



Balancing control and delegation: the moderating influence of managerial discretion on performance effects of board monitoring and CEO human capital

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Published online: 29 June 2018

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Abstract

Building on research within corporate governance and strategic management, this paper explores how managerial discretion stemming from managerial task environment influences the balance between controlling and enabling managerial decision-making. Two sets of alternative hypotheses about the moderating effects of managerial discretion on the performance effects of board monitoring and CEO human capital were formulated. The results indicate partial support for governance-driven explanation showing that the association between board monitoring and market-based performance is strongest in environments characterized by high levels of managerial discretion. The findings also show that CEO human capital is positively associated with market-based performance in low-discretion environments, while in high-discretion environments this relationship turns negative. The central contribution of this paper is to demonstrate that managerial discretion is a useful tool to explain the balance between controlling and enabling managerial decision making.

Keywords Corporate governance · Board of directors · Managerial discretion · CEO

1 Introduction

Corporate executives have been the focus of research within the fields of corporate governance (Bebchuk et al. 2002; Daily et al. 2003; Weisbach 1988) and strategic management (Finkelstein and Hambrick 1990; Hambrick and Finkelstein 1987; Hambrick et al. 2005), albeit from somewhat different perspectives. The corporate governance perspective, grounded within the agency theory (Jensen and Meckling 1976), has focused on managerial behavior in relation to the decision control function, assuring the alignment of managerial interests with

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shareholder interests. On the other hand, the strategic management perspective, grounded within the upper echelon theory (Hambrick and Mason 1984), has chiefly addressed the decision management function, examining how executives adapt their firms to external environments. Each of the two research streams has been evolving largely independently of the other (Capasso and Dagnino 2014; Umans and Smith 2013). This artificial separation has obscured a potentially fertile area of development for a more comprehensive understanding of the balance between control and delegation in corporate governance practices.

The balance between control and delegation is defined through two central actors within a corporation: those who undertake decisions, namely professional managers, and those who control those decisions, the boards of directors (Fama and Jensen 1983; Finkelstein and Hambrick 1996). These two forces constitute the key determinants of corporate survival (Monks and Minow 1991): the strategic aspect related to value creation achieved through delegation, represented by executives; and the governance aspect, related to accountability, represented by the board (Daily et al. 2003). This study focuses on how and when board monitoring and CEO characteristics affect organizational performance.

The board of directors is one of the central governance mechanisms that provides the CEO with a mandate to act (Hutzschenreuter et al. 2012; Van den Berghe and Baelden 2003). Based on the corporate governance perspective, effective monitoring increases shareholder value through limiting managerial opportunism (Fama 1980; Jensen and Meckling 1976). On the other hand, strategic management scholars have brought to attention the indirect effects of board monitoring on a firm's strategic flexibility, questioning its benefits in certain environments, for example under high product market competition (Randøy and Jenssen 2004) or in the context of family firms (Chen and Nowland 2010). Past research on how boards of directors affect organizational outcomes, dominated by the agency theory, has indicated the presence of mixed and inconsistent results (for reviews see Dalton et al. 1998, 1999; Johnson et al. 1996). Today, when board monitoring is being increasingly promoted and more and more boards strive for greater independence in their composition (Johanson and Østergren 2010; Westphal and Zajac 1997), it is important to understand under which conditions it can be most beneficial for a firm.

CEO characteristics constitute the second aspect of corporate survival, as the CEO is the central agent responsible for undertaking and executing strategic decisions (Hambrick and Finkelstein 1987; Mintzberg 1973). CEO human capital, which can be broadly defined as individual expertise, knowledge, reputation and skills (Becker 1964; Coleman 1988) is one of the key personal attributes defining managerial strategic choices (Hambrick and Mason 1984). Previous research has shown that CEO human capital can have both a positive and a negative influence on organizational outcomes. On one hand, CEO human capital has served as a valuable resource indicating one's professional competence and managerial talent (Castanias and Helfat 1991; Khurana 2001). On the other hand, the positive effects of CEO human capital may be crowded out by opportunistic use of authority that comes with it, leading to entrenchment and "stale in the saddle" problems (Miller 1991). More recent studies have pointed out the complexity of the phenomenon, suggesting that

the relationship between CEO human capital and firm performance may go beyond simple direct effects (Simsek 2007).

To advance the understanding of the balance between controlling and enabling managerial decision making, this paper explores the concept of managerial discretion (Hambrick and Finkelstein 1987; Wangrow et al. 2015) at the environmental level. Environmental discretion refers to latitude of decision-making choices stemming from executives' task environment. In environments characterized by the presence of high discretion, executives are assumed to have a strong influence on firm outcomes. Correspondingly, in environments with low levels of managerial discretion, executives' ability to undertake strategic decisions is assumed to be constrained. Environmental discretion is particularly important for exploring the effects of the board and the CEO on organizational outcomes as it constitutes a neutral concept—that is, when executives are provided with discretion they may use their influence both for the good and to the detriment of their corporations (Hambrick 2007). This implies that, although high-discretion environments allow firms to fully capitalize on executives' professional talents, these may come at the cost of managerial opportunism.

Given the neutrality of the concept, two alternative hypotheses have been developed to explain performance effects of board monitoring and CEO human capital under different contingencies of managerial task environment. The governance-driven explanation suggests that discretion available to executives in their task environments needs to be limited through the use of governance mechanisms. Alternatively, a strategy-driven explanation argues that the greater the environmental discretion, the greater the performance benefits associated with executives' decision-making power will be. The results of this study provide partial support to the governance-driven explanation, showing that board monitoring has a stronger positive effect on market performance in environments with high levels of managerial discretion. Furthermore, the results show that although the CEO human capital is positively related to firm market performance under low levels of managerial discretion, this relationship turns negative as discretion increases. These findings signify how discretion available to managers in their task environment manifests itself on the influence of key strategic actors in the organization—the boards and the CEO—enriching our understanding of the corporate governance relationships.

The remainder of the paper is organized as follows. The next section presents a review of the literature and the development of the hypotheses. Next follows a description of the methodological approach, data and variables, and the presentation of empirical results. The final section presents the main conclusions and theoretical and practical implications of the study, as well as directions for future research.

2 Theory and hypotheses

Since its introduction by Hambrick and Finkelstein (1987, p. 369) the concept of managerial discretion has been evolving in the field of strategic management (Wangrow et al. 2015). Managerial discretion was used in numerous strategy studies in order to explain a wide array of organizational outcomes including

executive turnover (Shen and Cho 2005), CEO compensation (Finkelstein 2009; Finkelstein and Boyd 1998), strategic orientation (Rajagopalan and Finkelstein 1992), and managers' ethical presuppositions when making strategic decisions (Key 2002). According to this view, when provided with discretion professional managers may then engage in the development of their firms, for example by pursuing the course of strategy diversification (Lane et al. 1998; Misangyi 2002).

Managerial discretion has also been discussed in the field of corporate governance research (Fama and Jensen 1983; Williamson 1963). In this stream of literature discretion has been largely viewed as a gray area where managers may engage in opportunistic behavior at the expense of shareholder capital, thus adversely affecting the agency costs of a firm (Shleifer and Vishny 1997). Studies within the corporate governance perspective have shown that managers provided with discretion may not necessarily use it in the interest of their firms, but instead pursue their private goals, such as unjustified asset selling practices (Lang et al. 1995), engaging in unrelated diversification (Tosi and Gomez-Mejia 1989), over- and under-investment (Stulz 1990), overpricing a portion of abnormal accruals (Xie 2001), and influencing bonus pool allocation (Bailey et al. 2011). These opportunistic actions result in agency costs, ultimately borne by the shareholders. Consequently, the central focus of governance literature was on how to minimize the costs of managerial opportunism arising from managerial discretion (Fama 1980; Jensen and Meckling 1976).

The two perspectives, one emphasizing enabling managers to capitalize on existing strategic opportunities while the other emphasized control over managerial self-interest, outline different views on the influences of the central actors within the firm—the board and the CEO—under different levels of managerial discretion. This study applies the two competing views to derive propositions of expected moderating effects of managerial discretion on the performance effects of board monitoring and CEO human capital. Figure 1 illustrates the divergent perspectives on the moderating influence of managerial discretion on the performance effects of board monitoring and CEO human capital. While both actors are expected to have a positive direct influence on firm performance—the board through the reduction of agency costs and the CEO by providing the firm with managerial talent—their influence will be moderated by the nature of managerial task environment and specifically by the level of managerial discretion. The next

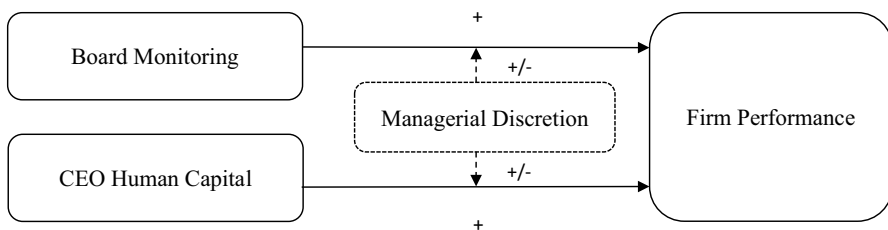


Fig. 1 Performance effects of board monitoring and CEO human capital under different contingencies of managerial discretion

sections develop arguments for the two competing hypotheses about the role of managerial discretion in the relationship between board monitoring, CEO human capital and organizational performance.

2.1 Moderating role of managerial discretion: a governance-driven explanation of board monitoring effects on organizational outcomes

Agency theorists place the central focus on the function of the board of directors as being an internal control mechanism monitoring managerial behavior (Fama 1980). Board monitoring can be defined as controlling action exercised, on behalf of the principal, through direct and indirect observation of the agent's behavior (Jensen and Meckling 1976). Based on this perspective, environments where managers have higher levels of managerial discretion may provide more opportunities to misuse authority and autonomy delegated to them, ultimately leading to greater agency costs. As the risks of agency costs increase, effective board monitoring therefore becomes especially important in high-discretion environments.

Previous research has proposed that, when managers are provided with discretion, the likelihood that they will use it opportunistically increases. In support of this, Bailey et al. (2011) empirically demonstrated that managers responsible for bonus pool allocation are more prone to act in their own self-interest when given full discretion. Simultaneously, this negative effect is mitigated when discretion is limited due to the presence of governance mechanisms. Consequently, firms where managers possess a large scope of discretion are in need of stronger internal governance mechanisms (Miller 2011). In congruence with these results, a study by Agarwal et al. (2009) provided support to the notion that a combination of high levels of managerial discretion and strong governance mechanisms leads to superior performance. The two factors are viewed as complementary, highlighting the importance of governance mechanisms aimed to align managerial objectives with shareholder objectives.

In line with these arguments, board monitoring may become an important governance mechanism in balancing the discretion delegated to managers (Jonnergård and Stafsudd 2011). Effective board monitoring may reduce agency costs by limiting managerial opportunism (Hambrick et al. 2015). In environments characterized by high discretion where managerial strategic decisions tend to have a strong impact on organizational outcomes, active involvement by the board in financial and strategic control (Baysinger and Hoskinson 1990) may prevent significant failures arising from the misuse of discretion delegated to managers.

The dot-com bubble of the early 2000s offers empirical examples in which lack of constraints on managerial opportunism in high-discretion environments led to destruction of shareholder value. Although executives of internet startups were hailed as visionaries and business heroes, the board governance practices in dot-com business appeared to lag behind. On the one hand, the boards of these firms were generally less independent, while on the other hand directors lacked competence in newly emerging digital business technologies (Finkelstein 2001). European online clothing retailer Boo.com provides an interesting illustration of how weak

monitoring by the board and lack of directors' competence to evaluate managerial decisions in the presence of high environmental discretion led to the delisting of the corporation. As a zingy startup in 1998, Boo.com managed to raise significant capital, attracting numerous high-profile investors including Benetton, LVMH, JP Morgan and the Goldman Sachs Group (Malmsten et al. 2001). Despite Boo.com's board boasting a wide range of experience from successful retailers, company management controlled the majority of the board seats. Although directors were knowledgeable in conventional retail, none of them had significant competence in digital business. Heavy spending along with a series of executive missteps quickly brought the firm to bankruptcy. In just 18 months the firm was delisted; \$135 million of equity disappeared with it (Malmsten et al. 2001).

In contrast to high-discretion environments, contexts where managerial ability to influence organizational outcomes is significantly constrained may not require active monitoring by the board. Executives operating in environments with low levels of discretion, such as public utilities and natural resources, tend to face significant regulatory and normative constraints that limit their ability to influence organizational outcomes (Hambrick and Finkelstein 1987). Ability to benchmark against industry standards and norms makes it easier for directors to monitor performance. Thus, board monitoring efforts may not be reflected in performance outcomes under low levels of managerial discretion. Based on these arguments, the following hypothesis is derived:

H1a The interaction of board monitoring and managerial discretion is positively related to firm financial performance.

2.2 Moderating role of managerial discretion: a strategy-driven explanation of board monitoring effects on organizational outcomes

Following previous arguments, board monitoring is assumed to decrease the agency costs arising from managerial self-interest. However, one may question whether the minimization of agency costs would always lead to profit maximization. Motivated by this question, an alternative rationale accounting for the strategic consequences of board monitoring can be proposed. Based on this view, the negative strategic effects of board monitoring are likely to be most pronounced when managerial discretion is high. Simultaneously, board monitoring is expected to have the strongest positive performance effects under a low level of managerial discretion.

Boards emphasizing monitoring may stress the independence of the directors. However, more independent boards may have limited access to the necessary information about the firm in order to provide strategic advice and to evaluate managerial actions (Baysinger and Hoskinson 1990). Information received by directors is provided mainly by the management and mostly concerns short-term performance, with little reference to long-term financial and non-financial trends (Lipton and Lorsch 1992). The information-processing ability of the board (Boivie et al. 2016) becomes especially relevant under high levels of managerial discretion due to the complexity of information characterizing strategic decision-making processes.

Such environments make monitoring by the board more difficult to implement. Tian (2014) argued that in strategic environments where the board cannot interpret the outside information as well as the CEO does, active board monitoring may not produce an accurate evaluation of the CEO's efforts. Knowing that the board is not able to monitor the CEO, the latter may decrease his or her effort to improve performance.

In line with this, boards emphasizing the monitoring function may send signals to managers that their information may be used against them, indicating distrust in managerial actions. Furthermore, the salience of the monitoring function by the board may lead to categorization and the creation of an "us versus them" perspective toward the board members. This social categorization process between the board and the managers may lead to the formation of a negative attitude toward outsiders (Miller and Brewer 1996), accentuating the agency conflict even further, demotivating managers to maximize shareholder value and even leading to higher engagement in opportunistic actions (Argyris 1964). This in turn may undermine the formation of mutual trust and social cohesion between managers and the board, thus limiting the possibility of alliance formation and ultimately reducing collaboration between the two groups of actors (Gulati and Westphal 1999; Perrow 1986; Sundaramurthy and Lewis 2003).

A case of Dell's successful bid for managerial buyout resonates with the logic of costs arising from extensive monitoring. The founder Michael Dell explained his decision to take Dell private in 2014 as a means to allow the firm to execute his long-term innovation strategy. In his commentary in the *Wall Street Journal*, Dell (2014) stated: "Privatization has unleashed the passion of our team members who have the freedom to focus first on innovating for customers in a way that was not always possible when striving to meet the quarterly demands of Wall Street." This statement points out the short-term performance sensitivity of the capital markets which ultimately spans toward corporate boards. Executives of large public firms like Dell face increasing scrutiny from shareholders and are discouraged from adopting norm-divergent strategies as these do not comply with the board's governance and risk agenda (Subramanian 2015).

While the benefits from active monitoring may decrease in high-discretion environments, the need for monitoring may be also less pronounced due to disciplining forces of market competition. Hambrick and Finkelstein (1987) viewed competitive market structure as a source of managerial discretion. Shleifer and Vishny (1997) argued that a manager's ability to engage in expropriation is constrained by high product market competition, thus making the conflict of interest between managers and shareholders less pronounced. Consequently, active board monitoring under highly competitive markets may become redundant, since product market competition is assumed to reduce the agency costs of managerial opportunism. In support of this, Faleye, Hoitash and Hoitash (2011) argued that the benefits of vigilant board monitoring can be outweighed by negative strategic effects, when corporate innovation and acquisition constitute significant value drivers as well as when a firm's operations are highly complex. This in turn suggests that vigilant board monitoring under high managerial discretion is redundant and costly, resulting in inhibited strategic outcomes for a firm and ultimately decreasing the firm's value.

In contrast, the positive performance effects of board monitoring may be stronger under low levels of firm discretion. As firms with low discretion operate in strategic environments that are more predictable and less dynamic (Hambrick and Finkelstein 1987), board monitoring can be performed more accurately. In such environments, managers may not have an ability to significantly improve firm performance as the latitude of their actions is constrained; they can nevertheless have opportunities for entrenchment and opportunism. Thus, vigilant monitoring by the board becomes imperative for preventing managerial opportunism under low firm discretion.

Taken together, this perspective suggests that negative strategic effects arising from board monitoring in high-discretion environments may outweigh the benefits associated with the reduction of agency costs. Likewise, under a low level of managerial discretion, where strategic decision making tends to be considerably constrained, the positive performance effects of board monitoring are likely to be more pronounced as the negative strategic consequences of board monitoring are at their minimum. Based on these arguments, the following hypothesis is derived:

H1b The interaction of board monitoring and managerial discretion is negatively related to firm financial performance.

2.3 Moderating role of managerial discretion: a governance explanation of CEO human capital and its effects on organizational outcomes

Managerial talent constitutes one of the benefits derived from the separation between management and control in publicly listed corporations (Fama and Jensen 1983). The CEO is a central actor within the firm, as he or she occupies a position of unique influence and possesses distinctive qualities that together enable key strategic decisions to be undertaken (Daily and Johnson 1997). Based on the corporate governance perspective grounded in agency theory, the benefits associated with CEO human capital may be crowded out by the costs associated with CEO entrenchment (Miller 1991; Hambrick et al. 1993). This can be especially strong in environments characterized by high levels of managerial discretion.

Human capital provides CEOs with a valuable resource, enhancing their authority and power (Daily and Johnson 2001). According to prospect theory (Tversky and Kahneman 1991), knowing the value of their human capital, CEOs may become more risk averse as, in case of mistakes, they have more to lose. Previous research has consistently shown that CEOs with a rich experience and power base accumulated during their career are more likely to commit to the existing paradigm (Miller 1991). This behavior is facilitated by the expectations from the stakeholders. In support of that, Grossman and Cannella (2006) found that CEOs who also have a board chair position receive higher compensation if they exhibit strategic persistence. Powerful executives with greater human capital assume high responsibility for their decisions and therefore tend to be more persistent with the chosen course of action (Staw 1976). CEOs' commitment to an established strategy can remain even if the strategy is shown to be ineffective (Ingram and Bhardwaj 1998).

If the firm's strategic environment is stable, predictable, and presents only a limited number of market opportunities, strategic persistence and the unity of command by the CEO may have a positive effect on firm value. CEOs are often selected based on the fit between their human capital, the organization and its external environment (Guthrie and Datta 1997). CEOs' past success formula may still be applicable to the present strategic environment, and their accumulated expertise can increase firm value. In line with this, to support their authority and to reduce uncertainty in the decision-making process, CEOs bound to the legacy of their past career success tend to form their top management teams, based on their own preferences, with other executives sharing similar profiles (Finkelstein and Hambrick 1990; Haleblian and Finkelstein 1993).

However, high-discretion environments present numerous strategic options and impose considerably larger information complexity (Hambrick and Finkelstein 1987). Fierce competition puts pressure on executives to undertake innovative strategic decisions in order to stay competitive in the market. Thus, the ability of executives to process large amounts of new information is crucial for strategic environments characterized by a high level of managerial discretion (Håkonsson 2006). Strong reputation and the legacy of past success may force CEOs with high human capital to reduce risks, limiting their strategic convictions to those that have been successful in the past, even if they are no longer applicable to the present environment.

While the ability to process information is reduced, the commitment to inefficient choices may escalate. High-profile CEOs may effectively leverage their human capital to accumulate influence on strategic decision making. The concentration of decision-making power in the hands of an individual CEO may further limit managerial information processing capacity (Haleblian and Finkelstein 1993). Escalation of commitment can be increased in the presence of high-profile CEOs as other organizational members may feel uncomfortable criticizing or questioning their proposed courses of action (Finkelstein and Hambrick 1989). Thus, the main emphasis may be put on supporting decisions rather than exploring alternative solutions (Maier and Hoffman 1960). Furthermore, CEOs with higher influence in the organization may be able to restrict information available to other organizational actors participating in the strategic decision-making process, such as the board of directors or other members of the management team (Finkelstein and Hambrick 1990). CEOs may also have a strong influence on how information is interpreted, controlling the strategic agenda and disregarding interpretations that contradict their own vision.

Visible examples of escalating commitment in IT projects point toward the severity of this problem in high-discretion environments. For instance, Avis Europe canceled a major ERM system project after investing more than \$55 million in it (Keil and Mähring 2010). Complexity of information and uncertainty characterizing high-discretion environments may escalate a firm's commitment to previous courses of action, increasing the likelihood of being trapped in them.

Thus, while CEO human capital may facilitate the decision-making process under low managerial discretion, the entrenchment that comes along with it may hinder the strategic decision-making process under a high level of environmental discretion, offsetting the potential benefits derived from CEO human capital. Consequently, it

can be proposed that the latitude of actions available to top executives—the degree of managerial discretion—may have a negative moderating effect on the relationship between CEO human capital and the firm's financial performance. Based on these arguments, the following hypothesis is derived:

H2a The interaction of CEO human capital and managerial discretion is negatively related to firm financial performance.

2.4 Moderating role of managerial discretion: a strategy explanation of CEO human capital and its effects on organizational outcomes

An alternative view of how managerial discretion at environment level influences the relationship between CEO human capital and firm performance derives from strategic management literature. Based on the strategic choice perspective, a CEO requires discretion in order to influence firm outcomes (Hambrick and Finkelstein 1987). When managerial discretion is constrained, organizational outcomes are likely to be less affected by executives' predispositions, while more influence could be attributed to environmental and organizational factors (Hambrick and Finkelstein 1987). Consequently, the effects of CEO human capital on firm performance are expected to be stronger in environments with a high latitude of managerial actions.

CEO human capital constitutes an important resource for a firm (Becker 1964). The experience of dealing with risky situations and the ability to evaluate future risks developed in the course of a CEO career create a unique body of idiosyncratic and tacit knowledge (Dew et al. 2009). These heuristics developed through practice constitute an important element in coping with uncertainty (Sarasvathy 2001). High-discretion environments, where many strategic alternatives are present, increase information complexity and uncertainty faced by managers. The use of simple heuristics can increase the speed and quality of strategic decisions (Artinger et al. 2015). Leveraging individual human capital involving executives' previous experiences and knowledge about the firm and the industry becomes especially important in such environments. Consequently, when provided with extensive discretion, CEOs with a high human capital may be able to recognize and seize profitable strategic opportunities better than CEOs with limited human capital.

CEO human capital also involves strong reputation and expertise. This type of capital is assumed to enhance CEO authority, establishing unity of command in the organization and facilitating the speed of strategic decision making. Under a high level of managerial discretion, these skills and abilities of a CEO are likely to have the strongest reflection in organizational outcomes. Simultaneously, under a low level of discretion in their task environments, CEOs may not be able to capitalize on the benefits of their professional expertise as their ability to positively influence organizational outcomes is constrained. In low-discretion environments the pressure is put on efficiency. For example, an empirical study by Salanick and Pfeffer revealed that the influence of city mayors, who generally have very little discretion, accounts for only about 10% of the total variance. The authors argued that the ability of mayors to influence budget expenditures and income is severely constrained by a

wide variety of external forces, with the size of the city being the main determinant of city outcomes. In such environments, characterized by greater predictability and stability, the professional talent and skills of managers may not have a strong reflection on firm value, as the firm's outcomes will be mainly driven by the forces of its external environment (Hambrick and Finkelstein 1987).

To summarize, managers may not be able to capitalize on their human capital unless provided with environmental discretion. In environments characterized by high levels of managerial discretion, the CEO may effectively leverage his or her human capital, capitalizing upon accumulated expertise, knowledge, reputation and skills. Consequently, it can be proposed that the benefits from CEO human capital will be most pronounced in high-discretion environments; alternatively, under low managerial discretion CEO human capital may not be able to generate benefits for organizations. Based on these arguments, the following hypothesis is derived:

H2b The interaction of CEO human capital and managerial discretion is positively related to firm financial performance.

3 Method

3.1 Sample and data collection

The hypotheses were tested with data on firms listed on the Swedish Stock Exchange for the years 2010, 2011 and 2012. The sample was restricted to a set of firms for which full information could be obtained. The final sample consists of 374 firm-year observations of which 127 were from 2010, 126 from 2011 and 121 were from 2012. The choice to limit the study to include only listed corporations provided more opportunities to access data, because data on boards of directors and managers in privately held firms are sparse due to the different types of information disclosure requirements when compared to listed firms. Data on boards and CEOs were hand collected from 750 annual reports. The financial performance data were collected from ORBIS research database. The information on CEO human capital (CEO reputation proxy) was collected from the database Retriever Media Archive.

Historically, Swedish firms have been highly internationalized firms competing on the global market (Carlsson 2007; Jansson and Larsson-Olaison 2010). Orientation to a global market and competitive demands associated with it imply that managerial strategic decision making becomes of utmost importance for the firm's ability to adapt to the forces of its external environment. In addition, responding to pressure to adapt to the best global corporate governance practices becomes crucial for Swedish corporations in attracting foreign capital (Johanson and Østergren 2010). In light of recent reforms toward a policy of increased board monitoring (Adams et al. 2010; Finegold et al. 2007), Swedish boards have responded to global changes by increasing the independence of directors (Jonnergård and Stafsudd 2011). Consequently, the Swedish context, where both enabling managers to respond to global competition and adapting boards in response to the global movement in corporate

governance are of paramount importance, provides a suitable setting to examine the effects of both CEO and board characteristics on firm outcomes.

3.2 Measures and controls

3.2.1 Dependent variable

Firm performance was operationalized through both market-based and accounting-based measures, each reflecting different dimensions of firm financial performance (Gentry and Shen 2010). It is generally assumed that the market-based performance measures incorporate expectations about a firm's long-term ability to create value in the future, while accounting-based performance measures, in contrast, reflect a firm's legacy of the past and short-term performance (Hoskisson et al. 1994). Market-based performance was operationalized through Tobin's Q and market capitalization. Consistent with previous studies (Fama and French 1992), the proxy of Tobin's Q was calculated as a market-to-book ratio dividing the firm's market equity by the firm's total assets. In addition, I calculated Tobin's Q as the market value of equity minus the book value of equity plus total assets divided by total assets. As the correlation between the two measures of Tobin's Q was strong (0.99), I decided to proceed with a market-to-book ratio that had the least number of missing values. Although the value of total assets reflects accounting information, previous research has regarded Tobin's Q as a largely market-based performance measure (Gentry and Shen 2010; Hillman 2005). Two accounting-based indicators were employed in this study, including return on sales (ROA) and return on equity (ROE). These measures have been commonly used in management research (Bigley and Wiersema 2002; Boone et al. 2004). I transformed all measurements using a natural logarithm to reduce skewness and kurtosis.

3.2.2 Independent variables

The independent variables in this study, namely board monitoring and CEO human capital, represent latent constructs, which are problematic to measure directly. Similarly, managerial discretion, the moderating variable that is the essence of this theorization, is a latent construct. In the case where a construct is broad and can be measured in several ways, multiple indicators are recommended (James et al. 1982). Past research has used several quantitative measures to assess each of the three constructs. However, including all proxy variables in one regression model may lead to a collinearity problem, as some of the indicators are likely to be correlated. A collinearity problem can in turn lead to instability concerning parameter estimation and the levels of significance. Therefore, some researchers have used composite indexes to capture complex multidimensional constructs such as board monitoring (Cheng et al. 2012), CEO characteristics (Haleblian and Finkelstein 1993; Zhu and Westphal 2014), and managerial discretion (Waldron et al. 2013). In this study three composite indexes were constructed: a board monitoring index, a CEO human capital index and a managerial discretion index. The indexes were calculated as the sum of

the standardized scores ($\bar{x}=0$, s.d. = 1) for each proxy measure included in the construct. A comparison of indexes by a more traditional method of discrete principal components revealed consistent results for all three independent variables, namely board monitoring, CEO human capital and managerial discretion.

A context-specific composite index of board monitoring was developed based on previous research (Cheng et al. 2012) combining five indicators: (1) board size, (2) the number of board committees, (3) the proportion of independent directors, (4) the proportion of international directors, and (5) the amount of directors' compensation. Past research has claimed that larger boards have larger information processing capability that can facilitate their monitoring function (Lehn et al. 2009) and that larger boards may also reduce the likelihood of CEO domination over the board's decisions, thus enhancing their ability to monitor managerial performance (Pearce and Zahra 1991). Board size was calculated as the total number of directors on the board, excluding employee representatives. With regard to the second indicator of board monitoring, previous research suggested that the formation of board committees, such as an audit or nominations committee consisting of directors, independent from management, facilitates the monitoring function by the board of directors (Klein 2002; Pincus et al. 1989; Collier 1993). I therefore included the number of board committees in our composite index. The inclusion of independent directors has also been argued to constitute effective monitoring (Weisbach 1988; Fama and Jensen 1983). Independent directors can act as monitors of managers since they are able to make an unbiased assessment of managerial performance (Fama and Jensen 1983). I included the percentage of independent directors as the third proxy in the composite index, calculating it as the number of directors independent from both the company and major shareholders, divided by the size of the board. The fourth proxy measure of board monitoring included the percentage of international directors on the board. Swedish firms oriented to global markets may need additional information in order to evaluate managerial decision making in distinct institutional contexts. Thus extending the pool of potential candidates through recruiting foreign directors can contribute to more effective information processing on the board regarding strategic decisions concerning global markets, which is necessary for effective monitoring (Van den Bergh and Levrau 2004). Furthermore, the inclusion of international directors on the board can be interpreted as a signal of compliance with global corporate governance practices strengthening investor confidence in the international financial market (Oxelheim and Randøy 2003). The fifth proxy for board monitoring was board compensation. Previous studies suggest that greater compensation provides incentives for board members to exercise stricter board control over managerial decision making (Linn and Park 2005). A logarithm of board total compensation divided by the number of directors was included in the index as a measure of board compensation. Re-estimating the model with slightly different versions of index, for example by excluding some of the proxy measures, did not change the main results.

CEO human capital can derive from multiple sources including CEO expertise, knowledge, reputation and skills (Peng et al. 2015). This construct was operationalized through a composite index of four facets of CEO human capital: CEO tenure, CEO compensation, CEO age and CEO reputation. Although there could be different proxy measures to capture CEO human capital, I advocate the key attributes

suggested in corporate governance research. Previous studies have shown that during the years spent in the position of CEO, individuals accumulate firm-specific human capital (Buchholtz et al. 2003; Vancil 1987). CEO tenure was measured as the number of years since the CEO was appointed to his or her position. According to human capital theory, CEO compensation is a reflection of one's professional competence (Belliveau et al. 1996). Due to managerial labor market competition, CEOs with greater human capital are likely to receive greater compensation than those with less human capital (Murphy and Zábojník 2004). CEO compensation was measured as total compensation, including fixed and variable salary plus monetary benefits. Furthermore, with increasing life and career experience, CEOs are expected to possess more authority and expert power, which in turn enhance CEO human capital. CEO age was measured in years. Finally, CEO reputation also contributes to the building of one's human capital (Liu et al. 2017). CEO reputation was operationalized as the number of times the CEO has been mentioned in the press. A total of 18 information sources in the Swedish press were searched, including business magazines, national radio, news agencies and newspapers. In order to assure that the article mentioned the focal CEO, the article must have also mentioned the name of the company where the CEO has been serving. As a robustness check, the model has been tested with each measure of CEO human capital separately; the results of the analyses were the same as those shown in the final model, except CEO reputation. Alternative index measure of CEO human capital encompassing CEO tenure, CEO compensation and CEO age held results consistent with the final model.

3.2.3 Moderating variable

Managerial discretion was operationalized at the environmental level following Waldron et al. (2013). As strategic opportunities are recognized by the managers and implemented by the firm, using aggregate measures of discretion for each industry would not reflect the discretion level for each individual firm (Finkelstein and Boyd 1998). Hambrick and Finkelstein (1987) argued that managerial discretion is exercised by managers within the firm context. Thus, measuring managerial discretion at firm level over several years allowed us to capture both the strategic flexibility of an individual firm and some of the industry-level dynamics.

Three proxy indicators were used in the index of managerial discretion, namely the degree of firm market growth, demand instability and capital intensity. Previous studies have argued that CEOs will have the greatest discretion in environments characterized by high firm market growth and annual changes in demand (Hambrick and Finkelstein 1987; Waldron et al. 2013). Growing markets present executives with more investment opportunities, which in turn increase not only the scope of possible actions but also the variation of outcomes (Smith and Watts 1992). Unpredictable changes in demand create uncertainty and may require novel strategic responses, thus increasing managerial discretion (Hambrick and Finkelstein 1987). Consistent with past research, market growth was calculated as the average growth in firm sales over 5 years, and the measure for demand instability was calculated as an average standard deviation of the firm's sales growth over 5 years (Hambrick and Finkelstein 1987; Halebian and Finkelstein 1993). In addition, large capital

investments in irreversible assets commit the firm to the chosen course of action, thus capital-intensive firms may constrain CEOs in their strategic choices (Hambrick and Finkelstein 1987; Waldron et al. 2013). To measure capital intensity, I divided the value of net property, plant and equipment by the number of employees, computing the score for five prior years. Since higher capital intensity indicates less discretion, in the index I used a reversed average value of capital intensity scores. R&D intensity was also considered to be included as a measure of industry differentiation, as high investments in business development can increase strategic opportunities for the CEO (Finkelstein 2009; Hambrick and Finkelstein 1987). However, due to a large proportion of missing data (45%), this measure was omitted in the computation of the index. The results of the model with all four proxy measures, including R&D intensity, were consistent with the final model.

3.2.4 Control variables

Corporate performance can be affected by a number of firm-, board- and CEO-specific characteristics. In order to reduce the omitted variable bias, a number of control variables were included. The influence of firm-specific characteristics was controlled by including the following variables: firm size (Dalton et al. 1999; Fama and French 1992), previous performance (Haveman 1992), and firm age (Zahra and Pearce 1989; Lipton and Lorsch 1992; Huse 2000). I also controlled for ownership concentration (Shleifer and Vishny 1986) measured as a Herfindahl index, which included ownership measured as voting rights of the five largest owners. In Sweden, corporations have dual class shares, where voting rights (number of A class shares) may assume larger control rights than ordinary shares (B class). Voting rights were thus counted as an indication of control over managerial behavior that may lead to increased performance due to a decrease in agency costs (Collin et al. 2016; Oxelheim and Clarkson 2015). The influence of the industrial sector and year effects were accounted for by including dummy variables (Hoskisson 1987; Volonte and Gantenbein 2016). Industry effects were controlled for using the Stockholm Stock Exchange industry categories classification, distinguishing among the following sectors: oil and gas, materials, industrials, consumer goods, consumer services, health care, telecom, utilities, technology and financials. Due to missing data, three sectors from this 10-category classification were not included, namely oil and gas, utilities and financials.

Past research within the resource-based perspective has argued that besides monitoring, resource provision by the board can be positively related to firm performance (Hillman and Dalziel 2003; Volonte and Gantenbein 2016). In order to account for the intensity of board activity and the service provision, additional controls were included, namely the number of directors' professional appointments (Field et al. 2013), directors' tenure (Celikyurt et al. 2012) and the number of board meetings (Vafeas 1999). To measure director interlocks, I used the average number of board appointments per director on the board. Directors' tenure was measured as the average number of years served by all directors on the board. Previous research has also shown that CEO power and performance are interrelated (Daily and Johnson 1997). A dummy of the CEO presence on the board was included as a control variable.

4 Analyses and results

4.1 Model specification

Data used in the present study consist of three unbalanced panels. In this case OLS regression may produce correlated error terms, inflated t-statistics and underestimated standard errors (Sanders and Hambrick 2007). The Hausman test is often recommended for choosing the appropriate model of panel data analysis. However, that test has considerable limitations, namely it assumes heteroscedasticity and the absence of serial autocorrelation (Clark and Linzer 2015). The presence of heteroscedasticity was found in the sample using a modified Wald statistic for group-wise heteroscedasticity in the residuals. The test for autocorrelation also indicated that the data suffered from serial correlation of residuals. Thus, the results from the Hausman test would be inadequate to provide guidance in the choice between the fixed and random effects models. An alternative to the Hausman test that relaxes the assumptions of heteroscedasticity and autocorrelation is the Mundlak test (1978). The Mundlak approach estimates the random effects of regression adding group means of time-varying regressors in the model (Debarys 2012). I ran the Mundlak regression by adding the means of time-variant regressors including the board, the CEO human capital, and managerial discretion indexes, the interaction terms and Tobin's Q. As a large part of firm performance is attributed to past performance, a large time-invariant component could be assumed in the control measure of Tobin's Q. Thus I included the percentage of difference in performance and its mean value when conducting the Mundlak test. The results of the Mundlak test show that the null hypothesis cannot be rejected, indicating no systematic differences between within firms and Mundlak regression coefficients ($p=0.16$), indicating that the random effects model is appropriate for estimation of the sample.

The feasible Generalized Squares (FGLS) regression model was used to identify the relationship among board monitoring, CEO human capital and firm financial performance. This model specification is appropriate for this study as it provides reliable estimates in the presence of heteroscedasticity and autocorrelation of residuals (Wooldridge 2002). Fixed-effects models are not suitable when the within-unit sample size is relatively small (Clark and Linzer 2015). The present sample comprises only 3 years of observations (i.e., 2010, 2011, 2012). Thus, given that the variation within each firm is low due to the fact that board and managerial characteristics vary slowly over time, by excluding the between-firm variance from the analysis, I may not have enough information to explain the relationship. In support of this, Zhou (2001) argued that the fixed-effects model relying on within-firm variation may not reveal the relationship between executive attributes and performance, despite the common assumption of the existence of such in the literature. The advantage of the FGLS model is that it accounts for the common unobservable firm-level factors in estimation of within-firm effects (Greene 2011). The following model was used in the analysis:

$$\begin{aligned}
 & \text{Firm Financial Performance}_{i,t+1} \\
 &= \beta_0 + \beta_1 \text{ Board Monitoring Index}_{i,t} + \beta_2 \text{ CEO Human Capital Index}_{i,t} \\
 & \quad + \beta_3 \text{ Managerial Discretion}_{i,t} + \beta_4 \text{ Board Monitoring Index}_{i,t} \\
 & \quad \times \text{ Managerial Discretion}_{i,t} + \beta_5 \text{ CEO Human Capital Index}_{i,t} \\
 & \quad \times \text{ Managerial Discretion}_{i,t} + \sum \text{ Firm Controls}_{i,t} + \sum \text{ Year Dummies}_{i,t} \\
 & \quad + \sum \text{ Industry Dummies}_{i,t} + \varepsilon_{i,t}
 \end{aligned} \tag{1}$$

In expression (1), the dependent variables have been measured 1 year after the independent variables. The coefficients of interactions indicate the impact of managerial discretion available in managerial task environment on performance effects of board monitoring and CEO human capital.

5 Results

Table 1 summarizes descriptive statistics regarding firm characteristics, financial performance, board characteristics, CEO characteristics, and managerial discretion. The number of observations, the mean, median, standard deviation, minimum and maximum values are presented for each variable. One can observe that market-based performance means are relatively stable over the years, while accounting-based performance dropped during 2012. The composite measures have a higher standard deviation, and appear to have a higher variation over the years.

Observing the correlation matrix depicted in Table 2, one can infer that market performance measures (Tobin's Q and market capitalization) are correlated, while only market capitalization is correlated with both accounting-based measures. Board monitoring and CEO human capital are correlated with market capitalization, but are not correlated with Tobin's Q and only partially correlated with accounting-based measures. In addition, CEO human capital and board monitoring are highly correlated, putting us on alert for potential multicollinearity problems.

Table 3 presents the results of my analysis. The four models represent the operationalizations of firm performance including Tobin's Q, market capitalization, ROA and ROE respectively. Model I shows positive direct effects of board monitoring ($p=0.003$) and CEO human capital ($p=0.096$) on Tobin's Q. The interaction term between board monitoring and managerial discretion is significant ($p=0.001$) and positive. The interaction term between CEO human capital and managerial discretion is significant ($p=0.004$) and negative. The results of Model II, which has market capitalization as the dependent variable, are largely in line with the results of Model I. However, the interaction term between board monitoring and managerial discretion is not significant, indicating only partial support for Hypothesis 1a. The results do not hold in Models III and IV, which have accounting-based measures of firm financial performance as dependent variables.

The difference in results between market-based and accounting-based performance measures may not be surprising, given the presence of mixed findings shown

Table 1 Descriptive statistics

Variable	2010, 2011, 2012		2010		2011		2012	
	Mean	Median	SD	Min	Max	Mean	Mean	Mean
<i>Dependent variables</i>								
Tobin's Q ₍₊₁₎	1.244	0.8395	1.426	0.067	10.929	1.172	1.109	1.461
Market capitalization (MSEK) ₍₊₁₎	17,624.450	1419.675	53,333.650	16.730	449,375.40	15,718.740	19,387.230	17,789.040
ROA ₍₊₁₎	3.112	4.860	15.124	-99.140	72.500	3.437	3.513	2.353
ROE ₍₊₁₎	6.308	11.290	30.510	-206.120	156.730	7.193	7.324	4.322
<i>Independent variables</i>								
Board monitoring	-0.033	-0.272	2.691	-5.664	11.023	-0.133	0.170	-0.140
CEO human capital	0.364	0.081	2.550	-3.708	13.8623	0.447	0.513	0.122
Managerial discretion	-0.033	-0.230	1.374	-2.764	9.652	0.252	-0.061	-0.303
<i>Control variables</i>								
Tobin's Q	1.276	0.820	1.771	0.070	22.170	1.686	1.059	1.073
Market capitalization (MSEK)	17,100	1,285,000	52,700	9	432,000	18,200	17,900	15,000
ROA	3.755	5.105	14.846	-93.020	72.500	2.379	5.304	3.587
ROE	7.439	11.870	31.181	-192.650	156.730	4.329	10.681	7.328
Total assets (MSEK)	19,000	1580	54,600	11.500	377,000	17,300	21,100	18,500
Ownership concentration	1531.873	1003.445	1452.171	45.900	6846.100	1563.072	1562.314	1467.428
Firm age	51.762	29	55.109	5	403	49.638	51.373	54.397
Board tenure	5.999	5.290	3.353	0.250	19.170	5.909	5.926	6.170
Board interlocks	3.838	3.710	1.557	0.330	9.430	3.813	3.737	3.967
Board meetings	10.193	10	3.722	5	24	9.984	10.484	10.107
CEO on board	0.463	0	0.499	0	1	0.457	0.492	0.438

Table 2 Correlation data

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
(1) LN Tobin's Q	1.00																		
(2) Market capitalization _(t+1)	0.26	1.00																	
(3) LN ROA _(t+1)	0.05	0.21	1.00																
(4) LN ROE _(t+1)	0.17	0.29	0.84	1.00															
(5) Board monitoring	0.06	0.69	0.07	0.10	1.00														
(6) CEO human capital	0.01	0.59	0.12	0.15	0.40	1.00													
(7) Managerial discretion	0.17	-0.28	-0.10	-0.20	-0.19	-0.21	1.00												
(8) Tobin's Q	0.60	0.09	0.03	0.08	0.01	-0.02	0.29	1.00											
(9) Market capitalization	0.11	0.61	0.09	0.14	0.39	0.39	-0.15	0.06	1.00										
(10) ROA	0.21	0.29	0.35	0.51	0.12	0.15	-0.19	-0.04	0.15	1.00									
(11) ROE	0.15	0.31	0.34	0.49	0.13	0.19	-0.19	-0.12	0.16	0.94	1.00								
(12) LN total assets	-0.20	0.87	0.17	0.20	0.68	0.58	-0.35	-0.20	0.58	0.19	0.24	1.00							
(13) Ownership concentration	-0.13	-0.05	0.07	0.08	-0.25	0.08	-0.17	-0.09	-0.05	0.05	0.02	-0.00	1.00						
(14) Firm age	-0.21	0.31	0.07	0.08	0.20	0.23	-0.27	-0.15	0.12	0.08	0.09	0.41	0.14	1.00					
(15) Board tenure	0.03	0.07	0.17	0.21	-0.15	0.11	-0.16	0.06	-0.03	0.19	0.17	0.05	0.39	0.12	1.00				
(16) Board interlocks	-0.08	0.11	0.08	0.05	0.07	-0.04	-0.13	-0.02	0.04	-0.00	0.00	0.13	0.03	0.11	0.16	1.00			
(17) Board meetings	0.02	0.05	-0.16	-0.18	0.14	-0.09	0.16	0.01	-0.03	-0.18	-0.18	0.05	-0.17	-0.08	-0.33	0.06	1.00		
(18) CEO on board	-0.06	0.37	0.13	0.15	0.23	0.39	-0.16	-0.11	0.18	0.08	0.14	0.39	0.02	0.29	0.19	-0.05	-0.22	1.00	

N=435

Correlations greater than 0.11 are significant at $p < 0.05$

Table 3 Board monitoring CEO human capital and firm financial performance

Independent variables	Prediction	Dependent variable: Tobin's $Q_{(t+1)}$	Dependent variable: market capitalization $_{(t+1)}$	Dependent variable: market ROA $_{(t+1)}$	Dependent variable: ROE $_{(t+1)}$
		(I)	(II)	(III)	(IV)
Prior performance	+	0.278*** (0.021)	0.000*** (0.000)	0.006*** (0.001)	0.001*** (0.000)
Firm age	±	-0.001† (0.001)	-0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)
LN total assets	+	-0.107*** (0.030)	0.651*** (0.043)	0.018 (0.013)	0.002 (0.002)
Ownership concentration	+	-0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
Board tenure	+	0.042 (0.042)	0.174** (0.056)	0.018 (0.018)	0.004† (0.002)
Board interlocks	+	-0.043 (0.034)	-0.007 (0.046)	0.020 (0.015)	0.001 (0.002)
Board meetings	+	0.012 (0.042)	0.065 (0.058)	-0.033† (0.018)	-0.003 (0.002)
CEO on board	±	0.116 (0.079)	0.187† (0.106)	0.031 (0.034)	0.003 (0.004)
Board monitoring	+	0.057*** (0.019)	0.099*** (0.026)	-0.005 (0.008)	-0.000 (0.001)
CEO human capital	+	0.030† (0.018)	0.066** (0.024)	-0.002 (0.008)	-0.000 (0.001)
Managerial discretion		-0.008 (0.029)	0.006 (0.038)	0.005 (0.012)	-0.002 (0.001)
Board monitoring × managerial discretion	±	0.037**	0.018	-0.002	-0.000

Table 3 (continued)

Independent variables	Prediction	Dependent variable: Tobin's $Q_{(t+1)}$	Dependent variable: market capitalization $_{(t+1)}$	Dependent variable: ROA $_{(t+1)}$	Dependent variable: ROE $_{(t+1)}$
		(I)	(II)	(III)	(IV)
CEO human capital \times managerial discretion	\pm	(0.011)	(0.015)	(0.005)	(0.001)
		-0.039**	-0.090***	-0.001	0.001
Industry		(0.014)	(0.018)	(0.006)	(0.001)
Year		Included	Included	Included	Included
Constant		Included	Included	Included	Included
		1.223	-7.020***	4.212***	5.960***
Wald Chi Square		(0.666)	(0.945)	(0.283)	(0.034)
N		368.68***	1760.79***	77.75***	151.37***
		374	374	374	374

Standard errors are reported in parentheses

† $p < 0.10$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

in previous research (Hillman 2005; Gentry and Shen 2010). One potential reason for the lack of findings for accounting-based performance measure can be that the two types of performance indicators measure different things. Lubatkin and Shrieves (1986) argued that market-based performance indicators provide a more holistic picture of prospects for organizational performance in the future, incorporating information available on the market. On the other hand, accounting-based performance measures are typically anchored in past results of the firm and financial decisions.

Furthermore, in some instances the information provided by accounting-based measures of firm performance can be potentially misleading: In some cases a negative profit and a negative equity can result in a positive ROE. Conversely, negative or low ROE may not necessarily indicate poor performance as a company might, for example, engage in an ambitious long-term investment project which may cause a temporary decrease in its net income.

One also needs to be careful as the information released by the firm to the market is often controlled by the CEO and the board, and thus can be biased. One can speculate that firms may send signals of compliance to the dominating “shareholder-centric” norms of governance, which are subsequently rewarded by the investors. This, however, may not necessarily be reflected in the historically determined bottom-line outcomes.

Previous research has noted that the interpretation of interaction results can be problematic; therefore, the use of interaction plots is recommended (Dawson 2014). In Figs. 2 and 3 I plot the interaction effects presented in Model I.

The coefficient of the interaction term of board monitoring and level of managerial discretion was significant and positive ($p = 0.001$). From Fig. 2 we can see how the relationship between the strength of board monitoring and firm market performance changes under different levels of managerial discretion. We can observe a steep positive slope under high managerial discretion, which is consistent with the governance-based prediction that in high-discretion firms monitoring by the board will be associated with higher financial performance. Simultaneously, we can see that under low levels of managerial discretion, the slope

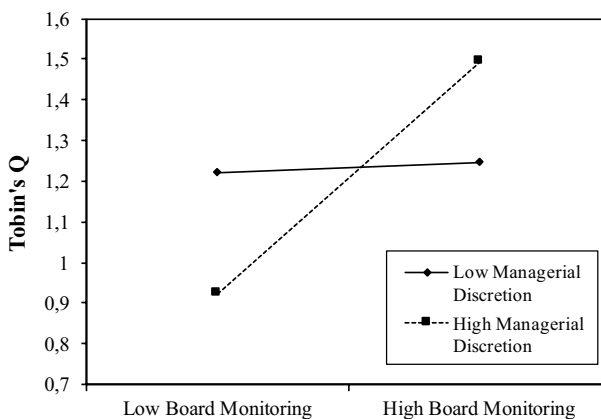


Fig. 2 Board monitoring, Tobin's Q and managerial discretion

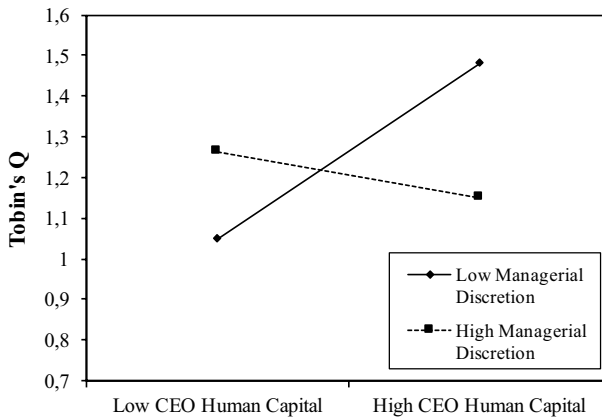


Fig. 3 CEO human capital, Tobin's Q and managerial discretion

of the relationship becomes flatter and even turns to slightly negative, indicating a weaker relationship between the strength of board monitoring and firm financial performance under a low level of managerial discretion. This may imply that under low managerial discretion board monitoring may not contribute to the improvement of firm market performance, as the agency costs may not be as significant as under a high level of managerial discretion.

Figure 3 depicts the negative moderating effect of managerial discretion on the relationship between CEO human capital and firm financial performance ($p = 0.004$). From the plot, we can observe the existence of a steep positive slope between CEO human capital and firm financial performance under a low level of managerial discretion, whereas under high managerial discretion the relationship between CEO human capital appears to be negative. These results are consistent with Hypothesis 2a, which proposes that the benefits related to CEO human capital become offset by the agency costs associated with entrenchment under high managerial discretion, turning the relationship between CEO human capital and firm performance from positive to negative. One potential reason why the relationship turns negative is because of the agency costs that offset the benefits arising from CEO human capital under a high level of managerial discretion. This prevalence of agency costs over benefits from CEO professional talent decreases firm value. On the other hand, under a low level of managerial discretion, where the agency costs are not as significant, the benefits associated with CEO human capital may positively influence firm value.

5.1 Sensitivity analysis

Endogeneity presents a common problem within research in corporate governance and is a relevant concern for our study. Empirical models that do not account for potential endogeneity run the risk of misspecification and biased results (Shaver 1998). Endogeneity may arise due to multiple reasons including the presence of

endogenous predictors, omitted variable bias, and reverse causality (Antonakis et al. 2010). Because board composition and CEO human capital both reflect and influence firm performance, it is important to be conscious of potential endogeneity problems. However, previous corporate governance studies have noted the problem of weak instrumental variables, stating that the latter can be potentially endogenous themselves (Larcker et al. 2007). In fact, weak instruments when employed may significantly bias results of regressions (Stock et al. 2002). I thus strived to control the potential endogeneity problem by including additional control variables and composite measures of board and CEO characteristics as well as managerial discretion. In order to address the potential inverse causality issue, I used the lead value of performance Tobin's $Q_{(t+1)}$ in our final model. I also performed a version of the Granger causality test, replacing the performance indicators by current year Tobin's Q while controlling for previous performance Tobin's $Q_{(t-1)}$. When comparing to the final model a lead value of dependent variable, the model with same-year performance measure has shown consistent results with significant Wald chi (χ^2 : 680.5). This shows that our predictors significantly explain the dependent variable, suggesting that the board monitoring and CEO human capital Granger-cause performance.

In order to assure that potential multicollinearity among regressors will not bias the results, I followed the procedure described by Belsley et al. (1980), applying *coldiag* command in Stata. The condition number was 5.15, which is considerably below the recommended threshold of 30, indicating no evidence of potential multicollinearity. As an additional precaution, I ran regressions randomly dropping control variables. The results held across regressions. I also conducted tests including the firm sales to control for firm size. The tests showed consistent results.

6 Discussion and conclusions

Overall, the empirical findings indicate support for the prediction that discretion stemming from managerial task environment is an important moderator of the relationship between board monitoring and CEO human capital on the one hand, and firm market performance on the other. I find partial support for the governance perspective explaining the influence of board monitoring and CEO human capital on market performance. The proposed explanation of findings is based on the notion that the minimization of agency costs arising from managerial opportunism creates value for a firm. In line with previous studies, it is argued that boards actively engaged in monitoring and ratification of strategic decisions become especially important under high managerial discretion when CEO influence on organizational outcomes is prominent (Agarwal et al. 2009; Bailey et al. 2011).

The findings also show support for the notion that the positive effects of CEO human capital are most pronounced under low managerial discretion, whereas under high managerial discretion the agency costs associated with CEO entrenchment may outweigh the benefits associated with CEOs with human capital. In such strategic environments, CEOs with high human capital may suffer from the "stale in the saddle" problem, becoming increasingly committed to their paradigm (Miller 2011).

Their strategic persistence and unwillingness to consider novel strategic choices can be detrimental for the ability of the firm to capture attractive strategic opportunities, while other firms may outperform it on the market. These results are in line with previous research discussing the agency costs of entrenched CEOs and showing that CEOs with high human capital are most effective when managerial discretion is low (Henderson et al. 2006).

The insignificant results when accounting-based performance measures were used can be explained by the established notion that the market rewards firms with strong monitoring and discounts value when the firm is led by a strong CEO with large human capital, creating the risk for entrenchment effects. These findings indicate that boards may stress monitoring composition not because of its function, as was assumed in the present study, but in order to comply with the dominant institutional logic and send favorable signals to investors, pointing toward a more service-oriented function of the board. This compliance signal can in turn be valued by the stock market as assurance of future performance (Oxelheim and Randøy 2003) and may not necessarily be reflected in a balance sheet embedded in past performance results.

The central contribution of this paper is to show that managerial discretion is a useful tool to explain the balance between controlling and enabling managerial decision making under different contingencies. By accounting for contingency forces of managerial discretion, this study offers a potential explanation of mixed findings regarding the performance effects of board monitoring and CEO human capital. The empirical results provide partial support for theoretical arguments of corporate governance perspective, indicating that the agency costs arising from CEO human capital are most prominent under a high level of managerial discretion, namely in situations where the CEO can have the strongest effect on organizational outcomes. In contrast, under low levels of managerial discretion, CEOs' ability to both create agency costs and develop their organizations are significantly constrained. This implies that strategic freedom granted with managerial discretion needs to be balanced against governance mechanisms in order to assure that the discretion delegated to managers will not be misused. On the other hand, when managerial ability to undertake strategic decisions is constrained—under low levels of managerial discretion—boards may not need to emphasize monitoring. One may even speculate that when managerial discretion is highly constrained, instead of stressing monitoring, boards may prefer to engage in other tasks that further enable managerial actions, such as resource provision, strategic advice and conflict resolution.

This study also contributes to the literature on managerial discretion by illuminating the two views on the concept. While previous studies largely took either strategic management or governance perspective on managerial discretion, this study emphasizes the neutrality of the concept, accounting for both dimensions of managerial discretion. Research in both fields may benefit when the competing theories are considered simultaneously (Capasso and Dagnino 2014). Consideration of these two perspectives provides a more comprehensive understanding of the role of managerial discretion in the strategic decision-making process (Hambrick 2007; Ponomareva and Umans 2015).

The results of this study yield several recommendations for practitioners. The study suggests that boards should consider the strategic environment in the design of governance mechanisms as well as when assessing CEO decisions. Overall, our findings relate to the emerging concept of enterprise governance, which stresses the importance of a balance between accountability and value creation (IFAC 2002). The central argument behind enterprise governance postulates that good governance is not sufficient for successful performance. Namely, the board function needs to balance conformance against the performance (IFAC 2002), adjusting the level of oversight with the level of opportunities executive have in their task environments. Particularly, under high-discretion environments boards may stress board monitoring in order to mitigate the agency costs of managerial opportunism. Alternatively, when managerial actions are constrained, boards may balance themselves by empowering managers exercising a service-oriented role. This study also shows that the agency costs can offset the benefits associated with CEOs with high human capital. Boards may need to be aware of the agency costs associated with managerial entrenchment. Effective mitigation of agency costs may allow companies to maximize the value of executive talent and experience without diminishing shareholder value.

The present study has a number of limitations that outline directions for future research. First, our observations are limited to a single country, thus our results could be influenced by the specifics of the country conditions (Munari et al. 2010). Future research may focus on testing whether the proposed relationships are supported in other contexts. Second, although the focus of this study is only on financial aspects of firm performance, future research can explore the effects of managerial discretion on the links among board monitoring, CEO human capital and non-financial performance outcomes such as innovation, sustainability or resource allocation. Third, while our main focus is the moderating effect of managerial discretion, our results and theoretical reasoning indicate that the agency costs associated with CEO human capital could be decreased by the function of governance mechanisms in high-discretion environments. This idea can be explored further, testing whether board monitoring can offset the agency costs arising from CEO entrenchment and whether its influence differs under various levels of managerial discretion. Fourth, although striving to distinguish between board monitoring and board engagement functions through control for the number of board meetings, director tenure and interlocks, this may not be as straightforward with present empirical measures (Johnson et al. 1996). In addition, promising avenues for future research may include the examination of the interplay between multiple dimensions of managerial discretion, analyzing the interrelationship between multiple determinants at environmental, organizational, and individual levels.

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