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Determinants and consequences of CEO selection:

Examining the effect of interdependencies at the apex of the firm

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Vorwort

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Stefan Görgens

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List of abbreviations

CEO	Chief executive officer
CFA	Chartered financial analyst
CFO	Chief financial officer
CPA	Certified public accountant
CRSP	Center for Research in Security Prices
OLS	Ordinary least squares
EISAM	European Institute for Advanced Studies in Management
ROA	Return on assets
S&P	Standard & Poor's
SD	Standard deviation
SIC	Standard industrial classification
SEC	Securities and Exchange Commission
SMS	Strategic Management Society
SOX	Sarbanes-Oxley Act
TMT	Top management team
TRS	Total return to shareholders

I. Introduction

1 Research motivation

The selection of a new chief executive officer (CEO) is one of the most critical decisions of the firm. From an internal perspective, the selection of a new CEO can be considered as the most pervasive form of top management change which “instills hope, fear, or simply anxiety in organizational members” (Finkelstein, Hambrick, & Cannella, 2009:164). From an external perspective, the CEO is frequently considered as “the ultimate decision-maker and the person with absolute authority” (Kesner & Sebor, 1994:328). Consequently, the selection of a new CEO inevitably sends out a signal about the future success of the firm, and the failure of an individual CEO often translates into the failure of the entire firm. The selection of a new CEO and its consequences, therefore, have been the subject of a substantial volume of strategic management research over the last decades (see reviews in Finkelstein et al., 2009; Giambattista, Rowe, & Riaz, 2005; Kesner & Dalton, 1994).

Regarding the selection of a new CEO, research has centered on the question of how the firm’s environment determines the choice of a new CEO with specific knowledge, skills and experiences (Finkelstein et al., 2009; Pfeffer & Salancik, 1978). For example, in his seminal work, Fligstein (1987) argued that the firm’s internal strategy and structure as well as its external environment determine the choice of a CEO with a certain functional background. Similarly, Datta and Rajagopalan (1998) showed that new CEOs tend to match the requirements of their industries regarding organizational tenure, age, educational attainment and functional background. A major limitation of most of the studies in this field is that they have investigated CEO selection decisions without explicitly considering the knowledge, skills and experiences already available within the firm (Hillman, Withers, & Collins, 2009). For example, directors not only facilitate the firm’s adaptation to the environment by engaging in the selection of new top executives but also bring own resources to the firm (Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978; Pfeffer & Salancik, 2003). In fact,

recent research has argued that CEOs and directors often collaborate in developing strategic choices and actions (Jensen & Zajac, 2004; Westphal & Fredrickson, 2001). However, little is known about whether the resources of directors affect a firm's decision to select a certain CEO in order to adapt to the requirements of the firm's environment.

Regarding the consequences of the selection of a new CEO, a substantial body of strategic management research has focused on the question of how the origin of a new CEO (i.e., whether the new CEO is hired from within or outside the firm) affects postsuccession firm performance (Kesner & Dalton, 1994; Shen & Cannella, 2002a; Zajac, 1990). While researchers agree that firms hire outside CEOs to resolve organizational difficulties (Boeker & Goodstein, 1993; Datta & Guthrie, 1994), they also frequently associate outside CEOs with negative postsuccession performance consequences (Shen & Cannella, 2002a; Zajac, 1990). A common explanation for such negative performance consequences is based on the notion that outside CEOs lack firm-specific human and social capital, which translates into difficulties in making adequate strategic changes in a timely fashion (Friedman & Saul, 1991; Gabarro, 1987; Kotter, 1982). Surprisingly, while scholars have studied the ability of the firm's directors to provide its top management team (TMT) with knowledge and strategic advice (Baysinger & Butler, 1985; Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Kor & Misangyi, 2008; Lester, Hillman, Zardkoohi, & Cannella, 2008; Pfeffer & Salancik, 1978; Pfeffer & Salancik, 2003; Westphal, 1999), little is known about whether directors can in fact supplement newly selected outside CEOs with firm-specific human and social capital to improve postsuccession firm performance.

Finally, the consequences associated with the selection of a new CEO will depend not only on the CEO's interdependencies with the firm's board of directors, but also on the interdependencies with other members of the TMT (Shen & Cannella, 2002a). An emerging stream of research has highlighted the importance of social dynamics in the relationship between the CEO and the board of directors. For example, Fiss (2006) investigated the role of demographic differences between the CEO and the chairperson of the board in the context of CEO compensation. However, little is known about the

social dynamics between the new CEO and other members of the TMT (Fiss, 2006). Specifically, it is not clear how the relative differences between the CEO and other TMT members affect social influence attempts that ultimately lead to important corporate outcomes. In addition, limited empirical research has investigated the context that moderates the degree to which the CEO will engage in social influence attempts.

Collectively, the above described research gaps highlight the need for a more profound examination of the interdependencies between the CEO and the board of directors, on the one hand, and the CEO and the TMT, on the other, in the context of the determinants and consequences of CEO selection decisions. As far as interdependencies with the board of directors are concerned, future research should improve our understanding of the effect of the collaboration between the CEO and directors for the determinants and consequences of CEO selection decisions. Regarding interdependencies with the TMT, future research should investigate the importance of social dynamics between the CEO and members of the TMT that could lead to important CEO selection consequences. A more profound examination of these interdependencies can be expected to advance strategic management research on CEO selection determinants and consequences.

2 Research objectives

The overarching objective of this dissertation is to advance previous research on CEO selection by examining the determinants and consequences of CEO selection decisions while focusing on the interdependencies between the CEO and the board of directors, on the one hand, and the CEO and the TMT, on the other. Regarding selection determinants, this dissertation seeks to examine the relationship between the characteristics of the board of directors and the choice of a new CEO in response to critical firm contingencies. Regarding selection consequences, this dissertation strives to examine the relationship between supplementing board capital and new CEO performance consequences, as well as seeks to examine the relationship between relative TMT differences and CEO social influence dynamics. Overall, this dissertation seeks to advance

previous research on CEO selection determinants and consequences by addressing three main research objectives (see Figure I-1).

Figure I-1. Overview of research objectives

CEO selection	Interdependency	
	CEO and board of directors	CEO and TMT
Selection determinants	Research objective 1: <i>Examine the relationship between board of director characteristics and new CEO selection in response to critical contingencies</i>	
Selection consequences	Research objective 2: <i>Examine the relationship between supplementing board capital and new CEO performance consequences</i>	Research objective 3: <i>Examine the relationship between relative TMT differences and CEO social influence dynamics</i>

Research objective 1: *Examine the relationship between board of director characteristics and new CEO selection in response to critical contingencies.*

This dissertation strives to address this research objective by investigating the effect of the independent directors' functional resources on the selection of new CEOs in response to critical contingencies. Drawing on resource dependence theory, I will first argue that the selection of a new CEO with specific functional resources depends on the firm's critical contingencies. Then, I will propose that this relationship is stronger when the board of directors does not possess the required functional resources to address the firm's critical contingencies.

Research objective 2: *Examine the relationship between supplementing board capital and new CEO performance consequences.*

This dissertation seeks to achieve this research objective by investigating the effect of the characteristics of the board of directors on the performance consequences of newly selected outside CEOs with limited firm-specific human and social capital. Based on

resource dependence theory, I will first propose that the selection of an outside CEO with limited firm-specific human and social capital on average leads to negative postsuccession firm performance within the first years after succession. Then, I will argue that the depth and breadth of the firm-specific board capital of independent directors mitigate the negative relationship between outside CEO succession and firm performance, suggesting that outside CEOs can collaborate with independent directors to compensate for their firm-specific human and social capital disadvantages.

Research objective 3: *Examine the relationship between relative TMT differences and CEO social influence dynamics.*

This dissertation strives to address this research objective by examining how the relative differences between a firm's CEO and its chief financial officer (CFO) as a central member of the TMT weaken internal controls over financial reporting. In particular, building on social influence theory, I will suggest that the relative differences in educational attainment, position tenure and functional heterogeneity between the CEO and the CFO lead to an increased likelihood of material accounting weaknesses. Moreover, I will argue that those factors are especially likely to prompt material accounting weaknesses when firm performance is poor.

At this point, it is important to demarcate the focal and theoretical boundaries of this dissertation. Regarding the focal boundaries, succession studies have often taken the view that succession is a process in which the type of departure and successor selection determinants are intertwined (Cannella & Shen, 2001; Shen & Cannella, 2002b, 2002a). This view is important, but it is not the interest of this dissertation. Moreover, some studies have examined the dynamics of the CEO succession process and its impact on CEO selection outcomes (Ocasio, 1999; Shen & Cannella, 2002b; Vancil, 1987). This is also outside the scope of this dissertation.

Regarding theoretical boundaries, this dissertation develops insights in the field of CEO selection primarily drawing on resource dependence theory. Resource dependence theory assumes that the survival of organizations depends on their ability to pro-

cure critical resources from the external environment (Pfeffer & Salancik, 1978). In order to reduce the uncertainty in the flow of resources, organizations will try to restructure their dependencies with a variety of tactics (Casciaro & Piskorski, 2005), among which are the selection of new top executives and the selection of independent directors (Pfeffer & Salancik, 1978). However, the theory has been criticized for being “more of an appealing metaphor than a foundation for testable empirical research” (Casciaro & Piskorski, 2005:167) and for being “almost so accepted and taken for granted that it is not as rigorously explored and tested as it might be” (Pfeffer & Salancik, 2003:xxxiii).

In particular, three aspects shall be acknowledged. First, research on resource dependence theory has so far been relatively silent about how the different tactics to restructure organizational dependencies interact (Hillman et al., 2009). Specifically, some tactics may be complements that jointly reduce the uncertainty in the flow of resources while other tactics may work as substitutes with little or now change in dependence when employing them jointly. Second, research on resource dependence theory has been slow to recognize that dependencies exist with multiple environmental contingencies (Hillman et al., 2009) and little is known about how the “multiplexity” of these dependencies affects organizational outcomes. Third, resource dependence theory highlights the importance of the distribution of power and control within the organization for executive succession decisions (Pfeffer & Salancik, 1978). However, it also assumes that this distribution is affected by “the environmental context with its contingencies, uncertainties and interdependencies” (Pfeffer & Salancik, 1978:228) and thereby ignores the importance of other sources of power and control within the organization such as socio-political and social-psychological effects (Belliveau, O'Reilly, & Wade, 1996).

This dissertation partially contributes to a more comprehensive understanding of these aspects. In particular, the first and second research objective investigate interdependencies between the selection of a new CEO and independent directors and thereby shed light at how both tactics support firms in restructuring their environmental dependencies. In addition, the second research objective contributes to a more profound

understanding of the multiplexity of resources in the context of resource dependence theory. Finally, the third research objective addresses the dynamics within the TMT from a social influence theory perspective, which assumes that individuals may attempt to exceed influence over other individuals using various interpersonal mechanisms including anchoring, persuasion or intimidation (Belliveau et al., 1996; Fiss, 2006). While this dissertation does not explicitly synthesize resource dependence theory and social influence theory, it still sheds light on CEO selection consequences from both theoretical perspectives and thereby follows recent research calls in this context (Hillman et al., 2009).

3 Research approach

This dissertation employs archival data on a sample of publicly traded US companies listed on Standard & Poor's (S&P) S&P 500 index to empirically address the research objectives described above. This approach is consistent with related literature in this field of research (cf. Kor & Misangyi, 2008; Li, Sun, & Ettredge, 2010; Tian, Haleblian, & Rajagopalan, 2010). This dissertation investigates the years between 1998 and 2009, thereby covering significant corporate governance implications from the enactment of the Sarbanes-Oxley Act (SOX) in 2002 and increasing this dissertation's generalizability. The entire sample of this dissertation consists of 392 companies (3,613 firm-year observations) that exhibited no significant differences in terms of sales or assets compared with the entire S&P 500 index population.

The individual research objectives thereby require tailored sub-datasets depending on the interdependencies under which CEO selection decisions are investigated. For example, the first research objective focuses on the relationship between the characteristics of the board of directors and CEO selection outcomes and thus requires detailed demographic information on boards of directors and newly selected CEOs. The second research objective concerns the board of directors' ability to supplement newly selected CEOs and thus additionally requires data on firm performance following CEO successions. Finally, the third research objective focuses on the social dynamics be-

tween the CEO and the CFO and includes additional demographic information on CFOs.

In order to construct these different sub-datasets, I included archival data from multiple sources. Specifically, I hand-collected data on the demographic characteristics of CEOs, directors and CFOs from companies' proxy statements, Marquis Who's Who, S&P's Register of Corporations, Directors and Executives and press articles published in the Dow Jones Factiva and LexisNexis databases. I obtained the financial data on the sample firms and other firms in their industries from Compustat and from annual proxy statements and collected stock returns from the Center for Research in Security Prices (CRSP).

Moreover, the individual research objectives require specific empirical techniques. In particular, the first research objective requires a multinomial logistic regression analysis consistent with Ocasio and Kim (1999). I address the second research objective using Heckman selection analysis consistent with Karaevli (2007). Finally, the third research objective requires a continuous-time, non-parametric event history analysis, and thereby also responds to frequent calls for longitudinal studies in succession research (Datta & Rajagopalan, 1998; Finkelstein et al., 2009). The respective parts of this dissertation provide a more comprehensive description of the different datasets and analytical methodologies.

At this point, I would like to acknowledge that the task of collecting the different datasets was a joint effort between me and my doctoral research colleague Florian Christ. While we share a common research interest in the field of executive succession, we focus on different succession stages in our dissertations. In particular, he investigates the departure stage, and I focus on the subsequent stages of determinants and consequences of executive selection. As a result, both dissertations differ in their research motivation, their underlying theory and their empirical methodologies.

4 Outline of dissertation

This dissertation consists of five chapters beginning with this introductory chapter presenting the research motivation, the research objectives, the corresponding research approach and the outline of the dissertation. The subsequent three chapters develop around related but self-contained studies with each study addressing one of the derived research objectives. In particular, the second chapter addresses the first research objective and examines the relationship between board of director characteristics and new CEO selection. The third chapter addresses the second research objective and examines the relationship between supplementing board capital and new CEO performance consequences. The fourth chapter addresses the third research objective and examines the relationship between relative TMT differences and CEO social influence dynamics. The fifth chapter summarizes and compares the findings of this dissertation, highlights its theoretical contributions and practical implications and acknowledges its limitations. Finally, it outlines directions for future research and concludes.

II. Board of director characteristics and new CEO selection in response to critical contingencies

The following study seeks to examine the relationship between board of director characteristics and new CEO selection by developing and testing theory on the role of the functional resources of independent directors for the selection of new CEOs in response to critical contingencies. Thus, drawing on resource dependence theory, I first argue that firms align the functional resources of newly selected CEOs with their critical contingencies. Moreover, I suggest that this effect is strengthened when independent directors do not possess the required functional resources to address the firms' critical contingencies. The hypotheses are tested using a sample of CEO successions in publicly traded US companies listed on the S&P 500 in the 1998-2009 period. Overall, I obtain strong support for most of the hypotheses.

This study provides a more comprehensive view of CEO selection determinants by simultaneously examining firm contingencies and the resources of independent directors. In particular, it contributes to the growing stream of research examining the resource-provider role of the board of directors by showing that firms consider their boards' resources when selecting CEO successors in response to their critical contingencies. This study was accepted and presented at the eighth workshop of the European Institute for Advanced Studies in Management (EIASM) on Corporate Governance in Brussels, Belgium in May 2011.

1 Introduction

The selection of a new CEO is among the most important decisions for an organization because it can have far-reaching implications for its future success (Karaevli, 2007; Shen & Cannella, 2002a; Worrell, Davidson, & Glascock, 1993). In particular, executive succession provides an opportunity for a firm to adapt to major organizational or environmental changes (Pfeffer & Salancik, 1978; Pfeffer & Salancik, 2003; Tushman & Romanelli, 1985). Consequently, there is a considerable body of literature that has examined the relationship between organizational and environmental antecedents and CEO successor characteristics, including firm size (Dalton & Kesner, 1983; Datta & Guthrie, 1994), performance (Cannella & Lubatkin, 1993; Schwartz & Menon, 1985), strategy (Guthrie & Olian, 1991; Smith & White, 1987) or industry conditions (Datta & Rajagopalan, 1998; Rajagopalan & Datta, 1996).

In addition, a growing stream of research has argued that the board of directors not only facilitates the firm's adaptation to the environment by selecting new top executives but also by bringing own resources to the firm (Haynes & Hillman, 2010; Hillman & Dalziel, 2003). For example, scholars have shown that firms draw on the board of directors for the provision of knowledge and advice (Baysinger & Butler, 1985; Westphal, 1999) and for access to strategically relevant stakeholders (Carpenter & Westphal, 2001; Daily & Dalton, 1994). Despite the growing research on the resource-provider function of the board, little is known about if and how the board's resources moderate the decision to select a certain CEO successor as a response to organizational contingencies. This research gap is particularly important because previous research has shown that top level managers and outside directors often collaborate in developing strategic choices and actions (Jensen & Zajac, 2004; Westphal & Fredrickson, 2001).

In this study, I thus strive to capture the selection decision more completely than previous research has by simultaneously examining both, firm contingencies and board resources. In particular, I argue that the selection of a CEO successor with a particular functional specialization depends on the firm's contingencies. Moreover, I propose

that this relationship is stronger when the board does not possess the required functional resources to address the firm's critical contingencies.

I focus on the selection of CEOs with a dominant functional background in finance (i.e., finance CEOs) for three reasons. First, I can build on literature analyzing the prevalence of finance personnel at the top of the firm (e.g., Fligstein, 1987). Second, the focus on the finance function allows me to build on the literature regarding directors with finance expertise (Chava & Purnanandam, 2007; DeFond, Hann, & Hu, 2005). Third, financial responsibilities are relatively homogeneous across firms compared with the responsibilities of other functions (Gore, Matsunaga, & Eric Yeung, 2011; Li et al., 2010). As a result, I can use a cross-sectional sample to better generalize my findings. Overall, these reasons increase the relevance of this study from a theoretical and practical perspective.

With this study, I seek to obtain a better understanding of how firms adapt to their contingencies through the selection of CEOs with certain functional backgrounds. In particular, I strive to make the following contributions. First, I aim to contribute to the literature on the selection of new CEOs (see review in Finkelstein et al., 2009). By analyzing the role of critical organizational contingencies that influence the choice of a new CEO with a functional specialization in finance, I complement existing studies that have analyzed the selection of CEOs with functional backgrounds in operations (Koyuncu, Firfiray, Claes, & Hamori, 2010) and marketing (Srinivasan & Parrino, 2009).

Second, I seek to contribute to the emerging stream of research that has examined the resource-provider role of the board of directors (Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Kor & Misangyi, 2008). In particular, recent work has suggested that the board supplements the firm's TMT with vital advice and counsel (Filatotchev & Bishop, 2002; Kor & Misangyi, 2008). I extend work in this context by showing that firms also consider their boards of directors' resources when selecting new CEOs in response to critical contingencies.

The remainder of this study is organized as follows. The next section develops theory regarding the selection of finance CEOs. Subsequently, I provide details on sample selection, measures and methods. Then, I report the results of the study, followed by a presentation of the discussion and my ideas for future research. The last section provides a conclusion for this study.

2 Theoretical background

Resource dependence theory views the corporation as an open system. A firm's survival is dependent on its ability to procure critical resources from the external environment (Pfeffer & Salancik, 1978). Along these lines, Pfeffer and Salancik (1978) introduce two important adaptation mechanisms that a firm can pursue to address its external dependencies: the selection of new top executives and the selection of new independent directors.

The selection of new top executives is considered as an organization's response to address environmental uncertainties and dependencies (Pfeffer & Salancik, 1978). In this context, strategy researchers have particularly focused on the functional experience of executives (Datta & Guthrie, 1994; Datta & Rajagopalan, 1998; Koyuncu et al., 2010). Although CEOs are presumed to have a generalist's view on the business (Hambrick & Mason, 1984), they are usually functionally specialized (Gupta, 1984) and bring knowledge, skills and attitudes that are shaped by their experience in their primary functional area. Furthermore, research has proposed that the strategy of an organization partly determines the types of functional expertise critical to its success (Hitt, Ireland, & Palia, 1982). Datta and Rajagopalan (1998) presented empirical support for the importance of the firm's environmental uncertainties and dependencies, as well as its strategy for the selection of CEOs with particular functional backgrounds. These authors showed that firms choose new CEOs with particular functional characteristics in response to industry conditions such as product differentiation, growth rate or capital intensity. Moreover, Beal and Yasai-Ardekani (2000) investigated the performance implications of aligning the characteristics of top executives with the firm's

strategic context. I follow this literature and argue that firms select new top executives in response to their critical contingencies.

Similarly, the selection of new independent directors supports the organization in reducing its dependence on critical contingencies (Pfeffer, 1972; Pfeffer & Salancik, 1978). In particular, scholarly interest in this subject has focused on the directors' expertise, experience, reputation and skills that provide the firm with knowledge and advice (Baysinger & Butler, 1985; Haynes & Hillman, 2010; Westphal, 1999), access to strategically related external organizations (Carpenter & Westphal, 2001; Daily & Dalton, 1994; Pearce & Zahra, 1992) and legitimacy (Certo, Daily, & Dalton, 2001). Thereby, research has acknowledged the importance of adjusting the composition of the board of directors to adequately address the firm's critical contingencies (Boeker & Goodstein, 1991; Lang & Lockhart, 1990). For example, Mizruchi and Stearns (1988, 1994) provided empirical support for the relationship between a firm's need for financial resources and the representation of financial institutions on its board. Although I do not investigate the selection of new outside directors in this study, I explicitly consider their role and their ability to provide the firm with important resources.

While most studies of top management and corporate strategy have focused either on the CEO or on the board of directors (Finkelstein et al., 2009; Hillman et al., 2009), this study is beneficial in that it acknowledges the importance of both parties in examining corporate responses to critical contingencies. This seems particularly important, given that previous research has shown that top level managers and independent directors often collaborate in developing strategic choices and actions (Jensen & Zajac, 2004; Westphal & Fredrickson, 2001). In particular, this collaboration suggests that resource deficits among managers can be supplemented with the appointment of independent directors who possess that particular type of knowledge (Filatotchev & Bishop, 2002).

Based on these considerations, I develop theory suggesting that firms should not only select new CEOs in response to their critical contingencies, but that they should also

consider the resources of independent directors in the selection decision of new top executives.

2.1 Financial contingencies and the selection of new finance CEOs

In this section, I discuss the impact of three financial contingencies on the selection of new CEOs, namely financial leverage, dividend payments and unrelated diversification. I decided to examine these contingencies because they are extensively discussed in strategic management research (cf. Jensen & Zajac, 2004; Kochhar, 1996; Schellenger, Wood, & Tashakori, 1989).

A firm's financing structure plays an important role in its strategic and operational decision-making process (Jensen & Meckling, 1976). I argue that this affects the characteristics of newly selected CEOs for two reasons.

First, a firm with a high share of external borrowings is responsible for substantial principal and interest payments, and therefore the firm has less cash available to fund new investments (Baxter, 1967). The firm's debt holders demand that the firm is particularly prudent in its expenditures and that it focuses on activities consistent with the profit-maximizing interests of its shareholders (Nghah-Kiing Lim, Das, & Das, 2009). In addition, debt holders are likely to demand higher interest rates, which in turn adversely affect the firm's cash flow (Froot, Scharfstein, & Stein, 1993; Nghah-Kiing Lim et al., 2009). Consequently, firms with high shares of external borrowings require greater financial skills on the part of the CEO.

Second, because publicly traded firms depend so heavily on external financial resources, the management of relationships with external capital suppliers and the management of internal capital flows are particularly important (Balakrishnan & Fox, 1993). The higher the share of external borrowings, the more the firm is dependent on external financial stakeholders, including its creditors, stockholders and the larger financial community. Consequently, the management of different financial stake-

holders and different types of external financing require the CEO to possess substantial financial skills.

For these reasons, I propose that a firm's financial leverage influences its decision to select a finance CEO. In particular, I expect a firm with a higher financial leverage to face greater challenges in the funding of new investments and to be more dependent on the management of its financial stakeholders. Consequently, it is more likely to select a finance CEO than is a firm with a lower financial leverage.

Hypothesis 1a: There is a positive relationship between a firm's financial leverage and the likelihood that a finance CEO is appointed.

In order to meet its need for financing, a firm could also decide to reduce dividend payments to investors (Higgins, 1972; Rozeff, 1982). I argue that a reduction in a firm's dividend payments affects the selection of a new CEO for two reasons.

First, a firm's dividend payments are an important indicator of the TMT's beliefs in the firm's future prospects (Ross, 1977) and is of primary importance to investors (DeAngelo & DeAngelo, 1990). Consequently, a reduction in a firm's dividend payments can foster investor scrutiny because investors may see it as a downward re-evaluation of the firm's prospects. In fact, various studies have shown large negative stock price reactions observed around the announcement of dividend reductions (Aharony & Swary, 1980; Grullon, Michaely, & Swaminathan, 2002; Pettit, 1972). Not surprisingly, executives are reluctant to reduce dividend payments (Brav, Graham, Harvey, & Michaely, 2005). In order to mitigate negative investor reactions to dividend reductions, a firm needs to emphasize the communication of its strategy and the associated benefits to the market. This communication will be more successful if the CEO is in a position to understand not only the internal organization of the firm, but also outside investors' requirements (Bunderson, 2003; Williams & O'Reilly, 1998). Therefore, firms that decrease their dividends will be more likely to select a CEO with a background in finance.

Second, a firm commonly employs dividend reductions when it faces financial distress in the form of liquidity or solvency concerns (Brav et al., 2005; DeAngelo & DeAngelo, 1990; Lintner, 1956). Similar to the effect of financial leverage discussed above, it is more challenging to fund new investments in situations of financial distress (Froot et al., 1993; Ngah-Kiing Lim et al., 2009). Consequently, a firm that reduces dividend payments due to financial distress is likely to require greater financial skills on the part of the CEO.

Both explanations indicate that a firm with a reduction in its dividend payments faces greater financial challenges. Thus, I expect that a firm experiencing a reduction in its dividend payments is more likely to select a finance CEO than is a firm experiencing no reduction in its dividend payments.

Hypothesis 1b: There is a positive relationship between the reduction of a firm's dividend payments and the likelihood that a finance CEO is appointed.

In addition to the firm's financial leverage and dividend payments, its diversification strategy is an important aspect that may affect the firm's decision to select a finance CEO. In particular, two types of diversification strategies need to be distinguished. A related diversification strategy refers to diversification within a single industry group, while an unrelated diversification strategy refers to diversification across unrelated industry groups (Baysinger & Hoskisson, 1989; Jacquemin & Berry, 1979; Palepu, 1985). I argue that the diversification strategy affects the characteristics of a newly selected CEO for two reasons.

First, related and unrelated diversification strategies require different types of management controls (Rowe & Wright, 1997). A related diversification strategy requires the sharing of activities and the transfer of skills across businesses in order to increase firm value from operational synergies (Ngah-Kiing Lim et al., 2009). In this case, strategic controls are more suitable, and the TMT of the corporation is more involved in the formulation of business level strategies (Hill, Hitt, & Hoskisson, 1992). On the contrary, an unrelated diversification strategy implies that different businesses operate

independently. In this case, the firm emphasizes financial controls that consist of more formalized systems, rules and procedures, and the TMT exerts less influence on business level strategies (Baysinger & Hoskisson, 1989; Hoskisson & Hitt, 1988).

Second, a firm following an unrelated diversification strategy needs to review its division portfolios more frequently than a firm following a related diversification strategy (Rajan, Servaes, & Zingales, 2000; Williams, Paez, & Sanders, 1988). In order to successfully engage in these acquisition and divestiture activities, financial experience is of substantial importance. For example, Reed and Reed (1989) showed that companies that have CEOs with experience in finance, law and administration generate higher post-acquisition performance than do companies headed by CEOs with other backgrounds.

Accordingly, the differences between these strategies determine the critical abilities of the CEO. Under a related diversification strategy, the CEO is especially required to understand and assess the substantive implications of his or her decisions, while under an unrelated diversification strategy, the CEO needs to focus on the financial and administrative implications of his or her decisions (Michel & Hambrick, 1992) and requires experience in the management of corporate acquisitions and divestitures (Reed & Reed, 1989). On this note, Hayes and Abernethy (1980) and Fligstein (1990) argued that individuals with functional experience in finance perceive firms as portfolios of multiple businesses, and thus they are more likely to emphasize growth through diversification and acquisitions. In support of this view, Song (1982) found that the CEOs of firms following related diversification strategies tended to rise through careers in operations and marketing, while the CEOs of firms following unrelated diversification strategies tended to rise through finance, accounting and law. Similarly, Gupta (1984) proposed that functional experience in manufacturing and operations make the greatest contribution to organizational effectiveness in related diversified firms, while functional experience in finance and accounting make the greatest contribution to organizational effectiveness in unrelated diversified firms.

For these reasons, I expect the diversification strategy of the firm to affect its decision to appoint a finance CEO. Specifically, I propose that, in a firm following an unrelated diversification strategy, the selection of a finance CEO is more likely than in a firm following a related diversification strategy.

Hypothesis 1c: There is a positive relationship between the degree of a firm's unrelated diversification and the likelihood that a finance CEO is appointed.

2.2 The moderating effect of independent director financial expertise

Independent directors present an important adaptation mechanism that a firm can use to address its critical contingencies (Pfeffer & Salancik, 1978; Pfeffer & Salancik, 2003). Besides their monitoring function, independent directors can acquire resources from elements outside the firm as well as offer advice and counsel (Hillman & Dalziel, 2003). Consequently, studies have shown that the selection of independent directors should reflect the needs of the corporation (see reviews in Carpenter & Westphal, 2001; Hillman et al., 2009). A number of studies have specifically focused on the effect of independent directors with a functional background in finance (financial independent directors).

Regarding the resource acquisition role, Booth and Deli (1999) studied the characteristics of firms that have financial independent directors, finding that such firms have more debt than do those without financial independent directors. Similarly, Stearns and Mizruchi (1988) and Lang and Lockhart (1990) investigated solvent firms and found that firms with high liquidity have fewer financial independent directors on their boards than do other firms. Stearns and Mizruchi (1993) also highlighted the elevated importance of financial independent directors in the acquisition of resources. They find that the amount of funds borrowed by firms is positively associated with the presence of independent directors of institutions that are the primary suppliers of those funds. Moreover, Lee, Rosenstein and Wyatt (1999) found that the appointment of a financial

independent director to the firm's board is associated with positive abnormal returns if the firm's access to capital is limited.

Regarding the advice and counsel function, Agrawal and Chadha (2005) studied the relation between the financial expertise of boards and audit committees and the likelihood of earnings restatements by a firm. They found that having directors with a certified public accountant (CPA), chartered financial analyst (CFA) or similar degree on audit committees translates into fewer earnings restatements. Similarly, DeFond et al. (2005) analyzed abnormal returns around the announcement of newly appointed independent directors assigned to audit committees and documented a positive stock market reaction if these directors possess accounting knowledge. With regard to acquisition activity, McDonald, Khanna and Westphal (2008) studied the impact of independent directors during acquisitions on a firm's stock returns. They theorized that independent board members with relatively high levels of expertise in making acquisition decisions are more efficient in the identification and selection of acquisition targets and in the anticipation of long-term strategic consequences of acquisitions. Consistently, they found that firms that have independent directors with relevant expertise in particular acquisition types generate excess stock returns when they engage in these acquisitions.

Given that both the CEO and independent board members can address critical contingencies, I expect that the financial expertise of independent board members influences the selection of a finance CEO as a response to critical financial contingencies. Filatotchev and Bishop (2002) presented first evidence of such an interactive relationship. These authors studied the selection of independent directors in initial public offering firms and found that such firms strategically select independent directors that compensate for a relative lack of experiences and contacts among their executives. Similarly, Kor and Misangyi (2008) hypothesized that the collective endowment of industry experience among the firm's top managers affects the amount of industry experience provided by independent directors. Accordingly, they found a negative relationship between the top management and the board's collective levels of industry experience, which suggests that the board supplements top management with vital advice and

counsel. To reverse this argument, if a firm faces critical financial contingencies and its independent directors only possess limited financial expertise, the firm should be more likely to select a finance CEO to address its contingencies.

A firm facing critical financial contingencies may also choose to increase the financial expertise of its independent directors by altering the composition of its board. However, the interaction effect postulated above should be independent of such a decision. Once a firm has established its board of directors, the replacement of independent directors is difficult, even if there is an increased need in director expertise due to an emergence of particular contingencies (Kor & Misangyi, 2008). As long as independent directors fulfill their basic duties, they are rarely replaced or dismissed to make room for other directors with more adequate expertise (Monks & Minow, 2001). Furthermore, social and friendship ties between managers and directors substantially affect director nomination processes (Westphal, 1999), which may also hinder the timely replacement of independent directors. In addition, firms may deliberately decide to address their critical financial contingencies with functionally specialized CEOs instead of independent directors with finance expertise. Because independent directors with finance expertise are frequently affiliated with financial institutions (Burak Güner, Malmendier, & Tate, 2008), their advisory influence can be problematic since they might also pursue the interests of their own institutions rather than maximizing shareholder value (Burak Güner et al., 2008; Kroszner & Strahan, 2001). Thus, when the finance expertise of the CEO is sufficient to address the firm's financial contingencies, the firm might choose to avoid this conflict of interests.

For these reasons, I expect that the financial expertise of a firm's independent directors will have a moderating influence on the selection of a CEO with a functional background in finance. Specifically, I argue that in a firm facing critical financial contingencies, the selection of a finance CEO will be more likely when the board of directors' financial expertise, and in turn their ability to provide access to resources and financial advice, is limited. Thus, I propose the following hypotheses.

Hypothesis 2a: The positive relationship between the financial leverage of a firm and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low.

Hypothesis 2b: The positive relationship between the reduction of a firm's dividend payments and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low.

Hypothesis 2c: The positive relationship between the degree of a firm's unrelated diversification and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low.

3 Methods

3.1 Data and sample

The population of this study consisted of CEO successions between 1998 and 2009 in a random subset of publicly traded companies listed on the S&P 500 index. This subset exhibited no significant differences in terms of sales or assets compared with the entire S&P 500 population. I decided to use this timeframe because it covers years before and after the enactment of the SOX in 2002 and should therefore enhance the generalizability of my findings. I chose to focus on S&P 500 companies because I needed to ensure sufficient biographical transparency throughout the entire careers of the CEOs and the independent directors in the companies of the sample. I excluded financial institutions from the sample (SIC codes 6000-6999) because their financial contingencies may differ from those of other companies. My original sample consisted of 444 successions in 284 companies. After excluding 60 successions in financial institutions and 96 with missing information (e.g., missing biographical data), the final sample consisted of 288 CEO successions in 202 companies. Thereof, 129 companies had one CEO succession event, 61 had two CEO succession events, 11 had three CEO succession events and 1 had 4 succession events.

3.2 Dependent variable

New CEO functional background. New CEO functional background was the dependent variable in this study. I classified the functional backgrounds of CEOs into the following categories: technical, production, sales, marketing, finance, operations, medical, journalism, and legal. In the analysis, I collapsed these classifications into the following categories for consistency with Ocasio and Kim (1999): (1) production and technical, (2) marketing and sales, (3) finance, (4) legal, and (5) operations and other. I assigned the CEOs to these categories according to their dominant functional experience in terms of number of years (Bunderson & Sutcliffe, 2002) at the time of succession. Thereby, a CEO's functional experience did not have to be accumulated at his or her current employer. While 'legal' was treated as a separate category in the descriptive analysis, I collapsed 'legal' into the 'operations and other' category because there were only few cases, and because I sought to maintain consistency with previous studies by Fligstein (1987) and Ocasio and Kim (1999). In order to ensure the most comprehensive coverage for this variable, I relied on various data sources and hand-collected information from companies' proxy statements, Marquis Who's Who, S&P's Register of Corporations, Directors, and Executives, as well as press articles published in the Dow Jones Factiva and LexisNexis databases.

3.3 Independent variables

Financial leverage. I measured financial leverage as long-term debt as a proportion of total capital employed (Mehran, 1992) in the fiscal year of the succession. Most studies of capital structure are silent about whether the optimal long-term debt or the total debt is under investigation. I decided to focus on long-term debt because only a few theories have been developed to explain the existence of short-term debt or convertible debt (Green, 1984; Myers, 1977). I gathered data on financial leverage from Compustat. For my succession sample, financial leverage had a mean value of 0.27 and a standard deviation of 0.15.

Dividend payments. I measured dividend payments as the change in a firm's dividend payments from the fiscal year before the succession to the fiscal year of the succession (DeAngelo & DeAngelo, 1990). As dividend payments, I defined the total cash paid out as common dividends as a proportion of total sales (Brockman & Unlu, 2009). As an alternative, I defined dividend payments as the total cash paid out as common dividends as a proportion of total assets (Miller & Modigliani, 1961). I obtained similar results using this measure. I reverse coded the variable to ensure its comparability with the other measures of financial contingencies. I gathered data on this variable from Compustat. For my succession sample, dividend payments had a mean of -0.03 and a standard deviation of 0.46.

Unrelated diversification. I measured firm diversification strategy as the entropy measure of diversification (Baysinger & Hoskisson, 1989; Jacquemin & Berry, 1979; Palepu, 1985). This measure has been shown to possess high reliability and validity (Hoskisson, Hitt, Johnson, & Moesel, 1993). The entropy measure of diversification has two dimensions measured continuously: related diversification and unrelated diversification. I calculated these dimensions for the fiscal year of the succession using the approach specified by Palepu (1985). Specifically, I calculated each component using the following formula:

$$\text{Entropy measure} = \sum P_j \ln(1/P_j)$$

where P_j is the share of sales in segment j and $\ln(1/P_j)$ the weight for each segment. This measure takes into account the number of segments a firm operates in and the relative importance of each segment in terms of sales (Palepu, 1985). Related diversification refers to diversification arising from operating in two-digit industry groups (SIC codes), with industry group sales as the sales reference. Unrelated diversification refers to diversification arising from operating between two-digit industry groups (SIC codes), with total sales as the sales reference. I included the measure of unrelated diversification as an independent variable and the measure of related diversification as a control variable. I gathered data on firm and segment sales from Compustat. For my

succession sample, unrelated diversification had a mean of 0.30 and a standard deviation of 0.42.

Independent director financial expertise. I measured independent director financial expertise as the percentage of independent directors that had financial expertise in the fiscal year of the succession. The construction of this variable required two steps. In the first step, I identified the independent directors of each firm by checking if a firm had one or more independent board members in the fiscal year of the succession. I sourced the composition of the board of directors from the firm's proxy statements. Consistent with Weisbach (1988), Byrd and Hickman (1992) and Dalton, Daily, Ellstrand and Johnson (1998), any director who was an employee of the firm was classified as an insider. In addition, I classified nonemployee directors who were former officers, consultants, commercial bankers, investment bankers, lawyers, insurance company executives or that were related to an officer of the firm as insiders. I classified all other nonemployee directors as independent. In the second step, I determined the financial expertise of the independent board members. I accredited financial experience to those independent board members who at any time during their careers had held primary employment titles which could be assigned to a financial function or who gathered experience in a company belonging to the financial services sector (Chava & Purnanandam, 2007; DeFond et al., 2005). In order to collect this information, I relied on the same data sources as described above for new CEO functional background. For my succession sample, independent director financial expertise had a mean of 0.14 and a standard deviation of 0.15.

3.4 Control variables

Prior CEO functional background. I captured the political dynamics of the CEO succession process by including the functional background of the prior CEO in office. This variable measures the stability of power of functional subunits in the firm across generations of CEOs (Ocasio & Kim, 1999) and whether previous history affects the determination of who controls the CEO position (Stearns & Mizruchi, 1993). Prior CEO functional background was collected the same way as new CEO functional back-

ground. Prior CEOs with a background in operations and other was the omitted category.

Forced succession. I further captured the political dynamics of the CEO succession process by investigating if the departure of the prior CEO was routine or forced (Ocasio, 1994; Shen & Cannella, 2002b). I relied on business news reports over a four-year period around the departure, from two years before the departure to two years after the departure, to identify the circumstances under which the CEOs left office. The approach for classifying departures as dismissal followed those of Weisbach (1988), Parrino (1997) and Farrell and Whidbee (2003). Among the 288 CEO successions, I identified 77 successions in which the prior CEO was dismissed (27%). Forced succession was coded as 1 if the prior CEO was dismissed from office and 0 otherwise.

Multiple CEO successions. I included an indicator variable in the analysis that controlled for the number of CEO successions a firm experienced (Ocasio & Kim, 1999). Multiple CEO successions can lead to organizational disruption (Vancil, 1987) and may negatively affect firm performance (Kesner & Sebor, 1994), which may in turn influence the selection of a new CEO. Multiple CEO successions were coded as 1 for firms that experienced more than one CEO succession between 1998 and 2009 and 0 otherwise.

Board size. I controlled for board size because previous research has suggested that the size of the board can impact its ability to provide counsel and advice (Goodstein, Gautam, & Boeker, 1994; Pearce & Zahra, 1992). I measured board size as the number of all directors on the firm's board in the fiscal year of the succession.

CFO qualifications. I controlled for the professional qualifications of the CFO, in particular for the statutory titles CPA or CFA, because previous studies have shown a relationship between the CFO's qualifications and corporate outcomes (e.g., Aier, Comprix, Gunlock, & Lee, 2005; Li et al., 2010; Zhang, Zhou, & Zhou, 2007). In particular, firms can consider the CFO's qualifications in the selection of new CEOs.

CFO qualifications were coded as 1 if the CFO held the statutory title of CPA or CFA and 0 otherwise.

Firm and sector performance. I included firm performance in the analysis because research has consistently shown that previous firm performance can affect selection outcomes (Cannella & Lubatkin, 1993; Huson, Parrino, & Starks, 2001; Shen & Cannella, 2002b). I measured firm performance using both an accounting and stock performance measure adjusted by industry difference. I measured industry-adjusted firm return on assets (ROA) as the firm's ROA in the fiscal year of the succession adjusted for industry median ROA excluding the focal firm (Huson, Malatesta, & Parrino, 2004). This measure of firm performance helps differentiate between firms that performed poorly in an absolute sense and firms that performed poorly relative to their respective industries. Similarly, I measured industry-adjusted stock return using the firm's total return to shareholders (TRS) in the fiscal year of the succession minus the median stock return excluding the focal firm in the firm's core industry. I gathered data on firm performance from Compustat and the Center for Research in Security Prices (CRSP).

Related diversification. I included a measure of the firm's related diversification strategy in the analysis because firms with high related diversification need to place greater weight on strategic controls as compared to financial controls, in order to exploit the interdependencies of various businesses (Hill et al., 1992), which may in turn affect the selection of a new CEO. I calculated the measure as described above.

Firm size. I controlled for firm size because larger firms may have deeper internal talent pools and more established succession processes (Parrino, 1997). I measured firm size using the natural logarithm of the firm's total sales in the fiscal year of the succession (Zhang, 2008). As an alternative, I measured firm size as the natural logarithm of the total number of employees (Zhang, 2006). Both measures of firm size produced consistent results. I gathered data on firm size from Compustat.

CEO certification requirements. I also controlled for CEO certification requirements. From August 2002, the US Securities and Exchange Commission (SEC) has required CEOs of all publicly traded companies with revenues greater than \$1.2 billion to certify their financial statements. In this context, research has found that the attributes of the CEO can send important signals to the investment community regarding the credibility of the CEO's certification and thereby of the firm's financial statements (Zhang & Wiersema, 2009). Because this might also affect the selection of a new CEO, I included this dichotomous variable, which was set to 0 if the succession took place before August 2002 and 1 otherwise.

Time. Financial contingencies may have changed over the study period (Mizruchi & Stearns, 2006). To control for this possible effect, I added 12 time dummy variables for the years 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009. The omitted year was 2006. In the supplementary analyses, I dropped these 12 time variables and the results remained consistent with those reported in the study.

3.5 Analytical methodology

In order to test my hypotheses, I estimated a multinomial logistic regression model of CEO successions of each functional CEO background. A multinomial logistic regression model estimates simultaneous logistic regression models, with pair-wise comparisons of each category with a base category (Koyuncu et al., 2010; Ocasio & Kim, 1999). The base category was new CEOs with a functional background in operations and other. Given that there can be multiple CEO successions in a firm, the assumption of independence of observations could be violated. Therefore, I used the clustered standard errors procedure to produce robust estimates. In determining the statistical significance, the individual parameter estimates and the comparison of parameter values across the estimated equations needed to be considered.

4 Results

Table II-1 presents a classification of the functional backgrounds of new CEOs by the backgrounds of their predecessors and, therefore, allows me to assess the intraorganizational mobility in the backgrounds of CEOs appointed from 1998 to 2009. In 97 of the 288 cases (34%), the functional backgrounds of the CEOs remained stable. Among the 288 succession events, 18% of the successors had a background in production and technical, 27% in marketing and sales, 7% in legal, 19% in finance and 29% in operations and other. Ocasio and Kim (1999) reported similar results for the time period from 1981 to 1992, which indicates that the distribution of functional backgrounds has remained fairly stable between the two study periods.

Table II-1. Distribution of functional backgrounds of new CEOs by backgrounds of prior CEOs*

Functional background	Prior functional background					Total
	Production and technical	Marketing and sales	Legal	Finance	Operations and other	
Production and technical	13	6	2	12	18	51
	22%	10%	10%	26%	17%	18%
Marketing and sales	15	25	7	10	21	78
	26%	42%	33%	21%	20%	27%
Legal	4	2	5	1	7	19
	7%	3%	24%	2%	7%	7%
Finance	10	12	3	14	17	56
	17%	20%	14%	30%	17%	19%
Operations and other	16	14	4	10	40	84
	28%	24%	19%	21%	39%	29%
Total	58	59	21	47	103	288

* Percentages below frequency counts refer to percent of column total

Table II-2 reports the variable means, standard deviations, and Pearson correlation coefficients for all observations excluding year dummies (N = 288). The magnitudes of the correlations do not suggest that multicollinearity is an issue.

Table II-2. Variable means, standard deviations and correlation coefficients

Variable	Mean	SD.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) CEO certification requirements	0.47	0.50																
(2) Firm size	8.85	1.25	0.14															
(3) Multiple CEO successions	0.63	0.48	0.13	0.09														
(4) Prior CEO: Production and technical	0.19	0.39	0.02	0.06	0.05													
(5) Prior CEO: Marketing and sales	0.19	0.39	0.04	0.00	0.08	-0.23												
(6) Prior CEO: Legal	0.07	0.25	-0.04	-0.02	-0.13	-0.13	-0.13											
(7) Prior CEO: Finance	0.16	0.37	-0.11	0.06	-0.02	-0.21	-0.21	-0.12										
(8) Forced succession	0.28	0.45	0.03	0.13	0.00	-0.02	0.13	-0.06	-0.01									
(9) Return on assets	-0.01	0.09	-0.01	-0.02	-0.03	0.03	-0.06	-0.03	0.03	-0.26								
(10) Total return to shareholders	0.39	3.97	0.07	-0.01	0.03	-0.03	-0.04	-0.03	0.10	-0.01	-0.06							
(11) Related diversification	1.01	0.68	-0.15	-0.08	0.00	0.07	-0.02	-0.04	-0.07	-0.06	0.07	-0.07						
(12) Board size	11.18	2.40	-0.14	0.33	-0.04	0.00	-0.03	0.07	0.05	-0.11	0.16	0.03	0.07					
(13) CFO qualifications	0.40	0.49	-0.07	-0.14	-0.01	0.01	0.00	-0.03	0.01	0.07	-0.02	0.06	-0.04	-0.15				
(14) Independent director financial expertise	0.14	0.15	0.49	0.01	0.02	-0.03	0.09	0.03	-0.06	0.02	0.00	-0.01	0.01	-0.06	0.00			
(15) Financial leverage	0.27	0.15	-0.01	0.04	-0.07	-0.08	-0.03	0.14	0.06	0.09	-0.17	-0.01	0.01	0.14	0.02	-0.01		
(16) Dividend payments	-0.03	0.46	0.01	-0.13	0.03	-0.01	0.06	-0.08	-0.04	-0.02	-0.19	0.02	-0.09	-0.12	0.01	0.00	-0.02	
(17) Unrelated diversification	0.30	0.42	-0.07	0.04	-0.05	0.10	0.04	-0.04	-0.05	0.01	0.00	-0.04	0.19	0.11	-0.04	-0.05	0.07	0.00

N = 288. Correlations larger than 0.11 are significant at the level of $p < 0.05$, and those larger than 0.15 are significant at $p < 0.01$

Table II-3. Results of multinomial logistic regression model predicting selection of functional backgrounds of CEOs^a

	Model 1			
	Production and technical	Marketing and sales	Finance	Chi-square contrast
<i>Controls</i>				
CEO certification requirements	-0.87 (1.21)	-0.44 (0.99)	0.55 (1.42)	0.98
Firm size	0.50 *** (0.18)	0.53 *** (0.18)	0.04 (0.21)	11.42 ***
Multiple CEO successions	1.04 ** (0.43)	-0.05 (0.35)	0.36 (0.39)	7.43 *
Prior CEO: Production and technical	0.32 (0.52)	0.39 (0.46)	0.36 (0.49)	0.98
Prior CEO: Marketing and sales	-0.21 (0.60)	1.31 *** (0.44)	0.89 * (0.53)	12.86 ***
Prior CEO: Finance	0.80 (0.59)	0.38 (0.58)	1.36 ** (0.54)	6.58 *
Forced succession	-0.32 (0.48)	-0.38 (0.38)	-0.67 (0.43)	2.74
Return on assets	1.44 (2.41)	1.26 (2.74)	0.18 (2.47)	0.42
Total return to shareholders	0.01 (0.12)	-0.10 (0.11)	0.04 (0.05)	1.79
Related diversification	-0.59 (0.37)	-0.92 *** (0.25)	-0.58 * (0.35)	13.63 ***
Board size	0.02 (0.10)	0.12 (0.09)	0.11 (0.09)	2.67
Independent director financial expertise	-0.09 (1.49)	0.55 (1.45)	-2.71 * (1.39)	5.33
CFO qualifications	-0.62 (0.42)	0.29 (0.38)	0.02 (0.41)	4.69
<i>Independent variables</i>				
Financial leverage				
Dividend payments				
Unrelated diversification				
<i>Interactions</i>				
Financial leverage X independent director financial expertise				
Dividend payments X independent director financial expertise				
Unrelated diversification X independent director financial expertise				
Constant	-5.51 *** (2.06)	-5.99 *** (1.95)	-2.58 (2.04)	
Chi-square		125.04***		

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ ^a Standard errors are in parentheses

N = 288 successions

Table II-3 summarizes the results of the multinomial logistic regression analysis predicting the selection of functional backgrounds of new CEOs. Model 1 reports the results with only the control variables included. Model 2 reports the results with the addition of the independent variables. Models 3 reports the results with the addition of the moderating variables. As shown in Table II-3, the chi-square value of Model 3 (chi-square = 209.03, $p < .01$) exceeds those of Model 1 (chi-square = 125.04, $p < .01$)

Table II-3. Continued

Model 2				Model 3			
Production and technical	Marketing and sales	Finance	Chi-square contrast	Production and technical	Marketing and sales	Finance	Chi-square contrast
-0.86 (1.19)	-0.41 (0.98)	0.48 (1.53)	0.80	-0.77 (1.20)	-0.59 (0.98)	0.70 (1.60)	1.12
0.49 *** (0.18)	0.54 *** (0.18)	0.06 (0.20)	12.09 ***	0.52 *** (0.17)	0.55 *** (0.19)	0.02 (0.20)	13.94 ***
1.11 *** (0.42)	-0.03 (0.36)	0.40 (0.39)	8.47 **	1.13 ** (0.45)	0.05 (0.37)	0.38 (0.39)	7.24 *
0.22 (0.58)	0.37 (0.46)	0.36 (0.51)	0.88	0.09 (0.58)	0.23 (0.47)	0.26 (0.51)	0.39
-0.23 (0.63)	1.32 *** (0.45)	0.98 * (0.55)	12.70 ***	-0.47 (0.67)	1.18 *** (0.45)	0.93 * (0.53)	11.45 ***
0.85 (0.59)	0.38 (0.58)	1.32 ** (0.57)	5.86	0.72 (0.62)	0.14 (0.62)	1.24 ** (0.59)	5.17
-0.25 (0.48)	-0.34 (0.38)	-0.75 (0.46)	2.84	-0.32 (0.51)	-0.32 (0.39)	-0.86 * (0.48)	3.31
1.47 (2.27)	2.71 (2.79)	2.64 (2.66)	1.36	1.26 (2.33)	3.22 (2.87)	2.79 (2.73)	1.66
0.01 (0.08)	-0.10 (0.10)	0.03 (0.03)	2.82	0.02 (0.06)	-0.09 (0.09)	0.03 (0.03)	3.02
-0.61 (0.40)	-0.90 *** (0.26)	-0.61 (0.37)	12.62 ***	-0.62 (0.39)	-0.91 *** (0.27)	-0.64 * (0.37)	12.37 ***
0.02 (0.11)	0.11 (0.09)	0.09 (0.09)	1.89	0.02 (0.11)	0.10 (0.09)	0.08 (0.09)	1.34
-0.09 (1.57)	0.55 (1.49)	-2.51 * (1.41)	4.87	0.63 (1.56)	0.29 (1.73)	-2.73 * (1.45)	5.26
-0.63 (0.42)	0.24 (0.39)	-0.08 (0.42)	4.33	-0.80 * (0.43)	0.23 (0.40)	-0.04 (0.44)	5.46
0.09 (1.28)	1.65 (1.35)	3.85 *** (1.40)	9.02 **	-0.13 (1.39)	1.71 (1.38)	3.59 ** (1.46)	7.79 *
-0.14 (0.32)	0.25 (0.42)	0.45 (0.39)	1.69	-0.21 (0.35)	0.60 (0.41)	0.79 ** (0.38)	6.83 *
0.83 (0.52)	0.74 * (0.42)	1.12 *** (0.40)	8.40 **	0.93 * (0.56)	0.57 (0.43)	1.03 ** (0.44)	6.43 *
				-1.51 (7.18)	6.97 (7.14)	-15.21 ** (7.02)	6.92 *
				-7.52 * (3.86)	5.04 (3.70)	4.93 (3.36)	9.69 **
				-5.17 (3.63)	-9.68 *** (3.68)	-6.60 * (3.51)	7.28 *
-5.63 *** (2.12)	-6.58 *** (1.99)	-4.02 * (2.05)		-5.95 *** (2.14)	-6.37 *** (2.14)	-3.41 * (2.05)	
	191.45***				209.03***		

and Model 2 (chi-square = 191.45, $p < .01$). This implies that the results add to the understanding of the determinants of the selection of CEOs with particular functional backgrounds.

Hypothesis 1a predicts a positive relationship between the degree of a firm's financial leverage and the likelihood that a finance CEO is appointed. The results indicate that the selection likelihood of a finance CEO is positively and significantly associated

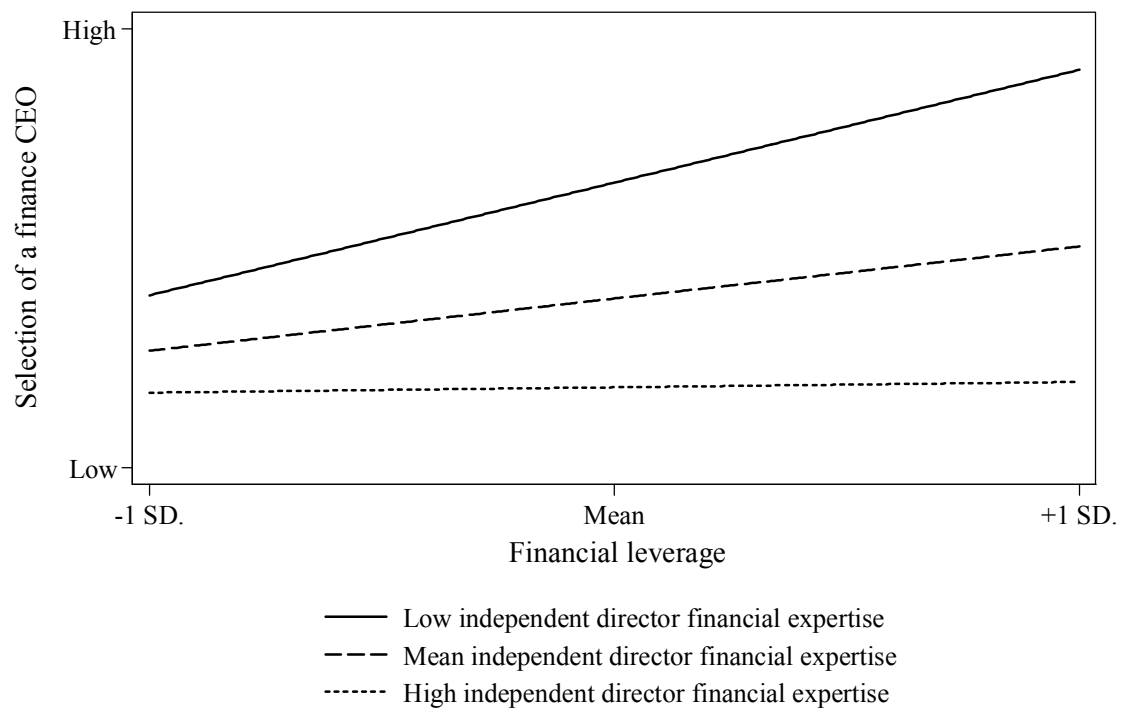
with higher financial leverage ($b = 3.85$, $p < .01$ in Model 2 and $b = 3.59$, $p < .05$ in Model 3). Thus, Hypothesis 1a is strongly supported.

Hypothesis 1b predicts a positive relationship between the change in a firm's dividend payments and the likelihood that a finance CEO is appointed. The results indicate that the selection likelihood of a finance CEO is higher when the firm experiences a change in its dividend payments ($b = 0.45$, n.s. in Model 2 and $b = 0.79$, $p < .05$ in Model 3). Since the effect shows the postulated direction but is only significant in Model 3, Hypothesis 1b receives partial support.

Hypothesis 1c expects a positive relationship between the degree of a firm's unrelated diversification and the likelihood that a finance CEO is appointed. The results indicate that the selection likelihood of a finance CEO is positively and significantly associated with higher financial leverage ($b = 1.12$, $p < .05$ in Model 2 and $b = 1.03$, $p < .05$ in Model 3). Thus, Hypothesis 1c receives strong support.

In order to test the moderating effects of financial contingencies and financial expertise of independent directors, I added interaction terms that were the product of the centered financial contingency variable and the centered independent directors financial expertise variable. Hypothesis 2a posits that the positive relationship between the financial leverage of a firm and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low. As shown in Model 3, the coefficient for the selection of a finance CEO for the interaction of financial leverage and financial expertise of independent directors is negative and significant ($b = -15.21$, $p < .05$). However, when estimating interaction effects, one cannot solely rely on the direction and statistical significance of the interaction coefficient (Hoetker, 2007; Wiersema & Bowen, 2009). Therefore, I graphically illustrate this moderating effect in Figure II-1.

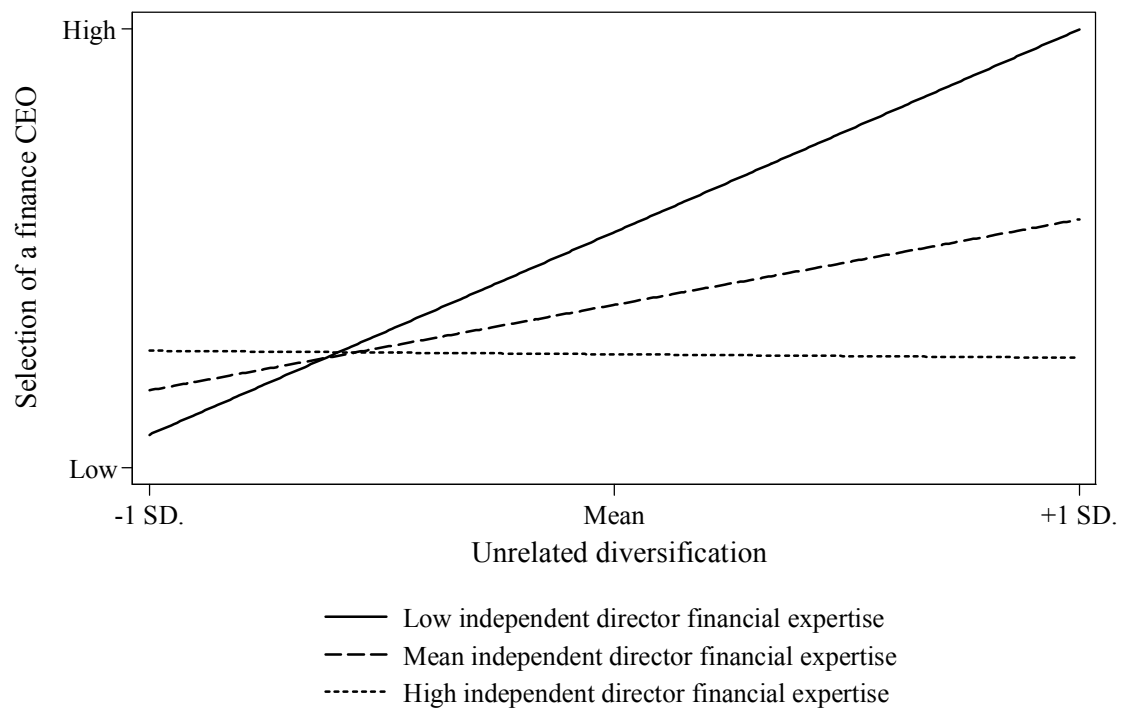
Figure II-1. Financial leverage and selection of a finance CEO: the moderating effect of independent director financial expertise



The vertical axis represents the likelihood of selection of a finance CEO, while financial leverage is graphed on the horizontal axis. For this purpose, all variables in the model, except for financial leverage and financial expertise of independent directors, were constrained to mean values. As indicated by the graph, the marginal effect of independent director financial expertise has a greater negative effect on the likelihood that a CEO with a finance background is appointed when independent director financial expertise is low (one standard deviation below its mean) than when it is high (one standard deviation above its mean). Thus, Hypothesis 2a receives strong support.

Hypothesis 2b predicts that the positive relationship between a reduction in the dividend payments of a firm and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low. As shown in Model 3, the coefficient for this interaction is positive and not significant ($b = 4.93$, n.s.). Thus, Hypothesis 2b is not supported.

Figure II-2. Unrelated diversification and selection of a finance CEO: the moderating effect of independent director financial expertise



Hypothesis 2c expects that the positive relationship between the unrelated diversification of a firm and the likelihood that a finance CEO is appointed is stronger when the financial expertise of independent directors is low. As shown in Model 3, the coefficient for unrelated diversification and financial expertise of independent directors is negative and significant ($b = -6.60, p < .10$). Thus, Hypothesis 2c receives strong support.

The control variables also yielded interesting results. For example, there is a positive effect of firm size on the likelihood that a new CEO with a background in production and technical ($b = 0.50, p < .01$) or marketing and sales ($b = 0.53, p < .01$) is appointed. In addition, there is a positive effect of prior CEO background in marketing and sales on the likelihood that a marketing and sales CEO is appointed ($b = 1.31, p < .01$). Furthermore, prior CEO background in finance seems to positively affect the likelihood of selection of a new CEO with a background in finance ($b = 1.36, p < .05$). Finally, firms following a related diversification strategy are significantly less likely to

select a finance CEO ($b = -0.58, p < .10$) or a CEO with a functional background in marketing or sales ($b = -0.92, p < .01$). This is in line with the idea that under a related diversification strategy, increased importance is placed on the extraction of synergies between different business units, which may be easier for a CEO with a functional background in operations.

5 Discussion

Collectively, these results show that firms consider their critical contingencies when selecting new CEOs and that the extent to which the firms' independent directors address these contingencies critically affects this decision.

In particular, the first set of results indicates that firms facing high financial leverage, firms experiencing a reduction in dividend payments and firms following an unrelated diversification strategy are more likely to select new CEOs with a functional background in finance. My findings thereby corroborate the view that the resource provision ability of CEOs is important in the selection decision (Pfeffer & Salancik, 1978). Finance CEOs seem to be particularly able to manage relationships with external capital suppliers, portfolios of unrelated businesses and investment activities when financial resources are constrained.

The second set of results relates to the role of the independent directors' financial expertise in the selection decision of a new CEO with a functional background in finance. I show that firms that are highly leveraged and firms following an unrelated diversification strategy are more likely to appoint a finance CEO when the financial expertise of their independent directors is low. These results clearly support the argument that in order to address their critical contingencies, firms consider interdependencies between the CEO and the board of directors. Furthermore, the results are particularly interesting in light of Zajac and Westphal's (1996) study on CEO selection. These authors, considering socio-political and social-psychological factors, argued that boards will have a preference for demographically (including functionally) similar

CEOs. The supplementing effect found in this study seems to indicate that the realization of the board's preference for demographically similar CEOs is dependent on the critical contingencies of the firm.

5.1 Theoretical contributions

This study contributes to the research stream on critical organizational contingencies that influence the choice of CEO successors with particular functional specializations (Daily, Certo, & Dalton, 2000; Dalton & Kesner, 1985; Fligstein, 1987; Ocasio & Kim, 1999). Given that CEO succession practices have changed substantially over time (Huson et al., 2001), the evidence from these studies may no longer be valid. With my focus on the selection of CEOs with backgrounds in finance, I complement two recent studies that have analyzed the selection of CEOs with backgrounds in operations (Koyuncu et al., 2010) and marketing (Srinivasan & Parrino, 2009).

The theory and results presented in this study also contribute to the growing research on interactions between the TMT and board of directors (Finkelstein et al., 2009; Kor & Misangyi, 2008; Zahra & Pearce, 1989; Zajac & Westphal, 1996). For example, Kor and Misangyi (2008) showed that the level of industry experience among the TMT of the firm affects the amount of industry experience provided by independent directors. This study extends this literature by indicating that firms consider the resources of independent directors in the selection of new CEOs. For example, if independent directors possess a particular resource, the selection of a CEO with the same resource is less likely and, conversely, if independent directors lack a particular resource, firms tend to select new CEOs that possess that particular resource. I consequently show a supplementing effect between independent directors and newly selected CEOs. From a resource dependence theory perspective, this study thereby enhances our understanding of the interaction between the selection of new CEOs and independent directors as dependency reducing tactics.

5.2 Limitations and future research

To my knowledge, this study represents the first attempt to empirically investigate the interdependency between the functional resources of independent directors and the selection of new CEOs with a particular functional background. I believe that the evidence gained is valuable, but my study has several limitations, which in turn offer fruitful avenues for future research.

First, this study focused on executive selection decisions in the face of three financial contingencies, namely financial leverage, dividend payments and unrelated diversification. I decided to select these contingencies because they have been extensively discussed in previous strategic management research (cf. Jensen & Zajac, 2004; Kochhar, 1996; Schellenger et al., 1989). However, I believe that my findings may be useful for a wide range of critical contingencies and I, therefore, encourage future research to identify additional critical contingencies that promote the selection of CEOs with a functional background in finance or different backgrounds.

Second, this study analyzed the interdependencies between the CEO's and the independent directors' abilities to address critical organizational contingencies. However, firms may also employ different strategies to address their critical contingencies. For example, other members of the TMT may have an influence on the firm's ability to address contingencies (e.g., Homburg, Workman, & Krohmer, 1999; Koyuncu et al., 2010). In addition, recent literature has focused on the exchange of strategic advice between firms (McDonald et al., 2008; McDonald & Westphal, 2003, 2010). It would thus be interesting to see how these different strategies affect my findings.

Third, this study focused on effects influencing the selection of new CEOs in the face of critical organizational contingencies. Thus, this study is descriptive in that it documents the existence of these linkages. However, researchers have argued that descriptive studies are needed in concert with studies examining strategic choices and outcomes (Mintzberg, 1979). In particular, future research could benefit from examinations of whether and how complementary director and management capabilities affect

strategic choices and outcomes (e.g., strategic change, diversification, divestments) and in turn the performance of the firm.

Finally, a significant weakness of this study is the measurement of financial expertise. I attempted to increase the validity of my results by following the approaches by Bunderson and Sutcliffe (2002) to define the CEOs' dominant functional experience and by Chava and Purnanandam (2007) to measure independent directors' financial expertise. However, additional measures should be considered to incorporate the different aspects of CEO and independent director financial expertise, such as the amount of financial experience or a finer categorization of financial expertise (accounting, finance, auditing, etc.).

6 Summary

In conclusion, I investigated how critical contingencies and independent director characteristics affect the firm's decision to select a CEO with a particular functional background. Specifically, I find that firms that are highly leveraged, firms with a reduction in their dividend payments and firms following an unrelated diversification strategy are more likely to select a finance CEO. Moreover, my results show that the financial expertise of independent directors significantly affects the selection of a finance CEO. In particular, firms that are highly leveraged and firms following an unrelated diversification strategy are more likely to select a CEO with a dominant functional background in finance if the financial expertise of independent directors is limited. These findings provide strong support for a supplementing relationship between the CEO and independent directors regarding their ability to address critical contingencies. I hope that my results can inspire future research on the role of corporate boards in CEO succession decisions.

III. Supplementing board capital and new CEO performance consequences

The following study examines the relationship between supplementing board capital and new CEO performance consequences. It thereby extends the insights gained in the previous chapter by building on the notion that CEOs and independent directors collaborate in developing strategic choices and actions. Thus, drawing on resource dependence theory, I first argue that outside successions on average result in negative postsuccession firm performance in the first three years after succession. Moreover, I propose that the depth and breadth of the firm-specific board capital of independent directors improve the performance consequences of outside CEOs. The hypotheses are tested using a sample of CEO successions in publicly traded US companies listed on the S&P 500 index in the 1998-2006 period. Overall, I find strong support for all hypotheses.

Collectively, the theory and results in this chapter indicate that independent directors can provide newly appointed outside CEOs with firm-specific human and social capital in order to mitigate existing firm-specific human and social capital disadvantages. In particular, this study contributes to the literature on the selection consequences of newly appointed outside CEOs by showing that postsuccession firm performance differs greatly when distinguishing different levels of firm-specific board capital. Moreover, it contributes to the research on the resource-provider role of independent directors. While previous work in this context has largely focused on the role of board resources to directly address potential environmental uncertainties, this study illustrates the role of independent directors to support new CEOs in overcoming deficiencies in their human and social capital.

1 Introduction

The selection of a new CEO is widely considered as an important decision that shapes a firm's future success (Shen & Cannella, 2002a; Worrell et al., 1993). Over the past few decades, strategic management research has placed particular emphasis on the question of how new CEO origin (whether the new CEO is hired from within or outside the firm) affects postsuccession firm performance (Karaevli, 2007; Kesner & Dalton, 1994; Shen & Cannella, 2002a; Zajac, 1990). In particular, new CEO origin is an important determinant of firm performance because it distinguishes two relevant succession contexts: Outside CEOs (those hired from outside the firm) are hired to resolve organizational difficulties, while inside CEOs (those promoted from within the firm) are hired to ensure leadership continuity (cf. Karaevli, 2007). Inside CEOs are therefore valued for their firm-specific human and social capital, while outside CEOs are prized for their novel outside human and social capital (Harris & Helfat, 1997; Zhang & Rajagopalan, 2003, 2004, 2010).

Surprisingly, while scholars have acknowledged that outside CEOs can be an appropriate response to a shift in environmental demands (Kesner & Dalton, 1994; Wiersema, 1995), outside successions are often associated with negative postsuccession performance consequences (Shen & Cannella, 2002a; Zajac, 1990). Along these lines, researchers have argued that a lack of firm-specific human and social capital of outside CEOs translates into difficulties making adequate strategic changes in a timely fashion (Friedman & Saul, 1991; Gabarro, 1987; Kotter, 1982). However, little is known about if these human and social capital disadvantages of new outside CEOs can be mitigated, which could ultimately improve firm performance.

A large body of research based on resource dependence theory has argued that independent directors are able to provide the firm and its leadership with knowledge and advice (Baysinger & Butler, 1985; Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Kor & Misangyi, 2008; Lester et al., 2008; Westphal, 1999). Despite the existing literature on the resource-provider function of independent directors, there has been limited empirical research investigating whether independent directors can provide

new outside CEOs with firm-specific resources in order to improve firm performance. This research gap is particularly important because it represents a new type of resource provision by independent directors, namely the transfer of firm-specific human and social capital.

In this study, I examine the effect of outside succession on firm performance and investigate whether different dimensions of the resource-provider role of independent directors moderate this effect¹. In the first hypothesis, I follow Shen and Cannella (2002a) and propose that the selection of an outside CEO on average leads to negative postsuccession firm performance within the first years after succession. In the second and third hypotheses, I argue that the depth and breadth of the firm-specific board capital of independent directors mitigate the negative relationship between outside CEO succession and firm performance. These hypotheses suggest that independent directors with firm-specific human and social capital support new outside CEOs, which provides the basis for decisions on adequate strategic changes and ultimately translates into improved firm performance.

Through this study, I strive to improve our understanding of the impact of outside succession on firm performance by examining the resource-provider role of independent directors. In particular, this study seeks to make three contributions. First, it seeks to contribute to the literature on the performance consequences of new CEO origin (see reviews in Finkelstein et al., 2009; Karaevli, 2007). While previous work has shed more light on the distinction between successor type, successor actions and the succession context in order to predict certain performance consequences (Karaevli, 2007; Shen & Cannella, 2002a), this study aims to show that the performance consequences of newly appointed outside CEOs differ greatly when distinguishing between different levels of firm-specific board capital depth and breadth. Second, this study aims to contribute to the research on the resource-provider role of independent directors (Baysinger & Hoskisson, 1990; Carpenter & Westphal, 2001; Haynes & Hillman, 2010; Kor & Misangyi, 2008; Kroll, Walters, & Wright, 2008; Lester et al., 2008; Westphal, 1999). Previous work in this context has largely focused on the role of board resources to directly address potential environmental uncertainties (e.g., Haynes

& Hillman, 2010). However, this study seeks to show that board capital also improves firm performance when it allows new CEOs to overcome deficiencies in their own human and social capital. Third, this study seeks to contribute to the literature on board capital (Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Kor & Sundaramurthy, 2009; Lester et al., 2008; Tian et al., 2010) by capturing different facets of firm-specific human and social capital (i.e., depth and breadth).

The remainder of this study is organized as follows. The next section develops theory regarding the selection of outside CEOs and the resource-provider role of independent directors. Subsequently, I provide details on sample selection, measures and methods. I then report the results of the study and present the discussion and my ideas for future research. The last section concludes this study.

2 Theoretical background

Resource dependence theory describes the firm as an open system that needs to adapt to changes in its external environment in order to survive and succeed (Pfeffer & Salancik, 1978). Among a few others, the theory highlights two corporate actions that firms can take in order to reduce environmental dependencies: CEO succession and the board's resource provision.

The first corporate action is that firms can hire a new CEO as a “strategic response to environmental contingencies” (Pfeffer & Salancik, 1978:248). Specifically, firms can resolve a potential environmental misalignment by replacing the incumbent CEO with someone “capable of coping with the critical problems facing the organization” (Pfeffer & Salancik, 1978:236). In addition, resource dependence theory suggests hiring an outside CEO in order to resolve organizational difficulties such as poor firm performance (Boeker & Goodstein, 1993; Datta & Guthrie, 1994) or resistance to adapt to an environmental shift (Pfeffer & Salancik, 1978; Virany, Tushman, & Romanelli, 1992). A large body of research in this context has found that the choice of

an outside CEO is more likely when performance before succession is poor (see review in Finkelstein et al., 2009).

The second corporate action is that firms can draw on the board of directors, which is able to provide resources in order to address the critical contingencies faced by the organization. Specifically, Pfeffer and Salancik (1978:163) suggested that a director is expected “to support the organization” and thus “will concern himself with its problems [...] and will try to aid it”. Resource dependence researchers have found that directors provide valuable expertise, advice and counsel to firms (Baysinger & Hoskisson, 1990; Carpenter & Westphal, 2001; Kroll et al., 2008; Lester et al., 2008; Westphal, 1999) and that they are able to aid in strategy formulation processes and other important strategic decision-making functions (Judge & Zeithaml, 1992; Lorsch & MacIver, 1994). In fact, Lorsch and McIver (1994:64) found that directors consider “their key normal duty” to be that of advising the CEO.

Importantly, Hillman and Dalziel (2003) argued that directors differ in their ability to successfully engage in such resource-provision activities. In particular, the authors suggested that the board’s ability to provide resources depends on the sum of the individual directors’ human² and social capital³, a concept described as board capital⁴. Consistent with prior literature, I strive to capture two dimensions of board capital (Haynes & Hillman, 2010; Lester et al., 2008). The first dimension, ‘depth’, refers to the profundity of a director’s expertise, knowledge, skills and social networks. Each director brings a unique set of characteristics and resources to a firm (Kosnik, 1990). Thus, the depth of these characteristics and resources affects the value of the director to the firm (cf. Lester et al., 2008). The second dimension, ‘breadth’, refers to the extent of the skills, expertise, and social networks a director possesses. While depth represents the scale of human and social capital, breadth refers to the scope of human and social capital (Mizruchi, 1996; Pfeffer, 1972).

Despite the large research stream on the consequences of CEO succession and the emerging research stream on the role of the depth and breadth of board capital, little is known about the interconnectedness of both organizational actions in addressing ex-

ternal dependencies (Hillman et al., 2009). This is particularly important because empirical studies have provided inconsistent evidence on the effects of outside CEO successions on firm performance thus far (see reviews in Finkelstein et al., 2009; Karaevli, 2007). In this study, I connect both previously independent research streams by introducing the resource-provider role of independent directors for new outside CEOs and by investigating how this role affects postsuccession firm performance.

Thereby, I focus on the resource-provider role of independent directors for two reasons. First, in contrast to independent directors, dependent directors (inside directors) are less willing to support a newly appointed outside CEO because they are closely linked to the predecessor CEO and share his or her strategic perspectives (Fondas & Wiersema, 1997). Second, an outside succession often represents the judgment by the board of directors that no competent successor candidate is available within the firm (Finkelstein et al., 2009). Thus, it often signals a loss of control for the inside directors (Boeker & Goodstein, 1993). In such a situation, tension within the group of inside directors is usually high because they may feel fearful, inferior or even hostile towards the new CEO (cf. Shen & Cannella, 2002a; Vancil, 1987).

Based on these considerations, I will proceed to derive hypotheses examining whether the depth and breadth of firm-specific board capital of independent directors affect the performance consequences of new outside CEOs.

2.1 Outside succession and firm performance

In general, resource dependence theory highlights various benefits of hiring outside CEOs relative to inside CEOs. Given their external perspectives (Harris & Helfat, 1997; Zhang & Rajagopalan, 2003, 2004, 2010), outside CEOs can draw from a broader range of strategic alternatives and incorporate those into their strategic planning processes (Zhang & Rajagopalan, 2010). Moreover, outside CEOs are not emotionally attached to the firm's status quo (Hambrick, Geletkanycz, & Fredrickson, 1993) and thus they are more likely to initiate strategic change (Finkelstein & Hambrick, 1990). As a result, particularly in times of organizational trouble such as

poor firm performance, outside CEOs can better initiate strategic change (Boeker & Goodstein, 1993; Cannella & Lubatkin, 1993; Helmich & Brown, 1972; Kesner & Dalton, 1994). However, although outside CEOs certainly have important advantages, two central reasons are likely to prevent these benefits immediately translating into better postsuccession performance compared with inside CEOs (cf. Karaevli, 2007; Shen & Cannella, 2002a).

First, outside CEOs lack firm-specific expertise, knowledge, skills and social networks (Greiner, Cummings, & Bhambri, 2003). New outside CEOs are often pressured by the board of directors to take quick decisions in order to turnaround performance (Friedman & Saul, 1991). However, without an in-depth understanding of their new firms, it is difficult for new outside CEOs to quickly take well-formulated strategic decisions (Gabarro, 1987; Kotter, 1982; Shen & Cannella, 2002a). Outside CEOs are also likely to develop strategies that deviate from existing firm capabilities because they are unable to incorporate those capabilities in the strategy-making process (Zhang & Rajagopalan, 2010). However, such strategic changes have a greater failure risk because strategic changes that build on existing firm-specific capabilities are more likely to improve immediate performance than are those that require entirely new capabilities (Haveman, 1992; Sastry, 1997). Similarly, Zhang and Rajagopalan (2010) argued that outside CEOs are likely to have difficulties implementing strategic change because they do not know how internal resources and capabilities can be reconfigured and reused. In sum, I expect that an outside succession relative to an inside succession leads to negative postsuccession firm performance in the first years of the new CEO's tenure.

Second, new outside CEOs often struggle to find executives within the firm that will deliberately provide them with the required firm-specific knowledge in order to be able to respond to shifting environmental demands (Friedman & Saul, 1991; Shen & Cannella, 2002b). New outside CEOs generally face a number of senior executives that had close relationships with the prior CEO or that were even hired by him or her. Thus, senior executives are often hostile towards new outside CEOs (Boeker & Goodstein, 1993; Shen & Cannella, 2002b). They may strongly identify with their

firms' past strategies and might resist providing the relevant firm-specific human and social capital to the new CEOs (Helmich & Brown, 1972; Wiersema, 1995). Alternatively, ambitious senior executives may seek to benefit from the lack of firm-specific human and social capital of the new CEOs and challenge them in their early tenure (Shen & Cannella, 2002b). Thus, although new outside CEOs may have the support of their boards, they are likely to have less support from other senior executives than might inside CEOs, which puts them at a significant disadvantage.

For both reasons, relative to inside CEOs, I expect that outside CEOs have difficulties translating their advantages into performance improvements in the early years of their tenure. Hence, relative to an inside succession, I suggest that an outside succession on average has a negative impact on postsuccession firm performance.

Hypothesis 1: There is a negative relationship between outside succession and postsuccession firm performance.

2.2 The moderating effect of the depth of firm-specific board capital

Whether firm performance declines after a CEO succession is likely to depend not only on the origin of the new CEOs, which affects the executives' need for firm-specific human and social capital, but also on the possibility of obtaining resources from other sources, such as independent directors. Specifically, independent directors may provide new CEOs with firm-specific knowledge, skills and social networks, thereby allowing them to make the appropriate strategic changes. Independent directors' ability to engage in such resource provision activities is likely to depend on the human and social capital they have developed over the course of their tenures as directors of the firm (Fischer & Pollock, 2004; Hitt, Biermant, Shimizu, & Kochhar, 2001; Pennings, Lee, & Van Witteloostuijn, 1998).

During their tenure on the company's board, independent directors develop knowledge of the firm's past commitments and unique resources that would help outside CEOs develop new growth proposals (Kor & Sundaramurthy, 2009). With such knowledge,

independent directors may introduce new outside CEOs to firm-specific language, which allows new CEOs to exploit their knowledge more efficiently (Grant, 1996; Nahapiet & Ghoshal, 1998; Postrel, 2002). Zald (1969:104) consistently stated that “detailed knowledge of the organization and its problems is a sine qua non of decision making. The board member or executive without knowledge has difficulty influencing the decision process”. Similarly, Kor and Sundaramurthy (2009:986) argued that “experiential knowledge of a firm is vital for boards to effectively guide a firm’s future directions”. Thus, the provision of independent directors’ firm-specific human capital may allow new outside CEOs to more effectively formulate and communicate appropriate strategic change.

Furthermore, during their tenure on the company’s board, independent directors develop firm-specific social capital (Fischer & Pollock, 2004) in the form of knowledge of each other and of the firm’s TMT. This knowledge is valuable to new CEOs because it fosters interpersonal trust from other executives and, therefore, is likely to reduce hostility from other senior executives (Sundaramurthy & Lewis, 2003; Westphal, 1999). Moreover, firm-specific social capital allows new CEOs to become more familiar with the skills, habits and personalities of other senior executives, thereby enabling them to function and make decisions more effectively and ultimately reduce the resistance to change within the TMT (Fischer & Pollock, 2004; Westphal & Bednar, 2005). In addition, previous research has shown that the decisions to replace executive team members that new CEOs take do not always meet the demands of their competitive environments, and valuable talent may be lost because new CEOs do not know their executive teams sufficiently well (Gabarro, 1987; Shen & Cannella, 2002a). This effect should be less pronounced if new CEOs could benefit from independent directors’ firm-specific social capital. As a result, new outside CEOs can increase their attention to new strategic initiatives compared with the solution of emerging group process issues (Eisenhardt & Schoonhoven, 1990).

For these reasons, I expect that high average board tenure of independent directors as a measure of board capital depth allows outside CEOs to mitigate their firm-specific human and social capital disadvantages, ultimately improving firm performance. Thus,

I propose that the average board tenure of independent directors is likely to mitigate the negative relationship between outside succession and postsuccession firm performance.

Hypothesis 2: The negative relationship between outside succession and postsuccession firm performance is weaker when the average board tenure of independent directors is high.

2.3 The moderating effect of the breadth of firm-specific board capital

In addition to the depth of firm-specific board capital, I expect that the breadth of firm-specific board capital also affects the performance consequences of new outside CEOs. Whereas board capital depth concerns the profundity of firm-specific human and social capital, board capital breadth focuses on the range of firm-specific human and social capital of independent directors. Scholars have addressed the importance of board capital breadth with relation to resource complementarities (Krishnan, Miller, & Judge, 1997), absorptive capacity (Cohen & Levinthal, 1990) and resource provision (Haynes & Hillman, 2010; Lester et al., 2008). In this study, I argue that a larger number of independent directors on the board of directors represents a higher breadth of firm-specific board capital for the following reasons.

First, a larger number of independent directors increases the diversity of firm-specific human capital at the disposal of new outside CEOs (Forbes & Milliken, 1999). Independent directors may vary regarding their function, industry or educational background. For example, contemporary outside boards include executives from other companies as well as lawyers, bankers or academics who represent a wide range of educational and industry perspectives (Forbes & Milliken, 1999). In fact, boards are “internally differentiated and fairly complex social organizations” (Hill, 1995:273). These different backgrounds inherently lead to differences in the cognitive bases of the directors, which materializes in their distinct managerial perceptions of the firm’s situation (Hambrick & Mason, 1984). As a result, new CEOs will benefit from different approaches to problem solving, which in turn can make them more likely to gener-

ate “alternatives to creatively solve complex problems, reduce groupthink, and ultimately increase the quality of decisions” (Cannella, Park, & Lee, 2008:770). Consequently, I argue that the different managerial perceptions of boards with a larger number of independent directors provide new outside CEOs with a greater pool of firm-specific human capital to draw from.

Second, a larger number of independent directors ensures broader firm-specific social capital of independent directors. As discussed above, independent directors have varying educational, industrial and functional backgrounds, which allow them to build diverse relationships within different parts of the organization, for instance with TMT members or middle managers in various functional or divisional areas (Cao, Maruping, & Takeuchi, 2006). Thus, a larger number of independent directors will be able to develop a broader intrafirm social network. This broader intrafirm social network will aid CEOs to more effectively gather information from diverse parts of the organization (Collins & Clark, 2003; Mintzberg, 1973), which in turn is essential for the successful execution of the firm’s strategy (Galbraith, 1973; Habib & Victor, 1991).

For these reasons, I argue that a larger number of independent directors as a measure of board capital breadth allows outside CEOs to mitigate their firm-specific human and social capital disadvantages and to ultimately improve firm performance. Thus, I propose that the number of independent directors mitigates the negative relationship between outside succession and postsuccession firm performance.

Hypothesis 3: The negative relationship between outside succession and postsuccession firm performance is weaker when the number of independent directors is high.

3 Methods

3.1 Data and sample

The population of this study was CEO successions between 1998 and 2006 from a random subset of publicly traded US companies listed on the S&P 500 index. This subset did not exhibit any significant differences in terms of sales or assets compared with the entire S&P 500 population. I decided to use this timeframe because it covers years before and after the enactment of the SOX in 2002⁵ and should, therefore, support the generalizability of my findings. I chose to focus on S&P 500 companies to ensure sufficient biographical transparency for newly appointed CEOs and independent directors in the companies of the sample. My original sample consisted of 342 new CEO successions in 255 companies. After excluding CEO successions with missing information, the final sample consisted of 276 CEO successions in 215 companies.

3.2 Dependent variable

Postsuccession firm performance. As pointed out earlier, the purpose of this study is to investigate how firm-specific board capital affects the operational performance of newly appointed outside CEOs. I decided to select ROA as a dependent variable for various reasons. First, scholars have argued that accounting performance measures are more under management control than are movements in stock prices (Finkelstein et al., 2009). Second, CEO compensation is more often linked to accounting performance measures rather than market-based measures (Davila & Peñalva, 2006; Jensen & Murphy, 1990). Finally, ROA is a well-understood and frequently employed measure of operational performance in succession research (Shen & Cannella, 2002a). To fully capture the succession effect and to smooth fluctuations in firm performance in a given year, I calculated postsuccession firm performance as the average firm ROA during the first three years following the succession (Daily et al., 2000; Shen & Cannella, 2002a). As an alternative measure, I calculated postsuccession firm performance as the change in ROA from the time of succession until three years later (cf. Karaevli, 2007). This measure yielded consistent results with the explanatory power of the models

being somewhat weaker. However, because the potential firm-specific human and social capital deficits of newly appointed CEOs are likely to become less pronounced over time, the study's focus required a more careful consideration of postsuccession firm performance. Thus, I decided to employ the first measure, namely average firm ROA during the first three years following succession. I sourced data on postsuccession firm performance from Compustat.

3.3 Independent variables

Outside succession. I coded outside succession as 1 for successions in which the new CEO had a firm tenure of less than two years and 0 otherwise (Cannella & Lubatkin, 1993; Harris & Helfat, 1997; Zhang, 2008; Zhang & Rajagopalan, 2010). I gathered data on outside succession from S&P's Register of Corporations, Directors and Executives, Marquis Who's Who, corporate proxy statements and press articles published in the Dow Jones Factiva and LexisNexis databases. In the sample, outside succession ranged from 0 to 1, with a mean of 0.31 and a standard deviation of 0.46.

Average tenure of independent directors. I used the average tenure of independent directors as a measure of the depth of firm-specific board capital of independent directors. I measured the average tenure of independent directors as the average number of years that independent directors spent on the firm's board (Kor & Sundaramurthy, 2009; Westphal & Zajac, 1995). Previous studies have also used this measure to capture the firm-specific human capital of groups (Fischer & Pollock, 2004; Hitt et al., 2001). Consistent with Weisbach (1988), Byrd and Hickman (1992) and Dalton et al. (1998), I classified as an independent director any director who was not an employee of the firm, a former officer, consultant, commercial banker, investment banker, lawyer, insurance company executive or was related to an officer of the firm. I gathered data on average tenure of independent directors using the same sources as listed above. In the sample, the average tenure of independent directors ranged from 1 to 22, with a mean of 7.66 and a standard deviation of 2.97.

Number of independent directors. I used the number of independent directors as a measure of the breadth of firm-specific board capital of independent directors. As an alternative measure, I used the proportion of independent directors, measured as the number of independent directors divided by the total number of directors on the firm's board. Both measures produced highly consistent results. I gathered data on number of independent directors using the same sources as listed above. In the sample, the number of independent directors ranged from 1 to 17, with a mean of 8.27 and a standard deviation of 2.38.

3.4 Control variables

New CEO age. I controlled for new CEO age, because CEO age may confound the effect of new CEO origin on firm performance (Karaevli, 2007; Zhang & Rajagopalan, 2010). I measured CEO age as the number of years between the fiscal year and the year in which the CEO was born. I gathered data on new CEO age using the same sources as listed above.

New CEO degree. I controlled for new CEO educational background because a higher educational background may lead to increased structural power, which may in turn affect the performance consequences of the new CEO (Finkelstein, 1992). Following Westphal and Zajac (1995), I divided educational background into four categories: (1) less than a bachelor's degree, (2) less than a master's degree, (3) less than a doctoral degree and (4) a doctoral degree. I gathered data on new CEO degree using the same sources as listed above.

New CEO functional background. I controlled for new CEO functional background because different functional backgrounds may be associated with different effects on postsuccession firm performance (Koyuncu et al., 2010; Srinivasan & Parrino, 2009). Consistent with Ocasio and Kim (1999), I classified the functional backgrounds of new CEOs into the following categories: technical, production, sales, marketing, finance, operations, medical, journalism and legal. In the analysis, I collapsed these classifications into the following categories: (1) production and technical, (2) market-

ing and sales, (3) finance and legal and (4) operations and other (Karaevli, 2007). I assigned the CEOs to these categories according to their dominant functional experience in terms of the number of years (Bunderson & Sutcliffe, 2002) at the time of succession. Thereby, the CEO's functional experience did not have to be accumulated at the CEO's current employer. I gathered data on new CEO functional background using the same sources as listed above.

New CEO prior CEO experience. I also controlled for new CEO prior CEO experience. As Khurana (2001) suggested, new CEOs with experience in the CEO position in other firms have an understanding of the function and duties of a CEO, which in turn may affect postsuccession firm performance. Consistent with Zhang (2008), I coded prior CEO experience as 1 if the new CEO had been a CEO at another firm and 0 otherwise. I gathered data on new CEO prior CEO experience using the same sources as listed above.

New CEO duality. I controlled for new CEO duality because this may establish strong, unambiguous leadership (Finkelstein & D'Aveni, 1994), which may in turn affect postsuccession firm performance. CEO duality occurs when the same person holds both the CEO and board chairperson positions (Rechner & Dalton, 1991). I coded new CEO duality as 1 in years in which the CEO was also the chairperson of the firm's board and 0 otherwise. I gathered data on new CEO duality from annual proxy statements.

Firm size. I controlled for firm size because larger firms may have deeper internal talent pools and better established succession processes (Parrino, 1997). I measured firm size using the natural logarithm of the firm's total sales in the fiscal year of the succession (Zhang, 2008). As an alternative, I measured firm size as the natural logarithm of the total number of employees (Zhang, 2006). Both measures of firm size produced consistent results. I sourced data on firm size from Compustat.

Presuccession firm performance. I controlled for presuccession firm performance in order to capture the potential threat of regression to the mean (Brown, 1982). I meas-

ured presuccession firm performance as the firm's average ROA over the three years before CEO succession (Shen & Cannella, 2002a). I sourced data on presuccession firm performance from Compustat.

Predecessor dismissal. I captured the political dynamics of the CEO succession process by investigating whether the departure of the prior CEO was routine or forced (Ocasio, 1994; Shen & Cannella, 2002b). I relied on business news reports during a four-year period around the departure, from two years before the departure to two years after the departure, to identify the circumstances under which the prior CEO left office. I based the approach for classifying departures as dismissal on those of Weisbach (1988), Parrino (1997) and Farrell and Whidbee (2003). Among the 276 CEO successions, I identified 71 successions in which the prior CEO had been dismissed (26%). Predecessor dismissal was coded as 1 if the prior CEO was dismissed from office and 0 otherwise.

Postsuccesion industry performance. I controlled for industry dynamics because industry dynamics have been shown to have a significant effect on managerial discretion (Finkelstein et al., 2009) and may thus impact postsuccesion operational performance (Dess, Ireland, & Hitt, 1990). In particular, I measured postsuccesion industry performance as the mean industry ROA (excluding the focal firm) at the firm's primary two-digit SIC code level (Huson et al., 2004). I sourced data on postsuccesion industry performance from Compustat.

Number of dependent directors. I controlled for the number of dependent directors because previous research has suggested that the socio-political processes following a CEO succession can substantially affect succession outcomes (Shen & Cannella, 2002b). I measured the variable as the number of dependent directors on the firm's board in the fiscal year of the succession. I sourced data on number of dependent directors from annual proxy statements.

Post-SOX period. I also controlled for the enactment of the SOX in 2002, which imposed further legal requirements for the inclusion of independent directors on large

public firm boards (Kor & Sundaramurthy, 2009). I thus added a dummy variable coded as 1 if the year under investigation was after 2002 and 0 otherwise.

Time. Finally, I controlled for possible time related effects by adding nine time dummy variables for the years 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005 and 2006. The omitted year was 2006. In supplementary analyses, I dropped these nine time variables and the results remained consistent with those reported in the study.

3.5 Analytical methodology

Because a succession event is more likely to occur in poorly performing firms, I needed to correct for selection bias in analyzing postsuccession firm performance (Karaevli, 2007). For this purpose, I used the Heckman selection model (Heckman, 1979), which is a two-stage procedure that corrects for sample selection bias in regression analysis.

In particular, I first estimated the likelihood of CEO succession using a discrete time event history model for the full sample. In order to permit the annual updating of the time-varying covariates, I divided the succession intervals into firm-years ($N = 2,825$ firm-years) (Zajac & Westphal, 1996). Additionally, given that firms were at risk of succession throughout the entire study period, I treated succession as a repeatable event (Boeker, 1992), assuming that a firm's likelihood of succession is independent of its previous history (Allison, 1984; Yamaguchi, 1991). To mitigate the risk of potentially violating this assumption, I included two control variables for repeated event history models: the time since the last succession event measured in years and the number of previous succession events in the study period (Allison, 1984). Moreover, I included time dummy variables to ensure that the results were not dependent on unspecified, time-specific factors (Allison, 1984). All independent variables were lagged by one year.

Subsequently, I incorporated the parameter for the likelihood of succession (Heckman value) in a second-stage ordinary least squares (OLS) regression model to predict

postsuccession operational firm performance for all CEO successions (N = 276 CEO successions).⁶

4 Results

Table III-1 reports the variable means, standard deviations and correlation coefficients for all CEO successions (N = 276). The magnitudes of the correlations do not suggest that multicollinearity is an issue.

Table III-2 summarizes the results of the OLS regression model with postsuccession firm ROA as the dependent variable. Table III-2 also contains a description of the selection criterion model (i.e., event history model). Model 1 reports the results with only the control variables included. Model 2 reports the results with the addition of the independent variables. Models 3, 4 and 5 report the results with the sequential addition of the interaction variables. As shown in Model 1, the control variables account for a significant amount of variance in postsuccession firm performance ($R^2 = 0.23$, $p = .01$).

The main effect in Hypothesis 1 predicts a negative relationship between outside succession and postsuccession firm performance. I tested this effect in Model 2. The addition of this effect into the regression equation significantly increased Model 2's explanatory power over Model 1 ($\Delta R^2 = 0.02$, $p = .01$). The results indicate that outside succession is negatively and significantly associated with post-succession firm performance ($b = -1.99$, $p = .05$). Thus, Hypothesis 1 is strongly supported.

To test the moderating hypotheses that the average board tenure of independent directors and the number of independent directors moderate the relationship between outside succession and postsuccession firm performance, I added interaction terms that were the product of the mean-centered interaction variable and the outside succession variable.

Table III-1. Variable means, standard deviations and correlation coefficients

Variable	Mean	SD.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Postsuccession firm performance	4.75	6.30																	
(2) New CEO age	51.97	6.11	0.00																
(3) New CEO degree	1.89	0.73	-0.07	0.18															
(4) New CEO production background	0.15	0.36	0.10	0.08	0.09														
(5) New CEO marketing background	0.26	0.44	0.04	-0.14	-0.19	-0.25													
(6) New CEO finance background	0.26	0.44	-0.08	0.01	0.18	-0.25	-0.35												
(7) New CEO prior CEO experience	6.45	6.37	0.04	0.35	0.00	0.04	-0.05	-0.05											
(8) New CEO duality	0.10	0.30	0.01	0.17	0.00	0.09	-0.09	0.02	0.18										
(9) Firm size	8.82	1.27	0.00	0.09	0.17	0.10	0.05	0.03	0.11	0.14									
(10) Presuccession firm performance	5.32	6.02	0.42	-0.06	0.01	0.06	0.11	-0.11	-0.01	-0.02	-0.02								
(11) Predecessor dismissal	0.26	0.44	-0.04	0.10	0.05	0.03	-0.03	0.03	0.00	0.02	0.16	-0.10							
(12) Postsuccession industry performance	4.88	2.96	0.32	0.00	-0.10	-0.05	0.16	-0.15	0.00	-0.07	-0.16	0.17	0.00						
(13) Number of dependent directors	3.38	2.01	0.02	-0.10	0.10	-0.02	0.03	0.01	0.03	-0.10	0.10	0.00	-0.09	-0.14					
(14) Post-SOX period	0.41	0.49	0.11	0.08	0.02	-0.02	0.01	0.00	0.08	-0.06	0.14	-0.13	0.09	0.21	-0.17				
(15) Heckman value	1.51	0.29	0.11	0.01	-0.13	0.08	0.01	-0.15	0.04	0.02	-0.02	0.15	0.07	0.09	0.01	-0.08			
(16) Outside succession	0.31	0.46	-0.17	0.01	0.09	-0.02	0.01	-0.09	0.00	0.01	-0.03	-0.03	0.23	0.00	-0.13	0.08	0.12		
(17) Average tenure of independent directors	7.66	2.97	0.10	0.06	0.12	-0.03	0.01	0.08	-0.08	0.03	0.11	0.16	-0.12	-0.13	0.20	-0.10	-0.03	-0.16	
(18) Number of independent directors	8.27	2.38	-0.02	0.17	0.19	0.04	-0.05	0.11	0.08	0.07	0.36	-0.02	0.06	-0.15	-0.13	0.11	-0.10	0.01	0.00

N = 276 successions. Correlations larger than 0.11 are significant at the level of $p < 0.05$, and those larger than 0.16 are significant at $p < 0.01$

Table III-2. Results of OLS regression model predicting postsuccession firm performance^{ac}

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Controls</i>					
New CEO age	0.02 (0.06)	0.02 (0.06)	0.01 (0.06)	0.03 (0.06)	0.02 (0.06)
New CEO degree	-0.70 (0.50)	-0.53 (0.50)	-0.64 (0.50)	-0.66 (0.50)	-0.77 (0.50)
New CEO production background	1.77 * (1.06)	1.56 (1.05)	1.81 * (1.05)	1.49 (1.05)	1.75 * (1.04)
New CEO marketing background	-0.02 (0.91)	-0.04 (0.90)	-0.27 (0.90)	-0.20 (0.91)	-0.43 (0.90)
New CEO finance background	0.61 (0.92)	0.34 (0.92)	0.31 (0.91)	0.34 (0.91)	0.31 (0.91)
New CEO prior CEO experience	0.01 (0.06)	0.01 (0.06)	0.02 (0.06)	0.00 (0.06)	0.01 (0.06)
New CEO duality	0.88 (1.18)	0.97 (1.17)	0.80 (1.16)	0.62 (1.18)	0.44 (1.18)
Firm size	0.14 (0.29)	0.08 (0.29)	0.08 (0.29)	0.09 (0.30)	0.10 (0.30)
Presuccession firm performance	0.42 *** (0.06)	0.41 *** (0.06)	0.39 *** (0.06)	0.42 *** (0.06)	0.39 *** (0.06)
Predecessor dismissal	-0.18 (0.80)	0.26 (0.81)	0.42 (0.81)	0.15 (0.81)	0.31 (0.81)
Presuccession industry performance	0.52 *** (0.12)	0.50 *** (0.12)	0.52 *** (0.12)	0.54 *** (0.12)	0.55 *** (0.12)
Number of dependent directors	0.25 (0.18)	0.20 (0.18)	0.16 (0.18)	0.22 (0.18)	0.18 (0.18)
Post-SOX period	-1.27 (1.75)	-0.76 (1.75)	-0.81 (1.65)	-0.51 (1.66)	-0.66 (1.65)
Heckman value	-0.45 (1.34)	0.09 (1.34)	-0.02 (1.33)	0.11 (1.34)	0.01 (1.33)
<i>Independent variables</i>					
Outside succession		-1.99 ** (0.77)	-1.42 * (0.80)	-2.05 *** (0.77)	-1.49 * (0.80)
Average tenure of independent directors			0.04 (0.13)		0.04 (0.13)
Number of independent directors				-0.11 (0.18)	-0.12 (0.18)
<i>Interactions</i>					
Outside succession X average tenure of independent directors			0.57 ** (0.28)		0.56 ** (0.28)
Outside succession X number of independent directors				0.60 * (0.32)	0.60 * (0.31)
Constant	-1.38 (4.82)	-0.92 (4.78)	0.11 (4.67)	-1.83 (4.80)	-0.70 (4.82)
F	5.02 ***	5.19 ***	5.08 ***	4.95 ***	4.86 ***
Model adjusted R ²	0.23	0.25	0.26	0.26	0.27
Δ Model adjusted R ²		0.02 ***	0.01 *	0.01 * ^b	0.02 ** ^b

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ ^a Standard errors are in parentheses^b as compared with Model 2

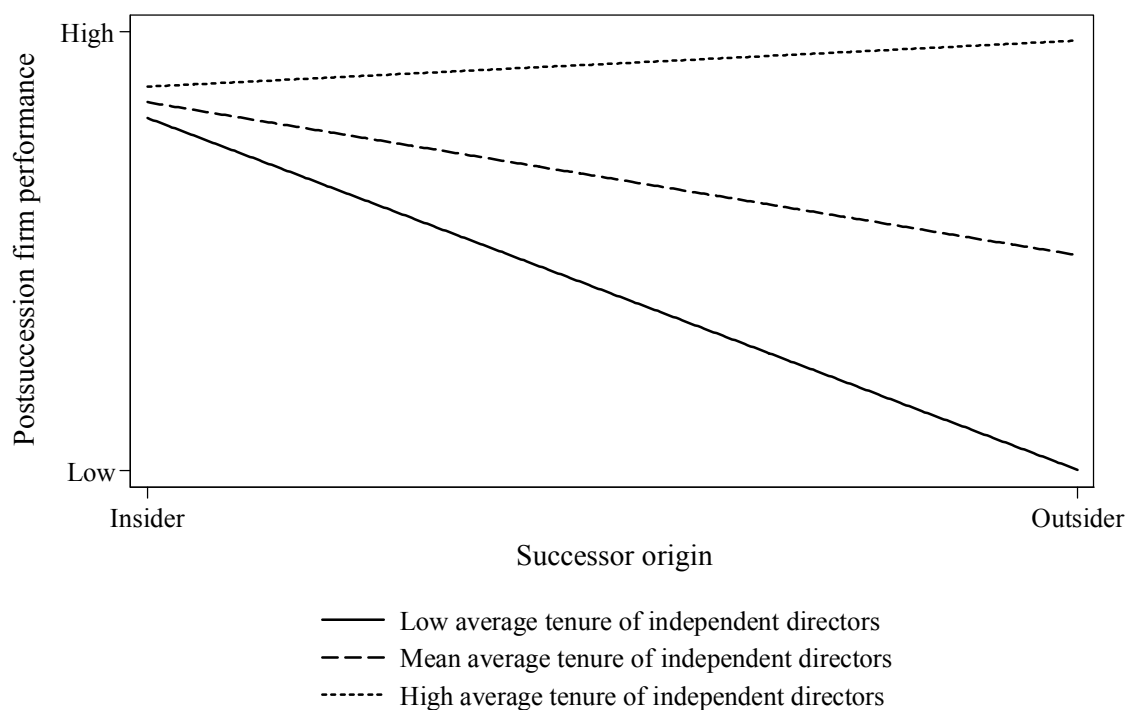
^c Coefficients of variables in the event history model are not displayed. This model takes the following form: $succession_t = a + b_1 presuccession\ firm\ performance + b_2 presuccession\ industry\ performance + b_3 board\ size + b_4 proportion\ of\ independent\ directors + b_5 firm\ size + b_6 time\ since\ last\ event + b_7 number\ of\ prior\ events + b_8 year\ dummies + u_t$

N = 276 successions

Hypothesis 2 predicts that the average board tenure of independent directors weakens the negative relationship between outside succession and postsuccession firm performance. Thus, Hypothesis 2 predicts a positive interaction effect between the average

board tenure of independent directors and outside succession. I tested this effect in Model 3. The addition of this interaction effect into the regression equation significantly increased Model 3's explanatory power over Model 2 ($\Delta R^2 = 0.01$, $p = .1$). In Model 3, the coefficient for postsuccession firm performance for the interaction between the average board tenure of independent directors and outside succession is positive and significant ($b = 0.57$, $p = .05$).

Figure III-1. Outside succession and postsuccession firm performance: the moderating effect of average tenure of independent directors

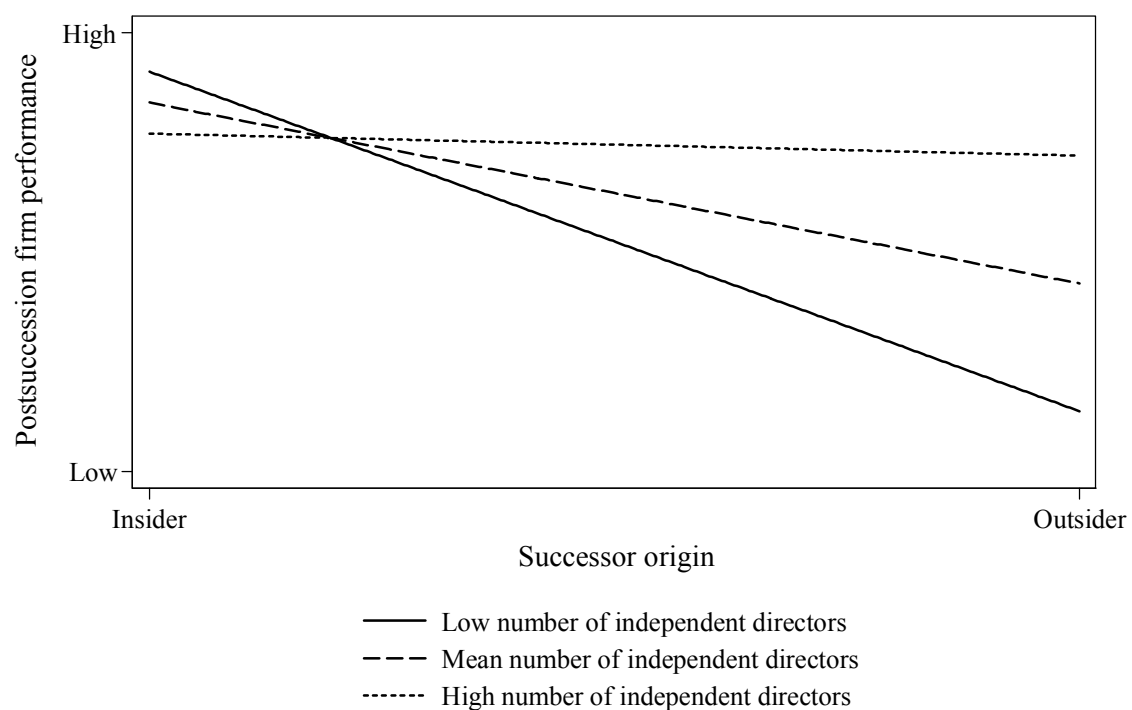


I additionally graphed the significant interaction from Model 3 in Figure III-1. The vertical axis represents the level of postsuccession firm performance. The outside succession variable (successor origin as insider or outsider) is on the horizontal axis. All variables in the model, except for outside succession and average board tenure of independent directors, were constrained to mean values. The values for the average board tenure of independent directors were constrained to its low value (one standard deviation below the mean), mean value and high value (one standard deviation above the mean). As indicated in Figure III-1, the above-average board tenure of independent

directors weakens the relationship between outside succession and postsuccession firm performance, whereas the below-average board tenure of independent directors strengthens it. Thus, Hypothesis 2 is supported.

Hypothesis 3 predicts that the number of independent directors weakens the negative relationship between outside succession and postsuccession firm performance. Thus, Hypothesis 3 predicts a positive interaction effect between the number of independent directors and outside succession. I tested this effect in Model 4. The addition of the effect into the regression equation significantly increased Model 4's explanatory power over Model 2 ($\Delta R^2 = 0.01$, $p = .1$). Model 4 provides a direct test of this prediction. In Model 4, the coefficient for postsuccession firm performance for the interaction between the number of independent directors and outside succession is positive and significant ($b = 0.60$, $p = .1$).

Figure III-2. Outside succession and postsuccession firm performance: the moderating effect of number of independent directors



In addition, I graphed the significant interaction from Model 4 in Figure III-2. As indicated in Figure III-2, an above-average number of independent directors weakens

the relationship between outside succession and postsuccession firm performance, whereas a below-average number of independent directors strengthens it. Thus, Hypothesis 3 is supported. The joint addition of both interaction effects in Model 5 further improved the explanatory power of the regression equation over Model 2 ($\Delta R^2 = .02, p = .05$).

5 Discussion

Overall, the resource dependence perspective and supportive findings presented in this study point to the conclusion that newly appointed outside CEOs can benefit from the depth and breadth of firm-specific board capital of independent directors, thereby ultimately mitigating the negative performance consequences of outside CEOs.

The first set of results demonstrates that new outside CEOs on average cause negative postsuccession firm performance within the first three years of succession. This finding indicates that new outside CEOs lack an in-depth understanding of their new firms as well as support from other senior executives, which makes it difficult for them to quickly take and execute well-formulated strategic decisions, resulting in negative firm performance after taking office.

However, the depth of firm-specific board capital of independent directors substantially affects this result. In particular, additional results indicate that new outside CEOs are able to mitigate their firm-specific human and social capital disadvantages, if independent directors supplement them with the firm-specific board capital they have developed over the course of their tenures. Thus, this finding supports the resource dependence perspective, showing that independent directors provide new CEOs with the required resources to reduce environmental dependencies.

Moreover, the results demonstrate that the breadth of firm-specific board capital of independent directors also allows outside CEOs to mitigate their firm-specific human and social capital disadvantages, ultimately improving firm performance. This finding indicates that a larger number of independent directors represents more heterogeneous

firm-specific human and social capital, from which new outside CEOs can benefit after taking office.

5.1 Theoretical contributions

The theory presented in this study contributes to a better understanding of how newly appointed outside CEOs can overcome firm-specific human and social capital disadvantages in order to mitigate negative postsuccession performance consequences. In particular, this study makes three theoretical contributions to the literature.

First, it contributes to the literature on the performance consequences of new CEO origin (see review in Finkelstein et al., 2009) by introducing the concept of firm-specific board capital to this context. While previous work has shed light on a better distinction of successor type, successor actions or succession context in order to predict certain performance consequences (Karaevli, 2007; Shen & Cannella, 2002a), this study examines the impact of the firm-specific board capital of independent directors on the performance consequences of outside CEOs. In particular, this study contributes to the succession literature by showing that the performance consequences of newly appointed outside CEOs differ greatly depending on the depth and breadth of firm-specific board capital of independent directors. In addition, the findings contribute to the resource dependence view of executive succession (Hillman et al., 2009; Pfeffer & Salancik, 1978), which suggests hiring outside CEOs to resolve organizational difficulties. By showing that outside CEOs can improve firm performance if sufficient firm-specific board capital is available, the results are among the first to provide empirical evidence of the resource dependence-based predictions of the advantages of choosing an outside successor.

Second, this study contributes to the research on the resource-provider role of the board of directors (Baysinger & Hoskisson, 1990; Carpenter & Westphal, 2001; Haynes & Hillman, 2010; Kor & Misangyi, 2008; Kroll et al., 2008; Lester et al., 2008; Westphal, 1999). Previous work in this context has largely focused on how board resources can directly address potential environmental uncertainties in order to

facilitate the firm's adaption process to the environment (e.g., Haynes & Hillman, 2010). This study contributes to this growing research stream by showing that board capital also improves firm performance when it allows new CEOs to overcome deficiencies in their human and social capital. In particular, new outside CEOs benefit from firm-specific board capital when implementing strategic changes to resolve organizational difficulties. Thus, rather than directly matching board capital to the external environment, firms may also benefit from environmentally matched CEOs whose firm-specific human and social capital deficiencies are supplemented by adequate board capital of independent directors.

Third, this study contributes to the literature on board capital (Haynes & Hillman, 2010; Hillman & Dalziel, 2003; Kor & Sundaramurthy, 2009; Lester et al., 2008; Tian et al., 2010) by capturing different facets of firm-specific board capital. Specifically, I argue that the average board tenure of independent directors and the number of independent directors capture two dimensions of firm-specific board capital, namely depth and breadth. Thus, this study is among the first to shed more light on the construct of firm-specific board capital, thereby extending previous research that has examined the implications of board capital on important corporate outcomes.

5.2 Limitations and future research

To the best of my knowledge, this study represents the first attempt to empirically examine the effect of firm-specific board capital on the performance consequences of outside CEOs. However, like any study, its findings must be considered in light of its limitations.

The primary limitation of this study is that it focused on three-year average ROA to measure postsuccession firm performance. Although this measure is widely used in succession research (e.g., Shen & Cannella, 2002a), it only captures accounting-based performance consequences. It is questionable if my results could be generalized to market-based performance measures because ROA and stock market valuation represent different dimensions of firm performance (Daily et al., 2000; Dalton et al., 1998).

The second limitation is that I used publicly available measures as proxies for board capital depth and breadth. For example, I relied on the measure of average board tenure because I was not able to directly observe the level of firm-specific human and social capital of each independent director. Thus, future research should use different methodologies (e.g., field studies) to capture firm-specific human and social capital in more detail. Moreover, research on the composition of boards of directors has also suggested that larger boards may face difficulties in coordinating the contributions of the various board members and that boards with high average tenure may experience lower cognitive conflict (Forbes & Milliken, 1999). Future research could build on these considerations and investigate their effect on the resource-provider role of independent directors for new CEOs.

A further limitation of this study is that I could not investigate the actual processes that led to the independent directors' provision of firm-specific human and social capital to the new CEO. In particular, it would be interesting to analyze the interactions within the group of independent directors and between the independent directors and the new CEO that promote the provision of firm-specific human and social capital. I believe that the development of a deeper understanding of the board processes and of the interaction between independent directors and top executives would be an interesting avenue for future research.

The fourth limitation of this study is that I did not explicitly consider the quality of the selection decision in the analysis. Independent directors with profound firm-specific human and social capital may be able to select better qualified new CEOs, thereby ultimately improving postsuccession firm performance (cf. Tian et al., 2010). However, given the focus on firm-specific human and social capital, this argument should be particularly valid for the selection of inside CEOs. The fact that I still find postsuccession performance improvements by outside CEOs consequently provides additional support to my results. Nevertheless, future research could shed more light on the quality of the selection decisions of independent directors.

6 Summary

In conclusion, in this study I examined how firm-specific board capital affects the performance consequences of newly appointed outside CEOs. My first hypothesis demonstrates that new outside CEOs on average cause negative postsuccession firm performance within the first three years of succession. This suggests that outside CEOs on average fail to compensate for their lack in firm-specific human and social capital, which translates into difficulties making adequate strategic changes in a timely fashion. In addition, my findings extend previous research by showing that the depth and breadth of firm-specific board capital of independent directors improve the postsuccession performance of outside CEOs. Thus, my findings indicate that independent directors can supplement newly appointed outside CEOs with firm-specific resources to mitigate their firm-specific human and social capital disadvantages. I hope that my results can inspire future research on the interconnectedness of executive succession and board capital.

Endnotes

- ¹ Consistent with previous research on the performance consequences of executive successions (Datta & Rajagopalan, 1998; Karaevli, 2007; Shen & Cannella, 2002a), I relied on a three-year timeframe to assess firm performance.
- ² Becker (1964) and Coleman (1988) defined an individual's expertise, experience, knowledge and skills as 'human capital'.
- ³ An individual's 'social capital' is the "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual" (Nahapiet & Ghoshal, 1998:243).
- ⁴ Although some researchers have examined human and social capital separately (e.g., Tian et al., 2010), I follow Coleman (1988), Nahapiet and Ghoshal (1998) and Lester et al. (2008) who highlighted that the two constructs are theoretically and empirically difficult to distinguish.
- ⁵ The SOX imposes further legal requirements on the inclusion of independent directors in large public firm boards (Kor & Sundaramurthy, 2009).
- ⁶ For more detail on the Heckman selection model, see Zajac and Westphal (1996).

IV. Relative TMT differences and CEO social influence dynamics

The following study examines the relationship between relative TMT differences and CEO social influence dynamics. Focusing on the relationship between the CEO and the CFO as a central member of the TMT, this study thereby complements the insights gained in the previous chapter on the collaboration between the CEO and independent directors. In particular, it investigates the sources and the context that determine the CEO's ability to influence the CFO as financial overseer of the firm. Thus, drawing on social influence theory, I first propose that the relative differences between the CEO and the CFO in educational attainment, position tenure and functional heterogeneity weaken internal controls over financial reporting. Moreover, I suggest that those factors are especially likely to weaken internal controls over financial reporting when firm performance is poor. I examine material weaknesses in internal controls within a large sample of S&P 500 companies for the 2002-2009 period and obtain strong support for most of my hypotheses.

Collectively, the theory and results in this chapter suggest that the social dynamics between the CEO and members of the TMT can affect important corporate outcomes. In particular, this study contributes to the research on social influence processes by suggesting that the relative demographic differences between the CEO and members of the TMT can lead to social influence attempts that ultimately affect corporate outcomes. With regard to CEO selection, this finding should especially be considered in the evaluation of selection consequences. Moreover, this study contributes to the literature on the determinants of effective internal control by suggesting that firms need to monitor and manage the relationships between the CEO and members of the TMT. This study was accepted for presentation at the 31st annual international conference of the Strategic Management Society (SMS) in Miami, USA in November 2011.

1 Introduction

In response to a wave of prominent corporate scandals in the past decade that began to undermine investor confidence, legislators introduced far-reaching reforms aimed at strengthening the accuracy and reliability of financial reports. With the ratification of the SOX in 2002, the role of the CFO was recasted as the “internal-control policeman” (Sinnott, 2007:35) responsible for the effectiveness of internal controls over financial reporting¹. Moreover, in order to restore investor confidence, regulators also required the CEO to sign and approve all financial statements alongside the CFO (Zhang & Wiersema, 2009). However, CEOs are primarily concerned with financial reports because such reports convey information about firm performance that directly reflects their managerial ability and may also influence their personal wealth (Burns & Kedia, 2006; Jha, Kobelsky, & Lim, 2010). Thus, scholars have often concluded that CEOs may have certain motivations to manipulate reports on firm performance (cf. Zhang, Bartol, Smith, Pfarrer, & Khanin, 2008).

A recent study by Feng, Ge, Luo, and Shevlin (2011) associated CFOs with weak internal controls over financial reporting because they succumb to CEO pressure. Thus, with a high CEO self-interest in strong firm performance and a considerable range of justifiable outcomes, it seems probable that social influence effects play a significant role in maintaining effective controls over financial reporting. Previous research, however, has shed little light on the sources and context that determine the CEO’s influence on the CFO’s oversight role as ‘internal-control policeman’. It is thus important for scholars and practitioners to better understand the driving forces and motivations that affect the CEO’s influence over the CFO in order to find ways to forestall this socially unwanted behavior.

In this study, I build on previous research that has employed social influence theory to examine which interpersonal mechanisms operating between the CEO and the board of directors affect managerial compensation (Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009; Wade, O'Reilly, & Chandratat, 1990). I investigate the effect of the relative differences in education level, position tenure and functional

heterogeneity, the three most important and frequently examined human capital measures. Furthermore, these measures have been shown to be influential factors that compensate for structural power disadvantages such as the CEO's power loss because of the expanding role of the CFO following the ratification of the SOX (Fiss, 2006; Geletkanycz, Boyd, & Finkelstein, 2001; Hill & Phan, 1991). In particular, I propose that the relative differences between the CEO and the CFO are influencing factors in weakening internal controls over financial reporting. Moreover, I argue that those factors are especially likely to weaken internal controls over financial reporting when firm performance is poor. Consistent with comparable study settings (e.g., Bedard, Hoitash, & Hoitash, 2010; Feng & Li, 2010), I rely on the disclosure of material weaknesses in internal controls² as a measure of ineffective internal controls over financial reporting.

The theory developed in this study strives to achieve a better understanding of the relationship between the CEO and the CFO and the interpersonal factors that determine the effectiveness of internal controls over financial reporting. In particular, this study seeks to make several theoretical and empirical contributions to the literature. First, this study offers a novel perspective on social influence processes (e.g., Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009) by developing and testing hypotheses that show how the relative differences between two top executives affect critical corporate outcomes such as the accuracy and credibility of financial statements. In addition, this study seeks to develop and test hypotheses about the context in which the CEO is most likely to make use of his or her social influence opportunities. Second, this study strives to contribute to the research on the impact of TMT heterogeneity on important firm outcomes (e.g., Hambrick, Cho, & Chen, 1996; Marcel, 2009; Pelled, Eisenhardt, & Xin, 1999; Wiersema & Bantel, 1992) by providing empirical evidence on how intra-TMT heterogeneity can ultimately reduce shareholder value. Third, this study contributes to the growing literature that has examined the determinants of effective internal controls over financial reporting (Aier et al., 2005; Hoitash, Hoitash, & Johnstone, 2009; Li et al., 2010) by showing that the CEO's social influence on the

CFO can also impact important decisions with regard to financial reporting beyond the CFO's qualifications.

I focus on differences between the CEO and CFO, as they are the most important actors who personally certify the disclosure of internal controls and the accuracy and completeness of the financial statements (Geiger & Taylor, 2003). Scholars have identified the relationship between the CEO and the CFO as the linchpin of financial reporting (Feng et al., 2011; Jiang, Petroni, & Yanyan Wang, 2010). While the board of directors and other TMT members are clearly also relevant in this context, the relationship between the CEO and the CFO sets the tone at the top, and the balance of power in this dyad is particularly important (Mian, 2001; Zorn, Dobbin, Dierkes, & Kwok, 2005).

The remainder of this study is organized into several sections. The next section describes the theoretical background and develops the hypotheses. Subsequently, I provide details on sample selection, measures and methods. I then report the results of the study and present the discussion and my ideas for future research. The last section concludes this study.

2 Theoretical background

2.1 Background on the CEO-CFO relationship

In order to better understand the CEO-CFO relationship, it is important to define the scope of the CFO's role and to what degree it differs from the CEO's role.

Previous studies have suggested that a key function of the CFO is corporate financial reporting (e.g., Arthaud-Day, Certo, Dalton, & Dalton, 2006; Bedard et al., 2010; Hoitash et al., 2009). The CFO position has traditionally involved the functional responsibility of being the financial overseer of the recording and reporting processes in corporations (Li et al., 2010). Drazin and Rao (1999) concluded that the CFO is the corporate functional expert who sets the financial policies for the entire organization.

With the ratification of the SOX in 2002, the financial reporting function of the CFO has gained further importance (Bargeron, Lehn, & Zutter, 2010). Since then, the CFO must certify the accuracy of the financial results as well as accept greater responsibility over the firm's internal controls, while being held personally liable for any cases of misconduct (Feng et al., 2011). Exemplary anecdotal evidence from Boeing or the American Insurance Group has indicated that CFOs often face exceptionally high risks of jail time if evidence of fraud or misconduct emerges (Francis & McDonald, 2005; Lunsford & Squeo, 2003). As a result, this increase in accountability has led CFOs to recast their roles as "corporate watchdogs" (Zorn, 2004:363).

By contrast, the CEO has the general responsibility for the strategy and performance of the entire organization (Finkelstein et al., 2009). The top executive officer has, therefore, often been characterized as a firm's decision-maker and chief cognizer (Calori, Johnson, & Sarnin, 1994). Along these lines, Hambrick and Mason (1984) argued that important firm outcomes reflect the characteristics of its powerful actors, among whom the CEO is the most prominent. Upper echelon researchers have found that CEO characteristics affect strategic decision-making processes (Peterson, Smith, Martorana, & Owens, 2003), strategic actions (Carpenter, Sanders, & Gregersen, 2001; Miller & Toulouse, 1986; Nadkarni & Narayanan, 2007) and strategic flexibility (Nadkarni & Herrmann, 2010), all of which have implications on firm performance. Scholars have thus often described CEOs as "shareholders' agents" charged with the responsibility of increasing shareholder wealth (Drazin & Rao, 1999:170). Moreover, the CEO is generally the CFO's direct superior in the organization, thereby having strong influence on his or her selection (Gore et al., 2011) and even on a potential dismissal decision (Fee & Hadlock, 2004). Thus, the CEO has a higher level of and more varied responsibilities compared with the CFO as his or her subordinate (cf. Hoitash et al., 2009). While the CEO assumes responsibility for the entire organization, the CFO sets corporate functional policies in the finance area, including key policies over corporate financial reporting (cf. Bedard et al., 2010).

Whereas the CEO and the CFO clearly differ in the level and variety of their responsibilities, both executives share a mutual interest in financial reporting outcomes. In

particular, the SOX acknowledges this interest in corporate financial reporting practices, and it has built specific reforms in order to forestall potentially unwanted managerial behavior. For example, Section 302 requires both executives to certify that financial reports fairly represent the firm's financial condition and operating performance (Burks, 2010; Zhang & Wiersema, 2009). Moreover, Section 404 requires that both, the CEO and the CFO, must annually disclose their assessments of internal controls and requires auditors to render an opinion on the assessment. While legislators have specifically addressed the CEO and the CFO in their reforms, various studies have suggested that the CFO is the executive with primary responsibility for the accuracy and credibility of the reports, arguing that he or she should be held accountable for weak internal controls over financial reporting (e.g., Frank & Goyal, 2007; Geiger & North, 2006; Jha et al., 2010; Jiang et al., 2010). Specifically, Jiang et al. (2010) argued that the CFO is more responsible for earnings management outcomes than is the CEO. However, a large body of research has also emphasized the importance of CEO characteristics and actions in corporate accounting and reporting practices (e.g., Bartov & Mohanram, 2004; DeAngelo, 1988; Murphy & Zimmerman, 1993; Pourciau, 1993). Recently, Feng et al. (2011) argued that the CFO often succumbs to CEO pressure when weak internal controls over financial reporting surface. An analysis of accounting manipulation cases revealed that the CEO was named as responsible in 72% of all cases in the respective auditing enforcement release, while the CFO was only named as responsible in 43% (Beasley, Carcello, & Hermanson, 1999). Following this view, little is known about the driving forces and motivations that affect the CEO's influence over the CFO's role as financial overseer of the firm.

2.2 The CEO's social influence on financial reporting practices

Traditional perspectives on interpersonal relations between executives generally do not address how executives respond to the threat of sweeping governance reforms such as the SOX in 2002. However, losing structural sources of power, for example an expanding CFO role, may prompt CEOs to initiate specific interpersonal influence attempts, ranging from anchoring and persuasion to ingratiation and intimidation. Mow-

day (1978:138) was among the first to suggest that top executives “compensate for structural disadvantages” by making greater use of interpersonal sources of influence. CEOs may be particularly tempted into such behavior because of their high intrinsic power motivations and levels of responsibility (Birch & Veroff, 1966; Mowday, 1978). Similarly, McDonald and Westphal (2010:347), in their study on the effects of board of director control on the CEO’s ability to obtain strategic help from outside executives, quote an interviewed CEO: “CEOs usually expect to have final control over [corporate strategy, and] CEOs usually react like some sort of right is violated [...] like an unstated contract has been broken [when they don’t have final control]”. In addition, the uncertainty and ambiguity inherent in the CEO’s individual performance provides ample opportunities for interpersonal influence (Ferris & King, 1992; Liden & Mitchell, 1988; Pfeffer, 1981; Westphal, 1998; Westphal & Zajac, 1995). These factors may reinforce a more basic, socio-psychological response to the threat of losing control in a particular area. In the context of the CEO-CFO relationship, the threat of losing some control over the design of financial reporting practices should precipitate efforts by the CEO to maintain his or her control over the reports of firm performance.

Such interpersonal influence attempts may be particularly effective in fundamentally ambiguous tasks such as financial reporting. In the financial reporting environment, definitive authoritative guidance does not exist and significant judgment is required (Kennedy, Kleinmuntz, & Peecher, 1997). For example, aggressive reporting practices can be spread across several different accounts in the financial statements in individually immaterial amounts (Dechow, Sloan, & Sweeney, 1995). Thus, with a considerable range of justifiable outcomes, it seems probable that social influence mechanisms play a significant role in the effectiveness of internal controls over financial reporting.

In addition, previous research has highlighted various reasons why CEOs have a high self-interest in financial reporting, which provides the basis for subsequent social influence attempts on CFOs. First, CEOs are usually concerned with financial reports because such reports convey information about firm performance that directly reflects their management ability (Burns & Kedia, 2006; Jha et al., 2010). Wiesenfeld (1993)

found that the visibility of a crisis was a key determinant of the CEO's prestige loss for firms filing bankruptcy. Along these lines, Wiesenfeld, Wurthmann and Hambrick (2008) suggested that corporate elites seek compensation or insurance against career losses in case of stigmatization when being associated with a company failure. In addition, a large body of agency-related research has argued that the future firm performance of more reputed CEOs is likely to exceed that of less reputed CEOs (Fee & Hadlock, 2004; Huson et al., 2004; MacLeod & Malcomson, 1988). Thus, in order to secure reputation and maintain good firm performance, CEOs may be intrigued to risk weak internal controls over financial reporting.

Second, previous studies have documented that the CEO's performance-dependent compensation is higher than that of lower ranked executives such as the CFO (e.g., Aggarwal & Samwick, 2003; Barron & Waddell, 2003). Specifically, Chava and Purnanandam (2010) found significantly higher pay-for-performance sensitivities for CEOs than for CFOs. Thus, financial reporting is likely to have a larger effect on the CEO's personal wealth than on the CFO's wealth, suggesting that the CEO has higher incentives to trade off weaker internal controls with better firm performance (Feng et al., 2011).

Third, previous research has shown that CEO turnover increases with poor performance (e.g., Boeker, 1992; Huson et al., 2004; Warner, Watts, & Wruck, 1988). Thus, the CEO might also be concerned about losing his or her job if the firm is performing poorly and thus pressure the CFO into weakening internal controls (Feng et al., 2011).

Fourth, compared with CEOs, scholars have found that in the case of the disclosure of internal control weaknesses, CFOs face higher litigation costs (Feng et al., 2011; Linck, Netter, & Yang, 2009), turnover risks (Li et al., 2010) and compensation losses (Hoitash et al., 2009). Thus, while CEOs benefit disproportionately from good firm performance, the consequences of weak internal controls are less severe for CEOs compared with CFOs.

Overall, the loss of structural CEO power as well as the ambiguity in financial reporting, combined with a high CEO self-interest in financial reporting is likely to affect the presence of social influence mechanisms that play a significant role in the effectiveness of internal controls over financial reporting.

In order to study such interpersonal influence effects, I build on previous research that has used social influence theory to examine how interpersonal mechanisms operating between the CEO and the board of directors affect executive compensation (e.g., Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009; Wade et al., 1990). While this research stream has reached inconclusive findings based on absolute demographic differences, Fiss (2006) reconciled those mixed findings by examining how relative differences affect executive compensation. Therefore, I examine the effect of the relative differences of the three most important and frequently examined human capital measures: education level, position tenure and functional heterogeneity (Geletkanycz et al., 2001; Hill & Phan, 1991; Hogan & McPheters, 1980; Westphal & Zajac, 1995). The literature on interpersonal influence processes has also shown that these measures represent important sources that compensate for structural power disadvantages (e.g., Fiss, 2006; Westphal, 1998; Westphal & Zajac, 1995). I thus argue that the relative differences in education level, position tenure and functional heterogeneity between the CEO and the CFO are important determinants of the effectiveness of internal controls over financial reporting.

2.3 Relative differences in education level

The first social influence determinant examined here relates to differences in education level between the CEO and CFO. Previous studies on executive characteristics have argued that the level of education is reflected in leadership style (Pinder & Pinto, 1974), tolerance of ambiguity (Dollinger, 1984), an individual's cognitive ability (Guthrie, Grimm, & Smith, 1991; Schroeder, Driver, & Streufert, 1967), innovativeness (Miller & del Carmen Triana, 2009) and strategic choices (Hambrick & Mason, 1984; Wiersema & Bantel, 1992). As a result, Fiss (2006) argued that differences in education level are likely to reflect an important source for potential social influence

attempts by the CEO. In particular, previous research has argued that there are two major reasons why a difference in education level represents an important social influence source.

First, the literature on corporate elites has provided abundant evidence that the level of education provides salient criteria for social categorization (e.g., Useem & Karabel, 1986; Westphal & Khanna, 2003; Westphal & Stern, 2006). Social identity theory (Tajfel & Turner, 1986) suggests that differences in education level provide the foundation for self-identification (Westphal & Zajac, 1995). Consequently, Fiss (2006:1015) suggested that “if ‘society is comprised of social categories which stand in power and status relation to one another’, then higher education level, will likely be an important source of greater social status”. Education level thus is an important indicator of status in the social elite (cf. Westphal & Khanna, 2003). Previous work on superior-subordinate dyads has similarly argued that the prestige associated with education (at least as perceived by the subordinate) may widen both the cognitive and the emotional distance between the superior and subordinate, ultimately reducing the superior’s affect towards the subordinate. Thus, if the CEO has a higher level of education compared with the CFO it is likely to reflect a difference in (at least perceived) status, allowing the CEO to exert interpersonal influence over the CFO.

Second, when executives in an hierarchical relationship differ in education level, they also tend to vary in values and beliefs and likely communicate relatively infrequently because they do not have the “language compatibility” (March & Simon, 1958:167) that is associated with similar levels of educational attainment. As a result, the superior and subordinate may come to have different conceptions of the subordinate’s job requirements, resulting in higher role ambiguity and role conflict for the subordinate (Tsui & O’Reilly, 1989). Such a difference in job expectations may also widen both the cognitive and the emotional distance between the superior and subordinate. Thus, if the CEO has a higher level of education compared with the CFO, it might also increase the role ambiguity with regard to the CFO’s role as primary financial overseer of the internal controls over financial reporting. Consequently, the CEO might priori-

tize strong firm performance over accurate and credible financial statements when the role ambiguity with regard to the CFO's role is high.

Both arguments suggest that the relative differences in education level between the CEO and the CFO are likely to affect the process of maintaining effective internal controls over financial reporting. If the CEO's level of education is high compared with the CFO, the CFO may be more likely to defer to the CEO's argumentation and status, leading to higher levels of material internal control weaknesses. Alternatively, if the CEO's education level is low compared with the CFO, then the CFO may devalue the CEO's ability and may be much less willing to defer to demands for weaker internal control. These arguments suggest the following hypothesis regarding differences in education level:

Hypothesis 1: Firms with CEOs with higher levels of education compared with their CFOs experience a higher likelihood of material weaknesses, while firms with CEOs with lower levels of education compared with their CFOs experience a lower likelihood of material weaknesses.

2.4 Relative differences in position tenure

The second social influence determinant examined here relates to differences in position tenure between the CEO and CFO. Previous research has highlighted various reasons why top executives are likely to become more influential with position tenure.

First, while human capital theorists emphasize the advantages of 'on-the-job' training and firm-specific expertise (Hogan & McPheters, 1980), sociopolitical theorists point to the tendency of the CEO to increase his or her influence and familiarize himself or herself with the firm's resources and internal information systems with increasing position tenure (e.g., Hill & Phan, 1991; Singh & Harianto, 1989; Zald, 1970). By doing so, the CEO may be able to withhold relevant information from the CFO, e.g., when that information would convey poor firm performance signals (Coughlan & Schmidt, 1985). Moreover, the CEO may be able to use control over information sys-

tems as a means to exercise influence over the board of directors. In such circumstances, the CFO may face a joint opposition in the CEO and board of directors, which may make it more difficult to maintain effective internal controls over financial reporting.

Second, previous studies have shown that the CEO may exercise influence through his or her authority to control selection outcomes (e.g., Fiss, 2006; Mace, 1986; Westphal & Zajac, 1995). For example, Westphal and Zajac (1995) examined the effect of CEO influence on the director selection process and found that new directors tend to be similar to the incumbent CEO if the latter has relatively more power than does the board. Similarly, CEO tenure may affect the selection process of the CFO. In particular, the larger the tenure difference between the CEO and CFO, the more likely is the CEO to have control over the CFO appointment decision. As a result, a comparatively high-tenured CEO can enhance his or her influence over the CFO's primary role of maintaining effective controls by appointing a CFO "sympathetic to [his or her] desires" (Wade et al., 1990:593).

Third, a CEO with high position tenure may acquire a "personal mystique or patriarchy" (Finkelstein & Hambrick, 1989:129) within the corporation, resulting in unquestioned loyalty or obeisance (Pfeffer, 1981; Westphal & Zajac, 1995). Thus, over time, as power becomes institutionalized in the CEO, the CFO's role is likely to be characterized by unquestioned deference, ultimately impeding an objective gatekeeper role of strong internal controls over financial reporting.

Fourth, Tsui and O'Reilly (1989) argued that the position tenure difference between executives in a hierarchical relation also affects the role ambiguity of the subordinate. Specifically, a low-tenured subordinate is likely to experience a higher level of role ambiguity than is a high-tenured subordinate (Tsui & O'Reilly, 1989). Thus, the larger the tenure difference between the CEO and CFO, the more likely the CFO experiences role ambiguity. Consequently, higher role ambiguity allows the CEO to enhance his or her influence over the CFO in order to control corporate financial reporting outcomes.

All four arguments suggest the same outcome: a higher CEO position tenure compared with the CFO should result in a higher likelihood of material internal control weaknesses. If CEO tenure is comparatively high, then the CFO may feel less expert and may be more likely to defer to the CEO's demands for less accurate and credible financial statements. By contrast, if the CFO's tenure is high relative to the CEO's tenure, then the CFO should have accumulated considerable influence and expert knowledge to be less deferential in financial reporting issues. This suggests the following hypothesis:

Hypothesis 2: Firms with CEOs with greater position tenure compared with their CFOs experience a higher likelihood of material weaknesses, while firms with CEOs with lower position tenure compared with their CFOs experience a lower likelihood of material weaknesses.

2.5 Relative differences in functional heterogeneity

The third social influence determinant relates to differences in functional heterogeneity between the CEO and CFO. A number of studies have established a link between functional background and specific attitudes or behavioral tendencies. In a landmark study, Dearborn and Simon (1958) found evidence that executives selectively interpret company problems depending on their functional backgrounds, suggesting that executives with primary experience in a particular functional area tend to have similar viewpoints on the sources of poor performance. In addition, Waller, Huber, and Glick (1995) found that top executives were more aware of changes in organizational effectiveness related to their own functional backgrounds. More recently, a series of studies have examined the effect of functional background on strategic choices. For example, Barker and Mueller (2002) found that CEO experience in output functions was positively related to R&D spending. Finally, Bunderson (2003) suggested that differences in functional heterogeneity should also reflect an important source for interpersonal influence for the CEO.

First, the knowledge and expertise in different functional areas can be a source of expert power (Finkelstein, 1992; French & Raven, 1959). During their careers, top executives gain experience in different functions that allow them to develop functional knowledge and expertise. If this expertise helps the organization resolve its critical uncertainties, it becomes a source of expert power (Finkelstein, 1992), forming the basis for social influence attempts. Thus, if the CEO has a higher functional heterogeneity than does the CFO, it is more likely that his or her knowledge and expertise will be critical to resolve organizational uncertainties, which will allow the CEO to exercise social influence over the CFO.

Second, experience in different functional areas can be a source of referent power. In particular, referent power stems from the qualities and characteristics that inspire liking, trust and identification (French & Raven, 1959). Research has shown that demographic similarity is a major determinant of positive interpersonal responses (Hoffman & Maier, 1966). This implies that members of the organization tend to “identify with, trust, and like those people who are similar to themselves on salient demographic characteristics” (Bunderson, 2003:460). Thus, if the CEO has a higher functional heterogeneity than does the CFO, he or she will be able to develop social relationships with a larger number of important top executives than can the CFO, which the CEO could exploit to exercise social influence over the CFO.

Third, the metafunctional expertise that results from experience in different functional areas can be another source of power (Bunderson, 2003). In particular, experience in a larger number of functional areas provides the CEO or CFO with an understanding of functions and how they relate (Bunderson & Sutcliffe, 2002), enabling him or her to “help resolve uncertainties associated with cross-functional coordination and integration” (Bunderson, 2003:459). If the CEO has a higher functional heterogeneity than does the CFO, he or she will possess more metafunctional expertise, which enables him or her to exercise social influence over the CFO.

These arguments suggest that differences in functional heterogeneity between the CEO and the CFO should result in a higher likelihood of material internal control weaknesses. This suggests the following hypothesis:

Hypothesis 3: Firms with CEOs with greater functional heterogeneity compared with their CFOs experience a higher likelihood of material weaknesses, while firms with CEOs with lower functional heterogeneity compared with their CFOs experience a lower likelihood of material weaknesses.

2.6 Relative differences and the importance of firm performance

A recent social influence research stream has suggested that the extent to which social influence opportunities are exploited is likely to be contingent on the leadership context in which the CEO operates (Wiseman & Gomez-Mejia, 1998; Zhang et al., 2008). In particular, the performance outcomes of strategic choices may affect subsequent decision-making behaviors by affecting the reference points of decision-makers (cf. Zhang et al., 2008). Along these lines, Wiseman and Gomez-Mejia (1998) argued that differences in the relation between firm performance and subsequent behavior distinguish behavioral decision models (e.g., social influence theory) and agency-based models. Thus, scholars have shown that firm performance is an important predictor of executive decision-making processes and that it also represents an important indicator of personal performance, because shareholders, including the CEO, usually attribute a firm's poor performance to its top executives (Meindl, Ehrlich, & Dukerich, 1985).

When firm performance is particularly good, it creates relatively favorable conditions for the CEO because it usually increases his or her wealth (Sanders, 2001). As a result, executives will be more likely to believe that the way to maximize future returns (and thereby create value in their stock options) is to maintain the strategic status quo (Hambrick et al., 1993; Sanders, 2001; Zhang et al., 2008). From a social influence theory point of view, high firm performance is likely to result in the CEO not exploiting potential social influence opportunities with the CFO and forgoing additional mar-

ginal wealth gains through weak internal controls over financial reporting in order to avoid the potential negative consequences from such behavior.

Alternatively, when performance is particularly poor, it creates an unfavorable position for the CEO, because executives are likely to experience wealth losses that will continue unless the poor performance can be improved (Sanders, 2001). Social influence theory suggests that, under such circumstances, the CEO might be tempted to risk inaccurate or less reliable financial statements by socially influencing the CFO to improve firm performance in order to escape this wealth loss situation. Along these lines, Alexander and Cohen (1996) found that poor performing firms were more likely to commit environmental crimes. Similarly, Zhang et al. (2008) argued that poor performance increases the incentive for the CEO to manipulate earnings.

In addition, one consistent empirical finding in executive succession research has been the critical role played by organizational performance (see reviews in Finkelstein et al., 2009; Giambatista et al., 2005; Kesner & Sebor, 1994). Not surprisingly, the CEOs of well-performing corporations enjoy longer tenures and a lower likelihood of dismissal than do CEOs of poorly performing corporations (Boeker, 1992). Thus, when performance is particularly poor, the CEO faces a higher likelihood of dismissal, which may prompt him or her to exercise social influence over the CFO in order to temporarily reduce the dismissal likelihood.

Accordingly, I propose that firm performance may interact with the CEO's ability to exert social influence over the CFO's role of maintaining effective internal controls. More specifically, low firm performance places extra pressure on the CEO to turn around firm performance in order to reduce potential wealth losses and dismissal risks. Therefore, poor firm performance should enhance the effect of differences in education level, position tenure and functional heterogeneity on material control weaknesses. By contrast, when firm performance is high, the CEO has little to gain by attempting to influence the CFO, particularly because inflating earnings that are already high might arouse suspicions with ensuing negative repercussions such as the disclosure of

material control weaknesses. Thus, in this situation the CEO is less likely to use social influence mechanisms on the CFO.

Hypothesis 4a: Firm performance moderates the relationship between differences in education level and material internal control weaknesses: lower firm performance strengthens the relationship between differences in education level and material internal control weaknesses, whereas high performance weakens it.

Hypothesis 4b: Firm performance moderates the relationship between differences in position tenure and material internal control weaknesses: lower firm performance strengthens the relationship between differences in position tenure and material internal control weaknesses, whereas high performance weakens it.

Hypothesis 4c: Firm performance moderates the relationship between differences in functional heterogeneity and material internal control weaknesses: lower firm performance strengthens the relationship between differences in functional heterogeneity and material internal control weaknesses, whereas high performance weakens it.

3 Methods

3.1 Data and sample

The sample of this study was randomly drawn from the population of publicly traded US companies listed on the S&P 500 index for at least one year between 2002 and 2009. I decided to use this timeframe because it covers sufficient years after the enactment of the SOX in 2002, which should support the generalization of my findings. By tracking the firms over seven years, I also ensure a sufficient number of years to capture material weaknesses. The original sample consisted of 322 companies over a seven-year period (2,274 firm-year observations) that exhibited no significant differ-

ences in terms of sales or assets compared with the entire S&P 500 population. After excluding firm-year observations with missing information, the final sample consisted of 265 companies and 1,666 firm-year observations for data analysis.

3.2 Dependent variable

Material weakness. Consistent with previous literature, I measured ineffective controls over financial reporting using the disclosure of material internal control weaknesses (Bedard et al., 2010; Feng, Li, & McVay, 2009; Li et al., 2010). I coded material weakness as 1 if the firm disclosed a material weakness in the respective year and 0 otherwise. Legislators require companies to comply with two types of internal control-related sections. Under Section 302, management must document its internal controls over financial disclosures, disclose whether those controls are effective and report material weaknesses that have been identified. By contrast, Section 404 requires that management tests controls over financial reporting and that auditors independently test those controls and present an audit opinion regarding any material weakness detected. S&P 500 firms had to comply with Section 302 requirements after August 2002 and with Section 404 requirements after November 2004. In order to better generalize my findings, I tested both types of weaknesses separately as well as jointly. All measures of material weaknesses produced highly consistent results, with the Section 302 definition providing somewhat stronger results. In addition, by using the Section 302 definition only I was able to include the period from August 2002 to November 2004 in the analysis. I thus used the Section 302 definition as the primary internal control measure in the models. I obtained the data on material weaknesses from two sources: (1) EDGAR, the SEC's website of electronic filings, through which I conducted an extensive search on registrants' 10-K filings using the keywords 'material weakness' and 'internal control', and (2) Compliance Week, an electronic newsletter that began collecting internal control disclosures from all SEC filings in November 2003. The final sample consisted of 265 companies, of which 42 companies disclosed at least one material internal control weakness during the seven-year study period.

3.3 Independent variables

Differences in education level. Previous studies on demographic similarities have largely used absolute difference scores (e.g., Tsui & O'Reilly, 1989; Westphal & Zajac, 1997), which are computed by squaring the differences between the values of demographic variables and either using the squared term itself or its square root. Such absolute difference scores are symmetric in that they ignore the direction of the differences. By contrast, following Fiss (2006), I used a relative difference score, calculated as the simple difference between the CEO characteristic and the CFO characteristic. Following Westphal and Zajac (1995), I divided educational background into four categories: (1) less than a bachelor's degree, (2) less than a master's degree, (3) less than a doctoral degree and (4) a doctoral degree. The variable differences in education level takes on positive values if the CEO's level of education is higher than that of the CFO and negative values if it is lower than that of the CFO. Equal levels of education cancel out, resulting in a value of zero. I hand-collected the information on differences in education level from S&P's Register of Corporations, Directors and Executives, Marquis Who's Who, corporate proxy statements and press articles published in the Dow Jones Factiva and LexisNexis databases.

Differences in position tenure. Similarly, following Fiss (2006), I calculated the variable differences in position tenure as the simple difference between the position tenure of the CEO and the position tenure of the CFO, measured in years. Consequently, the variable differences in position tenure takes on positive values if the CEO's position tenure is higher than that of the CFO and negative values if it is lower than that of the CFO. I hand-collected information on differences in position tenure using the same sources as listed above.

Differences in functional heterogeneity. I computed the variable differences in functional heterogeneity by adapting the procedure described in Bunderson (2003) to this context. Specifically, I defined differences in functional heterogeneity as the difference between the functional background heterogeneity of the CEO and the functional back-

ground heterogeneity of the CFO. I calculated differences in functional heterogeneity as follows:

$$\left(1 - \sum_{i=1}^k x_i^2\right) - \left(1 - \sum_{i=1}^k y_i^2\right)$$

where x_i is the percentage of the CEO's and y_i is the percentage of the CFO's total years of experience spent in the i th functional area of the k functional areas examined. This implies that higher values of differences in functional heterogeneity are associated with a more diverse functional background of the CEO than of the CFO. Consistent with Ocasio and Kim (1999), I classified the functional experiences of new CEOs into the following categories: technical, production, sales, marketing, finance, operations, medical, journalism and legal. In the analysis, I collapsed these classifications into the following categories: (1) production and technical, (2) marketing and sales, (3) finance and legal and (4) operations and other (Karaevli, 2007). I hand-collected information on differences in functional heterogeneity using the same sources as listed above.

Prior firm performance. I measured prior firm performance as the industry-adjusted ROA of the previous fiscal year, in which firm ROA was adjusted for industry median ROA (excluding the focal firm) (Huson et al., 2004). This measure of industry-adjusted firm performance helped differentiate firms that performed poorly in an absolute sense from firms that performed poorly relative to their respective industries. To test the robustness of my results, I also examined a two- and three-year average measure. The analysis produced highly consistent results. Alternatively, I measured prior firm performance as industry-adjusted stock return of the previous fiscal year, in which the firm's total return to shareholders was adjusted for the median stock return (excluding the focal firm) in the firm's core industry. The alternative measure also produced consistent results, with the first measure providing somewhat stronger results. I gathered data on prior firm performance from Compustat.

3.4 Control variables

Share of independent directors. At the firm level, I controlled for the share of independent directors because previous work has indicated that companies with a greater proportion of independent directors are less likely to experience financial fraud and SEC enforcement actions (Beasley, 1996; Dechow, Sloan, & Sweeney, 1996). Consistent with Weisbach (1988), Byrd and Hickman (1992) and Dalton et al. (1998), I classified as independent directors any director who was not an employee of the firm, a former officer, consultant, commercial banker, investment banker, lawyer, insurance company executive or was related to an officer of the firm. I hand-collected the required data from annual proxy statements.

Board size. I also controlled for the size of the board of directors because previous research has found that large boards are more effective at monitoring accruals (Xie, Davidson III, & DaDalt, 2003). I measured board size as the number of all directors on the firm's board. I hand-collected the data on this variable from annual proxy statements.

Firm size. I controlled for firm size because research has shown that larger firms are less likely to experience material weaknesses (Dechow et al., 1995; DeFond & Jambalvo, 1991; Kinney & McDaniel Jr, 1989). While large firms have more assets that must be controlled, they normally have more financial reporting processes and procedures in place. Large firms also tend to have more employees and greater resources to spend on internal auditors or consulting fees, which may aid in the generation of strong internal controls. For example, there is a strong positive association between non-audit fees and firm size (e.g., Frankel, Johnson, & Nelson, 2002). I measured firm size using the natural logarithm of the firm's total sales in the fiscal year of the succession (Zhang, 2008). As an alternative, I measured firm size as the natural logarithm of the total number of employees (Zhang, 2006). Both measures of firm size produced consistent results. I gathered data on firm size from Compustat.

Firm diversification. I controlled for firm diversification because previous research has argued that diversified firms experience higher information asymmetries and business complexities (Lim, Thong, & Ding, 2008), with both factors increasing the likelihood of opportunistic earnings management strategies. I measured firm diversification using the entropy measure of diversification, which takes into account the number of segments in which a firm operates and weights each segment according to its contribution to total sales (Baysinger & Hoskisson, 1989; Jacquemin & Berry, 1979; Palepu, 1985). I gathered data on firm and segment sales from Compustat.

Auditor change. In addition, I controlled for auditor changes because previous work has indicated that firms with recent auditor changes are likely to have internal control problems (Ashbaugh-Skaife, Collins, & Kinney, 2007). For example, auditors may drop risky clients as part of their risk management strategies because firms with material internal control weaknesses may represent high audit failure risks. Auditor change was coded as 1 if there was an auditor change in the fiscal year before the material weakness or to the close of the company's fiscal year and 0 otherwise. I hand-collected the data on auditors from proxy statements.

Prior CEO dismissal. I controlled for prior CEO dismissal because recent studies have suggested that the dismissal of CEO predecessor(s) may adversely affect the internal controls of a firm. Zhang (2008) argued that dismissals often occur under pressure from shareholders in order to quickly restore investor confidence. Thus, new CEOs may be more inclined to trade off weak internal controls with good performance in order to quickly restore investor confidence. I relied on news reports to identify the circumstances under which prior CEOs left office (dismissal versus voluntary turnover) following an approach based on those of Weisbach (1988), Parrino (1997) and Farrell and Whidbee (2003). Prior CEO dismissal was coded as 1 if the firm experienced a CEO dismissal in the previous three years and 0 otherwise.

CEO duality. At the individual level, I controlled for CEO duality because a large body of research has found that the chairperson position provides the CEO with an important source of structural power (e.g., Finkelstein, 1992). CEO duality was coded

as 1 if the CEO was also the chairperson of the board and 0 otherwise. I hand-collected data on CEO duality from annual proxy statements.

CFO qualifications. Moreover, I controlled for the professional qualifications of the CFO, specifically for the statutory titles CPA or CFA, because previous studies have shown that lower qualifications are associated with weak internal control (e.g., Aier et al., 2005; Li et al., 2010; Zhang et al., 2007). CFO qualification was coded as 1 if the CFO is a CPA or CFA and 0 otherwise. I hand-collected the data on CFO qualification from the same sources I used to determine other CFO demographic variables.

CEO and CFO age. Finally, I controlled for CEO and CFO age because recent evidence has indicated that older executives are likely to be more conservative in accounting choices and provide less earnings guidance (cf. Ge, Matsumoto, & Zhang, 2008). I hand-collected the data on executive age from the same sources I used to determine other CEO and CFO demographic variables.

3.5 Analytical methodology

In response to various calls for longitudinal studies in management research (e.g., Finkelstein et al., 2009), I used a continuous-time event history analysis to test the likelihood of material internal control weaknesses. Event history models are especially appropriate for analyzing longitudinal data when the dependent variable is a discrete event and the timing of the event's occurrence is of particular interest (Allison, 1984; Tuma & Hannan, 1984; Yamaguchi, 1991). The dependent variable – material weakness – is binary and was coded as 1 in a year in which a firm disclosed a material internal control weakness and 0 otherwise. It was, therefore, appropriate to analyze the effects of a CEO's social influence dynamics on material internal control weaknesses because it takes into account the effect of time. Using event history analysis offers two additional benefits in this study's research setting. First, it can incorporate time series variation into parameter estimates (Shen & Cannella, 2002b). Second, it can resolve sample selection problems that result from censoring (Blossfeld, Golsch, & Rohwer, 2007).

I specifically used the Cox proportional hazard model (Cox, 1972) to test my hypotheses. This model does not assume a prespecified hazard function and is therefore recommended when it is not known how a hazard rate depends on time or when the hazard rate is believed to be nonmonotonic over time. I modified the Cox proportional hazard model to incorporate separate annual baseline functions but found no significant differences.

4 Results

Table IV-1 reports the variable means, standard deviations and Pearson correlation coefficients for all observations ($N = 1,666$). The magnitudes of the coefficients do not indicate that multicollinearity is an issue.

Table IV-2 summarizes the results of the Cox proportional hazard model predicting the likelihood of material weaknesses. Model 1 reports the results with only the control variables included. Model 2 reports the results with the addition of the independent variables. Models 3, 4 and 5 report the results with the sequential addition of the interaction variables. Model 6 reports the model with all variables included. Overall, the Wald chi-square statistics for Models 2 to 6, reported in Table IV-2, indicate very strong model significance ($p < .01$).

Hypothesis 1 predicts a positive effect of differences in education level between the CEO and the CFO on the likelihood of material weaknesses. This hypothesis is strongly supported because the coefficients for differences in education level in all five models are positive and significant. For example, in Model 2 the coefficient for the effect of differences in education level on the likelihood of material weaknesses is 0.42 ($p < .05$).

Hypothesis 2 predicts a positive effect of differences in position tenure between the CEO and the CFO on the likelihood of material weaknesses. Hypothesis 2 is strongly supported because the coefficients for differences in position tenure in all five models

Table IV-1. Variable means, standard deviations and correlation coefficients

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Firm size	9.02	1.25													
(2) Firm diversification	1.07	0.92	-0.02												
(3) Board size	11.88	2.48	0.37	-0.10											
(4) Share of independent directors	0.70	0.11	0.17	0.01	0.13										
(5) CEO duality	0.28	0.45	0.06	0.13	0.00	0.17									
(6) CFO qualifications	0.36	0.48	-0.13	0.01	-0.09	-0.02	-0.02								
(7) Auditor change	0.06	0.23	-0.04	0.03	-0.04	0.01	0.02	0.01							
(8) CEO age	55.78	6.32	0.04	-0.06	0.11	0.07	-0.04	-0.03	-0.03						
(9) CFO age	51.04	6.24	0.06	0.07	0.03	0.04	-0.06	-0.04	-0.03	0.18					
(10) Prior CEO dismissal	0.08	0.28	0.13	0.06	0.03	0.04	-0.07	0.04	-0.02	-0.05	0.00				
(11) Prior firm performance	0.00	0.07	0.13	0.05	0.07	-0.04	0.02	0.00	-0.01	0.00	0.02	-0.07			
(12) Differences in education level	0.15	0.97	0.00	0.07	-0.01	-0.01	0.06	0.18	0.00	0.08	0.04	0.05	-0.01		
(13) Differences in position tenure	1.02	5.68	-0.08	-0.08	-0.01	-0.03	-0.05	0.00	0.01	0.36	-0.20	-0.15	-0.03	0.03	
(14) Differences in functional heterogeneity	0.25	0.50	-0.06	0.07	-0.06	0.00	-0.01	0.11	0.03	0.07	0.04	0.01	0.03	-0.15	0.02

N = 1,666. Correlations larger than 0.06 are significant at the level of $p < 0.05$, and those larger than 0.07 are significant at $p < 0.01$

Table IV-2. Results of Cox proportional hazard model predicting material weaknesses^a

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Controls</i>						
Firm size	-0.28 *	-0.26 **	-0.24 **	-0.26 **	-0.26 **	-0.25 **
	(0.16)	(0.12)	(0.12)	(0.11)	(0.12)	(0.12)
Firm diversification	0.44 *	0.54 **	0.56 **	0.55 **	0.60 **	0.65 **
	(0.26)	(0.25)	(0.24)	(0.25)	(0.26)	(0.26)
Board size	0.01	0.05	0.06	0.05	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Share of independent directors	-0.63	-0.59	-0.88	-0.54	-0.76	-0.96
	(1.27)	(1.24)	(1.24)	(1.24)	(1.25)	(1.22)
CEO duality	-0.51	-0.38	-0.41	-0.38	-0.40	-0.46
	(0.40)	(0.38)	(0.38)	(0.38)	(0.37)	(0.38)
CFO qualifications	0.11	-0.04	-0.07	-0.07	-0.02	-0.12
	(0.33)	(0.33)	(0.33)	(0.32)	(0.33)	(0.34)
Auditor change	0.47	0.26	0.12	0.28	0.33	0.25
	(0.70)	(0.72)	(0.81)	(0.72)	(0.71)	(0.77)
CEO age	-0.01	-0.04	-0.04	-0.04	-0.04	-0.04
	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
CFO age	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Prior CEO dismissal	0.65	0.57	0.55	0.57	0.39	0.35
	(0.51)	(0.51)	(0.52)	(0.51)	(0.58)	(0.60)
<i>Independent</i>						
Prior firm performance		-6.59 ***	-6.65 ***	-6.41 ***	-7.29 ***	-6.84 ***
		(1.16)	(1.09)	(1.23)	(1.25)	(1.26)
Differences in education level		0.42 **	0.36 **	0.43 **	0.39 **	0.34 **
		(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Differences in position tenure		0.07 ***	0.07 **	0.07 ***	0.06 **	0.07 **
		(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Differences in functional heterogeneity		0.64 **	0.60 *	0.67 **	0.56 *	0.60 *
		(0.33)	(0.33)	(0.34)	(0.33)	(0.34)
<i>Interactions</i>						
Differences in educational level X prior firm performance			-1.69 *			-1.91 *
			(0.97)			(1.12)
Differences in position tenure X prior firm performance				0.10		0.30
				(0.13)		(0.18)
Differences in functional heterogeneity X prior firm performance					-3.96 **	-4.32 *
					(1.99)	(2.57)
Wald Chi-Square	21.42 **	75.08 ***	81.14 ***	80.87 ***	88.02 ***	109.46 ***

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ ^a Standard errors are in parentheses

N = 1,666 firm years

are positive and significant. For example, in Model 2 the coefficient for the effect of differences in position tenure on the likelihood of material weaknesses is 0.07 ($p < .01$).

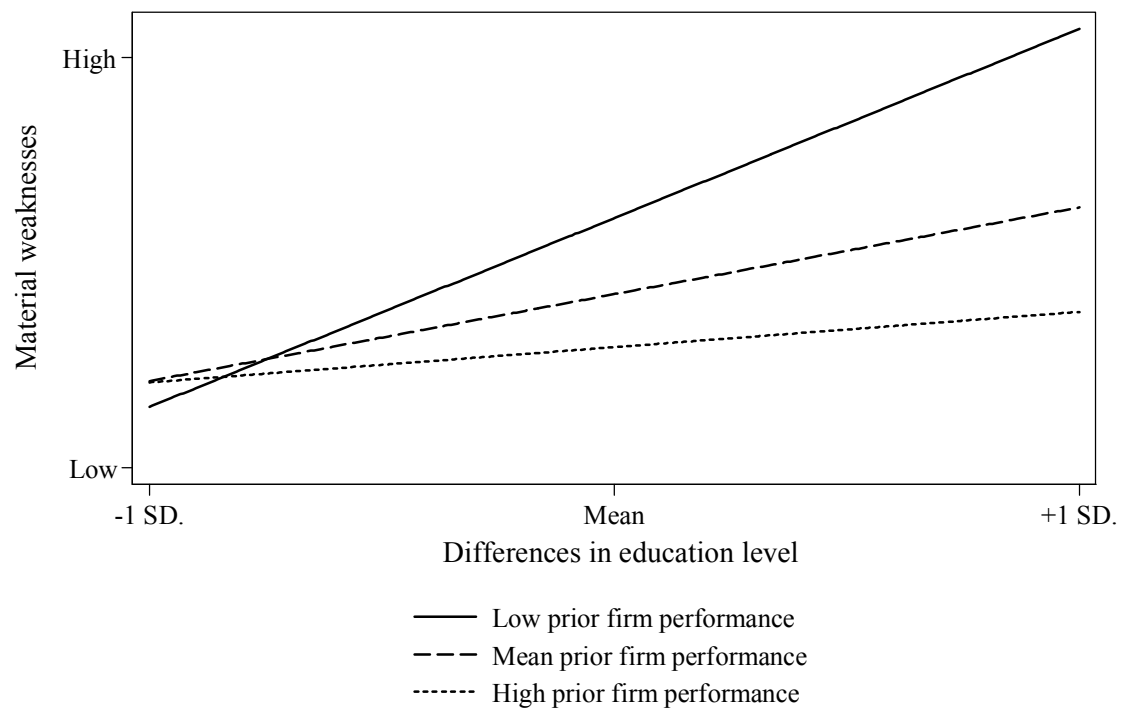
Hypothesis 3 predicts a positive effect of differences in functional heterogeneity between the CEO and the CFO on the likelihood of material weaknesses. This hypothesis also receives support because the coefficients for differences in functional heterogeneity in all five models are positive and significant. For example, in Model 2 the coeffi-

cient for the effect of differences in functional heterogeneity on the likelihood of material weaknesses is 0.64 ($p < .05$).

To test the moderating hypotheses that firm performance moderates the relationship between relative demographic differences and the likelihood of material weaknesses, I added interaction terms that were the product of the mean-centered firm performance variable and the mean-centered demographic differences variable. The chi-square statistics suggest that the models including interaction effects (Models 3, 4 and 5) are highly significant compared with the models without interaction effects (Models 1 and 2).

Hypothesis 4a predicts that firm performance moderates the positive relationship between differences in education level and the likelihood of material weaknesses. Thus, Hypothesis 4a predicts a negative interaction effect between firm performance and differences in education level. Model 3 provides a direct test of this prediction. In Model 3, the coefficient of the interaction between firm performance and differences in education level is negative and significant ($b = -1.69$, $p < .10$). However, when estimating interaction effects in a statistical model with a binary outcome, one cannot solely rely on the direction and statistical significance of the interaction coefficient (Hoetker, 2007; Wiersema & Bowen, 2009). I thus additionally graphed the significant interaction from Model 2 in Figure IV-1. The vertical axis represents the likelihood of material internal control weaknesses. The differences in education level are on the horizontal axis. All variables in the model, except for differences in education level and firm performance, were constrained to mean values. The values for firm performance were constrained to its low value (one standard deviation below the mean), mean value and high value (one standard deviation above the mean). As indicated in Figure IV-1, below-average firm performance strengthens the relationship between differences in education level and the likelihood of material weaknesses, whereas high performance weakens it. Thus, Hypothesis 4a is supported.

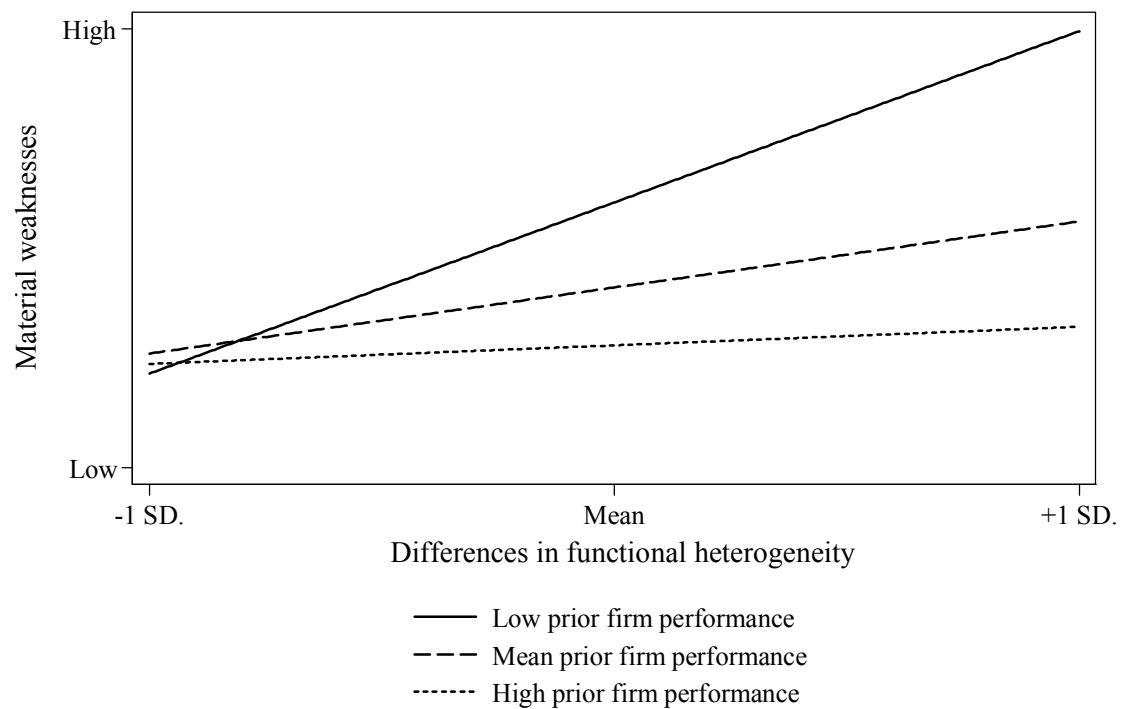
Figure IV-1. Differences in education level and material weaknesses: the moderating effect of firm performance



Hypothesis 4b predicts that firm performance moderates the positive relationship between differences in position tenure and the likelihood of material weaknesses. Thus, Hypothesis 4b predicts a negative interaction effect between firm performance and differences in position tenure. Model 4 provides a direct test of this prediction. In Model 4, the coefficient of the interaction between firm performance and differences in position tenure is positive and not significant ($b = 0.10$, n.s.). Thus, Hypothesis 4b receives no support.

Hypothesis 4c predicts that firm performance moderates the positive relationship between differences in functional heterogeneity and the likelihood of material weaknesses. Thus, Hypothesis 4c predicts a negative interaction effect between firm performance and differences in functional heterogeneity. Model 5 provides a direct test of this prediction. In Model 5, the coefficient of the interaction between firm performance and differences in functional heterogeneity is negative and significant ($b = -3.96$,

Figure IV-2. Differences in functional heterogeneity and material weaknesses: the moderating effect of firm performance



$p < .05$). The results are plotted in Figure IV-2. As indicated by the graph, low firm performance strengthens the relationship between differences in functional heterogeneity and the likelihood of material weaknesses, whereas high performance weakens it. Thus, Hypothesis 4c is supported.

In addition, the control variables yield interesting results. As expected, firm size has a strong negative association with the likelihood of material weaknesses ($b = -0.28$, $p < .10$). Furthermore, I find that high levels of firm diversification are associated with an increased likelihood of material weaknesses ($b = 0.44$, $p < .10$), which is in line with the view that more diversified firms face higher information asymmetries and business complexities, which in turn allows them to more actively engage in earnings management (Lim et al., 2008).

5 Discussion

Overall, the social influence perspective and supportive findings presented in this study point to the conclusion that demographic differences between the CEO and the CFO affect the effectiveness of internal controls over financial reporting.

As expected, the first set of results demonstrates that CFOs are more likely to defer to CEOs' social influence attempts when they have lower levels of educational attainment, position tenure or functional heterogeneity. Consequently, social influence by CEOs increases the likelihood of the disclosure of material weaknesses, indicating weak internal controls over financial reporting. These findings support the theoretical perspective that CEOs can employ social influence attempts to command CFOs on financial reporting matters. The rationale behind this is the CEO's interest in firm performance as a reflection of their management ability, their disproportionate performance-dependent compensation and comparatively limited litigation risks.

Furthermore, the results indicate that the performance context in which CEOs operate affects their social influence attempts. Specifically, the findings suggest that low performance places extra pressure on CEOs to turn around firm performance in order to reduce potential wealth losses and dismissal risks. Thus, the CEOs of poor performing firms are more likely to use social influence attempts on CFOs than are the CEOs of well performing firms when they possess superior educational attainment or functional heterogeneity.

5.1 Theoretical contributions

The theory developed in this study contributes to a better understanding of how the CEO's interpersonal influence on the CFO affects the effectiveness of internal controls over financial reporting. In particular, this study makes several theoretical and empirical contributions to the literature.

First, it offers a novel perspective on researching social influence processes (e.g., Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009) by developing and testing

new hypotheses that show how relative differences between two top executives affect critical corporate outcomes such as internal controls over financial reporting. Previous studies have largely used social influence theory to examine how interpersonal mechanisms operating between the CEO and board of directors affect corporate outcomes (Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009; Wade et al., 1990). Moreover, previous research has often applied a TMT perspective to explore how dominant demographic TMT characteristics affect strategic choices and firm performance (e.g., Cruz, Gómez-Mejia, & Becerra, 2010; Hambrick et al., 1996; Pelled et al., 1999; Wiersema & Bantel, 1992). This study contributes to both research streams by highlighting the importance of the CEO's position vis-à-vis certain executives such as the CFO with regard to particular functional decisions. Thus, this study advances theory towards an individual executive relationship level by showing that the relationship between the CEO and the CFO is pivotal in influencing internal controls over financial reporting. In addition, this study develops and tests new arguments about the decision context in which CEOs most likely make use of their social influence opportunities. My results are consistent with previous literature, indicating that poor firm performance is positively related to committing organizational crimes (Alexander & Cohen, 1996). I also find support for the argument that CEOs with comparatively superior amounts of social influence determinants increase the likelihood of material weaknesses, particularly when performance is poor.

Second, a large body of research has examined the impact of TMT heterogeneity on various firm outcomes (Hambrick et al., 1996; e.g., Marcel, 2009; Pelled et al., 1999; Wiersema & Bantel, 1992). One important research stream in that context has argued that heterogeneous teams improve firm performance because they experience lower levels of group consensus (Knight et al., 1999) and more of the task-oriented conflict that prompts thorough decision-making (Pelled et al., 1999). However, by examining the interpersonal relationships between two key members of the TMT, I find that demographic differences also facilitate social influence processes, which can negatively affect important corporate outcomes, such as weak internal controls over financial reporting.

Third, a growing body of literature has examined the determinants of effective internal controls over financial reporting. Previous research in this context has largely focused on the level of knowledge, skill and reputation required in the CFO position in order to produce qualitative financial statements (Aier et al., 2005; Hoitash et al., 2009; Li et al., 2010). This study contributes to this research stream by showing that the CEO's social influence on the CFO can also affect important decisions with regard to financial reporting beyond the CFO's qualifications. In addition, scholars have examined the factors that help prevent ineffective internal controls over financial reporting. Previous studies in this context often followed agency-theoretic propositions and largely focused on the design of adequate compensation schemes and incentive structures in order to better link managers' compensations to shareholder wealth (e.g., Burns & Kedia, 2006; Efendi, Srivastava, & Swanson, 2007). This study enhances previous research by showing that firms also need to monitor and manage the relationship between the CEO and the CFO in order to establish effective internal controls over financial reporting.

Finally, by using a longitudinal design with data from 2002 to 2009, the current study also presents a methodological advancement over previous studies, which have often relied on single-year data or have not sufficiently covered sufficient firm-year observations post-SOX.

5.2 Limitations and future research

To my knowledge, this study represents the first attempt to empirically examine the effect of social influence by CEOs on the effectiveness of internal controls over financial reporting – a core fiduciary duty of CFOs. However, like any study, this study is not without limitations.

First, because I relied on archival data I could not use direct information about the decision-making processes that ultimately led to material weaknesses. Moreover, I could only examine influence mechanisms leading to material weaknesses when they were announced to the public (e.g., in proxy statements), suggesting that there may

well be other mechanisms occurring that go undetected. Nevertheless, the material weaknesses I could identify were sufficient to allow a test that supported the theory that internal controls over financial reporting also depend on the relationship between the CEO and the CFO and, in consequence, on potential social influence attempts by the CEO.

Second, this study focused on the relationship between the CEO and CFO. While this relationship is arguably pivotal for the accuracy and credibility of financial statements (e.g., Feng et al., 2011; Jiang et al., 2010), a broader set of stakeholders (e.g., audit committees, auditors) could further improve the understanding of how social influence attempts from CEOs may influence CFOs and ultimately the effectiveness of internal controls over financial reporting.

Third, this study focused on the effect of the relative demographic differences between the CEO and the CFO on material weaknesses as an important corporate outcome. However, the demographic differences between both executives could also affect other firm outcomes, such as the adoption of takeover defenses (e.g., Buchholtz & Ribbens, 1994), the selection of CEO successors (e.g., Zajac & Westphal, 1996) or the turnover of incumbent top executives (e.g., Ocasio, 1994; Shen & Cannella, 2002b).

6 Summary

In conclusion, this study examined how the relative demographic differences between the CEO and the CFO are influencing factors in maintaining effective internal controls over financial reporting. My findings indicate that the relative differences in education level, position tenure and functional heterogeneity between the CEO and the CFO increase the likelihood of material internal control weaknesses. Thus, maintaining effective internal controls over financial reporting seems to be more difficult when CEOs are able to exercise social influence stemming from these relative demographic differences. Moreover, my findings indicate that the relative differences between the CEO and the CFO in education level and functional heterogeneity are especially likely

to prompt material internal control weaknesses when firm performance is poor. Under such circumstances, CEOs may seek to escape potential wealth loss situations and higher dismissal risks by socially influencing their CFOs. I hope that this study can inspire future research on social influence mechanisms between selected TMT members.

Endnotes

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- ¹ Internal controls over financial reporting are defined as “a process [...] to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP” (PCAOB, 2007).
- ² A material weakness is defined as “reasonably possible that a material misstatement of the company’s annual or interim financial statements will not be prevented on a timely basis” (PCAOB, 2007:434).

V. Discussion

1 Purpose of dissertation

The overarching objective of this dissertation was to advance previous research on CEO selection by examining the determinants and consequences of CEO selection decisions while focusing on the interdependencies between the CEO and board of directors, on the one hand, and the CEO and the TMT, on the other. Regarding selection determinants, this dissertation strived to examine whether the characteristics of the board of directors affect the choice of a new CEO in response to critical firm contingencies. Regarding selection consequences, this dissertation had two objectives. First, it aimed to examine the relationship between supplementing board capital and the performance of a new CEO. Second, this dissertation strived to examine the relationship between relative TMT differences and CEO social influence dynamics.

2 Overview and comparison of results

Collectively, the theory and supportive results presented in this dissertation suggest that interdependencies between the CEO and the board of directors, on the one hand, and the CEO and the TMT, on the other, are of accentuated importance for CEO selection determinants and consequences. The following section summarizes and compares the findings derived from the three research objectives of this dissertation.

2.1 Overview of results

Research objective 1: *Examine the relationship between board of director characteristics and new CEO selection in response to critical contingencies.*

I addressed this research objective in the first self-contained study. The findings presented there strongly support the main argument that firms select new CEOs in response to their critical contingencies. In particular, the results indicate that firms that

are highly leveraged, firms experiencing reductions in dividend payments and firms following an unrelated diversification strategy are more likely to select new CEOs with a functional background in finance. The results thereby support the view that the resource provision ability of CEOs is important in the selection decision (Pfeffer & Salancik, 1978). Moreover, there is strong support for the argument that in order to address their critical contingencies, firms consider interdependencies between the CEO and independent directors. Specifically, firms that are highly leveraged and firms following an unrelated diversification strategy are more likely to appoint a finance CEO when the financial expertise of their independent directors is low.

Research objective 2: *Examine the relationship between supplementing board capital and new CEO performance consequences.*

I addressed this research objective in the second self-contained study. The findings regarding this research objective in general support the notion that newly appointed outside CEOs benefit from the depth and breadth of firm-specific board capital of independent directors, thereby ultimately mitigating the negative performance consequences of outside CEO successions. In particular, the results show that new outside CEOs on average cause negative postsuccession firm performance within the first three years of succession, indicating that they lack an in-depth understanding of their new firms and support from other senior executives. However, the board capital of independent directors substantially affects this result. In particular, the results indicate that new outside CEOs are able to mitigate their firm-specific human and social capital disadvantages if independent directors can supplement them with firm-specific board capital depth and breadth, ultimately improving firm performance.

Research objective 3: *Examine the relationship between relative TMT differences and CEO social influence dynamics.*

I addressed this research objective in the third self-contained study. Overall, the findings regarding this research objective point to the conclusion that demographic differences between the CEO and the CFO affect the effectiveness of internal controls over

financial reporting. In particular, the results demonstrate that CFOs are more likely to defer to CEOs' social influence attempts when they have lower levels of educational attainment, position tenure or functional heterogeneity. Consequently, social influence by CEOs increases the likelihood of the disclosure of material weaknesses, indicating weak internal controls over financial reporting. These findings support the theoretical perspective that CEOs employ social influence attempts to command CFOs on financial reporting matters. The rationale behind this is the CEO's interest in firm performance as a reflection of his or her management ability, disproportionate performance-dependent compensation and comparatively limited litigation risks. Moreover, the results stress the importance of the performance context in which CEOs operate. Specifically, the results suggest that low performance increases the pressure on CEOs to turn around firm performance in order to reduce potential wealth losses and dismissal risks. Thus, CEOs of poor performing companies with higher levels of educational attainment and functional heterogeneity than their CFOs are more likely to employ social influence attempts on CFOs than are the CEOs of well performing firms.

2.2 Comparison of results

The three research objectives examined CEO selection determinants and consequences while considering the importance of interdependencies between the CEO and board of directors, on the one hand, and the CEO and the TMT, on the other, using two different theoretical angles and different analytical approaches. They, however, are not entirely separate from each other. In fact, using one common sample of CEO selection events in these studies allowed me to compare the findings and thus provide a more comprehensive view of CEO selection.

The first research objective of this dissertation focused on the selection determinants of a new CEO. Among others, the results indicate that firms, when facing critical financial contingencies, are more (less) likely to select a CEO candidate with financial expertise when the financial expertise of the independent directors is low (high). This implies that firms consider the collaboration of the new CEO and independent directors in their selection decisions. The second research objective then focused on the

consequences of the selection of a new CEO. The findings suggest that newly selected outside CEOs can collaborate with independent directors to compensate for their firm-specific human and social capital disadvantages, thereby improving postsuccession firm performance. However, a crucial requirement for this collaboration is that independent directors possess sufficient firm-specific human and social capital. Jointly, the findings suggest that the collaboration between the CEO and independent directors is of fundamental importance in both phases of the CEO selection process, and thus that both phases are strongly intertwined and need to be considered collectively in the CEO selection decision.

The second research objective also offers interesting insights when comparing it with the third research objective. While the second research objective concerned the interdependencies between the CEO and board of directors and focused on the collaboration between newly selected outside CEOs and independent directors, the third research objective focused on the importance of the interdependencies between the CEO and TMT for CEO selection consequences and highlighted the social dynamics between CEOs and TMT members. The results show that demographic differences between the CEO and the CFO can facilitate social influence attempts that can negatively affect corporate outcomes. Both research objectives complement each other and they suggest that CEO selection consequences are a complex phenomenon in which the interdependencies among the CEO, board of directors and other members of the TMT need to be considered.

3 Theoretical contributions

By focusing on CEO selection determinants and consequences while considering the interdependencies between the CEO and board of directors, on the one hand, and the CEO and the TMT, on the other, this dissertation provides theoretical insights into the complex phenomenon of CEO selection. Not only does it add to the literature on CEO selection determinants (e.g., Datta & Guthrie, 1994; Datta & Rajagopalan, 1998; Koyuncu et al., 2010) and consequences (e.g., Karaevli, 2007; Shen & Cannella,

2002a), but it also highlights the intertwined nature of both research streams. In addition, this dissertation offers various contributions to the literatures on the board of directors (e.g., Hillman & Dalziel, 2003; Kor & Sundaramurthy, 2009; Tian et al., 2010) and the TMT (e.g., Bunderson, 2003; Hambrick et al., 1996; Wiersema & Bantel, 1992).

Regarding the literature on CEO selection determinants, this dissertation first adds to previous research on organizational contingencies that influence the choice of particular CEO successors (Daily et al., 2000; Dalton & Kesner, 1985; Fligstein, 1987; Ocasio & Kim, 1999). Given that CEO succession practices have changed substantially over time (Huson et al., 2001), the evidence from these studies may no longer be valid. With its focus on the selection of CEOs with a background in finance, this dissertation complements two recent studies analyzing the selection of CEOs with a background in operations (Koyuncu et al., 2010) and marketing (Srinivasan & Parrino, 2009). Moreover, this dissertation contributes to the growing research on interdependencies between the TMT and the board of directors (Kor & Misangyi, 2008; Zahra & Pearce, 1989; Zajac & Westphal, 1996) and extends this research to the literature on CEO selection decisions. Specifically, this dissertation indicates that firms consider the available resources of independent directors in the CEO selection decision. For example, if independent directors possess a particular resource, the selection of a CEO with the same resource is less likely and, conversely, if independent directors lack a particular resource firms tend to select new CEOs that possess that particular resource. The dissertation thereby highlights the supplementing effect between the board of directors and the selection of a new CEO. From a resource dependence theory perspective, this dissertation thereby enhances our understanding of the interaction between the selection of new CEOs and independent directors as dependency reducing tactics. Moreover, this contribution is particularly interesting in light of Zajac and Westphal's (1996) study on CEO selection decisions. These authors, considering socio-political and social-psychological factors, argued that boards will have a preference for demographically (including functionally) similar CEOs. The supplementing effect found in this

dissertation seems to indicate that the realization of the board's preference for demographically similar CEOs is dependent on the critical contingencies of the firm

Regarding the literature on CEO selection consequences, this dissertation first contributes to research on the postsuccession performance of newly appointed CEOs. While previous work has shed light on a better distinction between successor type, successor actions or succession context in order to predict certain performance consequences (Karaevli, 2007; Shen & Cannella, 2002a), this dissertation highlights the importance of the resources of the board of directors. In particular, it shows that the performance of newly appointed CEOs with limited firm-specific human and social capital differ greatly depending on the level of the firm-specific human and social capital of independent directors. Thereby, this dissertation corroborates the view that CEOs and independent directors collaborate in developing strategic choices and actions (Jensen & Zajac, 2004; Westphal & Fredrickson, 2001). Moreover, it contributes to the literature on the resource-provider role of independent directors, which has largely focused on how board resources can directly address potential environmental uncertainties in order to facilitate the firm's adaption process to the environment (e.g., Haynes & Hillman, 2010). By showing that the human and social capital of independent directors also improves firm performance when it allows new CEOs to overcome deficiencies in their own human and social capital, it pronounces the importance of considering the interdependencies between independent directors and CEOs in this literature. Lastly, this dissertation contributes to the literature on CEO selection consequences by introducing the importance of social dynamics between CEOs and other members of the TMT that in turn should also be acknowledged as CEO selection determinants. While previous studies have certainly recognized social dynamics between the CEO and the board of directors (Belliveau et al., 1996; Fiss, 2006; Stevenson & Radin, 2009; Wade et al., 1990), this dissertation shows that demographic differences between the CEO and other TMT members allow for social influence attempts that can ultimately affect corporate outcomes. This contribution is particularly interesting in light of the discussion of the advantages and disadvantages of demographic differences (Hambrick et al., 1996; e.g., Marcel, 2009; Pelled et al., 1999; Wiersema & Bantel, 1992). By examin-

ing the interpersonal relationship between two key members of the TMT, this dissertation suggests that demographic differences facilitate social influence processes, which can negatively affect important corporate outcomes. Thus, it advances the theory on demographic differences towards an individual executive relationship level.

Finally, this dissertation highlights the intertwined nature of the research streams on CEO selection determinants and CEO selection consequences. The theory developed in this dissertation suggests that when selecting a new CEO it is insufficient to only focus on the candidate's ability to address the firm's critical contingencies. Rather, it is essential to consider the candidate's ability in light of the interdependencies with other important actors of the firm such as independent directors or other members of the TMT. While these interdependencies can be beneficial by allowing for a supplementation of important knowledge, skills and abilities, they can also be detrimental by promoting unwanted social influence dynamics. Both aspects ought to be considered in the selection decision and thus underline the complexity of the succession process.

4 Practical contributions

The evidence provided in this dissertation has important practical contributions regarding the selection of new CEOs and its consequences. The following section summarizes these practical contributions.

Regarding the selection of new CEOs, this dissertation highlights that firms consider their critical contingencies, as well as the functional resources of their independent directors in selecting new CEOs. This finding is of practical importance for CEO candidates. Apparently, firms consider their critical contingencies in the selection of new CEOs. As a result, CEO candidates whose knowledge, skills and abilities are particularly valuable given the firm's critical contingencies have a higher likelihood of consideration for the CEO position. However, CEO candidates should not limit their attention to the firm's critical contingencies; they should also consider the structure of its board of directors. If independent directors do not possess the abilities required to

address the firm's critical contingencies, the likelihood that the firm selects a CEO candidate who is capable of addressing these contingencies increases. This finding is also essential from a firm governance perspective. Besides their resource provision role, independent directors have the responsibility of monitoring the behavior and actions of the firm's top executives. Recent research has suggested that the effectiveness of this monitoring function depends on whether the independent directors possess the relevant technical knowledge (Hillman & Dalziel, 2003). Firms, consequently, face a constant trade off between the selection of CEOs and independent directors whose knowledge, skills and experiences complement each other and those whose knowledge, skills and experiences allow for the efficient monitoring of the CEO's actions.

Regarding the consequences of the selection of new CEOs, this dissertation shows that new outside CEOs, particularly in the early years of their tenure, can benefit from the support of independent directors, substantially affecting postsuccession firm performance. This finding is essential for the collaboration between new outside CEOs and independent directors. Independent directors possess valuable firm-specific knowledge, skills and social networks that outside CEOs typically lack. Since firm-specific human and social capital are essential to effectively guide a firm's future directions, independent directors and new outside CEOs should collaborate in order to mitigate the firm-specific human and social capital disadvantages of new outside CEOs. Furthermore, this finding indicates that it is important to maintain firm-specific human and social capital with independent directors. While dependent directors also possess firm-specific human and social capital, they may be less willing to support the newly appointed outside CEO because they were closely linked to the predecessor CEO and share his or her strategic perspectives (Fondas & Wiersema, 1997) or because they experienced a loss of control given the appointment of a new CEO from outside the firm (Boeker & Goodstein, 1993). That is, other things being equal, it is important to maintain stability in the group of independent directors. In addition, firms should consider developing mechanisms that help directors collect, share, store and transfer firm-specific human and social capital. Finally, this finding, together with those provided by Karaevli (2007), is essential in light of the CEO selection decision. Contrary to the

common notion that new outside CEOs frequently cause poor postsuccession firm performance, this finding suggests that an efficient collaboration of new outside CEOs and independent directors can enable firms to capture the advantages of new outside CEOs.

Moreover, this dissertation suggests that the social dynamics between the CEO and TMT members are an important determinant of corporate outcomes. This finding, in combination with the studies on the management of top executive behavior (e.g., Burns & Kedia, 2006; Efendi et al., 2007), is particularly relevant for independent directors, who should pay attention to the monitoring of the social dynamics within the TMT, especially when the demographic characteristics of the members of the TMT make social influence attempts likely. Furthermore, this finding has implications for the selection of new CEOs. In particular, firms are likely to benefit if they strategically select new CEOs by considering candidates that will not cause adverse social dynamics with other members of the TMT. Finally, independent directors should consider this finding in light of TMT changes following the selection of a new CEO by ensuring that TMT candidates can counterbalance social influence attempts by the new CEO.

5 Limitations

This dissertation is not without limitations. First, the limited sample may represent a limitation of this dissertation. The sample of this dissertation consists of 392 publicly traded US companies listed on the S&P 500 index between 1998 and 2009, a period that saw some unusual fluctuations in the stock market (e.g., the global economic crisis and the subprime mortgage crisis in the US). The sample exhibited no significant differences in terms of sales or assets compared with the entire S&P 500 population. I decided to employ this sample for three reasons. First, the focus on publicly traded US companies allowed me to ensure sufficient biographical transparency over the entire careers of the independent directors and executives investigated in this dissertation. Second, the selected period from 1998 to 2009 covers the years before and after the enactment of the SOX in 2002 and it should thus support the generalizability of my

findings. Third, the sample selection is consistent with related literature in this field of research (cf. Kor & Misangyi, 2008; Li et al., 2010; Tian et al., 2010) and thereby allows for an easier comparison of this dissertation's results. Still, the generalizability of this dissertation's findings may be limited.

Second, like most research on CEO succession, I based this dissertation on the empirical analysis of archival data rather than direct observation of the underlying processes of CEO succession. For example, in the first self-contained study, I could not explicitly measure the importance of financial contingencies for the organization. Instead, I used financial leverage, dividend policy and unrelated diversification to proxy the importance of financial contingencies. Similarly, I did not directly observe the firm-specific board capital of independent directors. Rather, I used the number and tenure of independent directors to proxy firm-specific board capital. Finally, in the third self-contained study, I could not directly measure social influence attempts within the TMT. As a substitute, I used demographic differences as a proxy for social influence attempts. While the results supported my theoretical arguments, field research would be helpful in corroborating the findings of this dissertation.

Third, this dissertation builds on the categorization of the demographic attributes of top executives and independent directors. Since the demographic information employed in this dissertation was gathered from publicly available sources and was not provided by the individuals themselves, the categorization of the demographic attributes has a degree of subjectivity (Westphal & Zajac, 1995) and may include errors. In order to mitigate this limitation, whenever possible I used information from more than one data source to categorize demographic attributes. Cases where no demographic categorization was possible were treated as missing values.

6 Future research

The findings reported in this dissertation have important implications for future research on CEO succession, boards of directors and TMTs.

A fruitful avenue for future research would be to investigate the conditions that facilitate and promote a successful collaboration between new CEOs and independent directors in a CEO selection context. This dissertation alludes to this research direction by providing empirical evidence of the role of the collaboration between CEOs and independent directors for the selection of new CEOs and for the mitigation of the firm-specific human and social capital disadvantages of outside CEOs. In a similar vein, research has highlighted that the collaboration of CEOs and independent directors can affect strategic choices and outcomes (Jensen & Zajac, 2004; Kor & Misangyi, 2008). Nevertheless, little is known about the factors and contexts that contribute to an efficient and effective collaboration between CEOs and independent directors. For example, future research could investigate how other board characteristics, such as the experience of independent directors with the CEO's role or their co-working experience (Tian et al., 2010), affect the success of the collaboration between the new CEO and the independent directors. Furthermore, qualitative research could observe how new CEOs and independent directors interact and could thereby enhance our understanding of their collaboration.

Within the broader CEO succession process, there remain unexplored issues. This dissertation focused on the importance of the collaboration between CEOs and independent directors for the selection of new CEOs and its consequences. However, I did not consider the monitoring role of independent directors that could ultimately trigger a CEO dismissal decision. Instead of viewing collaboration and monitoring as two opposing approaches to corporate governance, it would be interesting to see how independent directors can balance both tasks (Beatty & Zajac, 1994; Westphal, 1998, 1999; Zajac & Westphal, 1994). Related research has presented some theoretical considerations on the possibility of integrating the two approaches (Hillman & Dalziel, 2003; Sundaramurthy & Lewis, 2003). However, little is known about the attributes and contexts that help independent directors achieve effectiveness in both roles. For example, future research could explore the board incentives that may strengthen the relationship between the independent directors' knowledge, skills and abilities and their effectiveness in collaborating with and monitoring the CEO. Alternatively, future

research could investigate the marginal effects of collaboration and monitoring on firm performance and explore which is more important in specific contexts. For instance, firms operating in dynamic markets may need to place considerable focus on the collaboration between the CEO and independent directors.

It would also be interesting to further investigate the social dynamics between the CEO and other TMT members. This dissertation focused on these dynamics by presenting empirical evidence on the role of demographic differences for social influence attempts between the CEO and the CFO as one key member of the TMT. Similarly, research has investigated the role of demographic differences for conflict (Knight et al., 1999), slow competitive responses (Hambrick et al., 1996) and negative firm performance (Simons, Pelled, & Smith, 1999). However, a broad research stream has also focused on the benefits of demographic differences, including strengthened innovativeness (Bantel & Jackson, 1989), improved strategy development (Bantel, 1993) and more aggressive responses to competitive threats (Hambrick et al., 1996). Although various researchers have presented attempts to reconcile the different implications of demographic differences on social dynamics within management teams (e.g., Bunderson, 2003; Pelled et al., 1999), I echo recent calls for more process-oriented research on the social dynamics between the CEO and other TMT members (Pelled et al., 1999; Van Knippenberg, De Dreu, & Homan, 2004), because this focus will improve our understanding of the effects demographic differences can have. Moreover, future research could investigate other outcomes of social dynamics within the TMT, such as turnover or commitment.

Finally, several interesting aspects for future research might emerge from a more comprehensive investigation of recent corporate governance reforms (such as the SOX) that seek to restore investor confidence in response to a wave of corporate scandals in the past decade. This dissertation alludes to these governance reforms in the third self-contained study, which investigates the effect of social dynamics between CEOs and CFOs on the effectiveness of internal controls over financial reporting. While recent literature has investigated the effect of these corporate governance reforms on the selection and qualifications of newly selected CFOs (Li et al., 2010), little is known

about their effect on the selection of new CEOs or independent directors. Similarly, to my knowledge there is no evidence on if and how the increased requirements for the participation of independent directors on the board of directors and its key committees (Duchin, Matsusaka, & Ozbas, 2010) have affected the collaboration between independent directors and the TMT.

7 Conclusion

In conclusion, this dissertation develops theory and provides supportive empirical evidence on CEO selection determinants and consequences. By considering the importance of interdependencies between the CEO and board of directors, on the one hand, and the CEO and the TMT, on the other, it provides a more comprehensive picture of CEO selection. Regarding the interdependencies between the board of directors and the CEO, this dissertation suggests that collaboration is of substantial importance for CEO selection determinants and consequences. Regarding the interdependencies between the CEO and the TMT, this dissertation highlights the importance of social dynamics with other TMT members for CEO selection consequences. As noted by Kesner and Sebor (1994:327) “when it comes to executive succession, there is little that we know convincingly, much that we do not know because of mixed results and even more that we have not yet studied”. I hope that this dissertation will help improve our understanding of the complex issue of CEO selection and inspire future research in this field.

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