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Three Essays on Corporate Boards around the World

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Summary

Based on a sample of 35,000 firms across 54 countries, this thesis provides new large-scale evidence on boards around the world. Exploiting board member deaths as a source of exogenous variation, I first show that women increase firm valuation.[1] This effect is driven by more rigorous selection processes. Then, I argue that travel distance signals board member quality as longer travel distances increase firm valuation. I also provide evidence on three possible channels through which travel distances affect firm value: Extraordinary abilities, a good fit between firms and board members, and higher board independence. I further document that busyness on average reduces firm valuation. Distant board members, however, more than compensate for the negative effects of busy board members. Finally, I collect an international CEO dataset that distinguishes forced from voluntary executive transitions. I find that the probability of forced CEO turnover varies considerably across the sample countries. I then show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. The evidence is consistent with the view that CEOs in more hierarchical countries enjoy greater power.

[1] In this dissertation, I use the term "I" in the introduction and conclusion. It does not necessarily refer to me directly as the first and second essay are based on joint work with my coauthors.

Zusammenfassung

Diese Arbeit untersucht oberste Vorstands- und Aufsichtsratsorgane von Unternehmen im globalen Kontext. Dazu wurde ein Datensatz mit 35,000 Unternehmen aus 54 Ländern erhoben. Unter Ausnutzung von Todesfällen in Führungsgremien als Quelle exogener Variation wird gezeigt, dass Frauen die Unternehmensbewertung erhöhen, was primär auf strengere Auswahlmechanismen zurückzuführen ist. Zudem wird die Reisedistanz als Qualitätsmaß für Führungskräfte mit mehreren Mandaten etabliert. Personen mit hoher Reisedistanz zeichnen sich durch sehr gute Fähigkeiten und höhere Unabhängigkeit aus. Außerdem ist eine hohe Distanz ein Indikator für eine wertsteigernde Zuordnung von Person zu Unternehmen. Überdies wird gezeigt, dass Vorstände und Aufsichtsräte mit mehreren Mandaten grundsätzlich die Unternehmensbewertung reduzieren. Dies trifft allerdings nicht auf Vorstände und Aufsichtsräte mit geographisch weit verteilten Mandaten zu. Schließlich erhebe ich einen neuen internationalen Datensatz, der zwischen freiwilligen und unfreiweilligen CEO-Wechseln unterscheidet. Auf Basis von 5,006 solcher Wechsel zeige ich zunächst, dass die Wahrscheinlichkeit, dass ein CEO unfreiwillig sein Amt niederlegt, in den einzelnen Ländern stark schwankt: Die Wahrscheinlichkeit, dass ein CEO aufgrund schlechter Performance entlassen wird, ist in hierarchischeren Ländern am niedrigsten. CEOs genießen in diesen Ländern daher mehr Macht.

The most exciting phrase to hear in science,

the one that heralds new discoveries,

is not 'Eureka!' (I found it!) but 'That's funny ...'

—*Isaac Asimov*

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Nomenclature

ATT	Average Treatment Effect of the Treated
Avg	Average
CEO	Chief Executive Officer
cf.	confer
CFO	Chief Financial Officer
CIA	Central Intelligence Agency
d	day
Dep.	Dependent
Dir	Director
e.g.	exempli gratia
et al.	et alii
etc.	et cetera
f.e.	fixed effects
GDP	Gross Domestic Product
i.e.	id est
IPO	Initial Public Offering
M&A	Mergers and Acqusitions
MBA	Master of Business Administration
Mr.	Mister
Mrs.	Mistress
Ms.	Miss
OLS	Ordinary Least Squares
p.	page
P	Positions
PDI	Power Distance Index
Ph.D.	Doctor of Philosophy
S&P	Standard & Poor's
SEC	Securities and Exchange Commission
SIC	Standard Industrial Classification
Smt.	Shrimati
SOX	Sarbanes-Oxley Act
Sri.	Sriman
U.K.	United Kingdom
U.S.	United States
USA	United States of America
USD	United States Dollar
y	years

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1 Introduction

Corporate boards are one of the cornerstones of modern corporate governance. This becomes most apparent when things go wrong (cf. Adams et al., 2010). For example, in October 2001, accounting fraud at Enron had been discovered, which resulted in the largest corporate bankruptcy in U.S. history at that time.[1] In the aftermath of the scandal, the directors of Enron agreed to pay $168 million, out of which $13 million was out of their own pockets, to settle securities class action lawsuits against them (Klausner et al., 2005). Similarly, as a result of accounting fraud, WorldCom replaced Enron as the biggest case for U.S. bankruptcy only one year later.[2] According to the Securities and Exchange Commission (2003), more than $9 billion of accounting entries in WorldCom's financial system have been wrong. The origins of this misconduct have primarily been traced back to WorldCom's CEO, Bernard J. Ebbers. Nevertheless, the board of directors had to pay $54 million in settlements, out of which $18 million was out of their own pockets:

> "[...] the Board played far too small a role in the life, direction and culture of the Company. The Audit Committee did not engage to the extent necessary to understand and address the financial issues presented by this large and extremely complex business: its members were not in a position to exercise critical judgment on accounting and reporting issues, or on the non-traditional audit strategy of their outside auditor. The Compensation Committee dispensed extraordinarily generous rewards [...] that we believe were antithetical to shareholder interests and unjustifiable on any basis" (Securities and Ex-

[1]Total assets of Enron amounted to $66 billion at the time of the bankruptcy.
[2]Total assets of WorldCom amounted to $104 billion at the time of the bankruptcy.

change Commission, 2003, p. 264).

The above quote refers to one of the main duties of corporate boards: Monitoring management to reduce agency conflicts that arise from the separation of ownership and control (e.g., Berle and Means, 1932; Jensen and Meckling, 1976; Fama and Jensen, 1983). Another important task of boards is advising management (e.g., Adams and Ferreira, 2007; Coles et al., 2008; Field et al., 2013). While these two roles of boards mostly apply to *supervisory* board members, *executive* board members are responsible for the overall management of the corporation.

The different functions of board members are also reflected in cross-country differences in the formal organization of corporate boards.[3] On the one hand, there are countries such as the U.S. or the U.K. that have introduced *sole* board systems. Boards in these countries comprise both executive and non-executive directors who fulfill management and supervisory roles. On the other hand, countries such as Germany or Austria have established *dual* board systems. For example, German listed public companies have to appoint both a so-called "Vorstand" (i.e., an executive board) as well as an "Aufsichtsrat" (i.e., a supervisory board). Finally, there are also some countries such as France or Switzerland with *mixed* board structures. For instance, France allows its firms to choose between dual and sole board structures. In this thesis, I primarily stick to an *extended board definition* that refers to both executive and non-executive directors as well as senior managers or officers. This is because board types vary from country to country and I wish to ensure a high degree of comparability across the sample countries based on this broad definition. Nevertheless, I repeat all main analyses for executive and non-executive directors only and find similar results.

[3]Cf. Table I in Adams and Ferreira (2007) for an overview of board systems across a large number of countries.

1.1 Theoretical background and previous evidence on corporate boards

1.1.1 A short history of corporate boards

According to Gevurtz (2003), the origins of modern corporate boards date back to medieval ages. In the fourteenth and fifteenth centuries, Hanseatic merchants elected so-called aldermen and committees to govern individual merchants, for example, to settle disputes among the members. Parallel to this, English trading companies such as the Company of the Merchants of the Staple, which exported raw wool at a fixed place (the *staple*), governed themselves via a board and a chief executive officer. However, the role of boards in these companies cannot be compared to the function of boards in modern joint stock companies. Instead, similarly to the Hanse, the board was designed to govern activities of its members rather than run the firm.

In 1600, Queen Elizabeth I granted a Royal Charter to the East India Company, which was formed to enhance trade with the East Indies. The charter declared Sir Thomas Smith *governor* (“CEO”) and legislated that the members of the company annually elect 24 *comittees* (“directors”) who would then appoint the governor (cf. Gevurtz, 2003, p. 115-119). Thus, the East India Company is likely to be the first joint stock *trading* company[4] whose committees have been responsible for electing and terminating the governor or CEO, which facilitated the separation of ownership and control. This innovation came along with a change from so-called regulated companies (i.e., guilds such as the Hanse with independent members and operations) to joint stock companies whose boards (committees) were supposed to supervise the business on behalf of the members (stockholders) rather than mediate between its members.

More direct precedents of U.S. public firms can be traced back to three English Corporations that were founded by King James I and King Charles I in the early seventeenth century in order to colonize North America: The London Company, the Plymouth Com-

[4]The Russia Company, founded in 1554, is likely to be the first joint stock company (cf. Gevurtz, 2003, p. 120).

pany, and the Massachusetts Bay Company (cf. Gevurtz, 2003, p. 111-115). These firms all had institutions comparable to modern boards. The board of the Massachusetts Bay Company also allowed for regular meetings of so-called *assistants* (i.e., directors) in Massachusetts. Thereby, the charter of the Massachusetts Bay Company ultimately became the constitution of the Massachusetts colony, which contributed to the dissemination of elected boards as a governance mechanism. In addition, charters of English corporations such as the one of the Bank of England in 1694, which pioneered the term *directors*, served as blueprints for U.S. boards, for example, in terms of required board size or reelection rules (cf. Gevurtz, 2003, p. 110-111).

Finally, individual corporate charters of an increasing number of U.S. corporations became prevalent and were codified in New York's 1811 act, the first general incorporation statute. The act stipulated that "the stock, property and concerns of such company shall be managed and conducted by trustees [i.e., directors], who, except those for the first year, shall be elected at such time and place as shall be directed by the by laws of the said company..." (Gevurtz, 2003, p. 108, based on 1811 N.Y. Laws LXVII). Thus, for the first time, the act mandated the necessity of a board of directors, which was ultimately responsible for corporate affairs. Approximately 200 years later, in the aftermath of the accounting scandals at Enron and WorldCom, the Sarbanes-Oxley Act of 2002 legislated additional requirements regarding board size, composition, or director qualification. Prior to this, further board regulation regarding these aspects has not been directly mandated by securities laws (cf. Linck et al., 2008). Similarly to the U.S., Germany, for instance, introduced almost simultaneously the Corporate Control and Transparency Act of 1998 (Gesetz zur Kontrolle und Transparenz im Unternehmensbereich) to broaden the responsibilities of executive and supervisory board members. Furthermore, in reaction to managerial misconduct at Philipp Holzmann AG, a former German construction company, the German Corporate Governance Code, a set of recommendations and suggestions for good and responsible corporate governance was established in 2002. Among other things, the code also includes regulations regarding executive and supervisory boards.

1.1.2 Empirical evidence on corporate boards

Modern empirical corporate finance research on boards began in the 1980s and gained importance around the above mentioned accounting scandals. The literature can be organized along several theoretical frameworks (cf. Boyd et al., 2011), which I explain in the following section. However, it is important to note that empirical evidence on boards is oftentimes consistent with several theoretical explanations.[5]

Agency theory

The most important block in empirical research on corporate boards is presumably related to agency theory. Agency problems arise because of the separation of ownership and control (e.g., Berle and Means, 1932; Jensen and Meckling, 1976; Fama and Jensen, 1983) as the

> "directors of [joint-stock] companies being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own" (Smith, 1776, p. 700).

Beginning with Fama (1980), extensive research investigated the role of a special type of non-executive directors, so-called "independent" directors. In contrast to executives or inside directors, these directors are supposed to be independent of management and the power of the CEO. Thus, their interests are deemed to be more aligned with those of the shareholders, thereby making independent directors more suitable monitors. In line with this reasoning, higher levels of independence are generally considered desirable. For example, Weisbach (1988) finds a higher likelihood of CEO turnover in firms with a majority of independent directors. Weak corporate boards have also been identified as one of the causes of the accounting fraud scandals at Enron and WorldCom. Therefore, the Sarbanes-Oxley Act (SOX) of 2002, the NYSE, and Nasdaq legislated higher levels

[5] For example, the literature on board size (Yermack, 1996) is related both to agency and resource dependency theories.

of boardroom independence (cf. Duchin et al., 2010). More recent studies also confirmed positive effects of independence. Dahya et al. (2008) examine ownership structures, board structures, and investor protection simultaneously. They find a positive relation between board independence and firm value with this association being even more pronounced in countries with weak shareholder protection. Nguyen and Nielsen (2010) find negative stock price reactions when the death of an independent director is announced. Sharma (2011) finds a positive relation between dividends and board independence, thereby suggesting that independent directors help owners to extract dividends more easily and avoid managerial expropriation. Similarly, Fracassi and Tate (2012) show that CEO-director ties are detrimental to firm value and result in more value-destroying M&A transactions.[6]

Resource dependence theory

Resource dependence theory (Pfeffer and Salancik, 1978) argues that firms benefit from the procurement of important resources from the environment. Empirical corporate finance research examined, among other things, the role of board size and composition as well as changes in board composition due to external shocks (cf. Boyd et al., 2011). In contrast to Yermack (1996), who argues that higher board size reduces firm value due to inefficient communication, Coles et al. (2008) show that larger boards are optimal in more complex firms as a result of greater advisory requirements. In addition to the literature on board size, there is also vast but still non-conclusive evidence on the effects of board busyness, which refers to the notion that board members oftentimes hold several board seats simultaneously. While many studies show that busyness is related to over-commitment, thereby resulting in agency problems and lower firm performance (e.g., Core et al., 1999; Fich and Shivdasani, 2006), evidence by Field et al. (2013), for example, suggests that IPO firms can benefit from the expertise of busy board members.

Boards also tend to react to changes in the firm environment. For instance, Duchin

[6]In contrast to agency theory, stewardship theory (Davis et al., 1997) argues that directors act in the best interests of shareholders. For example, Westphal (1999) and Adams and Ferreira (2007) argue that management-friendly boards can increase firm value because the CEO will be more willing to share information with the directors, which will, in turn, improve advisory quality by the independent directors.

et al. (2010) exploit exogenous changes in the proportion of independent directors due to the enactment of SOX to show that independent board members increase firm value when the cost of acquiring information is low (e.g., because of low firm complexity). Ahern and Dittmar (2012) find that the introduction of a mandatory gender quota of 40% in Norwegian boards forced firms to deviate from their optimal board structure, which deteriorated firm performance. Finally, Eisfeldt and Kuhnen (2013) and Peters and Wagner (2014) argue that due to changing skill requirements in industry downturns or more volatile industries, replacing a CEO can become optimal even though he or she may be successful in terms of firm performance.

Upper echelons theory

Upper echelons theory has originally been developed in management literature (e.g., Hambrick and Mason, 1984; Carpenter et al., 2004; Hambrick, 2007). According to this theory, individuals are of significance and corporate decisions reflect their values, cognitive bases, and perceptions (see Carpenter et al., 2004, for an overview). The evidence by Bertrand and Schoar (2003), for instance, suggests that manager fixed effects help to explain, among other things, R&D expenses and firm performance. Thus, the authors conclude that managers matter. However, in a more recent study, Fee et al. (2013) find contradicting evidence by examining exogenous CEO departures such as deaths. Around these departures, the authors do not detect any meaningful idiosyncratic changes in corporate policies. In contrast, they only find changes around endogenous turnover events (e.g., terminated CEOs) that are likely to reflect joint board or shareholder decisions.

Apart from these two general studies, there is also a large number of studies that try to approximate values, cognitive bases, and perceptions by observable variables such as gender, age, education, personal experiences, etc. For instance, Malmendier et al. (2011) show that CEOs that grew up during the Great Depression are less overconfident, while CEOs with military experience tend to be more aggressive. More recently, many studies analyze the effects of gender, which is possibly related to political discussions on the introduction of mandatory gender quotas (see Ahern and Dittmar, 2012; Terjesen et al., 2014, for an overview of gender quotas by country). For instance, Huang and Kisgen (2013) show, among other things, that male executives perform more M&A acquisitions and attribute this effect to male overconfidence. In contrast, Adams and Funk (2012) find that female directors are not necessarily more risk-averse than their male counterparts. However, they are more benevolent and less power-oriented. In addition, there are also several studies that have attempted to come up with more direct measures of risk aversion based on text-search and option-exercising behavior (e.g., Malmendier and Tate, 2008, 2005). Overall, there is a huge number of studies that relate upper echelons theory. However, the greatest challenge for this literature is to find a suitable setting that allows for causal inferences.

Social network theory

Social network theory suggests that managerial decisions are affected by ties to other (external) parties.[7] It is well-known that board members are connected through far-reaching social networks (e.g., Fracassi, 2014). These social networks may influence a director's economic behavior. Ellison and Fudenberg (1993) and Ellison and Fudenberg (1995), for instance, argue that directors that have to cope with information overload and overwork tend to listen to the advice of friendly directors and/or copy their behavior, which is referred to as "decision externality" in social network theory.

Social networks have been studied since the late 1800s, primarily in sociology. Recently, finance researchers also investigated the impact of director networks on managerial decisions and corporate performance. Hwang and Kim (2009) examine social ties between CEO and other directors. The authors find no impact of independence on a CEO's total annual compensation for conventional measures of board independence. However, CEO compensation is, on average, lower by $3.3 million when there are also no social ties between independent directors and the CEO. Thus, the authors conclude that conventional measures of board independence are inappropriate and that "independent" directors do

[7]See Watts (2004) for an introduction to social network theory.

not necessarily act in the interest of the shareholders. Fracassi (2014) shows that managers are affected by their external networks when making investment decisions. Fracassi and Tate (2012) find that powerful CEOs hire socially connected directors. By doing so, they are able to reduce board monitoring intensity and hence are able to engage in more value-destroying merger activities. Furthermore, Bouwman (2011) shows that firms with greater director overlap have more similar governance policies. Others examine the benefits of personal ties. Engelberg et al. (2012), for instance, find that debt interest rates are lower when firms and banks are connected through interpersonal linkages, such as directors of both boards having attended college together. Finally, Larcker et al. (2014) show that firms that are more central because of many personal linkages of their directors exhibit superior firm performance and attribute this to informational advantages.

1.2 Research questions

Thus far, there is only scarce evidence on corporate boards worldwide. Although there is considerable research on boards in the U.S., less is known about boards in countries other than the U.S., possibly because data on corporate boards for non-U.S. firms is not readily available. Notable exceptions of international studies on corporate boards and CEOs are, among others, Defond and Hung (2004), Dahya et al. (2008), Lel and Miller (2008), and Aggarwal et al. (2009).[8] For example, using a sample of 21,483 firm-year observations in 33 countries over the 1997 to 2001 period, Defond and Hung (2004) show that strong law enforcement institutions strengthen the sensitivity of CEO turnover to poor performance. Dahya et al. (2008) examine ownership structures, board structures, and investor protection. Based on a hand-collected sample of approximately 800 observations, they find a positive relation between board independence and firm value with this association being more pronounced in countries with weak shareholder protection. Furthermore, Lel and Miller (2008) test the benefits of U.S. investor protection in a sample of cross-listed firms. They report that firms resided in countries with weak investor protection that are

[8]For more recent unpublished studies see Faccio et al. (2014) and Correa and Lel (2014).

cross-listed on a major U.S. exchange are more likely to dismiss CEOs for poor performance than non-cross-listed firms. Aggarwal et al. (2009) compare 5,296 U.S. and 2,234 foreign firms based on their governance practices such as board meeting attendance, audit committee independence, anti-takeover provisions, and director compensation. Using a matching approach, they show that firms and in particular minority shareholders can benefit from governance improvements.

Based on a sample of 35,000 firms and 500,000 board members across 54 countries, this thesis provides new large-scale evidence on boards around the world. It is organized around three specific research questions that focus on certain aspects of officers and directors. The first research question is related to performance implications of female board members. The second essay seeks to distinguish good from bad busy board members by putting forward a new measure of board member quality. The third research question examines the impact of national culture on the CEO turnover-performance relation.

1.2.1 Female board representation and firm performance

In view of recent political and sociological debates on female board representation, considerable research has addressed implications of *mandatory* female board representation as a result of binding gender quotas. Ahern and Dittmar (2012), for instance, exploit the exogenous introduction of a *mandatory* gender quota of 40% in Norway, and identify a decrease in firm performance and less experienced boards as a result of the quota. Similarly, Matsa and Miller (2013) show that the Norwegian quota lead to increased relative labor costs as well as employment levels, and ultimately lower short-term profits. Thus, there is strong evidence that mandatory gender quotas destroy firm value.

However, there is only scarce and mixed evidence on valuation implications of *voluntarily* appointed female board members.[9] This is possibly driven by the endogeneity of the board member selection process (Hermalin and Weisbach, 1998), as omitted variables and simultaneity issues make causal inferences on gender difficult. On the one hand, for

[9] Cf. Post and Byron (2014) for a meta-study.

example, it could be possible that women increase firm performance as they undergo more rigorous selection (Guiso and Rustichini, 2011; Adams and Kirchmaier, 2014) or that they bring certain attitudes and values to the boardroom that increase firm value (Niederle and Vesterlund, 2007; Anderson et al., 2011; Adams and Funk, 2012; Dezso and Ross, 2012; Huang and Kisgen, 2013). On the other hand, however, it could also be that women self-select into better performing firms or that shareholders are more likely to vote for male board members in firms with financial distress, thereby resulting into spurious correlations.

I therefore exploit more than 2,000 deaths of male and female board members to provide causal evidence of voluntary female board representation on firm performance. In doing so, I follow recent research such as Nguyen and Nielsen (2010), Fracassi and Tate (2012), and Fee et al. (2013). The advantage of using board member deaths is that these events occur relatively independent of changes in corporate policies, endogenous board member motivation, or private information of a retiring board member.

Based on long-run and short-run event studies around these events, I find strong evidence that voluntary female board representation increases firm value. This result is also supported by pooled OLS and firm fixed effects regressions for the entire board dataset of 35,000 firms over the 1998 to 2010 period and remains robust even after controlling for person-level characteristics such as education and network centrality.[10] The evidence also holds true for both directors as well as senior managers. The finding suggests that negative effects due to gender quotas are not driven by women per se and that firms can even benefit from voluntary female board representation.

I further document that the fraction of women on corporate boards increased only slightly from an average of below 8% to about 9% between 1998 and 2010. The fraction of female board members also varies from country to country. For instance, the share of women is 3% in Japan, 8% in the U.S., and 20% in the Philippines. There are also significant cross-country differences in the impact of female board members on firm value. The most positive effects are prevalent in Belgium, Norway (before the quota), Spain, Switzerland,

[10] Note that the evidence in this essay is only based on 53 countries, as I drop South Korea from the sample due to limited information on board member gender.

and New Zealand, while the opposite holds true for Chile, Turkey, Brazil, Argentina, and Egypt. The results further indicate that positive valuation implications of female board members are driven by a more rigorous selection process. In particular, the positive effect is more pronounced when the average female board representation in a country is lower. In contrast, women who became part of boards due to family connections reduce firm value. Thus, it is not necessarily the women themselves who increase firm value, but the glass-ceiling that leads to higher "quality" of female board members, which then increases firm valuation. Overall, firms can benefit from voluntary female board representation, at least if the appointment is based on objective reasons and not family connections. Firm value only suffers if there is legal pressure such as mandatory gender quotas to appoint women.

1.2.2 Travel distance and firm performance

The second research question is related to busy board members, i.e., board members with at least three simultaneous board positions. I observe that a relatively high fraction of busy directors holds board positions in geographically remote locations. Therefore, I examine travel distances of busy board members between the headquarters of their firms. The intuition behind measuring travel distances is that they are supposed to capture the remoteness of the geographic location of one board position relative to the other board positions of that board member. For example, consider a board member who holds simultaneous board positions in New York City, London, Berlin, and Rome. From the perspective of the firm located in New York City, for instance, all three other positions of that person are relatively far away (*remote*). In contrast, from the perspective of the firm with headquarters in London, there is only one relatively distant board position located in New York City, while the other two board positions are relatively close. Thus, from the viewpoint of the firm in London, the average travel distance to the other board positions is shorter than the one of the firm in New York City.

I argue that busy board members with long travel distances (i.e., remote board positions) increase firm value because travel distance serves as an empirical proxy for board member quality. There are at least three possible reasons why travel distance captures quality. First, distant board members are associated with superior skills and abilities for which they are likely to be well-known in their home countries or even in a global setting, thereby enabling them to receive distant board positions in the first place. Second, longer travel distances reflect a better fit between the firm and the board member. By widening its board member search and recruitment process to non-local officers and directors, a firm augments the pool of potential board members and hence overcomes possible shortcomings in the supply of officers and directors in the local labor market (e.g., Knyazeva et al., 2013). Third, more distant busy board members are less likely to reflect nepotism in the boardroom than an officer or director who exploits his or her local network or family ties to obtain additional board seats, which increases independence and ultimately firm value.

Accordingly, I find a positive link between firm valuation and travel distance in person-level OLS regressions. To mitigate endogeneity concerns, I control for several person-level variables such as betweenness centrality as well as person or firm fixed effects. In addition, I exploit natural retirements of busy board members for identification. I assume that a busy board member will retire if, in the next year, he or she gives up all board positions simultaneously and then disappears from the dataset completely. The intuition behind this approach is that giving up all positions simultaneously is likely to be driven by personal reasons and not (the anticipation of) a particular event (e.g., bad performance) in only one of the firms in which a certain board member holds a position.

Additional tests reveal that longer travel distances are likely to signal superior board member skills and abilities, value-increasing person-firm matching, and higher levels of boardroom independence. I also find that busyness on average reduces firm value, possibly due to over-commitment of busy board members. This effect, however, is less pronounced or even disappears in the presence of busy board members with high travel distances. To shed light on the underlying mechanism, I show that firms with busy boards perform more, potentially value-destroying M&A transactions with greater volumes. Interestingly, in the presence of distant board members this effect disappears.

1.2.3 Culture and CEO turnover

The last research question shifts the focus from the board of directors and officers in general to chief executive officers (CEOs) and deals with managerial entrenchment (Jensen, 1986). I hypothesize that CEOs are less likely to be terminated for inferior firm performance in countries where people are more willing to accept an unequal distribution of power and hierarchies. In such countries, the status of a CEO is more naturally taken for granted and his or her actions will less likely to be questioned by subordinates and other executives. Therefore, CEOs will be less likely to be held accountable for bad firm performance. Consequently, I expect a lower performance-turnover sensitivity in more hierarchical countries.

To test this hypothesis empirically, I obtain a hand-collected international CEO dataset that distinguishes forced from voluntary executive transitions. Overall, the sample covers 5,006 turnover events across 37 countries, which makes it one of the largest CEO turnover datasets that distinguishes forced from voluntary turnover, in particular in an international setting. First, I find that the probability of forced CEO events varies from country to country. The fraction of forced turnovers, for example, is highest in Malaysia, Sweden, and Germany, and lowest in Mexico, Japan, and Argentina. In addition, there is huge variation in CEO tenure, CEO age, and the probability of an insider replacement across the sample countries. For instance, while firms in general appoint an insider in 73% of all cases, firms in countries such as Japan, Mexico, and Spain are much more likely to appoint an insider as the next CEO, while the opposite holds true for Scandinavian countries.

Second, I show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to approve of an unequal distribution of power and hierarchies. As I control for unobserved heterogeneity at the country-level, I mitigate concerns related to omitted variables. Furthermore, with culture being relatively exogenous, the results are likely not driven by reverse causality issues. My findings are also robust to alternative measures of firm performance and hierarchy, placebo tests, subsample analysis, and different empirical methodologies. I further show that the results do not change once I control for differences in the turnover-performance sensitivity due to other cultural proxies and investor protection. Overall, the evidence is consistent with the view that CEOs in more hierarchical countries enjoy greater power.

1.3 Contribution and implications

Overall, the dissertation contributes to a better understanding of corporate boards around the world. First, I present international evidence on corporate boards. Although there is considerable evidence on boards in the U.S., less is known about boards in countries other than the U.S., possibly because data on corporate boards for non-U.S. firms is not readily available. In this thesis, I collect three unique international datasets on officers and directors. To begin with, I obtain a large-scale international board dataset of 35,000 firms across 54 countries. In addition, I gather information on over 2,000 board member deaths. Finally, I collect information on over 5,000 turnover events across 37 countries.

Second, using board member deaths for identification, I show that *voluntary* female board representation increases firm value, which is in contrast to previous evidence on forced female board representation as a result of mandatory quotas. In doing so, I add to the literature related to the upper echelons and resource dependency theories. In view of the low proportion of female board members, my dissertation has an important implication. It appears that firms can benefit from voluntarily appointing female officers and directors. This indicates that only forced appointments related to mandatory gender quotas are detrimental to firm value. To avoid the introduction of value-destroying quotas due to the low fraction of female board members, firms might want to intensify their efforts to voluntarily appoint female board members. This may, for instance, include the establishment of a corporate culture which fosters the promotion of women to the top. The importance of corporate culture to increase the fraction of female directors is, for example, highlighted by a survey of McKinsey (2013), which concludes that "companies must also work hard to transform mindsets and culture. These are crucial elements in the achievement of gender diversity" (p. 17).

Third, I put forward travel distance as a measure of busy board member quality and find a positive relation between distance and performance. Thereby, I add to recent studies such as Perry and Peyer (2005), Field et al. (2013) and Masulis and Mobbs (2014) that try to separate situations in which busyness enhances firm value from those in which it deteriorates performance. I contribute to the literature on the agency and resource dependence theories by proposing an intuitive measure to distinguish situations in which busy board members contribute positively to firm value from those in which they destroy firm value. I also show that busyness generally reduces firm value, with the effect disappearing in the presence of board members with high travel distances. Though controversially debated, evidence on the costs and benefits related to board busyness is still non-conclusive. While one strand of the literature argues that multiple board positions signal quality (e.g., Fama and Jensen, 1983), it is also possible that busyness negatively affects firm performance because over-commitment prevents busy board members from doing their job effectively, resulting in poorer decision-making and monitoring (e.g., Shivdasani and Yermack, 1999). As the average valuation effect of busyness is negative, a firm's shareholders should critically weigh the benefits and costs of associated with busy officers and directors before appointing them. Due to negative valuation implications of busyness, regulators may want to further restrict busyness among officers and directors. However, they may also want to improve the accessibility of a country's labor market so that firms can more easily appoint foreign officers and directors when they are in need of expertise that cannot be found locally.

Fourth, I add to the literature on CEO turnover, which is closely related to agency theory. To this end, I examine cross-country variation in culture. In particular, I find that CEOs in countries with higher levels of power distance appear to enjoy greater power because they are less likely to be terminated for bad firm performance. Differences in turnover risk, in turn, are supposed to affect managerial decision-making and corporate outcomes (e.g., Peters and Wagner, 2014; Liu, 2014; Cziraki and Xu, 2014; Lel and Miller, 2015). Thus, the results suggest that cultural reasons may give rise to CEO behavior that is undesired from a shareholder's perspective. For example, it could be that CEOs who enjoy greater power distances engage in excessive risk-taking.

1.4 Structure

The remainder of this dissertation is organized in the following manner. In Chapter 2, I present evidence on the effects of voluntary female board representation and firm performance. In Chapter 3, I put forward travel distance as a new measure of busy board member quality and examine its properties. In Chapter 4, I present a new international CEO turnover dataset and investigate the impact of culture on the CEO turnover-performance sensitivity. Finally, in Chapter 5, I provide a short summary and potential avenues for future research.

2 Women and Firm Performance: Evidence from Board Member Deaths

Abstract

Prior literature shows that mandatory gender quotas are detrimental to firm value. However, little is known about causal effects of voluntarily appointed women. A large board dataset covering 53 countries and about 500,000 people enables us to identify deaths of female board members. Long and short-run event studies yield evidence for a positive valuation effect of women. This is confirmed in panel regressions for the entire dataset. Further tests indicate that this positive impact is not driven by women per se, but more rigorous selection. Thus, firms can benefit from a corporate culture that fosters the promotion of women.

Keywords:	Female board representation, director deaths, gender quota, firm value
JEL Codes:	G32, G34, G38

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2.1 Introduction

The view that women on corporate boards are detrimental to firm value pervades academia since the seminal study of Ahern and Dittmar (2012). They analyze the introduction of a *mandatory* gender quota of 40% in Norway and find a decline in firm performance and less experienced boards in the aftermath of the quota. Similarly, Matsa and Miller (2013) show that Norwegian firms affected by the quota increased relative labor costs as well as employment levels, resulting in lower short-term profits. Thus, there is strong evidence that mandatory gender quotas destroy firm value.

By contrast, empirical evidence on *voluntary* female board representation and firm value is less conclusive. Post and Byron (2014), for instance, infer from their meta-analysis that empirical evidence is mixed in this regard. Among others, Adams and Ferreira (2009) find that the voluntary appointment of female directors reduces the value of U.S. firms. By contrast, Dezso and Ross (2012) show that female representation in top management improves firm performance, especially in innovative firms. Contrary to studies that exploit the quota introduction as exogenous shock, identification is much more challenging for voluntary board representation as the selection of board members is endogenous (Hermalin and Weisbach, 1998).

This paper contributes to the literature by providing causal evidence on the impact of voluntarily appointed female board members on firm value. For identification, we analyze stock market reactions to the deaths of female board members. In general, this approach is difficult to implement empirically due to the low number of women on boards and, thus, very few events. We overcome this problem by compiling a large board dataset of 35,000 listed firms across 53 countries with about 250,000 firm-year observations and 500,000 board members. This enables us to identify 2,081 events due to deaths of board members, of which 67 are related to female board members. Based on long-run and short-run event studies around these events, we find strong evidence that voluntarily appointed women increase firm value. This is also confirmed in pooled OLS and firm fixed effects regressions for the entire board dataset and remains robust even after controlling for person-level characteristics such as education and networks. The results also hold true for both for directors as well as senior managers.[1] This finding underlines that negative effects due to gender quotas are not related to female board members per se. Rather, firms can even benefit from voluntarily appointing female board members.

Based on the large board dataset, we find that the proportion of women on corporate boards increased slightly from an average of below 8% to about 9% between 1998 and 2010. We also document significant differences with regard to female board representation across the countries. For instance, the fraction of women is 3% in Japan, 8% in the U.S., and 20% in the Philippines. Not only the proportion, but also the impact of female board members on firm value varies greatly between countries. We find the most positive effects in Belgium, Norway (before the quota), Spain, Switzerland, and New Zealand. The most negative effects occur in Chile, Turkey, Brazil, Argentina, and Egypt.

We also shed light on the reasons for the overall positive impact of voluntarily appointed women on firm value. Overall, our results indicate that the positive impact stems from a more rigorous selection process of female board members. In particular, we exploit our international sample and find that the positive effect is more pronounced if the proportion of women who make it to the top is smaller in a country. By contrast, women who entered the boardroom due to family connections are detrimental to firm value. Thus, our results suggest that not women per se, but the fact that they have to traverse a more difficult path to the top leads to higher "quality" of female board members, which increases firm valuation.

[1]The advantage of using panel regressions for this sample compared to prior literature is that firm coverage is very high. Thus, we do not only include the largest listed corporations in a country in our analyses, but also smaller firms. This increases the representativeness of the results and reduces concerns that the results are driven by a country's largest firms, which are often very different from smaller firms because they are more internationally oriented or even cross-listed in other countries. There is also evidence that larger firms are more likely to appoint female board members (e.g., Adams and Funk, 2012; Huang and Kisgen, 2013). In our dataset, median total assets are about one-tenth of prior studies focusing on U.S. firms. Board data is available for more than 3,000 firms from the U.S and Japan, and more than 1,000 firms from Australia, Canada, China, India, and the U.K. Data for more than 100 firms is available for another 37 countries. Details about the yearly numbers of observations are provided in Table 2.2.

The implication of these findings is that there exists no reason why firms should not appoint female board members as we find no evidence for generally negative valuation consequences. Rather, the empirical evidence shows that firms can benefit from voluntarily appointing women, at least if the appointment is based on objective reasons and not family connections. This indicates that firm value only suffers if there is legal pressure to appoint women, e.g., due to a mandatory gender quotas. To avoid the introduction of possibly politically intended mandatory quotas, firms would be well-advised to intensify their efforts to voluntarily appoint female board members. Such voluntary action to increase the on average very low proportion of female board members may prevent value-destroying mandatory gender quotas.

The remainder of this paper is structured as follows. In Section 2.2, we introduce the dataset. Results based on event studies around the deaths of board members can be found in Section 2.3. Section 2.4 presents further tests for the full board dataset and sheds light on the reasons for the positive valuation impact of female board members. Section 2.5 summarizes the main results and discusses their implications.

2.2 Data

2.2.1 Sample selection

We first start with a large international board dataset obtained from Thomson Reuters, which we use to identify deaths of board members in a second step. This first dataset comprises public firms from 53 countries. All active and inactive firms covered by Thomson Reuters are included. We exclude all financial firms (SIC code between 6000 and 6999) and those without common stock. We also remove observations with negative sales, negative common stock, or negative cash dividends. We further drop observations for which losses exceed total assets and cash dividends exceed sales. Furthermore, in regressions, we exclude all firms from Norway after 2004 due to the introduction of the mandatory female board quota in 2008.[2]

2.2.2 Board data

The board dataset covers executive and non-executive directors as well as senior managers. It comprises information on current and past firm affiliations, education, as well as short biographies. To ensure the integrity of the data, some adjustments are made.[3] The final sample consists of about 35,000 publicly listed firms, 250,000 firm-years, and 500,000 board members over the 1998-2010 period. Even after the exclusion of financial firms, our board sample covers about 70% of the worldwide market capitalization of listed firms, which totals $54 trillion in 2010 according to the World Bank. If we included financial firms, the board sample would cover about 89% of the worldwide market capitalization of listed firms in 2010.

Table 2.2 shows the number of observations for each sample country. The U.S. and Japan account for only about one third of our sample observations, which is quite low compared to other large-scale international corporate governance studies.

Female board members

We measure female board representation as the proportion of female board members at the end of the fiscal year (WOMEN). To determine the gender of the people in the dataset, we follow a four-step procedure.[4] First, we extract gender-indicating titles from board

[2] Norway is the only country with a binding gender quota for publicly traded firms during the sample period from 1998 to 2010. More details on gender quotas in different countries are, for example, provided by Ahern and Dittmar (2012) and Terjesen et al. (2014).

[3] Board data by Thomson Reuters can be biased by M&A transactions. We carefully screen the raw data and eliminate data errors related to M&A transactions. In some cases, Thomson Reuters replaces a target firm's board data with board data of the acquiring firm. Therefore, persons may be affiliated with an acquired firm, although they held no board seat in this firm prior to the acquisition. These observations can easily be identified because both the target and the acquiring firm exhibit the same affiliations consisting of a unique board member identification number, the start and the end date related to the board position, and a short description of that position (e.g., "chief executive officer"). After the identification of these duplicate affiliations, we determine target firms with wrong affiliation data by using the company status footnote (WC00000) from Worldscope, merger data from SDC Platinum, and board member biography information, and remove these firms from the sample.

[4] A similar approach has been employed by Ahern and Dittmar (2012).

members' biographies such as "Mr.", "Mrs." or "Ms.". We also search for equivalent Hindu honorific titles such as "Sri." ("Mr.") or "Smt." ("Mrs.") in biographies of Asian board members. In a second step, we search biographies for pronouns such as "he", "she", "him", or "her". Third, we match forenames with gender-specific lists of forenames, carefully paying attention to forenames that are not necessarily gender-specific (e.g., Kim) or whose gender differs across countries. Andrea, for instance, is a female forename in Germany and a male forename in Italy. Finally, we aggregate the results from the previous three steps and manually check differing classifications. We also manually search the gender for people we could not classify with this approach. Overall, this procedure results in more than 16,000 manual adjustments.

In total, we are able to classify about 450,000 board members (90% of all people in the sample) either as male or female.[5] We then define the main variable WOMEN as the number of women on a firm's board at the fiscal year end date divided by the number of board members for which the gender could be identified. Furthermore, we create the dummy variable WOMEN [DUMMY], which equals one if at least one woman is present on the board at the fiscal year end date and zero otherwise.

Overall, we identify 41,000 female board members in the dataset. Thus, women constitute on average about 9% of all board members. Table 2.3 shows the fraction of female board members for each sample country, while Table 2.4 provides aggregate summary statistics. A graphical illustration is depicted in Figure 2.1. As can be seen, the sample covers the majority of countries in all continents, except for Africa and Antarctica. Furthermore, the figure demonstrates that the fraction of female board members varies heavily across countries. In Norway, for instance, about 19% of all board members are women. This number is lower than the quota of 40%, because the quota was only binding as of 2008 and our sample period already starts in 1998. Furthermore, the Norwegian quota only affects directors, while we consider both directors and senior managers.

[5]We repeat all our main analyses and (i) remove all observations from countries where the gender for less than 90% of all board members could be identified or (ii) assume that gender is split 50:50 among the non-classified board members of a firm. The results, which are available upon request, are robust to these two alternative specifications.

Table 2.2: Number of board observations across countries and years.

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Argentina	41	55	57	60	56	61	58	59	61	60	55	55	54	732
Australia	316	532	764	793	834	985	1,061	1,188	1,321	1,313	1,195	1,291	1,247	12,840
Austria	63	64	69	69	68	64	63	63	64	62	62	59	54	824
Belgium	74	73	72	76	80	84	97	100	105	104	95	94	90	1,144
Brazil	25	54	56	55	58	78	97	100	105	108	106	107	106	1,055
Canada	361	487	540	585	703	804	908	987	1,061	1,105	997	969	920	10,427
Chile	78	113	116	116	127	135	139	143	142	138	137	135	132	1,651
China	132	964	1,021	1,062	1,286	1,423	1,500	1,497	1,561	1,724	1,832	1,991	2,008	18,001
Czech Republic	15	16	18	18	18	20	28	21	20	16	13	13	12	228
Denmark	90	92	98	94	97	93	102	113	111	113	112	100	100	1,315
Egypt	5	6	12	17	25	31	54	91	100	106	106	102	89	744
Estonia					1	6	7	8	9	9	9	9	9	67
Finland	94	97	106	104	105	107	110	112	109	109	110	107	105	1,375
France	517	548	558	553	569	576	578	613	623	622	589	557	519	7,422
Germany	503	532	568	544	529	545	565	598	604	585	552	532	495	7,152
Greece	150	190	224	241	244	245	256	252	252	255	241	234	210	2,994
Hong Kong	278	372	586	635	678	713	738	744	759	781	755	756	768	8,563
Hungary	18	20	21	21	20	23	25	27	30	30	29	29	29	322
Iceland					4	6	8	8	8	7	4	3	3	51
India	265	318	347	358	446	593	663	1,709	1,829	1,856	1,850	1,844	1,763	13,841
Indonesia	97	136	172	185	205	220	229	244	253	277	285	286	283	2,872
Ireland	42	43	45	42	46	47	49	58	59	60	52	52	46	641
Israel	39	52	78	85	102	138	141	151	170	176	169	163	158	1,622
Italy	136	157	165	173	179	189	205	215	216	214	210	198	192	2,449
Japan	2,274	2,384	2,645	2,783	2,930	3,101	3,249	3,318	3,350	3,371	3,345	3,312	3,270	39,332
Luxembourg	14	14	18	16	19	17	19	22	23	23	24	21	22	252
Malaysia	271	359	531	567	667	762	813	847	853	849	829	817	796	8,961
Mexico	82	90	94	93	93	95	93	94	98	93	89	89	88	1,191
Morocco	3	7	9	11	13	15	19	20	29	28	29	28	27	238
Netherlands	81	86	83	85	86	89	92	97	95	92	86	83	81	1,136
New Zealand	43	57	72	75	80	92	100	102	108	114	103	101	95	1,142
Norway	78	82	89	99	105	115	137	162	177	185	172	158	154	1,713
Pakistan	73	78	76	76	84	86	94	104	109	103	97	100	93	1,173
Philippines	66	84	109	112	113	113	114	123	124	130	131	123	127	1,469
Poland	37	42	49	49	78	140	188	252	281	302	300	293	288	2,299
Portugal	47	52	53	52	52	48	49	50	47	46	43	45	44	628
Qatar						7	12	16	16	17	17	17	17	119
Russia	18	20	26	30	44	70	107	213	258	259	252	244	222	1,763

Continued on next page.

Table 2.2: Number of board observations across countries and years (continued).

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Saudi Arabia					4	46	55	69	83	85	89	88	89	608
Singapore	148	207	323	359	438	474	482	488	518	535	524	514	514	5,524
Slovakia	5	5	5	5	7	6	9	12	12	11	10	10	9	106
Slovenia			1	2	9	10	10	11	24	25	24	24	24	164
South Africa	226	234	237	233	216	220	232	230	251	267	257	249	233	3,085
Spain	80	82	89	90	95	95	102	101	104	101	101	100	97	1,237
Sweden	148	192	201	210	218	236	280	325	351	369	344	337	329	3,540
Switzerland	129	142	147	149	152	160	168	177	178	173	169	167	160	2,071
Taiwan	24	64	75	84	86	89	96	104	111	115	115	114	117	1,194
Thailand	175	188	227	249	291	343	381	390	397	399	394	397	394	4,225
Turkey	83	107	124	127	152	168	178	182	179	184	184	185	181	2,034
United Arab Emirates					1	9	23	28	37	37	38	39	39	251
United Kingdom	725	807	920	952	952	1,064	1,177	1,267	1,310	1,327	1,187	1,137	1,073	13,898
USA	3,346	3,432	3,337	3,195	3,168	3,306	3,400	3,477	3,544	3,564	3,244	3,156	3,022	43,191
Venezuela	14	18	21	18	19	19	19	19	20	19	17	15	9	227
Total	11,529	13,754	15,254	15,607	16,652	18,181	19,379	21,401	22,259	22,653	21,779	21,649	21,006	241,103

This table shows the number of observations for the fraction of women on a firm's board (WOMEN) across the 53 countries in the sample. The sample period is from 1998 to 2010.

Table 2.3: Average fraction of female board members.

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Argentina	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.06	0.06	0.07
Australia	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.06
Austria	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.05	0.04
Belgium	0.08	0.08	0.08	0.08	0.09	0.09	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.09
Brazil	0.06	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07
Canada	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07
Chile	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05
China	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.11	0.11	0.12	0.12	0.12	0.12	0.12
Czech Republic	0.13	0.12	0.10	0.10	0.10	0.08	0.12	0.10	0.10	0.12	0.13	0.15	0.18	0.12
Denmark	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Egypt	0.03	0.04	0.05	0.04	0.03	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.05
Estonia					0.13	0.13	0.16	0.16	0.14	0.17	0.15	0.19	0.16	0.16
Finland	0.14	0.14	0.14	0.13	0.13	0.13	0.14	0.15	0.14	0.14	0.15	0.16	0.16	0.14
France	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0.14	0.14
Germany	0.05	0.05	0.06	0.05	0.05	0.05	0.06	0.06	0.05	0.05	0.06	0.06	0.05	0.05
Greece	0.13	0.14	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.15	0.16	0.16	0.16	0.15
Hong Kong	0.13	0.13	0.14	0.15	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14
Hungary	0.16	0.17	0.21	0.17	0.19	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.18	0.17
Iceland					0.08	0.07	0.09	0.08	0.06	0.07	0.11	0.10	0.13	0.08
India	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.07	0.07	0.07	0.07
Indonesia	0.11	0.11	0.12	0.13	0.13	0.13	0.12	0.10	0.12	0.13	0.12	0.13	0.12	0.12
Ireland	0.04	0.04	0.04	0.04	0.06	0.05	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.05
Israel	0.08	0.11	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.16	0.14
Italy	0.08	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.08
Japan	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Luxembourg	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.05	0.06	0.06	0.07	0.08	0.08	0.05
Malaysia	0.10	0.10	0.11	0.10	0.11	0.11	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11
Mexico	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Morocco	0.07	0.09	0.08	0.06	0.06	0.05	0.06	0.06	0.08	0.08	0.07	0.07	0.06	0.07
Netherlands	0.09	0.09	0.08	0.09	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.09	0.08
New Zealand	0.07	0.06	0.07	0.07	0.07	0.08	0.07	0.08	0.09	0.09	0.09	0.09	0.09	0.08
Norway	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.20	0.23	0.24	0.24	0.25	0.19
Pakistan	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
Philippines	0.18	0.17	0.19	0.19	0.19	0.19	0.20	0.21	0.21	0.19	0.21	0.21	0.21	0.20
Poland	0.09	0.11	0.11	0.12	0.11	0.13	0.15	0.17	0.16	0.17	0.16	0.16	0.16	0.15
Portugal	0.15	0.15	0.15	0.15	0.13	0.11	0.13	0.12	0.12	0.09	0.09	0.09	0.09	0.12
Qatar						0.00	0.00	0.01	0.01	0.00	0.02	0.01	0.01	0.01
Russia	0.10	0.10	0.11	0.10	0.10	0.12	0.11	0.14	0.15	0.14	0.13	0.14	0.14	0.13

Continued on next page.

Table 2.3: Average fraction of female board members (continued).

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Saudi Arabia					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Singapore	0.14	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.15
Slovakia	0.10	0.10	0.10	0.12	0.12	0.09	0.18	0.16	0.18	0.21	0.22	0.23	0.23	0.17
Slovenia			0.41	0.32	0.23	0.22	0.20	0.20	0.24	0.25	0.24	0.21	0.25	0.23
South Africa	0.09	0.09	0.09	0.10	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.14	0.15	0.11
Spain	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.10	0.11	0.08
Sweden	0.11	0.11	0.11	0.11	0.11	0.12	0.14	0.14	0.14	0.14	0.15	0.15	0.16	0.13
Switzerland	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.05	0.06	0.06	0.06	0.05
Taiwan	0.07	0.04	0.05	0.06	0.06	0.06	0.06	0.07	0.06	0.07	0.08	0.09	0.09	0.07
Thailand	0.15	0.16	0.17	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.19	0.20	0.20	0.19
Turkey	0.10	0.10	0.11	0.10	0.10	0.11	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11
United Arab Emirates					0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.02
United Kingdom	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
USA	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.08
Venezuela	0.10	0.08	0.09	0.09	0.08	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.09
Total	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09

This table shows the average fraction of women on a firm's board (WOMEN) across the 53 countries in the sample. The sample period is from 1998 to 2010.

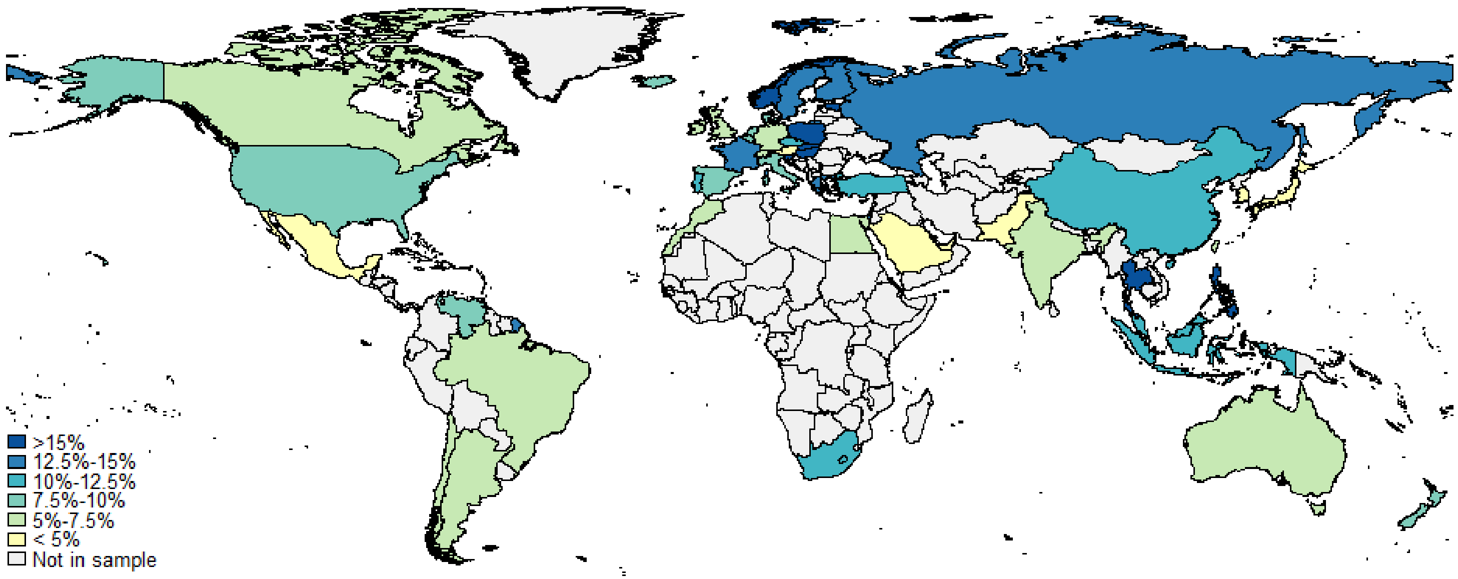

Figure 2.1: The figure shows the countries included in the sample and the average fraction of women on corporate boards (WOMEN) over the 1998-2010 period across all firms within that country.

Table 2.4: Sample descriptive statistics.

Variable	N	Mean	1^{st} Quartile	Median	3^{rd} Quartile	SD
Firm-level board variables						
Women	239,958	0.0856	0.0000	0.0455	0.1429	0.1156
Women [Dummy]	239,958	0.5109	0.0000	1.0000	1.0000	0.4999
Women [Director]	236,512	0.0680	0.0000	0.0000	0.1250	0.1217
Board Size	240,714	11.9122	7.0000	10.0000	15.0000	7.0348
Board Size [Director]	236,512	6.4901	4.0000	6.0000	8.0000	3.3619
Other firm- and country-level variables						
Tobin's Q	218,904	1.6938	0.9182	1.1997	1.8224	1.5621
Size	240,094	1,054	33	123	469	3,517
Leverage	239,568	0.2082	0.0279	0.1771	0.3383	0.1875
Profitability	233,382	0.0298	0.0022	0.0554	0.1083	0.1671
Retained Earnings	217,906	-0.1728	-0.0796	0.0811	0.2478	1.1128
Tangibility	239,058	0.3118	0.1085	0.2688	0.4689	0.2386
Growth	214,011	0.1262	-0.0399	0.1013	0.2510	0.3881
GDP per Capita	241,316	23,166	5,169	25,620	36,539	14,286
Market Cap to GDP	241,280	1.1055	0.6630	1.0223	1.3655	0.7750
Person-level variables						
Director	2,862,912	0.5711	0.0000	1.0000	1.0000	0.4949
Gender	2,606,433	0.0927	0.0000	0.0000	0.0000	0.2900
Education	748,613	2.1835	1.0000	2.0000	3.0000	1.1139
Betweenness [10^{-3}]	2,862,912	0.0305	0.0000	0.0000	0.0000	0.2036
Double Name	2,862,912	0.1129	0.0000	0.0000	0.0000	0.3165

This table provides summary statistics over the 1998-2010 period. A detailed description of all variables can be found in Appendix A. All other firm-level variables are winsorized annually at the 1%-level.

Figure 2.2 provides a graphical illustration of the fraction of women in boards over time. The fraction of female board members increased slightly from below 8% to above 9% between 1998 and 2010. Thus, there is a small positive trend. Nevertheless, even in 2010, women constitute less than 10% of all board members.

We also provide evidence that female board representation is lower compared to previous studies, likely because these studies are tilted toward large firms. Based on data by the European Commission, Desvaux et al. (2007) show that women held about 11% of the seats in the governing bodies of the top 50 listed companies in 13 European countries in 2006. Based on our data, which include 5,480 firms in 11 European countries in 2006, we find that women represented only about 9% of all board members.[6]

[6]In contrast to the study by Desvaux et al. (2007), we do not cover Latvian and Bulgarian firms. If one

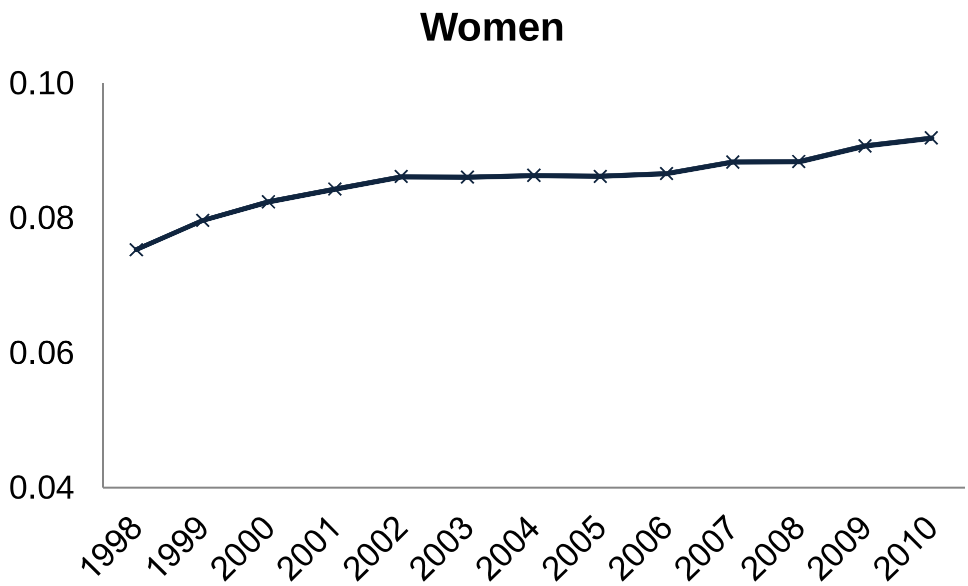

Figure 2.2: The figure shows the average fraction of women on corporate boards (WOMEN) over the 1998-2010 period across all sample firms.

Person-level controls

To control for education, we construct education variables for each person for which data on the obtained study degree is available (about 110,000 board members). In particular, we determine whether a board member holds a bachelor's or master's degree, a MBA, or a Ph.D. Based on that information, we construct an education index. This index equals one if a person has a bachelor's degree, two for a master's degree, three for a MBA, and four for a Ph.D. In addition to that, we determine a proxy of network centrality, betweenness, which measures the proportion of shortest paths between two board members in the network that pass through a certain board member. A high BETWEENNESS centrality indicates that a large flux of information may pass through a board member and that he or she may act as a broker connecting board members. Finally, we calculate DOUBLE NAME, a dummy variable which equals one if another board member in the same firm shares the

calculated the average female board representation based on single-country averages reported in Desvaux et al. (2007), average female board representation amounts to 12% in the other 11 countries.

same surname and zero otherwise. The variable is supposed to capture family relations in the boardroom. Summary statistics for these variables can be found in Table 2.4.

Panel A of Table 2.5 shows that male board members have higher levels of education compared to female board members. In unreported results, we also show that male board members are less likely to hold a master's degree, but are more likely to have a MBA degree or a Ph.D. We also document that male board members are significantly more central in their networks and are less likely to have family relations in the boardroom, as indicated by the DOUBLE NAME variable.

Table 2.5: Mean comparison.

Panel A: Person characteristics			
Variable	Men	Women	p-value
Education	2.17	2.00	0.00
Betweenness [10^{-3}]	0.0314	0.0191	0.00
Double Name [Person]	0.11	0.17	0.00
Panel A: Firm characteristics			
Variable	Male board	Female board	p-value
Tobin's Q	1.70	1.63	0.00
Size	1,374.35	649.75	0.00
Board Size	14.13	9.35	0.00
Leverage	0.22	0.20	0.00

Panel A reports person-level differences between male and female board members. Panel B reports mean firm characteristics for firms with no female board members and firms with at least one female board member. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

Directors vs. senior managers and data quality

Our main board definition takes both executive and non-executive directors as well as senior managers into account. Most prior studies on corporate boards in the U.S. focus on directors and ignore executives (which are not director at the same time). The distinction between directors and managers is, however, very difficult and often not straightforward in an international context as board structures differ heavily across countries. Nevertheless, we manually classify all board members in our dataset according to their role description as either directors or (non-director) senior managers.[7] After that, we re-calculate the fraction of female board members, but now consider only directors (WOMEN [DIRECTOR]). Table 2.4 shows that with an average fraction of about 6.8% of all directors, female representation among directors is even lower than among all board members. Not surprisingly, it can also be seen from the table that average board size declines from about 12 to 6.5 if only directors are considered.

For the U.S., the average board of directors in our sample has 7.12 members. The median value is 7. These numbers are a bit lower compared to other U.S. studies such as Yermack (1996) and Coles et al. (2008), possibly because our sample also comprises smaller firms. In the U.K., a firm had on average 6.01 directors during our sample period. Again, these values are very close to other single-country studies such as Dahya et al. (2002) and Guest (2008). Furthermore, there have been on average 8.93% female directors in the largest U.S. firms over the 1998 to 2003 period in our sample, which is very close to 8.5% women directors as reported by Adams and Ferreira (2009) for a dataset of 1,939 U.S. firms over the 1996 to 2003 period.[8] Overall, these comparisons suggest that, at least with respect to firms from the U.S. and the U.K., data quality is similar to previous studies based on other data sources such as Execucomp or RiskMetrics.

2.2.3 Death sample

Based on this board dataset, we identify board members who died in office. In the results section, we will use these deaths for identification. To obtain the deaths sample, we proceed in several steps. *First*, for the 35,000 firms in the international board dataset, we download 135,000 English annual reports from Thomson Reuters. We then search these annual reports for keywords such as "death", "passed away", "died", "accident", "deceased", etc.

[7] If a role description contains the term "director", we normally classify the affiliation as a director affiliation. An exception is, for example, the role "director of finance", which would be classified as manager. Similarly, a role description such as "general manager" would also be classified as manager. Other examples for managers are "managing director" or "director, Asia".

[8] To ensure that our dataset is comparable to the one by Adams and Ferreira (2009), we end our sample period after 2003 and select only U.S. firms with sales exceeding $500 million so that we arrive at firms that are of about the same size as the firms in Adams and Ferreira (2009).

Second, we also search the board member biographies reported in Thomson Reuters for these keywords. *Third*, we download all announcements related to CEO, CFO, or general board member changes reported in the Key Developments Database by Capital IQ (codes 101, 102, and 16) and also search these announcements for the above keywords. We then aggregate the information from these three data sources and drop duplicates. We then rely on databases such as Nexis or Factiva or perform web searches to obtain additional information on announcement dates, board member gender, and cause of death. We also carefully check the news around these events and drop about 100 deceased board members from the sample because they refer to condolences on retired or honorary board members. We further drop instances where there are multiple deaths in a given firm at the same time (e.g., on September 11, 2001).

As reported in Table 2.6, we identify 1,737 board member deaths or 2,081 events, because some of the board members held multiple board positions when they passed away. Overall, we find information on 53 deceased women (3.15% of all deceased board members), which, in turn, result into 67 events. For 45 of the 53 dead women, we are able to retrieve financial data from the Worldscope database and for another 35 women return data from Datastream. The low number of female board member deaths highlights the need for an international sample. For example, with a total of 20 deceased female board members, the U.S. is the country with the highest number of deceased female board members.[9] The average age at death is 67. About 20% of those events are explicitly sudden. In about two third of all events, the reason of death has not been stated explicitly or cannot be identified. When we perform our analysis, we take all deaths into account. Otherwise, the number of observations would decrease considerably, in particular for the subgroup of female board members. In line with Fracassi and Tate (2012) or Fee et al. (2013), however, we argue that these deaths, although they are not sudden and thus might have been anticipated by the firm or its shareholders, still reflect idiosyncratic shocks to the firm, ultimately affecting firm performance. Furthermore, the inclusion of non-sudden

[9] A low number of observations is a general problem in studies related to board member deaths. Johnson et al. (1985) and Nguyen and Nielsen (2010), for instance, perform their analyses based on 53 and 772 deaths, respectively.

deaths biases our results against finding any effect. Thus, the true effect might be even larger than documented by our empirical tests.

2.2.4 Other data

Firm-level accounting and capital market data comes from Thomson Reuters Worldscope. Summary statistics for firm financial variables are provided in Table 2.4. The definitions of all variables as well as their sources can be found in Appendix A. All the variables based on financial data are winsorized annually at the 1% level to mitigate the effects of outliers.

Panel B of Table 2.5 reports mean firm characteristics for firms with no female board members and firms with at least one female board member. Firms with female board members are on average higher valued, larger, and less leveraged. Not surprisingly, female board members are more likely when firms and their boards are larger. The average board size of a firm with female board members is about 14, whereas the average board size of firms with only male board members is about 9. All these differences are highly significant with absolute t-values exceeding 10.

2.3 Deaths of female board members

Previous literature has extensively discussed valuation implications of female board representation. By and large, one view is that female board members have undergone more rigorous *selection* processes or face economic or cultural barriers (e.g., Guiso and Rustichini, 2011; Adams and Kirchmaier, 2014). Thus, only relatively talented women might be appointed as board members, resulting in a (spurious) positive relation between women in the boardroom and firm performance. This is because, under this scenario, female board representation captures differences in board member selection processes for men and women and not necessarily gender-related effects. In addition, female board representation could (positively or negatively) affect performance due to increased levels of board *diversity*. For example, women could bring different management styles or higher or lower degrees of risk aversion or overconfidence into male-dominated boardrooms, thereby affecting group-level dynamics and corporate decision-making (e.g., Niederle and Vesterlund, 2007; Anderson et al., 2011; Adams and Funk, 2012; Dezso and Ross, 2012; Huang and Kisgen, 2013). Another popular view is that board member gender reflects differences in *skills or experience* (e.g., Ahern and Dittmar, 2012).

Table 2.6: Summary statistics for the deceased board member sample.

Panel A: General summary statistics				
	Women	Men	Total	Fraction Women
People	53	1,684	1,737	0.03
Events	67	2,014	2,081	0.03
Age at death	66.20	67.03	67.01	
Director	0.73	0.77	0.77	

Panel B: Cause of death		
	Frequency	Share of total
Cancer	81	4%
Unspecified illness	179	9%
Sudden death	325	16%
Unknown	1,496	72%
All	2,081	100%

Panel C: Balancing of covariates: Treated and non-treated firms				
	Treated (Woman)	Control (Man)	t-value	p-value
Leverage	0.18	0.22	-1.19	0.23
Profitability	0.06	0.05	0.61	0.54
Tangibility	0.31	0.32	-0.20	0.84
Growth	0.09	0.09	0.11	0.91
Size	12.74	12.75	-0.04	0.97
Age	67.26	66.93	0.19	0.85

Panel D: Balancing of covariates: Treated and control firms				
	Treated (Woman)	Control (Man)	t-value	p-value
Leverage	0.18	0.19	-0.23	0.82
Profitability	0.06	0.08	-0.70	0.48
Tangibility	0.31	0.30	0.30	0.76
Growth	0.09	0.11	-0.40	0.69
Size	12.74	12.79	-0.11	0.91
Age	67.26	65.95	0.49	0.63

Panel A provides general summary statistics for the subsample of deceased board members. Panel B shows causes of death. Panel C exhibits the balancing of covariates across the treatment group (deceased female board member) and non-treatment group (deceased male board member). Panel D exhibits the balancing of covariates across the treatment group (deceased female board member) and control group (matched deceased male board member). A detailed description of all variables can be found in Appendix A.

Overall, there is mixed empirical evidence on the effects of voluntary female board representation on firm performance (Post and Byron, 2014). This is likely driven by omitted variables and simultaneity issues which make causal statements on gender problematic.[10] In this paper, we follow recent research such as Nguyen and Nielsen (2010), Fracassi and Tate (2012), and Fee et al. (2013) and exploit board member deaths as an exogenous variation in board composition. The advantage of using board member deaths is that these events are likely to appear relatively random over time and, thus, convey only little or no information on a firm's intention to change corporate policies, endogenous board member motivation, or private information of a retiring board member. For example, female board members might be more likely to anticipate future decreases in firm performance and, therefore, leave the firm, which could result in a spurious positive relation between women and performance.

Announcement effects

We first test stock price reactions to board member deaths. To this end, we obtain daily stock return data from Datastream. Following Ince and Porter (2006), we search the end of each return-series for zeros to remove inactive stocks, which are wrongly listed in Datastream. We also drop observations whose lagged stock price is lower than one in local currency to mitigate the effects of penny stocks. We also delete observations with three consecutive zero returns. We then convert all returns to USD using daily exchange rates obtained from Datastream. We calculate total as well as cumulative abnormal returns around the announcements for two event windows ($[-1d; 1d]$ and $[-2d; 2d]$). Abnormal returns are based on a one-factor market model. The benchmark index is the MSCI World. The estimation period is set to the 250 trading days ending 30 trading days before the respective events.

Event returns are then regressed on a dummy variable that is set to one if the announcement refers to a deceased female board member and zero if it refers to a deceased male

[10] For example, Angrist and Pischke (2008) state in the introduction of their econometrics textbook that questions on race or gender are among those that are most difficult to answer.

board member (WOMAN). For an event to be included in the regression, we require that the announcement date is within 10 days of the death date. We include firm-level controls measured at the fiscal year ending before the respective announcements as well as dummy variables to control for the year of the announcement, the geographic region, and industry.[11]

In Panels C and D of Table 2.6, we first check whether the matching variables are similar across the treated and non-treated as well as treated and control samples, respectively. Across all the covariates and in both samples, we do not find statistically significant differences between treatment and control firms.[12]

Regression results are presented in Panel A of Table 2.7. In Model I, we regress total returns on the WOMAN indicator. Overall, we find a negative return of -1.5% for the $[-1d; 1d]$ event window when the death of a female board member is announced. The coefficient is significant at the 5%-level. Model II, based on the market model, confirms this result. The abnormal return for the announcement of deceased women in the boardroom is -1.4% (t-value: -2.41) for the same event window. The results are similar for the $[-2d; 2d]$ event window. To mitigate concerns that our results stem from systematic differences in the age of male and female board members, we also control for age in Model III. Introducing age to the specification changes the results only slightly. WOMAN is still negatively and significantly related to the event window stock return performance.

[11] The regions are North America, South America, Europe, Middle-East and Africa, Australia and Oceania, and Asia. Following the study by Nguyen and Nielsen (2010), the definitions of the industry indicators follow Fama and French's five industry classification.

[12] Note that female board members are slightly, but not significantly, older when they die, which is consistent with the fact that women have higher life expectancies. The mean values are slightly different compared to the statistics presented in the top part of Table 2.6 because some of the women enter the sample multiple times as we perform matching with replacement.

Table 2.7: Board member deaths: Announcement effects.

Panel A: Regression analysis						
Dep. variable	Raw Return		Abnormal Return			
Window [*d*]	[-1;1]	[-2;2]	[-1;1]	[-2;2]	[-1;1]	[-2;2]
Model	Ia	Ib	IIa	IIb	IIIa	IIIb
Leverage	0.0056	-0.0053	0.0035	-0.0070	0.0048	-0.0030
	(0.83)	(-0.62)	(0.56)	(-0.93)	(0.67)	(-0.35)
Size	0.00062	0.00052	0.00087	0.00036	0.00099	0.00042
	(0.58)	(0.41)	(0.81)	(0.29)	(0.79)	(0.31)
Leverage	-0.025**	-0.029*	-0.024**	-0.033**	-0.021	-0.020
	(-2.11)	(-1.74)	(-2.09)	(-2.10)	(-1.51)	(-1.13)
Profitability	-0.0020	0.024	-0.018	-0.00064	-0.022	0.0036
	(-0.12)	(1.14)	(-1.05)	(-0.031)	(-1.23)	(0.17)
Tangibility	0.019**	0.025**	0.018**	0.023**	0.023***	0.026**
	(2.19)	(2.04)	(2.24)	(2.19)	(2.60)	(2.33)
Age					0.00021	0.00021
					(1.17)	(1.03)
Woman	**-0.015****	**-0.024**	**-0.014****	**-0.029****	**-0.014****	**-0.021***
	(-2.30)	**(-1.64)**	**(-2.41)**	**(-2.22)**	**(-2.18)**	**(-1.79)**
Observations	625	625	625	625	490	490
R-squared	0.065	0.068	0.057	0.058	0.076	0.076
Year fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
Region fixed effects	yes	yes	yes	yes	yes	yes

Panel B: Nearest-neighbor matching						
ATT	Raw Return		Abnormal Return			
Window [*d*]	[-1;1]	[-2;2]	[-1;1]	[-2;2]	[-1;1]	[-2;2]
Model	Ia	Ib	IIa	IIb	IIIa	IIIb
Woman	**-0.0256****	**-0.0305***	**-0.0215****	**-0.0317****	**-0.0203**	**-0.0273***
	(-2.45)	**(-1.75)**	**(-2.40)**	**(-2.14)**	**(-1.92)**	**(-1.52)**
Leverage	X	X	X	X	X	X
Profitability	X	X	X	X	X	X
Tangibility	X	X	X	X	X	X
Growth	X	X	X	X	X	X
Size	X	X	X	X	X	X
Age					X	X
Industry	Exact	Exact	Exact	Exact	Exact	Exact
Region	Exact	Exact	Exact	Exact	Exact	Exact
Year	Exact	Exact	Exact	Exact	Exact	Exact

Continued on next page.

Table 2.7: Board member deaths: Announcement effects (continued).

The dependent variables are different returns around the announcements of the deaths of board members. Raw returns are cumulative returns around the event date. Abnormal returns are estimated based on a 250-day market model using the MSCI World as the benchmark. WOMAN is a dummy that is set to one if the announcement refers to a deceased female board member and zero if it refers to a deceased male board member. In Panel A, we employ OLS regressions. In Panel B, we perform nearest-neighbor matching. Treatment is the death of a female board member (WOMAN). Information regarding the balancing of covariates can be found in Table 2.6. Three matches are made per observation. Coefficients are bias-adjusted due to non-exact (continuous) matching along some of the covariates (cf. Abadie and Imbens, 2011). Robust t- (z-)statistics are presented in parentheses for Panel A (Panel B). ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

One concern with the above event study is that there are only about 3% deceased female board members in the dataset (Table 2.6), which might affect the regression results. We therefore use a nearest-neighbor matching estimator, which compares the stock return performance around the announcement of the death of a female board member (treatment group) to that around the announcement of the death of a male board member (control group). Matching is performed along several firm characteristics prior to the announcement as well as board member age. Coefficients are bias-adjusted due to non-exact (continuous) matching along the covariates (cf. Abadie and Imbens, 2011). We also exact-match each treated firm to a control firm based on industry, region, and announcement year. Three matches are made per observation.[13] We also correct the standard errors for heteroskedasticity.

Panel B of Table 2.7 reports the results for the nearest-neighbor matching estimator. In each specification, we obtain a negative coefficient of about -2% to -3% for WOMAN, the treatment variable. Although significance is reduced somewhat, some of the coefficients are even greater in magnitude compared to the regression specification in Panel A.[14]

Long-run event study

In addition to the short-term announcement effects of board member deaths, we also test long-run performance implications of board member deaths. In Panel A of Table 2.8, we

[13]The results are similar when we match to the two closest firms only.

[14]The reduction in significance likely stems from increased variance due to matching with replacement. Matching with replacement, however, ensures less biased coefficients.

therefore regress changes in TOBIN'S Q on the dummy variable DEATH, which is set to one in firm years with a deceased board member and zero otherwise. First differences are calculated based on the respective event windows provided in the column titles. The sample is based on all firm-year observations of firms with at least one deceased board member during the sample period. For firms with multiple events, each event is included individually with all firm-years during the sample period. T-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. For both the $[-1y; 1y]$ and $[-2y; 2y]$ event windows, we find no general long-run performance effect of board member deaths in general, as indicated by the insignificant coefficient for DEATH.

In Panel B, the sample is based on all firm-year observations with a deceased board member during that firm-year. WOMAN is a dummy variable that is set to one if a female board member dies and zero otherwise. Robust t-statistics are presented in parentheses. The coefficient for WOMAN exhibits a consistent negative and significant coefficient. For example, the coefficient of -0.11 in Model Ib suggests that Tobin's Q decreases by -0.11 in the year of the death and the year after the death of a female board member. This corresponds to a 6 % decrease in Tobin's Q (mean value: 1.6938). The results for the $[-2y; 2y]$ window are of similar magnitude.

In Panel C of Table 2.8, we again use a nearest-neighbor estimator to test long-run effects of board member deaths. The dependent variable is change in TOBIN'S Q from the beginning of the year of treatment to the end of the full fiscal year after. Treatment is the death of a female board member (WOMAN). The results confirm prior findings. In the full specification in Model V, we find an decrease in Tobin's Q by about -0.14 or 8% from the mean when a female board member dies. In sum, the evidence based on board member deaths in this section suggests that there is a causal impact of female board representation on firm valuation. In contrast, however, we do not detect any effects related to board member deaths in general.[15]

[15]We also do not find general short-term announcement effects of board member deaths.

Table 2.8: Board member deaths: Long-run event study.

Panel A: Regression analysis (full sample)				
Δ TOBIN'S Q [y]	[−1; 1]		[−2; 2]	
Model	Ia	Ib	IIa	IIb
Δ Leverage	-0.33***	-0.33***	-0.29***	-0.29***
	(-4.28)	(-4.26)	(-2.74)	(-2.70)
Δ Profitability	0.37***	0.37***	0.76***	0.77***
	(5.35)	(5.42)	(7.39)	(7.45)
Δ Tangibility	-0.089	-0.096	-0.25**	-0.26**
	(-0.97)	(-1.06)	(-2.41)	(-2.50)
Δ Growth	0.047**	0.048***	0.14***	0.14***
	(2.57)	(2.64)	(5.28)	(5.31)
Δ Size	-0.12***	-0.13***	-0.23***	-0.24***
	(-3.86)	(-4.05)	(-6.60)	(-6.88)
Death	**-0.0028**	**-0.00064**	**-0.0067**	**-0.0064**
	(-0.18)	**(-0.042)**	**(-0.33)**	**(-0.31)**
Observations	18,495	18,473	16,691	16,669
R^2	0.068	0.074	0.095	0.098
Industry fixed effects	no	yes	no	yes
Region fixed effects	no	yes	no	yes
Year fixed effects	yes	yes	yes	yes

Panel B: Regression analysis (deaths sample)						
Δ TOBIN'S Q [y]	[−1; 1]			[−2; 2]		
Model	Ia	Ib	Ic	IIa	IIb	IIc
Δ Leverage	-0.33	-0.34*	-0.40	-0.41	-0.42	-0.36
	(-1.64)	(-1.72)	(-1.60)	(-1.55)	(-1.56)	(-0.98)
Δ Profitability	0.12	0.13	0.15	0.73**	0.74**	0.72**
	(0.61)	(0.63)	(0.57)	(2.48)	(2.47)	(2.12)
Δ Tangibility	-0.042	-0.026	-0.025	-0.18	-0.16	-0.34
	(-0.19)	(-0.11)	(-0.070)	(-0.54)	(-0.46)	(-0.60)

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Table 2.8: Board member deaths: Long-run event study (continued).

Δ TOBIN'S Q [y]	[−1; 1]			[−2; 2]		
Model	Ia	Ib	Ic	IIa	IIb	IIc
Δ Growth	0.11**	0.10**	0.085	0.20**	0.20**	0.22*
	(2.21)	(2.16)	(1.58)	(2.26)	(2.25)	(1.95)
Δ Size	-0.17*	-0.18*	-0.21	-0.44***	-0.44***	-0.54***
	(-1.84)	(-1.88)	(-1.38)	(-3.94)	(-3.92)	(-3.43)
Age			-0.0013			-0.0039*
			(-0.67)			(-1.65)
Woman	**-0.13****	**-0.13****	**-0.11***	**-0.13***	**-0.12***	**-0.10**
	(-2.23)	**(-2.20)**	**(-1.76)**	**(-1.82)**	**(-1.76)**	**(-1.44)**
Observations	1,487	1,486	1,005	1,417	1,412	955
R^2	0.118	0.125	0.137	0.137	0.143	0.158
Industry fixed effects	no	yes	yes	no	yes	yes
Region fixed effects	no	yes	yes	no	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Panel C: Nearest-neighbor matching						
ATT	Change in Q	Change in Q	Change in Q	Change in Q	Change in Q	
Model	I	II	III	IV	V	
Woman	**-0.16****	**-0.17****	**-0.12***	**-0.12****	**-0.14***	
	-2.33	**-2.35**	**-1.75**	**-1.96**	**-1.89**	
Δ Leverage	X	X	X	X	X	
Δ Profitability	X	X	X	X	X	
Δ Tangibility	X	X	X	X	X	
Δ Growth	X	X	X	X	X	
Δ Size	X	X	X	X	X	
Age	X	X	X	X	X	

Continued on next page.

Table 2.8: Board member deaths: Long-run event study (continued).

ATT	Change in Q	Change in Q	Change in Q	Change in Q	Change in Q
Model	I	II	III	IV	V
Industry		Exact		Exact	Exact
Region			Exact	Exact	Exact
Year					Exact

In Panels A and B, we employ OLS regressions. The dependent variable is change in TOBIN'S Q around the deaths of board members in general. First differences are calculated based on the respective event windows provided in the column titles. In Panel A, the sample is based on all firm-year observations of firms with at least one deceased board member during the sample period. For firms with multiple events, each event is included individually with all firm-years during the sample period. DEATH is a dummy variable set to one in firm years with a deceased board member and zero otherwise. T-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. In Panel B, the sample is based on all firm-year observations with a deceased board member during that firm-year. WOMAN is a dummy variable set to one if a female board member dies and zero otherwise. Robust T-statistics are presented in parentheses. In Panel C, we perform nearest-neighbor matching. The dependent variable is change in TOBIN'S Q from the beginning of the year of treatment to the end of the full fiscal year after. Treatment is the death of a female board member (WOMAN). Information regarding the balancing of covariates can be found in Table 2.6. Three matches are made per observation. Coefficients are bias-adjusted due to non-exact (continuous) matching along some of the covariates (cf. Abadie and Imbens, 2011). Robust z-statistics are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

2.4 Further tests based on the large-scale board dataset

In this section, we analyze how female board representation affects firm valuation based on panel regression for the large board dataset. After an evaluation of the general impact of female board members on firm value, we exploit the internationality of the dataset to shed light on the underlying mechanisms.

2.4.1 Methodology

To test whether and how women on boards affect firm valuation, we apply pooled OLS and firm fixed effects regression. Firm fixed effects models offer the advantage that they control for any time-invariant omitted variables that may bias OLS results. The main dependent variable is TOBIN'S Q. Independent (control) variables are lagged by one year. OLS models also include year, industry, and country fixed effects.[16] In firm fixed effects models, we control for time effects. Since we use an international board dataset, we employ, in addition to country or firm fixed effects, country-year specific control variables. These are a country's GDP per capita and the ratio of a country's market capitalization to GDP, both obtained from the World Bank. Huber / White robust standard errors clustered by firms or countries are further employed in all models (Petersen, 2009; Cameron et al., 2011; Thompson, 2011). All variables used in interaction terms are demeaned in the respective models. The construction of all variables is explained in detail in Appendix A.

2.4.2 General implications

We start by presenting large-scale evidence on the women-performance relation for the full board dataset. Model Ia in Table 2.9 represents a pooled OLS regression with year, industry, and country fixed effects. Overall, we find a positive and significant coefficient for the WOMEN variable. The size of the coefficient suggests that in a firm with an average proportion of female board members of 8.5%, a one standard deviation increase in

[16] Industry dummies are based on the 49 industry portfolios defined by Fama and French.

female board representation is associated with an increase in TOBIN'S Q by 0.02 standard deviations or 0.03 in absolute values, which corresponds to 2% of the average TOBIN'S Q in the sample. Model Ib shows the outcome of a firm fixed effects regression to control for time-invariant firm characteristics, while Model Ic also includes country-year fixed effects to capture time-variant country-specific unobservables. Again, women on boards are positively related to firm valuation. With regard to the control variables, profitability, growth, GDP per capita, and market capitalization to GDP are positively associated with TOBIN'S Q, while size, leverage, and tangibility exhibit a consistently negative impact. In Models IIa to IIc of Table 2.9, we redo all our analyses and only consider directors, as discussed in Section 2.2.2. The results are very similar to those obtained in Models Ia to Ic. Thus, different board definitions do not alter the results.

The descriptive analysis in Section 2.2.2 revealed differences in education, betweenness, and family relations between male and female board members. Omitting these characteristics from regressions could lead to biased results, for example, because female board members are more likely to have family relations in the boardroom and family relations may result in higher or lower levels of firm valuation. As controlling for characteristics of individual people in firm-level regressions is not very intuitive, we perform person-level regressions in Table 2.10.[17] To this end, we observe each board member in each year and in each firm he or she is active.

In Model Ia, we report a person-level regression without controls for personal characteristics. In line with our previous findings, female board members are positively related to firm valuation, as indicated by the positive coefficient for the GENDER dummy variable, which is set to one for female board members and zero otherwise. If we include the controls for education, network centrality, and family relations (Model Ib), the number of observations drops from about 2.0 million to 500,000, mainly because of missing data on board member education. Nevertheless, the results confirm prior findings. After the inclusion of

[17]Including average board education, betweenness, and family relations in firm-level regressions confirms the findings in previous subsections. However, the results may still be driven by differences in education, betweenness, and family relations *within* a given board even after controlling for average board characteristics.

person-level control variables, the GENDER dummy variable is still positive and significant. Furthermore, we find some evidence that higher levels of education and network centrality are positively associated with firm valuation, while the opposite holds true for board-level family relations. In the remainder of Table 2.10, Models IIa and IIb, which are based on directors only, confirm the positive relation between female board members and firm valuation. Overall, the results indicate that firm valuation is positively associated with women on corporate boards. This relation is robust to the inclusion of unobserved time-invariant firm characteristics, country-year fixed effects as well as person-level controls.

2.4.3 Cross-country differences and the underlying mechanism

In the next section, we exploit the internationality of the board dataset to explore the underlying reasons for this effect. To this end, we perform country-specific regressions of Model Ia in Table 2.9.[18] We only consider countries in which female board members are present in more than 200 firm-years. The results are shown in Table 2.11. Apparently, there is huge cross-country variation in the women-performance relation. The countries with the highest positive valuation impact of women on boards are Belgium, Norway (before the introduction of the quota), Spain, Switzerland, New Zealand, Canada, Austria, Finland, and the U.S. The greatest negative effect is found in Chile, Turkey, Brazil, Argentina, and Egypt.[19]

[18] When performing the country-specific regressions, we drop GDP per capita, Market Cap to GDP as well as the country dummies from the regression specification.

[19] As the coefficient for WOMEN is relatively small for Chile, we repeat all our analysis without Chilean firms and find that the results are robust to this specification.

Table 2.9: Female board representation and firm valuation: Firm-level analysis.

	Extended board definition			Directors only		
Model	Ia	Ib	Ic	IIa	IIb	IIc
Size	-0.047***	-0.54***	-0.56***	-0.037***	-0.54***	-0.56***
	(-10.2)	(-32.6)	(-32.0)	(-8.84)	(-32.4)	(-31.9)
Board Size	0.086***	-0.048***	0.011			
	(7.95)	(-3.74)	(0.83)			
Board Size [Dir]				0.051***	-0.047***	0.010
				(5.09)	(-4.31)	(0.83)
Leverage	-0.67***	-0.079*	-0.0042	-0.69***	-0.077*	-0.00041
	(-21.9)	(-1.80)	(-0.094)	(-22.4)	(-1.73)	(-0.0091)
Profitability	1.25***	0.70***	0.64***	1.24***	0.70***	0.64***
	(18.8)	(14.5)	(13.4)	(18.5)	(14.4)	(13.3)
Retained Earnings	-0.25***	-0.016	-0.0066	-0.25***	-0.016	-0.0060
	(-19.9)	(-0.91)	(-0.38)	(-19.9)	(-0.90)	(-0.34)
Tangibility	-0.30***	-0.096**	-0.11**	-0.31***	-0.10**	-0.12**
	(-10.7)	(-2.08)	(-2.47)	(-10.8)	(-2.15)	(-2.55)
Growth	0.26***	0.17***	0.18***	0.26***	0.17***	0.18***
	(19.5)	(14.4)	(15.2)	(19.4)	(14.4)	(15.2)
GDP per Capita	1.40***	1.77***		1.43***	1.78***	
	(24.0)	(30.0)		(24.3)	(29.8)	
Market Cap to GDP	0.025*	0.024*		0.021	0.025**	
	(1.84)	(1.86)		(1.50)	(1.99)	
Women	**0.23*** **	**0.17** **	**0.14** **			
	(4.21)	**(2.33)**	**(1.99)**			
Women [Director]				**0.19*** **	**0.15** **	**0.13* **
				(3.86)	**(2.10)**	**(1.81)**
Observations	157,090	157,406	157,428	155,410	155,725	155,747
R^2	0.19	0.61	0.64	0.19	0.61	0.64
Year fixed effects	yes	yes	yes	yes	yes	yes
Firm fixed effects	no	yes	yes	no	yes	yes
Industry fixed effects	yes	no	no	yes	no	no
Country fixed effects	yes	no	no	yes	no	no
Country-year fixed effects	no	no	yes	no	no	yes

The dependent variable is TOBIN'S Q. Estimation models are pooled OLS regressions or firm fixed effects regressions. Models I refer to the sample related to the extended board definition, while Models II are estimated based on directors only. All independent variables are lagged by one period. *T*-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

Table 2.10: Female board representation and firm valuation: Person-level analysis.

Sample	All board members		Directors only	
Model	Ia	Ib	IIa	IIb
Size	-0.036***	-0.032***	-0.041***	-0.038***
	(-6.97)	(-4.25)	(-7.93)	(-5.24)
Board Size	0.13***	0.15***	0.14***	0.16***
	(8.50)	(5.59)	(8.93)	(6.59)
Leverage	-0.74***	-0.95***	-0.73***	-0.88***
	(-22.1)	(-16.8)	(-22.3)	(-16.7)
Profitability	1.56***	1.13***	1.44***	1.05***
	(21.4)	(12.0)	(20.8)	(11.7)
Retained Earnings	-0.26***	-0.19***	-0.26***	-0.19***
	(-21.0)	(-13.0)	(-20.9)	(-13.1)
Tangibility	-0.25***	-0.29***	-0.26***	-0.29***
	(-8.21)	(-6.59)	(-9.08)	(-7.30)
Growth	0.24***	0.30***	0.22***	0.28***
	(17.2)	(14.2)	(17.1)	(14.6)
GDP per Capita	0.94***	0.77***	1.01***	0.77***
	(19.3)	(8.78)	(20.6)	(9.27)
Market Cap to GDP	0.067***	0.098***	0.065***	0.083***
	(5.02)	(5.24)	(5.02)	(4.65)
Gender	**0.029*** **	**0.041*** **	**0.032*** **	**0.056*** **
	(4.63)	**(3.56)**	**(4.04)**	**(3.96)**
Education		**0.033*** **		**0.027*** **
		(8.21)		**(5.77)**
Betweenness		**27.1** **		**34.3*** **
		(2.38)		**(2.85)**
Double Name		**-0.061*** **		**-0.049*** **
		(-4.89)		**(-3.36)**
Observations	2,006,503	529,757	1,152,112	330,305
R^2	0.205	0.211	0.204	0.208
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes

The dependent variable is TOBIN'S Q. Estimation models are pooled OLS regressions at the person-level, i.e., for each firm-year, there is one observation for each board member. All independent variables are lagged by one period. *T*-statistics based on Huber/White robust standard errors clustered by firm and person are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

In Table 2.12, we shed light on the underlying mechanisms and construct two country groups. In the table, countries with high (low) female performance are the ten countries with the highest (lowest) regression coefficients for the proportion of female board members (WOMEN) in Table 2.11. The table documents significant differences between men and women within the two country groups as well as between men and women across the two country groups. First, we find that board member education is higher in countries with stronger female performance implications, with no significant differences between men and women in that country group. The opposite holds true for countries with a negative relation between women and firm performance. A similar reasoning applies to betweenness, our measure for network centrality. In countries with low female performance, betweenness of women is about 60% lower than those of men, while in the other country group, average betweenness of men and women is not significantly distinguishable from zero. We therefore conclude that differences in the quality of female board members cannot explain our results, at least with respect to those two measures.[20] Furthermore, the positive impact of female board representation on firm performance continues to hold even after we control for these variables (cf. Table 2.10).

The last row in Table 2.12, which shows evidence for the DOUBLE NAME variable, suggests that, in both country groups, female board members are more prone to have family boardroom connections, with this effect being much more pronounced in the low female performance group. It appears that, in some countries, women are more likely to obtain their board positions not because of their skills and abilities, but because of family connections. This is in line with Terjesen et al. (2009), p. 324, who state based on Singh (2008) that "the majority of Jordan's women directors are connected to the controlling or founding family, signaling the importance of 'wasta' ('connections')".

[20]There may, however, be other dimensions of skill or ability in place, which result in our main finding. We discuss this issue further in the end of this section.

Table 2.11: Effect of female board representation on firm valuation across countries.

Country	Value effect	Country	Value effect
Belgium	1.75	Greece	0.02
Norway	1.61	Mexico	0.02
Spain	1.59	South Africa	-0.02
Switzerland	1.43	Thailand	-0.05
New Zealand	1.01	Germany	-0.09
Canada	0.98	Netherlands	-0.10
Austria	0.77	Hungary	-0.10
Finland	0.72	China	-0.14
USA	0.69	India	-0.15
Sweden	0.67	France	-0.18
Israel	0.57	Pakistan	-0.20
Taiwan	0.47	Malaysia	-0.30
Ireland	0.45	Australia	-0.32
Poland	0.39	Russia	-0.39
Japan	0.27	Portugal	-0.40
Philippines	0.21	Italy	-0.42
Hong Kong	0.19	Egypt	-0.52
Denmark	0.18	Argentina	-0.67
Indonesia	0.12	Brazil	-0.87
United Kingdom	0.08	Turkey	-1.09
Singapore	0.07	Chile	-3.19

This table shows the coefficients for WOMEN, obtained from regressions of Model Ia, Table 2.9, for each country. Only countries in which female board members are present in more than 200 firm-years are considered.

Table 2.12: Differences in characteristics of female and male board members across the sample countries.

	High female performance			Low female performance			High vs. Low (p-value)	
Variable	Women	Men	p-value	Women	Men	p-value	Women	Men
Education	2.37	2.37	1.00	1.87	1.91	0.00	0.00	0.00
Betweeness [10^{-4}]	0.35	0.34	0.31	0.18	0.30	0.00	0.00	0.00
Double Name	0.05	0.04	0.00	0.13	0.10	0.00	0.00	0.00

The table shows mean comparison of female and male board member characteristics across countries in which female board members are associated with high Tobin's Q and low Tobin's Q. Countries with high (low) female performance are the ten countries with the highest (lowest) regression coefficients for the fraction of female board members in Table 2.11. A detailed description of all variables can be found in Appendix A.

Family boardroom relations

In Model I in Table 2.13, we test this more formally and regress DOUBLE NAME on GENDER, interacted with a dummy variable that is set to one (zero) if a country is among the ten countries with the highest (lowest) regression coefficients for the fraction of female board members. We find that women are more likely to share the boardroom positions with other family members. This effect, however, is only present in countries where women negatively contribute to firm valuation.[21] Next, we test whether women with a common surname in the boardroom have a smaller impact on firm valuation. Results are displayed in Model II of Table 2.13. Women who share the surname with another board member have no effect on firm valuation because the coefficients for the female dummy and the interaction term based on the female dummy and DOUBLE NAME cancel each other out (coefficients: +0.035 and -0.037). To mitigate endogeneity concerns, we replace the firm-specific measure for double names with country-year averages. The results in Model III confirm prior findings.

Overall, the results show that women do not affect firm performance in general. When the board member selection process is influenced by family connections ("nepotism") and not necessarily skills or abilities relevant in the boardroom, the positive valuation effect of female board members disappears. This is likely because women who have been appointed due to family relations need not pass through harder recruitment processes than their male counterparts, for example because cultural barriers might disappear in the presence of family connections. Furthermore, it is possible that these family-related female board members do not increase *actual* board-level diversity.

[21] This holds also true if one performs logit regressions.

Table 2.13: Gender, nepotism, and firm performance.

Dep. Variable	DOUBLE NAME		TOBIN'S Q			
Model	Ia	Ib	IIa	IIb	IIIa	IIIb
Size	-0.0063***	-0.0045***	-0.036***	-0.032***	-0.037***	-0.032***
	(-8.40)	(-4.01)	(-7.08)	(-4.26)	(-7.10)	(-4.22)
Board Size	-0.016***	-0.0092*	0.13***	0.15***	0.14***	0.15***
	(-4.45)	(-1.75)	(8.51)	(5.59)	(8.57)	(5.57)
Leverage	0.025***	0.022***	-0.74***	-0.95***	-0.74***	-0.95***
	(4.48)	(2.89)	(-22.1)	(-16.8)	(-22.1)	(-16.8)
Profitability	0.024***	0.022***	1.56***	1.13***	1.56***	1.13***
	(6.24)	(4.25)	(21.4)	(12.0)	(21.4)	(11.9)
Retained Earnings	0.0072***	0.0042***	-0.26***	-0.19***	-0.26***	-0.19***
	(11.2)	(6.01)	(-21.0)	(-13.0)	(-21.0)	(-13.1)
Tangibility	0.022***	0.016**	-0.25***	-0.29***	-0.25***	-0.29***
	(3.90)	(2.02)	(-8.14)	(-6.59)	(-8.08)	(-6.61)
Growth	-0.0019**	-0.00090	0.24***	0.30***	0.24***	0.30***
	(-2.00)	(-0.75)	(17.1)	(14.2)	(17.2)	(14.2)
GDP per Capita	0.010	-0.018	0.94***	0.77***	1.05***	0.79***
	(0.64)	(-0.48)	(19.4)	(8.78)	(19.2)	(8.02)
Market Cap to GDP	0.0015	-0.0065	0.067***	0.098***	0.058***	0.096***
	(0.60)	(-1.36)	(5.00)	(5.24)	(4.21)	(4.91)
Education		-0.0054***		0.033***		0.034***
		(-5.39)		(8.20)		(8.27)
Betweenness		-9.33*		27.0**		27.1**
		(-1.82)		(2.37)		(2.38)
Gender	0.028***	0.059***	0.035***	0.046***	0.054***	0.069***
	(3.99)	(3.52)	(5.21)	(3.70)	(5.29)	(3.64)
Gender * Country Group	**-0.020*** (-2.67)**	**-0.056*** (-3.28)**				
Double Name			**-0.061*****	**-0.056*****		
			(-8.71)	**(-4.27)**		
Gender * Double Name			**-0.037** (-2.49)**	**-0.042 (-1.47)**		
Double Name [Avg]					**-2.12*****	**-0.36**
					(-4.00)	**(-0.41)**
Gender * Double Name [Avg]					**-0.22*** (-3.30)**	**-0.25** (-2.07)**
Observations	996,456	338,785	2,006,503	529,757	2,006,503	529,757
R^2	0.052	0.064	0.205	0.211	0.205	0.211

The dependent variable is DOUBLE NAME in Models I and TOBIN'S Q in all other models. Estimation models are pooled OLS regressions at the person-level, i.e., for each firm-year, there is one observation for each board member who holds at least two outside positions in that firm-year. Country Group is a dummy variable that is set to one (zero) if a country is among the ten countries with the highest (lowest) regression coefficients for the fraction of female board members in Table 2.11. Independent variables are lagged by one period. All models include industry, country, and year fixed effects. Variables used in interaction terms are centered. *T*-statistics based on Huber/White robust standard errors clustered by firm and person are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. Descriptions of all variables can be found in Appendix A.

Diversity or selection?

So far we have identified a positive effect of female board members on firm valuation. We now test whether this effect stems from superior skills of women undergoing more rigorous selection processes. To this end, we exploit the internationality of the board dataset and examine whether the positive valuation contribution of female board members is less pronounced in countries with higher gender equality. This is because higher degrees of gender equality potentially reduce barriers that prevent women from entering the boardroom, thereby resulting in lower required skills or abilities.

In Model I of Table 2.14, we therefore regress TOBIN'S Q and on WOMEN, the fraction of female board members, interacted with BOARD INEQUALITY, which is defined as the annual difference between the fraction of women in the total labor force in 1990 in a given country minus the average fraction of female board members in a given country and year, excluding the firm under consideration.[22] Higher values of BOARD INEQUALITY suggest that the process of becoming a board member is tougher for women in a given country, as the fraction of female board members in a given country is low relative to the overall fraction of women in the workforce. The positive and significant interaction terms in the table suggest that the positive value contribution of women is predominantly present in countries where they face greater problems entering the boardroom, possibly demanding even greater skills from female board members, which, in turn, results in higher firm performance.

In the remainder of Table 2.14, we test the robustness of this result by using two proxies of gender equality. First, we employ the average fraction of female board members in a given country and year, excluding the firm under consideration (AVG_WOMEN (COUNTRY)). Second, we determine the average fraction of female board members in all firms that are less than 100 kilometers away from a given firm (AVG_WOMEN (REGION)), excluding the firm

[22] We lag the fraction of women in the total labor force to the earliest year available in the World Bank database since becoming a board member during the 1998 to 2010 period is a lengthy process. The results remain unchanged if we use contemporaneous values for the fraction of women in the total labor force. The results remain also unchanged if we control for the fraction of female board members who share the same surname with another board member.

under consideration. Values are calculated using the "nearstat" Stata module developed by P. Wilner Jeanty. Firm address data is from the Worldscope database, which is then used to obtain geographic coordinates via the Google Maps API. The intuition behind these two variables is that higher fractions of female board members are suggestive of fewer barriers to boardrooms, making selection processes less demanding for women.

As expected, we now find a negative coefficient for WOMEN and the two measures of equality, which is in line with the result in Model I. The less women in the boardroom in a certain country or region, the more positive the impact on firm valuation. This is consistent with the view that in areas or countries with fewer women on the board, only the best women could make it to the boardroom, which is why we observe the positive relation between firm performance and female board representation—even though we cannot measure observable differences in education or betweenness between female and male board members in the countries with the strongest female valuation implications, possibly because these measures are imperfect proxies for skill or ability. Thus, simple additions of female board members to the boardroom, for example, by introducing mandatory quotas, is not likely to increase firm performance. On the contrary, as firms have to deviate from their self-selected optimal board structures, firm performance is likely to decrease in the case a quota is introduced, as documented, for example, by Ahern and Dittmar (2012).

2.5 Conclusion

Prior literature that focused on mandatory gender quotas like Ahern and Dittmar (2012) shows that such quotas are detrimental to firm value. For voluntarily appointed women, the empirical evidence, however, is mixed (Post and Byron, 2014), possibly because endogeneity makes it difficult to obtain reliable results for voluntarily appointed women as the selection of board members is endogenous (Hermalin and Weisbach, 1998). This paper provides causal evidence on the effect of voluntarily appointed female board members on firm value. A large board dataset covering 53 countries, about 35,000 firms, and more than 500,000 people allows us to identify deaths of board members. Analyzing event returns around these events mitigates endogeneity concerns.

Table 2.14: Implications of gender inequality.

Model	Ia	Ib	IIa	IIb	IIIa	IIIb
Size	-0.047***	-0.54***	-0.047**	-0.54***	-0.045**	-0.55***
	(-2.70)	(-10.1)	(-2.63)	(-10.1)	(-2.44)	(-9.62)
Board Size	0.085***	-0.044	0.085***	-0.043	0.087***	-0.041
	(3.07)	(-0.93)	(3.07)	(-0.91)	(2.83)	(-0.91)
Leverage	-0.67***	-0.080	-0.67***	-0.080	-0.71***	-0.087
	(-2.80)	(-0.59)	(-2.80)	(-0.59)	(-2.79)	(-0.55)
Profitability	-0.25***	-0.015	-0.25***	-0.015	-0.24***	-0.00072
	(-7.46)	(-0.75)	(-7.47)	(-0.74)	(-8.21)	(-0.048)
Retained Earnings	-0.30***	-0.094**	-0.30***	-0.094**	-0.29***	-0.12**
	(-5.58)	(-2.05)	(-5.61)	(-2.05)	(-4.97)	(-2.44)
Tangibility	0.26***	0.17***	0.26***	0.17***	0.28***	0.18***
	(4.05)	(5.40)	(4.05)	(5.40)	(4.05)	(5.02)
Growth	1.41***	1.75***	1.40***	1.75***	1.39***	1.69***
	(5.55)	(8.49)	(5.53)	(8.46)	(5.51)	(8.38)
GDP per Capita	0.026	0.027	0.025	0.027	0.072	0.075
	(0.85)	(0.83)	(0.82)	(0.82)	(1.38)	(1.20)
Market Cap to GDP	1.25***	0.70***	1.26***	0.70***	1.27***	0.71***
	(4.89)	(5.57)	(4.88)	(5.57)	(4.99)	(5.28)
Women	0.18*	0.066	0.22*	0.093	0.29**	0.19***
	(1.91)	(0.73)	(1.91)	(1.15)	(2.34)	(2.70)
Board Inequality	0.38	-0.62				
	(0.26)	(-0.28)				
Women * Board	**4.10*** **	**3.60***				
Inequality	**(2.85)**	**(1.91)**				
AVG_Women (Country)			-0.30	0.63		
			(-0.20)	(0.28)		
Women * AVG_Women			**-3.20****	**-4.76***		
(Country)			**(-2.16)**	**(-1.80)**		
AVG_Women (Region)					0.32	0.46
					(1.58)	(1.03)
Women * AVG_Women					**-2.79*****	**-4.07****
(Region)					**(-2.92)**	**(-2.10)**
Observations	157,090	157,406	157,090	157,406	138,821	139,123
R^2	0.194	0.610	0.194	0.610	0.199	0.612
Year fixed effects	yes	yes	yes	yes	yes	yes
Firm fixed effects	no	yes	no	yes	no	yes
Industry fixed effects	yes	no	yes	no	yes	no
Country fixed effects	yes	no	yes	no	yes	no

The dependent variable is TOBIN'S Q. Estimation models are pooled OLS regressions or firm fixed effects regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. *T*-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix A.

We find strong evidence that women in corporate boards increase firm value. Both long-run and short-run event studies show that the capital market reacts more negatively to the death of female board members if compared to their male counterparts. The positive valuation impact is confirmed by pooled OLS and firm fixed effects regressions for the entire board dataset, even after controlling for person-level characteristics such as education or networks.

The internationality of the sample helps us to shed light on potential reasons for the overall positive impact of voluntarily appointed women on firm value. The results indicate that this positive impact comes from more rigorous selection of female board members. This suggests that not women per se, but the fact that they have to traverse a more difficult path to the top leads to higher "quality" of female board members, which increases firm valuation.

Our study also documents that the proportion of female board members increased only slightly from about 8% to 9% during the 1998 to 2010 period. There is also a huge heterogeneity across different countries. For instance, the proportion of women is 3% in Japan, 8% in the U.S., and 20% in the Philippines. Not only the proportion, but also the impact of female board members on firm value varies greatly between countries. We find the most positive effect of female board members in Belgium, Norway (before the quota), Spain, Switzerland, and New Zealand. The most negative effects occur in Chile, Turkey, Brazil, Argentina, and Egypt.

Especially in light of the low share of female board members, our study has an important implication. We find no evidence for generally negative impacts of voluntarily appointed women. By contrast, firms seem to profit from such appointments. This indicates that only appointments which are related to legal pressure, e.g., due to mandatory gender quotas, are detrimental to firm value. However, the low proportion of female board members causes society and politics to call for gender quotas in many countries. To avoid the introduction of value-destroying quotas, firms would be well-advised to intensify their efforts to voluntarily appoint female board members. This may, for instance, include the creation of a corporate culture which fosters the promotion of women to the top. The importance of corporate culture in this regard is also highlighted by a survey of McKinsey (2013), which concludes that “companies must also work hard to transform mindsets and culture. These are crucial elements in the achievement of gender diversity” (p. 17).

3 Travel Distance and Firm Valuation: International Evidence

Abstract

Board members often cover large travel distances when they simultaneously serve in several firms. Based on a novel board dataset covering 35,000 firms across 54 countries, we show that travel distance signals board member quality as we find that higher travel distances are correlated with higher firm valuation. We also provide evidence on three possible channels through which travel distances affect firm value: Extraordinary abilities, a good fit between firms and board members, and higher board independence. We further document that busyness on average reduces firm valuation. Distant board members, however, more than compensate for negative effects of busy board members.

Keywords:	Corporate governance, boards, busyness, firm value
JEL Codes:	G32, G34, G38

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3.1 Introduction

Officers or directors with multiple board positions oftentimes have to cover large travel distances when they want to be physically present at the companies where they serve as a board member. In 2007, Frank Biondi, a former CEO of The Coca-Cola Company and Viacom, held, among others, simultaneous independent director positions at Hasbro (Pawtucket, Rhode Island/USA), Cablevision (Bethpage, New York/USA), BNY Mellon (New York City, New York/USA), Amgen (Thousand Oaks, California/USA), Seagate (Cupertino, California/USA), and Harrah's Entertainment (Paradise, Nevada/USA). At the same time, Leif Johansson was both CEO at Volvo (Gothenburg/Sweden) and director of Bristol-Myers Squibb (New York City, New York/USA) and Svenska Cellulosa (Stockholm/Sweden). A graphical illustration of the geographic locations of the board positions held by Frank Biondi and Leif Johansson can be found in Figure 3.1.

As can be seen in the figure, both Mr. Biondi, who held positions located both at the east and the west coast of the U.S., and Mr. Johansson, who held positions in Europe and the U.S., had to travel several thousand miles just to be present at the headquarters of their respective companies. In fact, based on a large international board dataset, we find that 18% of board members with at least three board seats ("busy board members") maintain a board position in another country. More than 1,500 board members even held board positions in another continent during the 1998 to 2010 period.

In this paper, we use a new board dataset covering 54 countries, 35,000 publicly listed firms, and more than 500,000 executive and non-executive directors as well as senior managers ("board members") over the 1998-2010 period to examine whether we can exploit information on the geographic distribution of board positions to distinguish good (i.e., value-increasing) from bad (i.e., value-decreasing) board busyness.[1] In particular, we look

[1]Because of the internationality of the dataset, we wish to ensure a high degree of comparability across the 54 sample countries. We thus perform all our analyses based on an extended board definition according to which we take both officers and directors into account. As a robustness check, we then re-estimate the

Board positions of Frank Biondi in 2007

Board positions of Leif Johansson in 2007

Figure 3.1: The figure shows the geographic locations of the board positions held by Frank Biondi (upper graph) and Leif Johansson (lower graph) in 2007.

at travel distances of a firm's busy board members. The intuition behind the distance measure is that it is supposed to capture the remoteness of the geographic location of one board position relative to the other board positions of that board member. For example, consider a board member who holds simultaneous board positions in New York City, London, Berlin, and Rome. From the perspective of the firm located in New York City, for instance, all three other positions of that person are relatively far away (*remote*). In contrast, from the perspective of the firm with headquarters in London, there is only one relatively distant board position located in New York City, while the other two board positions are relatively close. Thus, from the viewpoint of the firm in London, average travel distance to the other board positions is lower than the one of the firm in New York City.

We argue that busy board members with long travel distances (i.e., those with remote board positions) contribute positively to firm performance because travel distance serves as an empirical proxy for board member quality. There are at least three reasons why travel

main empirical specifications based on a sample of directors only. For more details, confer Section 3.3.

distance captures the presence of extraordinarily good board members. *First*, distant board members exhibit superior skills and abilities for which they are well-known in their home countries or even in a global setting. Thus, being a "high profile" board member with some media attention might be a necessary condition to receive distant board positions in the first place. *Second*, longer travel distances reflect better matching between the firm and the board member. By widening its board member search and recruitment process to non-local officers and directors, a firm enlarges the pool of potential board members. Thereby, the firm can overcome possible shortcomings in the supply of officers and directors in the local labor market (e.g., Knyazeva et al., 2013). For example, to cater particular decision-making, advising, or monitoring needs of the firm, it may decide to hire a widely known expert even though he or she lives on another continent. *Third*, a more distant busy board member is less likely to receive an additional board position because of nepotism than an officer or director who exploits his or her local network or family ties to obtain additional board seats. Distant board members may therefore be more independent monitors and thereby increase firm value, while local board members may signal nepotism-related agency conflicts.

In line with this reasoning, we find a positive link between firm valuation and travel distance in panel regressions. Of course, this does not allow us to draw any conclusions on causality. We argue, however, that the question whether quality increases firm value or firms with higher firm value attract people with higher quality is of second order importance for our paper as we aim to put forward travel distance as a quality measure. Nevertheless, it is interesting to ask whether causality goes from distance to performance, or vice versa. To mitigate endogeneity concerns due to omitted variables we control for several person-level characteristics such as betweenness as well as person fixed effects. Furthermore, we also exploit natural retirements of busy board members. In line with recent research on corporate boards (e.g., Nguyen and Nielsen, 2010; Fracassi and Tate, 2012; Fee et al., 2013), we focus on these departures from a company's board because they occur relatively random over time and independent of major changes in board composition, firm policies, and firm valuation. We assume that a busy board member will retire if, in the next year, he or she gives up all board positions simultaneously and then disappears from the dataset completely. Overall, we identify about 600 of these natural retirements. The intuition behind this approach is that giving up all positions simultaneously is likely to be driven by personal reasons and not a particular event (e.g., bad performance) in only one of the firms in which a certain board member holds a position. Furthermore, it is also unlikely that a board member gives up all the positions simultaneously when he or she anticipates future bad performance in only some of the firms and does not want to be associated with the decline in performance. In line with our main result, we find that a negative retirement effect is more pronounced in firms with busy board members with long travel distances.

Additional tests reveal that longer travel distances are likely to signal superior board member skills and abilities as well as value-increasing person-firm matching. In contrast, busy board members with shorter travel distances are likely to have obtained board positions because of family ties and are thus less independent. We thus put travel distance forward as a way of identifying value-increasing busy board members. The results are consistent with the view that a firm appoints distant board members when it observes extraordinary abilities or certain skills that cater particular needs of the firm that cannot be met in the local labor market, which is then accompanied by a higher market valuation.

We also provide evidence on the relation of board member busyness and firm valuation. We find that busyness on average reduces firm value. However, we identify situations in which busyness increases firm valuation: The more a firm's busy board members travel, the more positive the relation between busyness and performance. To shed light on the underlying mechanism, we show that firms with busy boards perform more, potentially value-destroying M&A transactions with greater volumes. In the presence of distant board members, however, this effect disappears. We therefore conclude that distant busy board members perform their management and monitoring duties more effectively than those with lower travel distances, thereby reducing M&A activity, which then increases firm valuation.

We contribute to the literature along several dimensions. *First*, based on a novel large-scale board dataset, we provide representative descriptive statistics on corporate boards and particularly busyness around the world. Though there is considerable evidence on boards in the U.S., less is known about board member busyness in countries other than the U.S., possibly because data on corporate boards for non-U.S. firms is not readily available.[2] We document large differences in board size or board-level busyness across the 54 sample countries. We further find that busyness among officers and directors has increased considerably over time, possibly because of an increase in globalization in the corporate sector as well as improved ways of working in remote places such as better information and communication technologies. *Second*, we show international evidence on the relation between busyness and firm performance. Though controversially debated, evidence on the costs and benefits related to board busyness is still non-conclusive. On the one hand and in line with Fama and Jensen (1983), one strand of the literature argues that multiple board positions signal quality (e.g., Kaplan and Reishus, 1990; Cotter et al., 1997; Brickley et al., 1999; Ferris et al., 2003), implying a positive impact of busyness on firm performance. On the other hand, however, it is also possible that busyness negatively affects firm performance because over-commitment prevents busy board members from doing their job effectively, resulting in poorer decision-making and monitoring (e.g., Shivdasani and Yermack, 1999; Core et al., 1999; Fich and Shivdasani, 2006; Jiraporn et al., 2009; Falato et al., 2014). *Third*, and most importantly, we put forward travel distance as a useful measure of board member quality and find a positive relation between distance and performance. Recent studies such as Perry and Peyer (2005), Field et al. (2013) and Masulis and Mobbs (2014) try to separate situations in which busyness contributes to firm value from those in which it deteriorates performance. We add to this literature by proposing an intuitive measure to distinguish situations in which busy board members contribute positively to firm value from those in which they destroy firm value.

The remainder of this paper is organized as follows. In Section 3.2, we develop our main hypotheses. In Section 3.3, we present our sample, explain key variables, and provide

[2]Notable exceptions of international studies on corporate boards and CEOs are, among others, Defond and Hung (2004), Dahya et al. (2002), Lel and Miller (2008), and Aggarwal et al. (2009).

descriptive statistics. Empirical results are shown in Section 3.4. Section 3.5 concludes.

3.2 Hypothesis development

3.2.1 General implications of busyness on firm performance

Many studies have controversially debated on the costs and benefits related to board busyness. Following Fama and Jensen (1983), multiple board memberships reflect quality because better board members are expected to be offered additional board seats more frequently. According to this "certification view", busy board members should therefore positively affect firm value. Kaplan and Reishus (1990), for example, show that executives of companies reducing their dividends are less likely to receive additional directorships because their perceived quality is lower. Brickley et al. (1999) report that retiring CEOs in firms with better performance prior to their retirement hold more outside board positions. Similarly, Ferris et al. (2003) document that directors of firms with stronger performance are more likely to receive outside appointments and that busy directors do not neglect their responsibilities in terms of committee meeting attendance. More recently, Field et al. (2013) find that IPO firms benefit from the expertise of busy directors on their boards, helping them to navigate public markets. Furthermore, board member busyness is closely related to the concept of network centrality, as suggested by Larcker et al. (2014). By definition, busy board members serve on the boards of multiple companies, which makes the board well-connected with other firms. This may improve access to important information such as industry trends or market conditions as well as learning about superior technologies, more effective management, and governance practices from other firms.

In contrast, holding many board memberships simultaneously reduces the amount of time a director or officer can spend on a given firm. For example, Lublin (2012), argues that a directorship requires an average time commitment of 228 hours per year. Over-commitment of busy board members in combination with limited information processing ability may then result in poor managerial decision-making or insufficient monitoring through non-executive directors (Carpenter and Westphal, 2001) and thereby cause bad firm outcomes. Core et al. (1999), for instance, find that CEOs in firms with greater agency problems, approximated by board busyness, are paid excessively. In addition, Fich and Shivdasani (2006) show that firms in which the majority of directors hold multiple directorships exhibit lower market-to-book ratios, weaker profitability, and lower sensitivity of CEO turnover to firm performance. Thereby, they provide evidence on a possible channel through which board busyness results in lower firm performance. Sharma (2011) argues that busyness decreases the ability of independent directors to monitor dividend policy. In line with her hypothesis, she finds a negative relation between busyness and dividend payouts. Cashman et al. (2012) try to disentangle contradictory findings on board busyness by comparing different empirical designs and datasets. On balance, they find a negative relation between firm performance and director busyness. In a more recent study, Falato et al. (2014) exploit deaths of directors and CEOs as natural experiments and provide evidence of a negative causal effect of busyness on performance and monitoring.

In summary, there are mixed findings on the costs and benefits of busy board members. Irrespective of an *overall* positive or negative effect of busyness on firm performance, there may also be cross-sectional variation in the busyness-performance relation. Masulis and Mobbs (2014) show that busy independent directors are less likely to be absent from a firm's board meetings when they perceive their directorship in that firm as relatively important. This results in a positive relation between busyness and performance in some firms, while the opposite holds true for "low-rank" directorships that are affected by busyness. In a related study, Field et al. (2013) argue that busy directors may be valuable advisors to IPO firms that have little experience with capital markets. They find that busyness contributes positively to firm value in IPO firms, while in larger firms, in which the monitoring function is likely to be more important than the advisory role of directors, this relation turns out to be negative.

3.2.2 Travel distance and firm performance

In this paper, we exploit the internationality of a novel board dataset to examine cross-sectional heterogeneity among busy board members. To this end, we propose travel distance—the distance busy board members have to cover when they simultaneously hold board positions in firms located at different places—as a measure to distinguish "good" (i.e., value-increasing) from "bad" (i.e., value-decreasing) busyness.

Ex ante, there are no clear predictions on the impact of travel distance on firm performance. On the one hand, busy board members with long travel distances could contribute positively to firm performance because long travel distances might serve as an empirical proxy for board member quality. There are at least three reasons why one might expect that travel distance captures the presence of extraordinarily good board members. *First*, distant board members could exhibit superior skills and abilities for which they are well-known in their home countries or even in a global setting. Thus, being a "high profile" board member with some media attention might be a necessary condition to receive distant board positions in the first place. Also, when a firm considers to nominate a board member who already holds a position in a distant firm, the appointing firm possibly accounts for the fact that the designated board member will be working remotely most of the time. Therefore, it is likely to hire the board member only if he or she credibly claims to invest sufficient efforts in the distant firm. Furthermore, modern information and communication technologies make virtual meetings or group conference calls possible, thereby allowing for efficient long-distance communication.

Second, longer travel distances could also reflect better matching between the firm and the board member. By widening its board member search and recruitment process to non-local officers and directors, a firm enlarges the pool of potential board members. Thereby it can overcome possible shortcomings in the supply of officers and directors in the local labor market (e.g., Knyazeva et al., 2013). For example, to cater particular decision-making, advising, or monitoring needs of the firm, it may decide to hire a widely known expert even though he or she lives on another continent.

Third, a more distant busy board member is less likely to receive an additional board position because of nepotism than an officer or director who exploits local network or family ties to obtain additional board seats. Distant directors may therefore be more independent monitors and thereby increase firm value, while local board members may signal nepotism-related agency conflicts. In a related study, Fracassi and Tate (2012), for instance, show that powerful CEOs appoint directors from their network to the boardroom and that CEO-director ties reduce firm value. Overall, we thus postulate that busy board members increase firm value when they travel further.

Hypothesis H1: A firm's board members' travel distances contribute positively to firm value.

On the other hand, traveling is a stressful and time-consuming task, reducing the amount of time a board member can spend on a given firm affiliation. Therefore, board members who have to travel a lot may invest less time in the firms in which they hold board seats. For example, directors might refrain from important board meetings, which, in turn, results in worse monitoring or advisory quality. In two related studies, for instance, Jiraporn et al. (2009) and Masulis and Mobbs (2014) show that busyness is positively related to the probability to be absent from board meetings. This effect may be amplified when busy board members have to cover long travel distances, which is then likely to engender lower firm performance. This argument is also closely related to Giroud (2012) who shows based on flight connections and the geographic location of plants that distance reduces plant productivity because distance worsens information flows between plants and headquarters. Finally, distant board members might not be aware of local peculiarities (e.g., market characteristics or customer demands), worsening their ability to advise distant firms adequately. We hence hypothesize that busy board members contribute negatively to firm value when they have to cover longer travel distances.

Hypothesis H2: A firm's board members' travel distances contribute negatively to firm value.

3.3 Data and descriptive analysis

Sample selection

For our empirical analysis, we retrieve a novel international board dataset from Thomson Reuters, which provides extensive information about corporate board members such as past and current firm affiliations and education. We then merge this dataset with the Worldscope database. After the exclusion of financial firms (SIC code between 6000 and 6999), firms with non-common stock, and observations with inconsistent data[3], we arrive at the final sample that covers 54 countries, 35,000 publicly listed firms, and more than 500,000 board members over the 1998-2010 period.

Corporate boards around the world

Summary statistics for the board-level variables can be found in Table 3.2. Overall, our board sample comprises more than 250,000 observations and it is therefore one of the largest board samples that is currently available. Even after the exclusion of financial firms, the board sample covers about 65% of the worldwide market capitalization of $54 trillion in 2010 (source: World Bank). U.S. and Japanese firms account for only one third of the sample observations. The sample is therefore relatively representative of a large number of countries. Thus, the size of the dataset allows us to provide conclusive evidence on corporate boards around the world.

Panel A of Table 3.2 provides descriptive statistics for several board variables based on an extended board definition. When applying this definition, we refer to both executive and non-executive directors as well as senior managers. This is because board types vary from country to country and based on this broad definition we wish to ensure a high degree of comparability across the sample countries. In contrast to the U.S. and Canada, for instance, where firms only have a sole board of executive and non-executive directors, many countries also have dual board systems (Adams and Ferreira, 2007). German listed

[3] In particular, we remove observations with negative sales, common stock, or cash dividends. We also drop observations where losses exceed total assets and cash dividends exceed sales.

public companies, for example, have to appoint both a so-called “Vorstand” (i.e., an executive board) as well as an “Aufsichtsrat” (i.e., a supervisory board).[4]

In Panel B of Table 3.2 we also show summary statistics for the board variables derived from data on executive and non-executive directors only, i.e., in this part of the table we drop all senior managers from the sample. We do this based on role descriptions in the database.[5]

Average (extended) board size amounts to 11.86, while the median is 10. For the U.S., average and median board size equal 12.28 and 12, respectively. There is considerable variation in board size across the sample countries. The average board size in Mexico, for instance, is 23.31, while it is 8.39 in the United Kingdom. Board size calculated based on directors only amounts to 6.84 (median: 6). The average senior management board in the sample has therefore approximately five members. The biggest boards of directors can be found (in decreasing order) in Mexico, the Czech Republic, Thailand, Egypt, and Russia. Firms have the smallest boards (in increasing order) in Indonesia, Australia, Estonia, Japan, and the Netherlands. In the U.S., the average board of directors consists of 7.12 members (median: 7). These numbers are a bit lower compared to other U.S. studies such as Yermack (1996) and Coles et al. (2008), possibly because our sample also comprises smaller firms. In the United Kingdom, a firm had on average 6.01 directors appointed during the sample period, which is again in line with single-country studies such as Dahya et al. (2002) and Guest (2008). We thus conclude—at least with respect to the U.S. and United Kingdom—that board data obtained from Thomson Reuters is of comparable quality to previous studies.

[4]We repeat all our analyses for directors only and find similar results.

[5]A person with the role of a “[...] director [...]”, for instance, will generally be classified as director. An exception is, for example, the role “director of finance”, which would be classified as manager. Similarly, a role description such as “general manager” would also be classified as manager. Other examples for managers are “managing director” or “Director, Americas”.

Table 3.2: Summary statistics for the board variables across the sample countries.

	Panel A: Extended board definition								Panel B: Directors only							
		Board Size		Positions		Busyness		Busy Board		Board Size		Positions		Busyness		Busy Board
Country	N	Mean	50%	Mean	50%	Mean	50%	Mean	N	Mean	50%	Mean	50%	Mean	50%	Mean
Argentina	732	15.66	13	1.19	1.11	0.03	0.00	0.00	730	9.36	8	1.22	1.09	0.04	0.00	0.02
Australia	12,841	9.03	8	1.65	1.42	0.16	0.11	0.08	12,796	4.63	4	1.74	1.50	0.21	0.18	0.16
Austria	824	10.42	9	1.41	1.27	0.09	0.00	0.02	809	7.60	6	1.44	1.29	0.11	0.00	0.04
Belgium	1,144	14.93	13	1.41	1.31	0.10	0.07	0.00	1,113	9.11	9	1.59	1.46	0.15	0.11	0.04
Brazil	1,055	14.01	13	1.42	1.27	0.10	0.06	0.04	1,043	8.76	8	1.51	1.33	0.14	0.09	0.07
Canada	10,431	11.59	10	1.73	1.54	0.17	0.13	0.08	10,277	6.66	6	1.79	1.60	0.24	0.20	0.16
Chile	1,651	18.15	17	1.58	1.38	0.14	0.10	0.05	1,651	9.14	9	1.90	1.57	0.24	0.15	0.19
China	18,045	12.91	13	1.25	1.20	0.06	0.04	0.00	17,882	8.90	9	1.32	1.22	0.08	0.05	0.00
Czech Republic	228	15.67	13	1.12	1.07	0.01	0.00	0.00	226	11.83	11	1.13	1.07	0.02	0.00	0.00
Denmark	1,315	12.43	11	1.30	1.21	0.07	0.00	0.00	1,314	7.32	7	1.40	1.29	0.10	0.00	0.01
Egypt	744	17.94	16	1.06	1.00	0.01	0.00	0.00	743	10.97	10	1.07	1.00	0.02	0.00	0.01
Estonia	67	10.87	10	1.17	1.07	0.01	0.00	0.00	66	4.65	5	1.20	1.00	0.03	0.00	0.00
Finland	1,375	16.29	15	1.29	1.23	0.07	0.05	0.00	1,360	7.27	6	1.53	1.44	0.14	0.13	0.05
France	7,422	11.84	10	1.27	1.07	0.06	0.00	0.02	7,282	6.17	5	1.36	1.00	0.09	0.00	0.06
Germany	7,152	9.23	7	1.30	1.20	0.07	0.00	0.01	7,076	6.37	5	1.36	1.20	0.09	0.00	0.03
Greece	2,994	14.54	13	1.17	1.07	0.04	0.00	0.00	2,978	7.93	7	1.23	1.00	0.06	0.00	0.01
Hong Kong	8,578	14.21	13	1.51	1.36	0.11	0.08	0.02	8,482	7.79	7	1.68	1.50	0.16	0.13	0.07
Hungary	324	15.39	13	1.16	1.08	0.03	0.00	0.00	322	10.50	9	1.18	1.10	0.03	0.00	0.00
Iceland	51	13.92	14	1.17	1.13	0.03	0.00	0.00	51	6.86	7	1.32	1.22	0.06	0.00	0.00
India	13,856	11.72	10	1.45	1.25	0.10	0.01	0.01	13,827	7.66	7	1.54	1.25	0.14	0.00	0.07
Indonesia	2,910	9.00	8	1.29	1.17	0.06	0.00	0.01	2,871	4.04	3	1.17	1.00	0.04	0.00	0.03
Ireland	641	10.82	9	1.33	1.20	0.07	0.00	0.02	641	7.86	7	1.33	1.20	0.09	0.00	0.03
Israel	1,622	14.22	13	1.59	1.40	0.13	0.10	0.03	1,616	7.83	7	1.77	1.50	0.21	0.17	0.14
Italy	2,449	12.93	11	1.40	1.25	0.10	0.06	0.02	2,436	9.30	9	1.47	1.29	0.13	0.08	0.06
Japan	39,693	10.46	8	1.06	1.00	0.01	0.00	0.00	38,929	5.19	5	1.08	1.00	0.02	0.00	0.00
Luxembourg	252	14.56	11	2.55	1.68	0.26	0.17	0.25	252	7.55	7	2.73	2.00	0.34	0.25	0.30
Malaysia	9,025	11.06	9	1.78	1.57	0.16	0.13	0.05	8,791	6.88	7	1.64	1.43	0.15	0.11	0.08
Mexico	1,191	23.31	23	1.49	1.33	0.11	0.07	0.02	1,188	13.26	12	1.64	1.43	0.17	0.11	0.07
Morocco	238	15.27	13	1.51	1.41	0.12	0.07	0.05	238	7.10	6	1.78	1.75	0.25	0.17	0.15
Netherlands	1,141	11.72	10	1.32	1.20	0.08	0.00	0.01	1,131	5.37	5	1.54	1.33	0.14	0.00	0.08
New Zealand	1,142	11.32	10	1.35	1.25	0.08	0.00	0.01	1,141	5.80	6	1.48	1.33	0.13	0.00	0.05
Norway	1,713	14.63	14	1.38	1.30	0.09	0.07	0.01	1,702	7.57	7	1.51	1.40	0.15	0.13	0.05
Pakistan	1,173	15.56	13	1.43	1.23	0.11	0.04	0.04	1,173	9.98	9	1.39	1.20	0.14	0.00	0.07
Philippines	1,473	14.77	14	1.74	1.57	0.17	0.13	0.06	1,453	8.29	8	1.96	1.67	0.25	0.17	0.23

Continued on next page.

Table 3.2: Summary statistics for the board variables across the sample countries (continued).

	Panel A: Extended board definition								Panel B: Directors only							
		Board Size		Positions		Busyness		Busy Board		Board Size		Positions		Busyness		Busy Board
Country	N	Mean	50%	Mean	50%	Mean	50%	Mean	N	Mean	50%	Mean	50%	Mean	50%	Mean
Poland	2,299	9.55	9	1.26	1.14	0.05	0.00	0.01	2,242	5.72	5	1.33	1.20	0.08	0.00	0.03
Portugal	628	9.69	9	1.22	1.10	0.04	0.00	0.03	622	8.40	8	1.21	1.10	0.05	0.00	0.03
Qatar	119	13.31	11	1.09	1.03	0.02	0.00	0.00	119	8.92	9	1.11	1.00	0.04	0.00	0.02
Russia	1,764	16.85	15	1.72	1.50	0.17	0.13	0.06	1,755	10.68	9	1.72	1.50	0.22	0.18	0.13
Saudi Arabia	608	14.51	13	1.10	1.07	0.02	0.00	0.00	608	9.44	9	1.12	1.00	0.03	0.00	0.00
Singapore	5,528	14.10	13	1.64	1.53	0.13	0.11	0.01	5,451	6.36	6	2.01	1.83	0.23	0.20	0.13
Slovakia	106	12.88	12	1.05	1.00	0.01	0.00	0.00	101	7.62	6	1.05	1.00	0.01	0.00	0.00
Slovenia	164	13.47	13.5	1.10	1.08	0.02	0.00	0.00	162	8.48	9	1.11	1.08	0.02	0.00	0.00
South Africa	3,102	12.00	10	1.32	1.17	0.07	0.00	0.01	3,083	8.02	8	1.41	1.20	0.10	0.00	0.02
South Korea	13,088	10.61	9	1.15	1.07	0.02	0.00	0.00	13,077	5.44	5	1.15	1.00	0.04	0.00	0.01
Spain	1,237	21.52	21	1.17	1.11	0.04	0.00	0.00	1,235	10.40	10	1.27	1.20	0.06	0.00	0.00
Sweden	3,540	14.24	13	1.39	1.30	0.09	0.07	0.01	3,504	6.75	6	1.65	1.50	0.18	0.14	0.09
Switzerland	2,071	12.77	12	1.37	1.31	0.09	0.07	0.01	2,051	6.59	6	1.61	1.50	0.16	0.13	0.08
Taiwan	1,354	9.72	9	1.38	1.22	0.08	0.00	0.01	1,339	6.14	6	1.51	1.29	0.13	0.00	0.06
Thailand	4,234	14.81	14	1.39	1.27	0.09	0.06	0.01	4,220	10.99	10	1.49	1.33	0.12	0.09	0.02
Turkey	2,034	18.37	17	1.34	1.19	0.07	0.00	0.02	2,013	7.22	7	1.60	1.33	0.16	0.00	0.14
United Arab Emirates	251	16.52	14	1.14	1.10	0.03	0.00	0.00	250	9.02	9	1.20	1.14	0.05	0.00	0.00
United Kingdom	13,902	8.39	7	1.39	1.25	0.09	0.00	0.02	13,846	6.01	6	1.42	1.27	0.12	0.00	0.04
USA	43,199	12.28	12	1.34	1.25	0.08	0.05	0.01	42,693	7.12	7	1.48	1.38	0.13	0.09	0.05
Venezuela	227	16.35	14	1.17	1.11	0.03	0.00	0.00	224	9.36	9	1.25	1.09	0.05	0.00	0.00
Total	254,947	11.86	10	1.35	1.19	0.08	0.00	0.02	252,185	6.84	6	1.43	1.22	0.11	0.00	0.05

This table shows descriptive statistics for the board variables across the 54 countries in the sample. The sample period is from 1998 to 2010. Panel A refers to variables based on an extended board definition that refers to both directors and senior management, while Panel B refers to variables based on directors only. Board Size is the number of board members (Panel A) or directors (Panel B) at a firm's fiscal year end date. Positions is the average number of executive and non-executive directorships as well as senior management positions per board member (Panel A) or director (Panel B). Busyness refers to the fraction of all board members (Panel A) or all directors (Panel B) with at least two outside positions at a firm's fiscal year end date. Busy Board is an indicator variable that is set to one if the majority of all board members (Panel A) or all directors (Panel B) is busy and zero otherwise. A detailed description of all variables can be found in Appendix B.

Columns 5 and 6 of Table 3.2 indicate that a member of the average (extended) board in the sample holds 1.35 board positions, while the median value amounts to 1.19.[6] For directors, these values amount to 1.43 and 1.22, respectively.[7] As expected, busyness is lower among senior managers possibly because handling additional board positions is more difficult to reconcile with a full-time position as a manager than a part-time employment as a (non-executive) director.[8]

Within the average U.S. boardroom, the number of board positions for (extended) board members and directors only is 1.34 and 1.48, respectively. These numbers are lower compared to other U.S. studies. This is possibly driven by the fact that our sample firms are on average smaller compared to earlier studies on board busyness and previous evidence (e.g., Cashman et al., 2012) shows that busyness increases with firm size. Average (median) total assets for the U.S. firms in our sample, for instance, equal \$1,138 and \$128 million, respectively, while Cashman et al. (2012), for instance, report an average number of directorships of 1.99 for S&P 500 firms (median total assets: \$7,039 million) and 1.47 for non-S&P 500 firms (median total assets: \$792 million). When we split the U.S. firms in our dataset into samples of smaller and larger firms, we observe a similar pattern.

Columns 7 and 15 of Table 3.2 indicate that 8% of all board members and 11% of all directors per firm-year are classified as busy, with a board member being classified as busy if he or she holds at least two other positions at a firm' fiscal year end date. There is considerable variation in board busyness across the countries in our sample. Mean director busyness is highest in Luxembourg (0.34) and lowest in Argentina and the Czech Republic (0.04). Only 5% of the boards of directors in our sample consist of 50% or more busy directors (Column 17), while recent U.S. studies by Cashman et al. (2012) and Masulis and Mobbs (2014) report values of 9% and 12%, respectively. Again, this is primarily driven by the inclusion of smaller firms in the sample.

In the U.S. about 8% of all board members and 13% of all directors per firm-year obser-

[6]When calculating the number of board positions a person holds simultaneously, we also take financial firms into account.

[7]When calculating director busyness, we take (outside) management positions into account.

[8]In a related study, Ferris et al. (2003), for example, show in Table I that outside directors hold more directorships than the average board member (1.89 versus 1.60).

vation can be classified as busy. If we restrict our U.S. sample to firm-year observations where total assets exceed $2 billion to arrive at a median firm size comparable to the one reported for S&P 500 firms in Table 2 in Cashman et al. (2012), we arrive at 25% busy directors (median: 23%), which is close to the mean value of 27% (median: 25%) reported by Cashman et al. (2012).

A graphical illustration of the countries in the sample and the distribution of busyness across the respective countries can be found in Figures 3.2 (extended board definition) and 3.3 (directors only). Overall, busyness is relatively high in North America as well as Australia and Russia. In contrast, busyness is lower in Europe and Asia and lowest in South America, Africa, and Japan.

Table 3.3 provides information regarding the development of the board variables over time. First, as can be seen from the table, the annual number of observations almost doubles from 12,000 to 22,000 over the 1998-2010 period. Second, average board size in the sample remains relatively constant, while officer and director busyness increase by about 50% over time. The increase in busyness is also present if one restricts the sample to firms that have already been included in the dataset before 2000.

Table 3.3: Summary statistics for the board variables over time.

	Panel A: Extended board definition									Panel B: Directors only								
		Board Size		Positions		Busyness		Busy Board		Board Size		Positions		Busyness		Busy Board
Year	N	Mean	50%	Mean	50%	Mean	50%	Mean	N	Mean	50%	Mean	50%	Mean	50%	Mean
1998	11,978	11.56	10	1.25	1.10	0.05	0.00	0.01	11,676	6.31	6	1.26	1.00	0.08	0.00	0.03
1999	14,396	11.51	10	1.26	1.11	0.06	0.00	0.01	14,069	6.40	6	1.28	1.09	0.09	0.00	0.04
2000	15,915	11.67	10	1.28	1.13	0.06	0.00	0.01	15,600	6.47	6	1.32	1.13	0.09	0.00	0.04
2001	16,333	11.99	10	1.30	1.14	0.06	0.00	0.01	16,065	6.67	6	1.35	1.14	0.10	0.00	0.05
2002	17,507	12.15	10	1.32	1.17	0.07	0.00	0.01	17,228	6.80	6	1.37	1.17	0.10	0.00	0.05
2003	19,057	12.13	11	1.34	1.18	0.07	0.00	0.02	18,780	6.75	6	1.41	1.20	0.11	0.00	0.05
2004	20,317	12.11	11	1.36	1.20	0.08	0.00	0.02	20,078	6.75	6	1.43	1.22	0.12	0.00	0.06
2005	22,794	11.99	10	1.37	1.20	0.08	0.00	0.02	22,552	6.83	6	1.47	1.25	0.12	0.00	0.06
2006	23,665	11.83	10	1.39	1.21	0.09	0.00	0.02	23,493	6.88	6	1.50	1.29	0.13	0.00	0.06
2007	24,078	11.81	10	1.40	1.22	0.09	0.00	0.02	23,946	7.00	7	1.52	1.30	0.13	0.00	0.06
2008	23,261	11.83	10	1.39	1.23	0.09	0.00	0.02	23,168	7.09	7	1.50	1.29	0.12	0.00	0.06
2009	23,164	11.68	10	1.39	1.23	0.09	0.00	0.02	23,093	7.10	7	1.50	1.30	0.12	0.00	0.06
2010	22,482	11.71	10	1.39	1.23	0.09	0.00	0.02	22,437	7.19	7	1.49	1.29	0.12	0.00	0.05
Total	254,947	11.86	10	1.35	1.19	0.08	0.00	0.02	252,185	6.84	6	1.43	1.22	0.11	0.00	0.05

This table shows descriptive statistics for the board variables over the 1998-2010 period. Panel A refers to variables based on an extended board definition that refers to both directors and senior management, while Panel B refers to variables based on directors only. Board Size is the number of board members (Panel A) or directors (Panel B) at a firm's fiscal year end date. Positions is the average number of executive and non-executive directorships as well as senior management positions per board member (Panel A) or director (Panel B). Busyness refers to the fraction of all board members (Panel A) or all directors (Panel B) with at least two outside positions at a firm's fiscal year end date. Busy Board is an indicator variable that is set to one if the majority of all board members (Panel A) or all directors (Panel B) is busy and zero otherwise. A detailed description of all variables can be found in Appendix B.

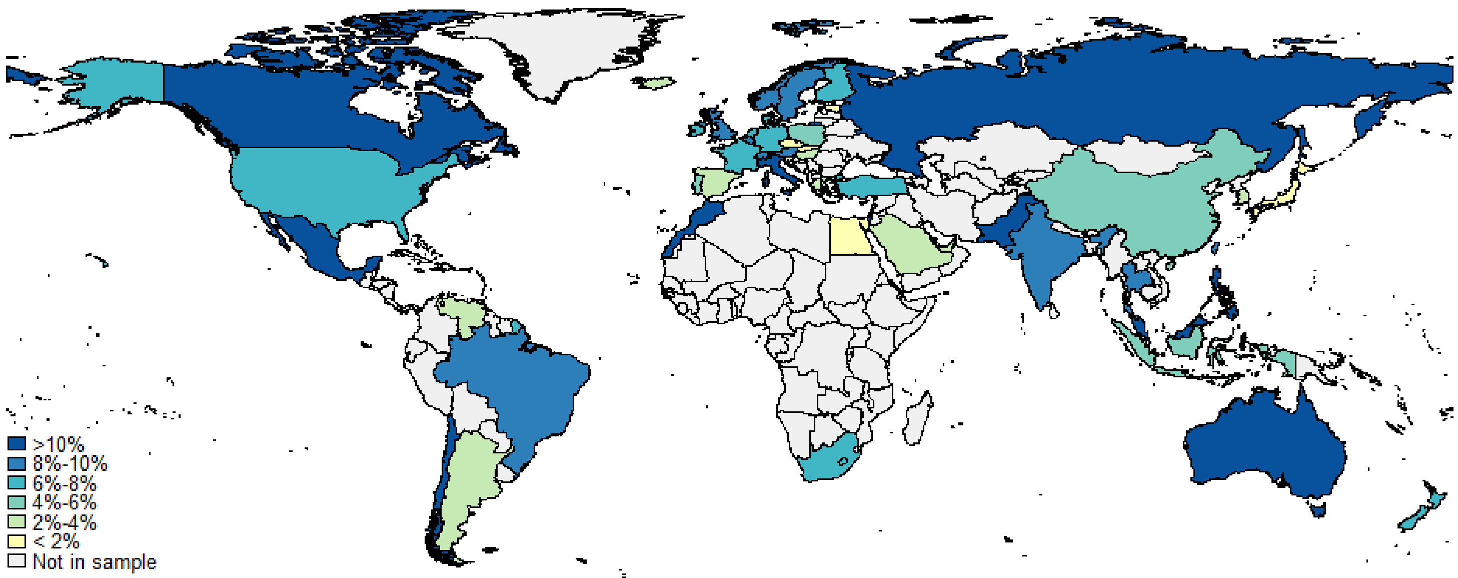

Figure 3.2: The figure shows the countries included in the sample and average busyness over the 1998-2010 period across all firms within a given country. Busyness refers to the fraction of both executive and non-executive directors as well as senior managers (i.e., board members) with at least two outside positions at a firm's fiscal year end date.

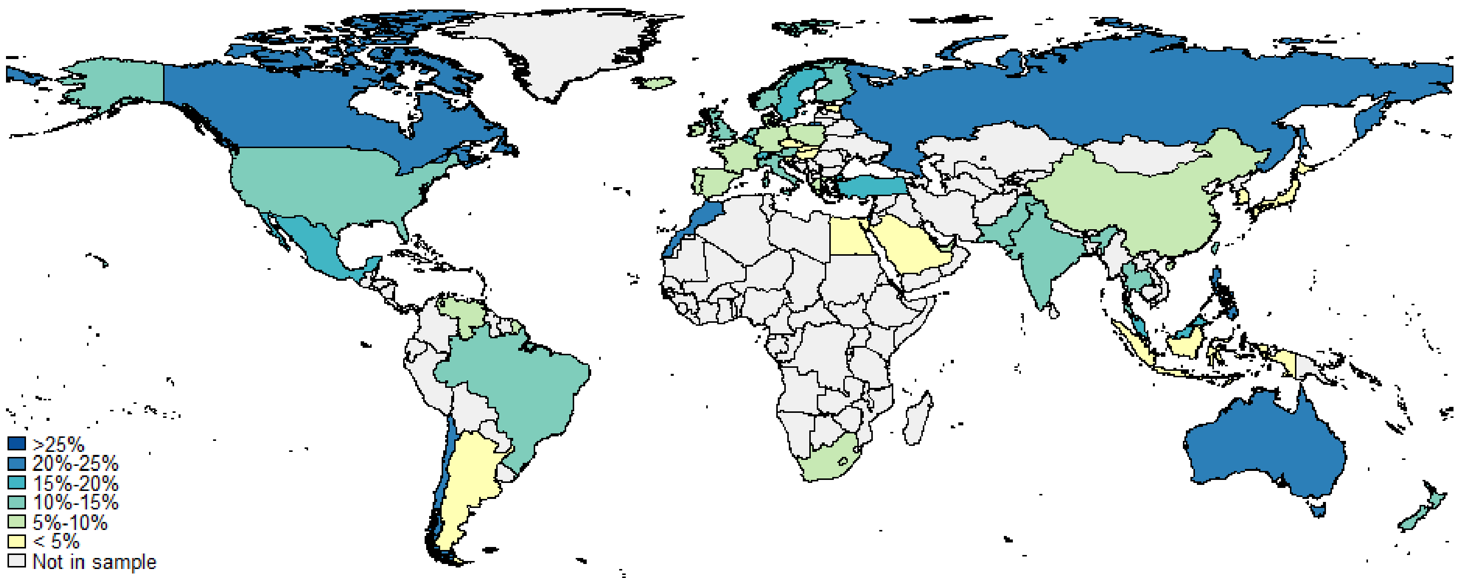

Figure 3.3: The figure shows the countries included in the sample and average director busyness over the 1998-2010 period across all firms within a given country. Busyness refers to the fraction of both executive and non-executive directors with at least two outside positions at a firm's fiscal year end date.

Travel distance

As explained in Section 3.2, we exploit the internationality of the board dataset to shed additional light on the good and the dark side of board member busyness. To this end, we look at travel distances of a firm's busy board members. The intuition behind the distance measure is that it is supposed to capture the remoteness of the geographic location of one board position relative to the other board positions. In doing so, we wish to approximate either outstanding board member qualities or over-commitment. For example, the more distant one position is relative to the other positions, the more stressful it is for a board member to travel there. Furthermore, if distance signals board member quality, it could also be that a board member has to be better and more renowned to receive more distant positions. In line with this reasoning, we define travel distance person-firm-specific and not person-specific. For a given board member, travel distance thus varies across that board member's firms. This allows us to distinguish board positions that are located relatively far away from other boards.

To obtain a single board member's travel distances, DISTANCE [PERSON], we calculate for *each* firm, year, and busy board member crow distances to the corporate headquarters where a given busy board member holds positions starting from the headquarters of the respective firm. Crow distances are obtained using the latitude and longitude of a firm's headquarters (source: Google Maps) and Vincenty's formulae. These formulae are used to calculate geodesic distances between a pair of points on the surface of the earth. The procedure is based on an exact ellipsoidal model of the earth and it is therefore more accurate than methods such as the great-circle distance which assumes a perfectly round geometrical object. For a given firm-year, DISTANCE is then defined as the average travel distance per busy board member and connection in miles. In firm-level regressions, the variable is set to zero when there is no busy board member. When performing regressions, we also employ the natural logarithm of the variable after adding one unit.

Figure 3.4 provides an illustrative example of how we calculate average travel distance per busy board member and connection. In the example, there is one board member who holds simultaneous board positions in New York City, London, Berlin, and Rome. In the upper graph, one board member's average travel distance is calculated based on the perspective of the firm located in New York City (USA), while in the lower graph, average travel distance—for the *same* board member—is calculated based on the perspective of the firm located in London (United Kingdom). For the position in New York City, total travel or crow distance amounts to the sum of the connections from New York to the three cities in Europe, which equals about $11,700$ miles. (Average) DISTANCE [PERSON] is then $11,700/3 = 3,900$ miles. For the same person, DISTANCE [PERSON] is $4,800/3 = 1,600$ miles for the position in London.

From the perspective of the firm located in New York City, for instance, all three other positions of that person are relatively far away, making traveling more time-consuming. Besides, receiving an additional board position in the U.S. while simultaneously holding three board positions across the Atlantic Ocean might also be a stronger signal of board member quality. In contrast, from the perspective of the firm with headquarters in London, there is only one relatively distant board position located in New York City, while the other two board positions are relatively close. Thus, average travel distance is lower. Finally, consider a person with only three board seats in London, Berlin, and Rome. In this case, average travel distance is even lower, because there is no board position which is relatively remote (e.g., a position in New York City).

Alternatively, one could also define travel distance as *total* distance and not deflated by the number of connections. This approach, however, would automatically result in longer travel distances for people with more board positions. However, we do not want to measure something that is highly correlated to the total number of board positions. Instead, we wish to capture the relative remoteness of *single* board positions, holding the number of board positions constant. Thereby, we can also distinguish differences in the value contribution of busy board members across the firms in which they hold board positions. This approach is also closely related to Masulis and Mobbs (2014), who distinguish the subjective importance of board positions to busy board members. Furthermore, one could calculate travel distances relative to a board member's place of residence. This approach,

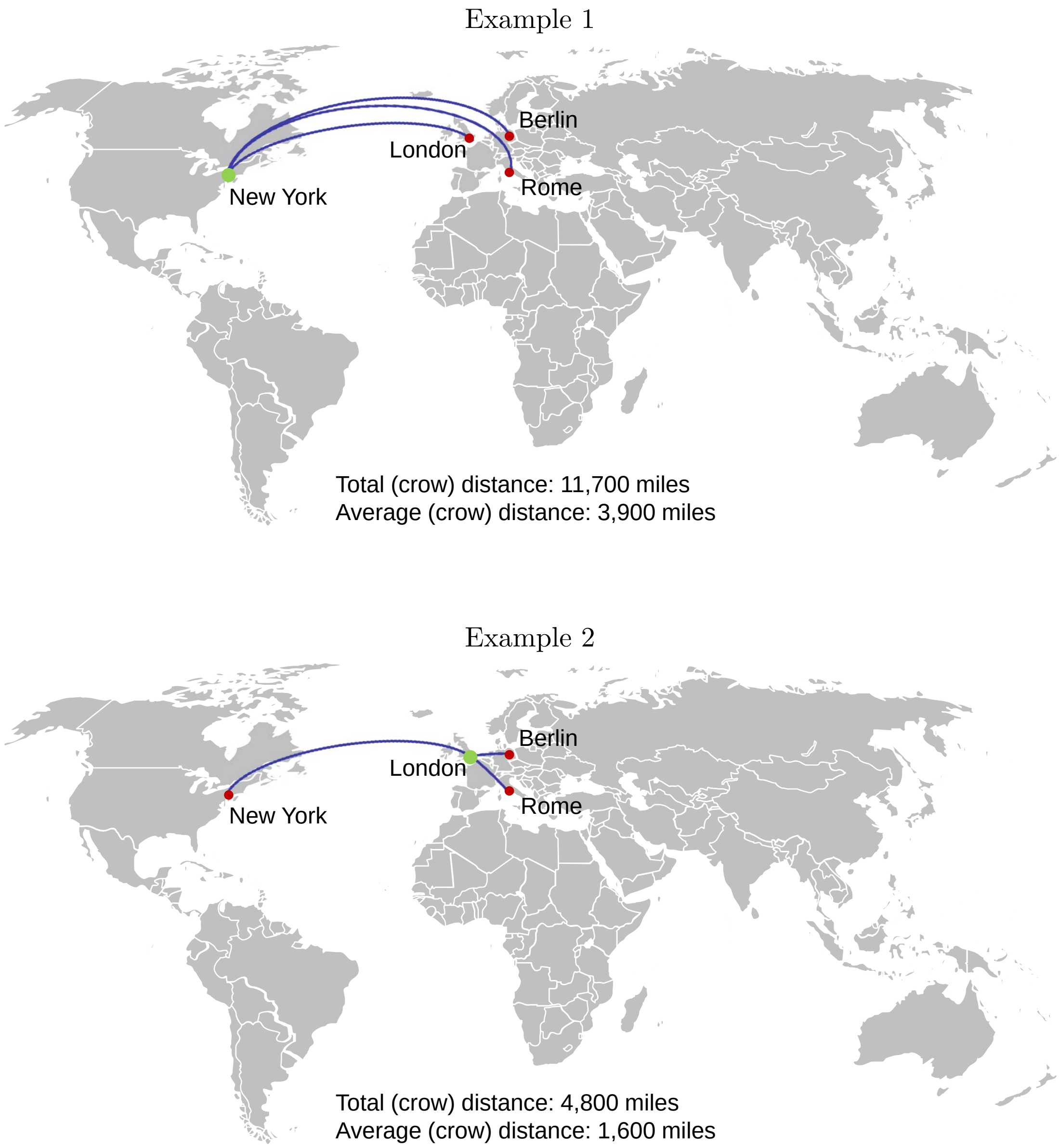

Figure 3.4: The figure shows two examples for the calculation of the distance variables. In the upper graph, one board member's average travel distance is calculated based on the perspective of the firm located in New York City (USA), while in the lower graph, average travel distance—for the *same* board member—is calculated based on the perspective of the firm located in London (United Kingdom).

however, suffers from data restrictions since information on a board members domicile is generally not available, in particular in an international setting.[9]

Finally, it is important to note that we deflate travel distance by the number of *busy* board members and *not* by a firm's full board size when aggregating the distance variable in a given firm-year. Thereby, the variable is less likely to capture something similar to classical variables measuring board busyness. Instead, it measures *differences* in travel distance *across* busy boards *only* and it can therefore be used to investigate cross-sectional differences of board busyness, i.e., for a given degree of board-level busyness, we can use the travel distance measure to distinguish value-increasing from value-decreasing board busyness.

Summary statistics for DISTANCE can be found in Tables 3.4 to 3.6. Within busy boards, the average travel distance per busy board member and connection amounts to about 480 miles (Table 3.4). The standard deviation is 887 miles. At the person-level, average travel distance is about 84 miles across all person-firm-year observations, while it is 527 miles for busy board members only (Table 3.7).[10] These numbers suggest that a large fraction of busy board members has to cover long distances when they want to be physically present at the firms where they hold a director or executive position. Travel distances are of similar magnitude among the subsample of busy directors. They are also a bit longer than those of senior managers, which does not come as a surprise since long travel distances are more difficult to reconcile with a full-time executive position. Board members travel most in larger countries such as Australia, Brazil, Russia, and the USA (Table 3.5), with mean travel distances being at about 600 to 900 miles. There are, however, some exemptions such as Ireland and Luxembourg, where busy board members cover large travel distances relative to the size of the country—in contrast to Hong Kong and Singapore. Finally, travel distances are lowest in smaller countries such as Estonia, Hong Kong, Singapore, Slovenia, and South Korea.

[9] One expection is the study by Alam et al. (2014) who collect residential information on 4,000 directors.

[10] Differences between the firm-level average travel distance and individual director travel distance arise because board member weights change when aggregating at the firm-level before reporting the summary statistics.

Table 3.4: Sample descriptive statistics: Firm-level.

Variable	N	Mean	1^{st} Quartile	Median	3^{rd} Quartile	SD
			Firm-level board variables			
Board Size	254,947	11.86	7.00	10.00	15.00	7.05
Positions	254,947	1.35	1.00	1.19	1.50	0.49
Busyness	254,947	0.08	0.00	0.00	0.13	0.12
Busy Board	254,947	0.02	0.00	0.00	0.00	0.13
Board Size [Dir]	252,185	6.84	4.00	6.00	9.00	3.53
Positions [Dir]	252,185	1.43	1.00	1.22	1.67	0.59
Busyness [Dir]	252,185	0.11	0.00	0.00	0.20	0.17
Busy Board [Dir]	252,185	0.05	0.00	0.00	0.00	0.22
			Variables related to travel distances			
Distance (busy)	113,273	479.66	4.15	135.04	569.28	886.99
Distance [Dir] (busy)	107,225	493.02	3.68	141.39	592.53	907.65
			Other firm-level variables			
Tobin's Q	275,219	1.65	0.90	1.17	1.76	1.52
Size	300,326	1,138.22	35.60	128.24	499.24	3,749.04
Leverage	299,712	0.21	0.03	0.18	0.34	0.19
Profitability	292,281	0.03	0.00	0.06	0.11	0.16
Retained Earnings	267,790	-0.16	-0.07	0.08	0.25	1.11
Tangibility	299,108	0.31	0.11	0.27	0.47	0.24
Growth	268,530	0.12	-0.04	0.10	0.25	0.39
			Other country-level variables			
GDP per Capita	302,125	22,867	6,333	25,191	36,539	14,028
Market Cap to GDP	302,089	1.07	0.62	1.00	1.35	0.74
Large Airports	100,529	0.27	0.06	0.14	0.49	0.27

This table provides summary statistics for firm-level variables over the 1998-2010 period. All other firm-level variables are winsorized annually at the 1%-level. A detailed description of all variables can be found in Appendix B.

There is also a slight increase in average travel distances over time, as suggested by Table 3.6. While travel distances amounted to about 470 miles in 1998, they reached 500 miles as of 2010. It thus appears that not only board member busyness increased over time (Table 3.2) but also the travel distances these board members covered. This finding is likely to be in line with an increase in globalization in the corporate sector as well as improved ways of working in remote places such as better information and communication technologies.

Table 3.5: Summary statistics for the travel distance variables across the sample countries.

	Panel A: Extended board definition (Distance)			Panel B: Directors only (Distance [Dir])		
Country	*N*	Mean	50%	*N*	Mean	50%
Argentina	197	1,472.28	686.51	172	1,742.61	855.76
Australia	8,084	869.63	298.43	7,367	908.22	291.97
Austria	391	216.54	115.43	373	220.72	96.10
Belgium	724	356.72	94.91	711	335.36	82.99
Brazil	601	721.92	310.33	594	750.44	304.59
Canada	7,541	631.59	364.84	7,163	656.06	384.02
Chile	1,191	241.28	2.81	1,179	248.36	2.57
China	9,112	337.57	215.62	8,958	334.96	212.07
Czech Republic	43	298.69	96.36	41	304.60	87.21
Denmark	635	515.15	111.74	620	481.21	103.10
Egypt	132	336.15	27.94	112	326.30	27.94
Estonia	10	41.56	2.03	9	40.59	1.49
Finland	805	239.04	78.75	770	224.55	63.23
France	2,341	459.57	198.03	2,201	438.82	189.40
Germany	2,605	341.11	158.09	2,526	329.76	154.14
Greece	791	235.88	9.47	727	256.65	8.40
Hong Kong	5,675	41.20	0.00	5,314	44.44	0.00
Hungary	105	497.01	133.18	101	524.62	141.12
Iceland	15	309.36	0.00	15	309.36	0.00
India	6,928	271.34	51.17	6,819	265.50	50.11
Indonesia	914	367.79	9.60	332	195.17	3.17
Ireland	253	1,388.85	668.72	249	1,403.89	684.58
Israel	1,099	678.35	38.48	1,070	675.32	27.31
Italy	1,319	233.90	118.93	1,310	223.36	114.40
Japan	3,108	336.06	31.57	2,959	316.84	22.45
Luxembourg	204	689.63	212.34	204	711.71	233.06
Malaysia	6,513	156.78	41.87	4,893	188.39	43.37
Mexico	809	489.57	209.29	792	497.03	219.84
Morocco	145	227.01	1.50	143	231.02	1.59
Netherlands	514	895.33	225.53	498	949.94	245.66
New Zealand	559	897.35	235.17	557	855.78	235.17
Norway	1,097	294.65	127.92	1,039	311.53	131.23
Pakistan	629	214.40	7.82	575	231.26	2.83
Philippines	1,007	198.56	8.61	934	220.83	13.02
Poland	808	157.97	100.96	742	159.03	106.68
Portugal	138	613.20	120.46	138	630.05	120.46
Qatar	32	132.97	0.00	29	2.04	0.00
Russia	1,232	643.53	475.63	1,215	657.87	481.85
Saudi Arabia	162	464.70	281.89	153	451.81	271.45
Singapore	4,324	68.09	0.00	4,037	66.50	0.00
Slovakia	10	124.46	131.30	9	128.86	133.68
Slovenia	39	10.57	10.25	39	11.38	11.84
South Africa	1,361	702.46	205.92	1,349	685.67	209.11
South Korea	2,279	59.22	6.12	2,038	63.24	4.73
Spain	564	586.52	168.45	522	529.81	160.61
Sweden	2,175	282.54	146.62	2,120	262.90	137.43
Switzerland	1,223	445.95	73.79	1,198	419.61	70.54
Taiwan	594	174.79	1.16	584	186.53	1.03
Thailand	2,429	185.20	3.11	2,420	182.77	3.23
Turkey	930	252.66	61.44	905	272.72	61.55

Continued on next page.

Table 3.5: Summary statistics for the travel distance variables across the sample countries (continued).

	Panel A: Extended board definition (Distance)			Panel B: Directors only (Distance [Dir])		
Country	*N*	Mean	50%	*N*	Mean	50%
United Arab Em.	97	482.37	7.54	97	443.24	4.89
United Kingdom	6,605	754.74	108.19	6,460	757.65	105.07
USA	22,086	787.34	611.26	21,776	804.52	628.34
Venezuela	89	466.56	1.42	67	619.51	2.84
Total	113,273	479.66	135.04	107,225	493.02	141.39

This table shows descriptive statistics for the travel distance variables for busy boards across the 54 countries in the sample. The sample period is from 1998 to 2010. Panel A refers to variables based on an extended board definition (DISTANCE) that refers to both directors and senior management, while Panel B refers to variables based on directors only (DISTANCE [DIR]). A detailed description of all variables can be found in Appendix B.

Table 3.6: Summary statistics for the travel distance variables over time.

	Panel A: Extended board definition (Distance)			Panel B: Directors only (Distance [Dir])		
Year	*N*	Mean	50%	*N*	Mean	50%
1998	4,022	469.38	124.91	4,022	469.38	124.91
1999	5,032	475.70	124.84	5,032	475.70	124.84
2000	5,946	470.72	115.96	5,946	470.72	115.96
2001	6,455	461.07	115.84	6,455	461.07	115.84
2002	7,397	457.63	118.50	7,397	457.63	118.50
2003	8,383	459.63	124.47	8,383	459.63	124.47
2004	9,265	467.03	124.88	9,265	467.03	124.88
2005	10,437	470.29	134.11	10,437	470.29	134.11
2006	11,235	496.33	145.64	11,235	496.33	145.64
2007	11,663	506.25	148.29	11,663	506.25	148.29
2008	11,318	485.90	140.31	11,318	485.90	140.31
2009	11,191	476.99	141.96	11,191	476.99	141.96
2010	10,929	501.75	167.89	10,929	501.75	167.89
Total	113,273	479.66	135.04	107,225	493.02	141.39

This table shows descriptive statistics for the travel distance variables for busy boards over the 1998-2010 period. Panel A refers to variables based on an extended board definition (DISTANCE) that refers to both directors and senior management, while Panel B refers to variables based on directors only (DISTANCE [DIR]). A detailed description of all variables can be found in Appendix B.

Person-related variables

In addition to travel distance, we obtain several variables related to individual board members' characteristics to mitigate omitted-variables bias. To this end, we obtain data on board members' education, industry experience, network centrality, within boardroom family connections, age, and compensation. Explanations of those variables can be found in Appendix B. Summary statistics are provided in Table 3.7, both for all board members in the sample and for busy board members (i.e., board members with at least three positions) only.

Table 3.7: Sample descriptive statistics: Person-level.

Variable	N	Mean	1^{st} Quartile	Median	3^{rd} Quartile	SD
			All observations			
Director	3,017,963	0.57	0.00	1.00	1.00	0.50
Busyness [Person]	3,017,963	0.07	0.00	0.00	0.00	0.26
Positions [Person]	3,017,963	1.32	1.00	1.00	1.00	0.96
#Industries	3,011,704	1.18	1.00	1.00	1.00	0.59
Betweenness [10^{-3}]	3,017,963	0.03	0.00	0.00	0.00	0.20
Double Name	3,017,963	0.13	0.00	0.00	0.00	0.34
Age	1,737,312	50.92	43.00	51.00	58.00	10.83
Education	854,634	2.12	1.00	2.00	3.00	1.11
University Quality	406,523	70.95	56.00	69.20	83.90	16.28
Distance [Person]	3,017,963	83.64	0.00	0.00	0.00	545.60
Compensation	332,833	621,720	98,301	261,826	622,890	1,069,028
			Busy board members only			
Director	216,770	0.90	1.00	1.00	1.00	0.29
Positions [Person]	216,770	4.15	3.00	4.00	5.00	1.71
#Industries	216,403	2.60	2.00	2.00	3.00	1.30
Betweenness [10^{-3}]	216,770	0.30	0.05	0.13	0.31	0.64
Double Name	216,770	0.11	0.00	0.00	0.00	0.31
Age	132,927	56.34	49.00	57.00	64.00	10.66
Education	114,326	2.29	1.00	2.00	3.00	1.15
University Quality	66,499	74.43	59.00	75.30	91.20	16.55
Distance [Person]	216,770	527.04	0.95	85.59	500.95	1144.97
Compensation	11,675	701,203	43,276	129,759	588,475	1,369,926
Dropout	216,770	0.01	0.00	0.00	0.00	0.08

This table provides summary statistics for person-level variables over the 1998-2010 period. A detailed description of all variables can be found in Appendix B.

Other variables

Summary statistics for other firm-level variables such as Tobin's Q or firm size, taken from the Thomson Reuters Worldscope database, are provided in Table 3.4. Again, variable definitions can be found in Appendix B. All the variables based on financial data are winsorized annually at the 1% level to mitigate the effects of outliers. To further control for time-variant cross-country differences, we also include a country's GDP per capita as well as its market capitalization relative to its GDP as a measure for stock market development in our regression equations. Data for these two variables is obtained from the World Bank. Again, summary statistics can be found in Table 3.4.

3.4 Valuation implications of travel distance

3.4.1 Person-level analysis

Characteristics of busy board members

In this section, we compare characteristics of busy board members with below and above median travel distances to arrive at a better understanding of the travel distance measure. The results are displayed in Table 3.8.

We find that busy board members with long travel distances are more likely to be directors who hold slightly fewer positions than their counterparts with lower travel distances. This does not come as a surprise since longer travel distances are more difficult to reconcile with full-time management positions. With respect to the age of busy board members, we do not find any significant differences between those who travel a lot and those who do not.

Next, we test whether travel distance is related to three measures of board member quality to shed light on whether distance captures quality or over-commitment. First, based on biographic information obtained from Thomson Reuters, we calculate a board member-specific index (EDUCATION) that equals one for a bachelor's degree, two for a master's degree, three for a MBA, and four for a Ph.D. Second, we assign the overall score of a board member's highest-ranked university among the 200 best universities according to the 2010-2011 World University Rankings to each board member (UNIVERSITY QUALITY). Third, we employ betweenness, the proportion of shortest paths between two board members in the network that pass through a certain board member, as a measure of network centrality. In the table, we find that busy officers and directors with strong networks and higher levels of education who obtained their degrees from more renowned universities have greater travel distances, as suggested by the results for the education index (EDUCATION), the university ranking variable (UNIVERSITY QUALITY) and betweenness. Thus, travel distance is likely to capture the effects of board member quality because it is positively correlated with education and network centrality.

Table 3.8: Characteristics of busy board members.

(1)	(2)	(3)	(4)	(5)
	Low distance	High distance	Delta	p-value
Director	0.88	0.93	0.06	0.00
Positions [Person]	4.18	4.12	-0.06	0.00
Age	56.31	56.36	0.06	0.32
Education	2.13	2.45	0.32	0.00
University Quality	72.42	76.14	3.72	0.00
Betweenness [10^{-3}]	0.27	0.34	0.07	0.00
#Industries (Positions [P] = 3)	2.00	2.08	0.08	0.00
Double Name	0.15	0.07	-0.08	0.00
Compensation	587,897	1,172,337	584,440	0.00
Compensation [Dir]	474,136	580,239	106,103	0.04

The table shows mean characteristics for busy board members with below and above median travel distances, respectively. Column (4) provides the difference between columns (2) and (3). Column (5) indicates whether the distance is significantly different from zero. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

As travel distance is likely to be related to board member quality we also test whether travel distance is related to general skills in the boardroom or rather industry-specific skills. When we calculate the average number of industries busy board members serve in, we find that board members with longer travel distances serve in fewer different industries (not reported in the table). This result, however, could be driven by the fact that board members who travel more also hold fewer board positions. To ensure comparability between board members with different travel distances, we thus restrict the sample to person-firm-years in which board members simultaneously hold exactly three positions.[11] In doing so, we find that busy board members with longer travel distances serve in a higher number of industries. This finding suggests that busy board members with more distant board positions reflect general skills valuable in the boardroom that are not necessarily restricted to a certain industry. In other words, busy board members who cover large distances are more likely to be known as general experts rather than industry experts.

We further examine whether travel distance is related to board independence. To this end, we calculate DOUBLE NAME, which is a dummy variable that equals one if another board member in the same firm shares the same surname and zero otherwise. We find that busy board members with long travel distances are significantly less likely to share the surname with another board member. We therefore conclude that distant board members bring higher levels of independence to the boardroom, at least in terms of family connections.[12]

The evidence up to now suggests that travel distance is likely to be associated with board member quality. If busy board members with longer travel distances were truly better than board members with lower travel distances, we would expect that they also receive higher compensation. To test this hypothesis, we obtain compensation data from Thomson Reuters. In line with this reasoning, we find that executives with longer travel distances earn about twice the amount in total fiscal year compensation compared to those with smaller travel distances. In the subsample of directors, we observe a similar pattern, although differences between busy board members with longer travel distances and those with lower travel distances are less pronounced, as indicated by COMPENSATION [DIR].[13] Overall, the results in this section indicate that longer travel distances are likely to be related to traditional measures of boardroom skills, compensation, network centrality as

[11] We obtain similar results if we look at exactly four, five, or more positions simultaneously.

[12] Classical measures of board independence (e.g., Dahya et al., 2008; Duchin et al., 2010; Fracassi and Tate, 2012) are hard to obtain in an international setting.

[13] Note that director compensation is relatively high because a director can simultaneously serve as an executive.

well as higher levels of independence.

Valuation implications

In this section, we test whether travel distance is positively or negatively related to firm performance. To this end, we regress Tobin's Q, defined as total assets minus common stock plus the market value of equity deflated by total assets, on travel distance. Regressions are based on person-level data for busy board members only, i.e., we observe each board member with at least three positions in each year and in each firm he or she is active. This approach allows us to add person-level control variables to the specification such as education and network centrality and. Thereby, we can disentangle the effects of travel distance from other board member characteristics. We restrict the sample to busy board members only since we are interested in cross-sectional variation within the subsample of busy board members. We also add firm-level controls as well as a set of country, industry, and year dummies. Industry dummies are based on the 49 industry portfolios defined by Fama and French.[14] Standard errors are clustered by person and firm. All independent variables are lagged by one period.

The results can be found in Model I of Table 3.9. Based on more than 150,000 observations, we find that travel distance and firm performance are positively correlated. This is in line with Hypothesis H1, which states that travel distances serves as a measure of board member quality. In addition, we find that Tobin's Q is negatively related to the number of board positions, suggesting that increasing levels of board busyness are detrimental to firm value. Betweenness, the proportion of shortest paths between two board members in the network that pass through a certain board member, is positively correlated with Tobin's Q, which is in line with Larcker et al. (2014). Therefore, board members who are more important because of their network interconnectedness contribute positively to firm value. At this point it is interesting to note that by controlling for a board member's network centrality, we are also able to distinguish quality effects approximated by travel distance from network effects. These network effects, which could also be captured by

[14] See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/.

board member busyness, arise automatically because a board member is, by definition, related to more individuals when he or she holds several board positions simultaneously. Finally, family relations, as indicated by the presence of board members with the same surname in a given firm (DOUBLE NAME), are negatively associated with firm performance.

In Model IIa of Table 3.9, we additionally control for education and age, which reduces the number of observations considerably. In general, we find a positive relation between education and performance, which does not come as a surprise. Age is negatively but insignificantly related to performance. Most importantly, however, we still obtain a positive and highly significant relation between travel distance and firm performance. Column IIb displays the beta coefficients for all the variables. An increase in travel distance by one standard deviation leads to a 0.042 standard deviation increase in predicted Tobin's Q (*t*-value: 3.03). Thus, capital markets learn about the quality of a firm's busy board members by looking at the geographic distribution of their board seats and, therefore, investors put a valuation premium on firms with busy board members who travel a lot. Across all the person-level characteristics, we also find that travel distance exerts the strongest effect on performance. For example, the beta coefficient for travel distance is about 50% greater in magnitude than the ones for the measures for education and network centrality.[15]

Also note that the coefficient for the distance variable, although smaller in magnitude, remains positive and significant after controlling for education. This implies that education can only partly capture the different aspects travel distance covers as a measure of board member quality. One intuitive explanation is that education is a rough proxy of board member quality, presumably the more so the more advanced a career is. Therefore, travel distance is a more suitable measure to assess the value contribution of busy officers and directors.

[15] We find similar results when we employ different network measures such as degree or closeness.

Table 3.9: Travel distance and performance.

Model	I	IIa	IIb (betas)
Size	-0.055***	-0.052***	-0.083
	(-8.11)	(-4.60)	
Leverage	-0.71***	-0.91***	(-0.12)
	(-14.1)	(-10.2)	
Profitability	1.62***	1.38***	0.16
	(15.3)	(7.57)	
Retained Earnings	-0.21***	-0.21***	-0.15
	(-12.6)	(-7.47)	
Tangibility	-0.18***	-0.22***	-0.040
	(-4.58)	(-3.38)	
Growth	0.19***	0.32***	0.093
	(10.2)	(7.70)	
Board Size	0.16***	0.17***	0.057
	(7.35)	(4.44)	
GDP per Capita	0.91***	1.05***	0.82
	(12.3)	(5.32)	
Market Cap to GDP	0.090***	0.099***	-0.075
	(5.20)	(3.29)	
Positions [Person]	-0.041**	-0.040	-0.0090
	(-2.11)	(-0.82)	
#Industries	-0.0015	0.011	0.0040
	(-0.10)	(0.36)	
Betweenness	45.9***	45.9***	0.025
	(5.02)	(3.28)	
Double Name	-0.042**	-0.074*	-0.017
	(-2.22)	(-1.75)	
Age		-0.0020	-0.014
		(-1.29)	
Education		0.012	0.010
		(1.05)	
University Quality		0.0020**	0.025
		(2.32)	
Distance [Person]	**0.018*** **	**0.020*** **	**0.042**
	(6.16)	**(3.03)**	
Observations	155,444	27,096	
R^2	0.221	0.251	
Year fixed effects	yes	yes	
Industry fixed effects	yes	yes	
Country fixed effects	yes	yes	
Standard error cluster	firm / person	firm / person	

The dependent variable is TOBIN'S Q in all models. Estimation models are pooled OLS regressions at the person-level, i.e., for each firm-year, there is one observation for each board member who holds at least two outside positions in that firm-year. Column IIb includes beta coefficients based on Model IIa. All independent variables are lagged by one period. T-statistics based on Huber/White robust standard errors clustered by firm and person are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

Robustness

In Table 3.10, we perform several robustness tests. First, we provide some evidence on the empirical validity of the measure. If travel distance truly captures something related to geographic distance, one might expect that the effects of travel distance are affected by the ease of travel within a given country. If a country, for example, has many large airports, it could be that reaching a given firm becomes easier, making the positive relation between travel distance and performance even stronger since traveling becomes less time-consuming and stressful. In contrast, it could also be that the effect of travel distance is reduced because, in case of improved travel conditions, longer distances become less extraordinary.

To test the moderating effect of the ease of travel, we interact travel distance with LARGE AIRPORTS, defined as the number of airports with paved runways (concrete or asphalt surfaces) longer than 3,047 meters per capita. Data is obtained from the CIA World Factbooks from 2003 to 2010. Both variables used in the interaction term are centered. In Model I of Table 3.10, we find that the positive relation between distance and firm valuation is stronger when there are more large airports in a given country. Thus, when time-consuming and stressful aspects of traveling are less prevalent, busy board members with longer travel distances can contribute more positively to firm value. Thus, this result suggests that travel distance is related to geographic variation.

Next, we restrict the sample to executive and non-executive directors only to mitigate concerns that the results are driven by cross-country variation in board systems, for example, because some countries adopt unitary board systems, while others mandate two-tier boards or the freedom of choice between the two of them (cf. Adams and Ferreira, 2007). In the reduced sample in Model II, however, we again find a positive and significant coefficient for the distance variable. Thus, the results are robust to the restriction of the sample to a certain type of board members (*directors*). Admittedly, however, even though we include country fixed effects and restrict the sample to directors only, we cannot completely rule out unobserved time-variant cross-country heterogeneity. In Section 3.4.1, we therefore exploit natural retirements of busy board members in a first-differences setup to provide additional evidence on the causality of the results.

Table 3.10: Travel distance and performance: Robustness.

Model	I	II	III
Size	-0.066***	-0.051***	-0.052***
	(-4.24)	(-4.42)	(-4.03)
Leverage	-0.88***	-0.92***	-0.93***
	(-5.17)	(-10.3)	(-9.46)
Profitability	1.29***	1.36***	1.33***
	(3.73)	(7.28)	(6.92)
Retained Earnings	-0.22***	-0.21***	-0.18***
	(-3.09)	(-7.21)	(-6.48)
Tangibility	-0.16*	-0.23***	-0.21***
	(-1.93)	(-3.34)	(-2.83)
Growth	0.27**	0.33***	0.36***
	(2.34)	(7.66)	(7.16)
Board Size	0.17***	0.17***	0.16***
	(2.89)	(4.28)	(3.53)
GDP per Capita	0.61	1.03***	0.94***
	(0.75)	(5.08)	(4.62)
Market Cap to GDP	0.00023	0.099***	0.28***
	(0.0039)	(3.13)	(4.07)
Positions [Person]	-0.068	-0.042	-0.067
	(-0.80)	(-0.83)	(-1.27)
#Industries	0.0058	0.011	0.038
	(0.17)	(0.33)	(1.10)
Betweenness	63.5***	43.5***	44.8**
	(4.20)	(3.04)	(2.06)
Double Name	-0.094	-0.063	-0.028
	(-1.47)	(-1.42)	(-0.53)
Age	-0.00086	-0.0019	-0.0028*
	(-0.48)	(-1.18)	(-1.71)
Education	0.012	0.013	0.016
	(0.83)	(1.05)	(1.21)
University Quality	0.0016*	0.0021**	0.0016*
	(1.66)	(2.34)	(1.68)
Distance [Person]	**0.015***	**0.020*****	**0.020*****
	(1.65)	**(2.95)**	**(2.96)**
Large Airports	**2.09*****		
	(3.95)		
Distance * Large Airports	**0.049****		
	(2.17)		
Observations	11,391	25,775	22,722
R^2	0.260	0.249	0.257
Year fixed effects	yes	yes	yes
Industry fixed effects	yes	yes	yes
Country fixed effects	yes	yes	yes
Standard error cluster	country / firm / person	firm / person	firm / person

Continued on next page.

Table 3.10: Travel distance and performance: Robustness (continued).

The dependent variable is TOBIN'S Q in all models. Estimation models are pooled OLS regressions at the person-level, i.e., for each firm-year, there is one observation for each board member who holds at least two outside positions in that firm-year. Model II is based on directors only. In Model III, countries that are considered to be tax havens (Hong Kong, Ireland, Luxembourg, Netherlands, Singapore, and Switzerland) are excluded from the sample. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by firm and person (and country) are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

Finally, in Model III of Table 3.10, we remove person-firm-year observations from so-called tax haven countries (Hong Kong, Ireland, Luxembourg, Netherlands, Singapore, and Switzerland) since Table 3.5 suggests that some countries that are considered to be tax havens (e.g., Ireland) exhibit some of the longest average travel distances. Although the number of observations is somewhat reduced in Model IV, we still observe a positive and significant coefficient for travel distance.

Causality

The above analysis does not allow us to draw any conclusions on causality. We argue, however, that the question whether quality increases firm value or firms with higher firm value attract people with higher quality is of second-order importance for our paper as we aim to put forward travel distance as a quality measure. Nevertheless, it is interesting to ask whether causality goes from distance to performance, or vice versa. Up to now, our results are robust to the inclusion of a set of control variables in addition to industry, country, and year fixed effects. In doing so, we can somewhat mitigate concerns that our results are driven by unobserved heterogeneity, which is particularly important when doing an international corporate governance study. Nevertheless, it is still possible that our estimates are biased by reverse causality. For example, better performing firms could hire busy board members with longer travel distances more frequently, which could also explain the above findings.

To deal with this issue, we identify natural retirements of busy board members. In line with recent research on corporate boards (e.g., Nguyen and Nielsen, 2010; Fracassi and Tate, 2012; Fee et al., 2013), we focus on these departures from a company's board because they occur relatively random over time and independent of major changes in board composition, firm policies, and firm valuation. We assume that a busy board member (i.e., a board member with at least three simultaneous board memberships) will retire if, in the next year, he or she gives up all board positions simultaneously and then disappears from the dataset completely. Overall, we identify about 600 of these natural retirements.

Following the first-differences approach presented by Duchin et al. (2010), we regress two-year ($[-1y; +1y]$) and one-year ($[-1y; 0]$) changes in Tobin's Q around the retirements of busy board members on the retirement dummy variable, DROPOUT, which is set to one if a busy board member gives up all board seats simultaneously, and zero otherwise, interacted with the distance variable. The intuition behind this approach is that giving up all positions simultaneously is likely to be driven by personal reasons and not a specific situation in only one of the firms in which a certain board member holds a position. Furthermore, it is also unlikely that a board member gives up all his or her positions simultaneously when he or she anticipates future bad performance in only some of his or her firms and does not want to be associated with the decline in performance. We also control for changes in firm characteristics, industry, country, and year as well as other board member characteristics. The results can be found in Table 3.11. We first find that performance improves after busy board members retire, as indicated by the positive, but insignificant coefficient for DROPOUT. This provides, albeit statistically insignificant, evidence that busyness is detrimental to firm value. Most importantly, however, Tobin's Q decreases after a busy board member with long travel distance leaves the firm, as suggested by the negative coefficient for the interaction of DROPOUT and travel distance. This is in line with the above results, suggesting that causality runs from travel distance to firm performance, and not vice versa.

Table 3.11: Retirements of busy board members.

Time window	$[-1y, 1y]$	$[-1y, 0]$
Model	I	II
Δ Size	-0.61***	-0.72***
	(-12.5)	(-11.5)
Δ Leverage	-0.38***	-0.20*
	(-3.48)	(-1.70)
Δ Profitability	1.08***	0.43***
	(9.88)	(4.71)
Δ Retained Earnings	-0.11***	-0.051
	(-2.95)	(-1.20)
Δ Tangibility	-0.35***	-0.49***
	(-3.57)	(-4.93)
Δ Growth	0.28***	0.16***
	(10.3)	(5.66)
Δ Board Size	-0.0014	-0.0012
	(-0.55)	(-0.45)
Δ GDP per Capita	1.05***	1.43***
	(3.05)	(3.71)
Δ Market Cap to GDP	0.12***	0.13***
	(5.68)	(5.21)
Positions [Person]	0.0030	0.000038
	(0.11)	(0.0023)
#Industries	-0.0046	-0.0039
	(-0.26)	(-0.34)
Betweenness	-4.79	-1.33
	(-0.66)	(-0.27)
Double Name	-0.011	-0.015
	(-0.63)	(-1.29)
Age	0.0011	0.00065
	(1.46)	(1.40)
Education	-0.0045	-0.0018
	(-0.82)	(-0.49)
Distance	-0.000093	0.00079
	(-0.029)	(0.32)
Dropout	**0.20**	**0.052**
	(1.57)	**(0.87)**
Distance * Dropout	**-0.067****	**-0.035****
	(-2.00)	**(-2.08)**
Observations	36,886	44,124
R^2	0.181	0.141

The dependent variable is changes in TOBIN'S Q around retirements of busy board members. Estimation models are pooled OLS regressions based on first differences. Variables used in interaction terms are centered. All models include industry, country, and year dummies. *T*-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

Channels

A positive impact of travel distance on firm valuation is in line with the notion that distance captures board member quality. Following the univariate analysis in Section 3.4.1, we now provide multivariate evidence that more distant board memberships certify skills and abilities, a good fit between a given firm and busy board member, and boardroom independence.

In the first two columns of Table 3.12, we add person-fixed effects and person-year fixed effects to the Tobin's Q regression from Table 3.9. In doing so, we can control both for time-invariant as well as time-variant unobserved heterogeneity at the board member-level. Again, the coefficient for the travel distance variable is still positive and highly significant. Most interestingly, however, the result in Model II suggests that the value contribution of a busy board member is highest in the firm with the greatest travel distance of that board member. Thus, at least part of the positive value contribution of busy board members with long travel distances stems from a value-creating person-firm matching. This is because identification now comes from differences in the value contribution of a given busy board member across the firms in which he or she serves since we control for time-invariant heterogeneity such as education as well as time-variant person-level characteristics such as professional experience. For instance, it could be that travel distance captures the effects of a firm hiring a renowned expert from another part of the world whose expertise is not locally available. This expert might then adequately cater special demands of that firm, which, in turn, increases firm valuation.

Table 3.12: Channels.

Dep. Variable	TOBIN'S Q		DISTANCE [PERSON]
Model	I	II	III
Size	-0.12***	-0.10***	0.081***
	(-12.9)	(-12.7)	(3.21)
Leverage	-0.63***	-0.60***	0.0068
	(-11.8)	(-11.8)	(0.042)
Profitability	1.55***	1.85***	0.35**
	(14.4)	(17.4)	(2.24)
Retained Earnings	-0.17***	-0.20***	-0.14***
	(-8.80)	(-11.5)	(-5.00)
Tangibility	-0.16***	-0.18***	-0.20
	(-4.01)	(-5.03)	(-1.12)
Growth	0.13***	0.18***	-0.049
	(7.15)	(9.36)	(-1.25)
Board Size	0.15***	0.14***	0.15
	(6.16)	(6.65)	(1.37)
GDP per Capita	0.98***	-0.062	0.71
	(10.2)	(-0.27)	(1.44)
Market Cap to GDP	0.086***	0.030	-0.060
	(4.98)	(0.94)	(-1.50)
Positions [Person]	-0.013		-0.15
	(-0.35)		(-0.84)
#Industries	-0.0044		0.76***
	(-0.17)		(6.58)
Betweenness	-1.62		**224****
	(-0.11)		**(2.51)**
Double Name	-0.12***	-0.070***	**-0.22****
	(-4.31)	(-2.97)	**(-2.17)**
Distance [Person]	**0.015*****	**0.023*****	
	(2.82)	**(3.44)**	
Age			**-0.012*****
			(-2.81)
Education			**0.068***
			(1.71)
University Quality			**0.0028**
			(1.10)
Observations	93,749	125,038	28,927
R^2	0.464	0.678	0.521
Year fixed effects	yes	yes	yes
Industry fixed effects	yes	yes	yes
Country fixed effects	yes	yes	yes
Person fixed effects	yes	yes	no
Person-year fixed effects	no	yes	no
Standard error cluster	firm / person	firm / person	firm / person

The dependent variable is TOBIN'S Q in Models I and II and DISTANCE [PERSON] in Model III. Estimation models are pooled OLS regressions at the person-level, i.e., for each firm-year, there is one observation for each board member who holds at least two outside positions in that firm-year. All independent variables are lagged by one period. T-statistics based on Huber/White robust standard errors clustered by firm and person are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

Finally, in the last column of Table 3.12, we regress the natural logarithm of a given busy board member's travel distance per connection (DISTANCE [PERSON]) on education, betweenness, and DOUBLE NAME, the family relations variable. The regression confirms previous results. We find that busy officers and directors have higher levels of education, come from better universities, are more central in their networks, and are less likely to share family connections with other board members. We also find a positive and significant relation between the distance variable and the number of industries a board member holds positions in. This finding suggests that busy board members with more distant board positions reflect general skills valuable in the boardroom that are not necessarily restricted to a certain industry. In other words, busy board members who cover large distances are more likely to be known as general experts rather than industry experts. Distant board members are also younger, suggesting that older board members are less likely to accept inconveniences due to long-range business trips.

Overall, the results in this section suggest that busy board members with shorter travel distances are likely to have obtained board positions because of family ties and are thus less independent. In contrast, longer travel distances are supposed to signal superior board member skills and abilities as well as value-increasing person-firm matching.

3.4.2 Firm-level analysis

Valuation implications

In this section, we perform firm-level analysis and test whether busyness itself affects firm performance, and if so, whether this relation is altered by travel distance. In doing so, we are able to estimate the aggregate effect of travel distance and busyness on firm performance. In Model I of Table 3.13, we therefore regress firm value, approximated by Tobin's Q, on busyness. In the model, we also add firm-level controls, time-invariant firm fixed effects as well as a set of year dummies. Standard errors are clustered at the firm-level.

The coefficient for busyness amounts to -0.20 with a t-value of -3.25, suggesting that there is a negative relation between busyness and firm performance. The effect is also of high economic significance. An increase in board busyness by one standard deviation from the mean results in a decrease in Tobin's Q of 0.03, which is about 2% of the average Tobin's Q in the sample. It therefore appears that, possibly due to over-commitment, board member busyness reduces firm value. In addition to that, we find that profitability, growth, GDP per capita as well as a country's market capitalization relative to its GDP are positively related with Tobin's Q, while the opposite holds true for firm size, tangibility, and board size. The adjusted R^2 for this specification based on almost 180,000 observations is 0.54.

In Model II of Table 3.13, we examine the interplay of board member busyness and travel distance. To this end, we interact DISTANCE, the average travel distance per busy board member and connection with BUSYNESS, after centering both variables at their means. We set DISTANCE to zero in case there are no busy board members in a given firm. The interaction term can be interpreted as the effect of distance on firm valuation for a given level of board member busyness. In the Tobin's Q regression, the coefficient for the interaction term is positive and highly significant (t-value: 3.16). This finding indicates that the negative effects of busyness disappear when a firm's busy board members cover large travel distances. For example, Tobin's Q stays roughly the same if busyness increases by one standard deviation from the mean if the average busy board member travels 400 miles per connection, which corresponds to the 60% percentile of the travel distance distribution of firms with at least one busy board member. The finding in this section is in line with Hypothesis H1. While there are in general negative effects of board member busyness in place, capital markets may even put a valuation premium on firms with busy board members in case they can observe long travel distances among busy board members.

Table 3.13: Firm valuation: Firm-level regressions.

Model	I	II	III	IV
Size	-0.52***	-0.52***	-0.52***	-0.52***
	(-35.2)	(-33.3)	(-35.0)	(-33.2)
Leverage	-0.043	-0.057	-0.041	-0.048
	(-1.09)	(-1.38)	(-1.02)	(-1.16)
Profitability	0.68***	0.69***	0.68***	0.69***
	(15.2)	(14.7)	(15.0)	(14.5)
Retained Earnings	-0.0095	-0.0011	-0.0098	-0.0023
	(-0.61)	(-0.073)	(-0.63)	(-0.14)
Tangibility	-0.10**	-0.12***	-0.11**	-0.12***
	(-2.50)	(-2.76)	(-2.55)	(-2.76)
Growth	0.17***	0.17***	0.17***	0.17***
	(15.8)	(15.2)	(15.8)	(15.3)
Board Size	-0.041***	-0.039***		
	(-3.55)	(-3.27)		
Board Size [Dir]			-0.046***	-0.048***
			(-4.53)	(-4.58)
GDP per Capita	1.35***	1.36***	1.35***	1.36***
	(28.2)	(27.2)	(28.0)	(27.1)
Market Cap to GDP	0.068***	0.11***	0.068***	0.11***
	(5.52)	(6.83)	(5.51)	(6.48)
Busyness	**-0.20*** **	**-0.34*** **		
	(-3.25)	**(-4.22)**		
Distance		**-0.0028**		
		(-1.14)		
Busyness * Distance		**0.067*** **		
		(3.16)		
Busyness [Dir]			**-0.12*** **	**-0.23*** **
			(-3.09)	**(-4.03)**
Distance [Dir]				**-0.0032**
				(-1.28)
Busyness [Dir] * Distance [Dir]				**0.048*** **
				(3.21)
Observations	179,829	167,777	178,547	166,826
R^2	0.544	0.547	0.544	0.548
Year fixed effects	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes
Standard error cluster	firm	firm	firm	firm

The dependent variable is TOBIN'S Q. Estimation models are firm fixed effects regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

In Models III and IV of Table 3.13, we examine whether our main findings still hold true if one restricts the sample to executive and non-executive directors only. Overall, the results confirm the above findings. Firm value is lower when director busyness increases, as suggested by the fixed effects regressions in Model III. Furthermore, the negative effects of busyness are less severe when director travel distance is long, as indicated by the positive and significant coefficient for the interaction of director busyness and travel distance.

M&A activity

Finally, we examine the effects of busyness and travel distance on corporate M&A activity. In doing so, we wish to shed light on how distant board members improve firm valuation. In this regard, we assume that, on average, bidder firms reduce firm value by engaging in M&A activities. This is in line with recent empirical evidence on mergers and acquisitions (e.g., Servaes, 1991; Betton et al., 2008; Ishii and Xuan, 2014). As we find a negative relation of busyness and firm valuation, we expect that firms with busy boards perform more M&A transactions with greater volumes, with this effect being reduced when busy board members are of higher quality, approximated by travel distance. The intuition, for example, is that busy directors are over-committed and therefore do not properly monitor management. Management can then pursue more, potentially value-destroying M&A activities. The effect, however, is not present in firms with better busy board members, for instance, because more distant board members are more independent in terms of family relations, and therefore supervise management more effectively.

For our analysis, we employ three different dependent variables:

- **Vol_WS**: Net assets from acquisitions deflated by sales. Data for this variable is obtained from Worldscope.
- **N_SDC**: Number of M&A transactions in a given year as reported in SDC Platinum where the deal value exceeds one million $. Transactions are only selected if the acquirer owns less than 50% of the target's stock before and at least 50% after the acquisition. If there are no reported deals in SDC Platinum for a given acquirer

firm, the variable is set to zero. When performing regressions, we employ the natural logarithm of the variable after adding one unit.

- **Vol_SDC**: Dollar value of all M&A transactions in a given year as reported in SDC Platinum where the deal value exceeds one million \$. Transactions are only selected if the acquirer owns less than 50% of the target's stock before and at least 50% after the acquisition. If there are no reported deals in SDC Platinum for a given acquirer firm, the variable is set to zero. When performing regressions, we employ the natural logarithm of the variable after adding one unit.

Regression results can be found in Table 3.14. In line with the firm-level evidence on firm valuation in Table 3.13, we find some evidence that firms with busy boards perform more M&A transactions with greater volumes. In the presence of distant board members, however, this effect disappears, as indicated by the negative and significant interaction of distance and board busyness. This effect holds both for data obtained from the Worldscope database and SDC Platinum and for the extended board definition (Models I to III) and directors only (Models IV to VI). We therefore conclude that distant busy board members perform their management and monitoring duties more effectively than those with lower travel distances, which increases firm valuation.

Table 3.14: Travel distance and M&A activity.

Dep. Variable	Vol_WS	N_SDC	Vol_SDC	Vol_WS	N_SDC	Vol_SDC
Model	I	II	III	IV	V	VI
Size	-0.011***	-0.029***	-0.12***	-0.011***	-0.029***	-0.12***
	(-9.13)	(-17.2)	(-15.5)	(-8.90)	(-17.0)	(-15.4)
Leverage	-0.050***	-0.047***	-0.26***	-0.049***	-0.046***	-0.26***
	(-11.8)	(-7.83)	(-9.08)	(-11.7)	(-7.64)	(-8.85)
Profitability	0.024***	0.053***	0.26***	0.025***	0.054***	0.26***
	(6.61)	(11.1)	(11.7)	(6.85)	(11.2)	(11.9)
Retained Earnings	0.0061***	0.0081***	0.039***	0.0060***	0.0082***	0.040***
	(5.46)	(6.25)	(5.68)	(5.34)	(6.31)	(5.82)
Tangibility	-0.017***	0.025***	0.17***	-0.016***	0.026***	0.18***
	(-3.06)	(4.12)	(5.55)	(-2.96)	(4.35)	(5.76)
Growth	-0.0024*	0.0031**	0.0077	-0.0026**	0.0030**	0.0078
	(-1.89)	(2.25)	(1.21)	(-2.06)	(2.11)	(1.22)
Board Size	-0.000059	0.0069***	0.034***			
	(-0.047)	(3.59)	(3.66)			
Board Size [Dir]				0.00041	0.0056***	0.024***
				(0.38)	(3.17)	(2.81)
GDP per Capita	0.0065	0.098***	0.48***	0.0065	0.10***	0.49***
	(1.63)	(17.8)	(17.5)	(1.62)	(18.3)	(17.8)
Market Cap to GDP	0.0076***	0.013***	0.063***	0.0074***	0.013***	0.063***
	(5.34)	(5.68)	(5.38)	(5.33)	(5.76)	(5.52)
Busyness	0.024***	-0.0036	0.019			
	(3.03)	(-0.26)	(0.31)			
Distance	-0.00013	-0.0012***	-0.0057***			
	(-0.57)	(-2.99)	(-3.02)			
Busyness * Distance	**-0.0041****	**-0.0072***	**-0.065*****			
	(-2.00)	**(-1.93)**	**(-3.45)**			
Busyness [Dir]				0.013**	0.0019	0.044
				(2.51)	(0.19)	(0.88)
Distance [Dir]				0.000067	-0.0010**	-0.0052**
				(0.31)	(-2.43)	(-2.55)
Busyness [Dir] * Distance [Dir]				**-0.0016**	**-0.0049***	**-0.039*****
				(-1.25)	**(-1.79)**	**(-2.71)**
Observations	110,007	176,933	176,933	109,599	175,701	175,701
R^2	0.019	0.031	0.026	0.018	0.031	0.026
Year fixed effects	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes
Standard error cluster	firm	firm	firm	firm	firm	firm

The dependent variables, listed in the first row of the table, are different proxies for M&A activity. Estimation models are firm fixed effects regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by firm are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix B.

3.5 Conclusion

Officers and directors often have to cover large travel distances when they simultaneously serve in boardrooms of firms located in different cities, countries, or even continents. In this paper, we use a new board dataset of about 35,000 firms across 54 countries to examine whether we can exploit information on the geographic distribution of board positions to distinguish good (i.e., value-increasing) from bad (i.e., value-decreasing) board busyness. In particular, we look at travel distances of a firm's busy board members that arise because a busy board member's board seats need not necessarily be located at the same place. The intuition behind the distance measure is that it is supposed to capture the remoteness of the geographic location of one board position relative to the other board positions of that board member.

We argue that travel distance serves as an empirical proxy for board member quality. In line with this reasoning, we show that firm valuation increases with travel distance. We also exploit natural retirements for identification because they occur relatively random over time and independent of major changes in board composition, firm policies, and firm valuation. Additional tests reveal that longer travel distances are positively associated with traditional measures of boardroom skills, compensation, network centrality as well as higher levels of independence in the boardroom. Travel distance, however, is a stronger predictor of firm performance than known measures of board member quality. We thus put travel distance forward as a way of identifying value-creating busy board members. The results are consistent with the view that a firm appoints distant board members when it observes extraordinary abilities or certain skills that cater particular needs of the firm that cannot be met in the local labor market for board members, which is then accompanied by a higher market valuation. We further show that board member busyness on average reduces firm value. However, we also highlight situations in which busyness increases firm valuation: The more a firm's busy board members travel, the more positive the relation between busyness and performance.

Overall, our findings imply that board busyness need not necessarily result in lower firm valuation, which is in accordance with previous evidence by Perry and Peyer (2005), Field et al. (2013) and Masulis and Mobbs (2014) who also distinguish good (i.e., value-increasing) from bad (i.e., value-destroying) board busyness. Nevertheless, as the average valuation effect of busyness is negative, a firm's shareholders should critically weigh the benefits and costs of associated with busy officers and directors before appointing them. Due to negative valuation implications of busyness, regulators may want to further restrict busyness among officers and directors. However, they may also want to improve the accessibility of a country's labor market so that firms can more easily appoint foreign officers and directors when they are in need of expertise that cannot be found locally.

4 Power Distance and CEO Turnover: International Evidence

Abstract

In this paper, I present a hand-collected international CEO dataset that distinguishes forced from voluntary executive transitions. I first find that the probability of forced CEO turnover varies considerably across the 37 sample countries. Based on 5,006 turnover events, I then show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. The results are robust to alternative measures of firm performance and hierarchy, placebo tests, subsample analysis, and different empirical methodologies. Overall, the evidence is consistent with the view that CEOs in more hierarchical countries enjoy greater power.

Keywords:	Corporate governance, CEOs, turnover, culture
JEL Codes:	G34, G38

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Current Status:	Working paper

4.1 Introduction

Beginning with the seminal study by Jensen (1986) managerial entrenchment has become one of the most researched topics in empirical corporate finance. In this paper, I examine a new channel that gives rise to managerial entrenchment: Culture. I hypothesize that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. In such countries, a given distribution of power is more likely to be perceived as legitimate and a formal chain of command is more likely to be taken for granted. Subordinates and other executives are more reluctant to critically challenge their supervisors and express negative feedback because such behavior may be considered as threatening status positions. Therefore, CEOs will less likely to be held accountable for bad firm performance and hence enjoy greater power.

To test this hypothesis empirically, I gather a hand-collected international CEO dataset that distinguishes forced from voluntary executive transitions. Overall, the sample encompasses 5,006 turnover events across 37 countries. I first find that the probability of forced CEO turnover varies considerably across the 37 sample countries. The fraction of forced turnovers, for example, is relatively high in Malaysia, Sweden, and Germany, while it is relatively low in Mexico, Japan, and Argentina. In addition, there is huge variation in CEO tenure, CEO age, and the probability of an insider replacement across the sample countries. For instance, while firms in general appoint an insider in 73% of all cases, firms in countries such as Japan, Mexico, and Spain are much more likely to appoint an insider as the next CEO, while the opposite holds true for Scandinavian countries.

I then show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. As culture is a relatively exogenous variable, the results are likely not driven by reverse causality. In addition, since I control for unobserved heterogeneity at the country-level, I can mitigate concerns related to omitted variables. The evidence is also robust to alternative measures of firm performance and hierarchy, placebo tests, subsample analysis, and different empirical methodologies. I further show that the results do not change once I control for differences in the turnover-performance sensitivity due to other cultural proxies and investor protection. Overall, the evidence is consistent with the view that CEOs in more hierarchical countries enjoy greater power.

The paper contributes to the literature along several dimensions. First, I provide a novel international CEO turnover dataset that distinguishes forced from voluntary CEO turnover events. Up to now, there are two large-scale international studies on CEO turnover. Using a sample of 21,483 firm-year observations in 33 countries over the 1997 to 2001 period, Defond and Hung (2004) show that strong law enforcement institutions improve the turnover-performance sensitivity. Furthermore, Lel and Miller (2008) test the benefits of U.S. investor protection in a sample of cross-listed firms. They report that firms resided in countries with weak investor protection that are cross-listed on a major U.S. exchange are more likely to dismiss CEOs for poor firm performance than non-cross-listed firms. Both studies, however, do not distinguish voluntary from involuntary CEO turnover. Based on my dataset, I am able to document economically important differences in the fraction of forced CEO turnovers across the sample countries. In addition, I highlight considerable cross-country variation in the CEO replacement process.

Second, the paper contributes to a better understanding of the reasons of CEO turnover events. In line with recent evidence by Fiordelisi and Ricci (2014), I find that the CEO turnover-performance sensitivity is affected by culture. However, in contrast to Fiordelisi and Ricci (2014) who look at measures of corporate culture based on text analysis of 10-K reports of U.S. firms, I examine cross-country variation in culture. In particular, I find that CEOs in countries with higher levels of power distance appear to enjoy greater power as they are less likely to be held accountable for bad firm performance. Differences in turnover risk, in turn, affect managerial decision-making and corporate outcomes (e.g., Peters and Wagner, 2014; Liu, 2014; Cziraki and Xu, 2014; Lel and Miller, 2015).

Finally, the paper is related to the growing literature on culture and finance (e.g., Stulz and Williamson, 2003; Giannetti and Yafeh, 2012; Guiso et al., 2009; Ahern et al., 2012) as well as managerial entrenchment (e.g., Jensen, 1986; Gompers et al., 2003; Dow, 2013). By showing that national culture gives rise to managerial entrenchment, the paper provides a connection between both literatures.

The remainder of this paper is organized as follows. In Section 4.2, I describe the data. Section 4.3 presents the main results. Section 4.4 concludes.

4.2 Data

4.2.1 Sample selection

I start with a dataset of all public firms included in the Worldscope database. I then exclude all financial firms (SIC code between 6000 and 6999) and those without common stock. I also remove observations with negative sales, negative common stock, or negative cash dividends. As collecting data on the underlying reasons of CEO turnover events is a manual and thus time-consuming task and therefore almost impossible for all the firms in the Worldscope database, I follow the approach in Dahya et al. (2008) and select the 70 firms with the largest market capitalization per country and year and track them over the entire 1998-2010 period.[1] A country is included in the sample if there is a sufficient number of firms in the Worldscope database for that country or if they are listed in studies such as La Porta et al. (2000) and Dahya et al. (2008). I further exclude CEO turnover events that are related to M&A activities such as takeovers, mergers, or spin-offs, as well as interim CEO appointments, i.e., the departing CEO was in the firm for less than one year. I also remove observations where there is more than one CEO in office. This procedure results in a turnover sample of 4,901 firms across 37 both developed and developing countries. An overview of the sample countries can be found in Table 4.2.

[1] For example, the 70 largest firms in 2004 will be tracked from 1998 to 2010. The same applies to the largest in the other years over the 1998 to 2010 period.

4.2.2 Turnover data

Based on job descriptions, biographies, and officer titles provided in annual reports and other press releases, and additional information obtained in databases such as ThomsonONE, Factiva, Nexis, and BoardEx as well as country-specific databases such as Allabolag for Sweden, I am able to identify 9,101 CEOs. To determine the CEOs of a firm's company, I follow Defond and Hung (2004) and Lel and Miller (2008) and look for general and country-specific job titles of CEOs such as CEO, Chief Executive Officer, Chief Executive, President (e.g., in Japan), Managing Director (e.g., in Australia), or General Manager (e.g., in Turkey).

For each departing CEO, I determine whether she left the firm voluntarily or not. To distinguish between forced and voluntary turnover, I stick to the classification rules described in Huson et al. (2001) and Hazarika et al. (2012). A turnover is classified as forced when the CEO was explicitly fired, forced out, or departed due to policy differences. For the remaining cases, turnover events are deemed to be forced if the departing CEO is under the age of 60 and (i) death, poor health, or the acceptance of another position, elsewhere or within the firm, cannot be identified as reason for the departure, or (ii) the "retirement" of the CEO has not been announced at least six months before the succession and the departing CEO does not take another position elsewhere or does not leave for personal or business reasons that are unrelated to the firm's activities.

Tables 4.2 to 4.5 report summary statistics for the turnover dataset. Overall, I identify 5,006 turnover events, whereof 1,576 or 31% can be classified as forced. The turnover dataset is therefore one of the largest samples on CEO successions that distinguishes voluntary from forced CEO turnovers.[2] For the U.S., I find that about 27% of total turnovers can be classified as forced, which is comparable to the values reported in Hazarika et al. (2012) and Jenter and Kanaan (2014). Table 4.2 and Figure 4.1 also suggest that the fraction of forced turnover differs considerably across countries. Forced CEO turnover is lowest in Mexico (about 10%) and Japan (about 14%) and highest in Malaysia and Sweden

[2]The samples by Hazarika et al. (2012) and Jenter and Kanaan (2014), for instance, comprise a total of 1,895 and 3,365 turnovers, respectively.

(about 50%). Due to limited information on the reasons behind turnover events and in particular on CEO age, the number of turnover events that cannot be classified either as forced or voluntary ("unknown") is relatively high in Greece, Indonesia, and South Korea. In a robustness test, I therefore repeat the main analyses and remove these countries from the sample. I find that the results are not driven by these countries.

Table 4.3 shows that the number of turnover events per year increases over time, which is primarily driven by an increasing sample size and better information availability. The fraction of forced turnovers, however, is relatively constant around 30% with small peaks in the aftermath of the dot-com bubble and during the recent financial crisis.

Table 4.4 provides additional CEO-level summary statistics across the sample countries. Again, the data is hand-collected from the above sources. The average CEO in the dataset is 53.53 years old. There is also considerable variation in age across the sample countries. Japanese CEOs, for instance, are oldest with an average age of 64. In contrast, CEO age is about 50 in China, Norway, and Russia. In the U.S., CEO age is approximately 56 years, which is close to the 55 years reported by Yim (2013) in Table 1. Tenure, the number of years the incumbent CEO is in position, is about 7.56 years. Again, there are some countries with lower average tenure such as Argentina, Mexico, Portugal, or South Korea, and other countries with tenure exceeding 10 years (Belgium, Taiwan, and Thailand). INSIDER, a dummy variable that is set to one if the successor of the departing CEO is an insider, i.e., the successor has been within the firm or one of its subsidiaries for at least six months prior to the turnover, and zero otherwise, also differs from country to country. While firms in general appoint an insider in 73% of all cases, firms in countries such as Japan, Mexico, and Spain appoint an insider as the next CEO about 90% of the time. In contrast, in Scandinavian countries, insiders are only appointed in about 50% of cases.

Table 4.2: Turnover events across the sample countries.

Country	Forced	Unknown	Voluntary	Total	% Forced
Argentina	10	6	46	62	0.16
Australia	79	14	99	192	0.41
Austria	27	2	49	78	0.35
Belgium	21	0	54	75	0.28
Brazil	13	10	56	79	0.16
Canada	43	2	88	133	0.32
China	99	11	228	338	0.29
Denmark	56	0	84	140	0.40
Finland	55	0	135	190	0.29
France	29	0	70	99	0.29
Germany	51	0	77	128	0.40
Greece	24	30	56	110	0.22
Hong Kong	58	1	134	193	0.30
India	28	18	128	174	0.16
Indonesia	55	52	74	181	0.30
Ireland	20	3	44	67	0.30
Italy	30	4	47	81	0.37
Japan	29	5	176	210	0.14
Malaysia	104	8	65	177	0.59
Mexico	5	0	45	50	0.10
Netherlands	40	1	84	125	0.32
New Zealand	32	17	69	118	0.27
Norway	56	10	121	187	0.30
Philippines	42	6	63	111	0.38
Portugal	9	11	23	43	0.21
Russia	35	8	79	122	0.29
Singapore	31	7	86	124	0.25
South Africa	27	0	108	135	0.20
South Korea	62	39	54	155	0.40
Spain	19	6	60	85	0.22
Sweden	109	1	106	216	0.50
Switzerland	43	1	94	138	0.31
Taiwan	25	8	39	72	0.35
Thailand	69	17	60	146	0.47
Turkey	40	27	80	147	0.27
United Kingdom	56	0	102	158	0.35
USA	45	0	122	167	0.27
Total	1,576	325	3,105	5,006	0.31

The table provides summary statistics for the CEO turnover variables across the sample countries over the 1998-2010 period. A detailed description of all variables can be found in Appendix C.

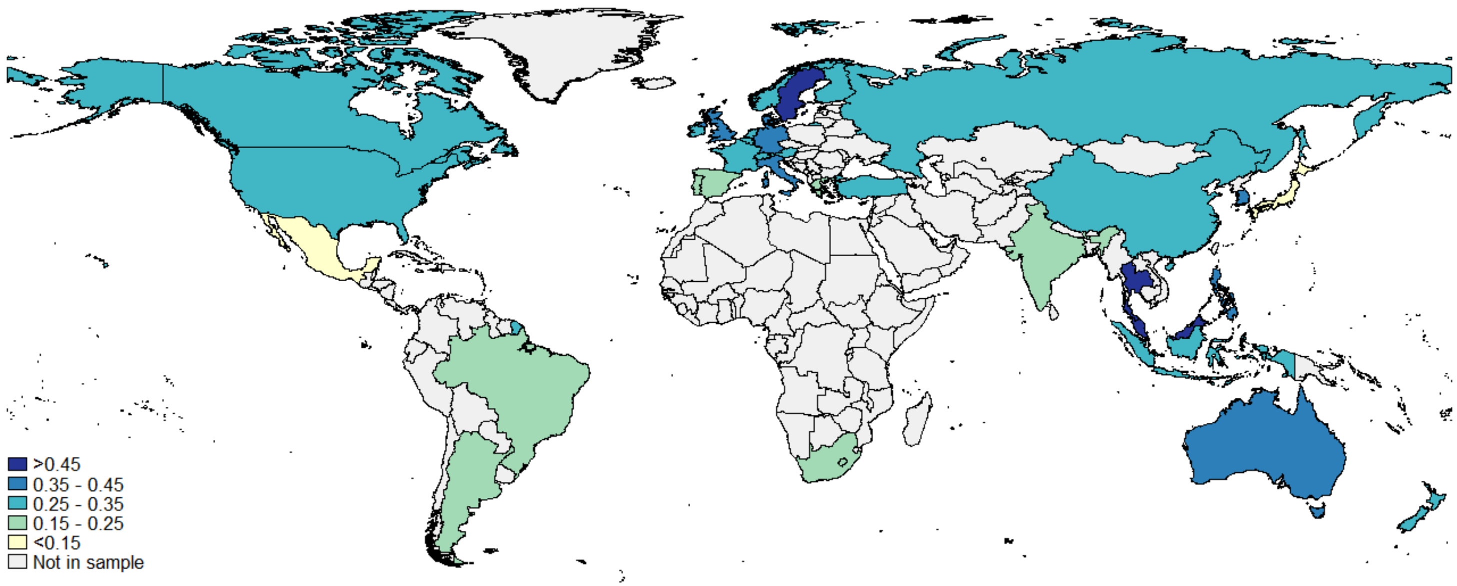

Figure 4.1: The figure shows the countries included in the sample and the fraction of forced turnover events over the 1998-2010 period across all firms within a given country.

Table 4.3: Distribution of turnover events over the sample period.

Year	Forced	Unknown	Voluntary	Total	% Forced
1998	47	11	97	155	0.30
1999	69	24	150	243	0.28
2000	100	32	198	330	0.30
2001	114	35	200	349	0.33
2002	131	31	229	391	0.34
2003	123	38	225	386	0.32
2004	116	29	269	414	0.28
2005	107	28	285	420	0.25
2006	157	30	284	471	0.33
2007	158	20	293	471	0.34
2008	169	12	311	492	0.34
2009	162	24	304	490	0.33
2010	123	11	260	394	0.31
Total	1,576	325	3,105	5,006	0.31

The table provides annual summary statistics for the CEO turnover sample over the 1998-2010 period. A detailed description of all variables can be found in Appendix C.

4.2.3 Other firm-level variables

Firm-level accounting and capital market data comes from Thomson Reuters Worldscope. Summary statistics for firm financial variables are shown in Table 4.5. The definitions of all variables as well as their sources can be found in Appendix C. All the variables based on financial data are winsorized annually at the 1% level to mitigate the effects of outliers.

I employ two performance measures to test culture-driven differences in the turnover-performance sensitivity across the sample countries. First, I employ PROFITABILITY, defined as earnings before interest and taxes to total assets. Second, I use EXCESS RETURNS to capture capital market performance. EXCESS RETURNS are annual total shareholder returns throughout a firm's fiscal year in excess of the average return in the firm's country in that fiscal year. In the sample, average PROFITABILITY and EXCESS RETURNS amount to 8% and -2%, respectively.

Table 4.4: CEO characteristics across the sample countries.

Country	Age	Tenure	Insider
Argentina	54.62	5.63	0.91
Australia	53.54	6.96	0.59
Austria	54.12	8.23	0.69
Belgium	54.41	10.53	0.68
Brazil	53.32	3.88	0.88
Canada	54.43	8.14	0.78
China	49.75	4.84	0.73
Denmark	53.01	8.18	0.50
Finland	52.36	6.86	0.58
France	56.63	8.81	0.67
Germany	53.25	7.20	0.76
Greece	52.11	5.70	0.57
Hong Kong	50.82	8.10	0.68
India	55.93	8.13	0.75
Indonesia	51.17	8.07	0.72
Ireland	52.67	9.12	0.70
Italy	55.38	9.50	0.59
Japan	63.65	7.38	0.98
Malaysia	51.12	7.43	0.70
Mexico	51.24	5.56	0.95
Netherlands	55.76	8.12	0.75
New Zealand	53.44	6.95	0.63
Norway	49.53	5.81	0.53
Philippines	56.27	8.12	0.70
Portugal	57.05	4.10	0.70
Russia	48.27	5.04	0.52
Singapore	53.26	9.98	0.69
South Africa	51.93	8.20	0.73
South Korea	56.16	4.87	0.85
Spain	54.98	9.09	0.91
Sweden	51.01	6.44	0.50
Switzerland	55.10	6.64	0.71
Taiwan	55.36	10.54	0.79
Thailand	51.99	10.07	0.67
Turkey	51.59	6.43	0.72
United Kingdom	53.56	5.96	0.69
USA	56.26	7.84	0.84
Total	53.53	7.56	0.73

The table provides CEO-level summary statistics across the sample countries over the 1998-2010 period. A detailed description of all variables can be found in Appendix C.

Average total assets is about $5,168 million, with the median being $723 million, which is fairly high. This is primarily driven by the fact that I select the largest firms per country. Still, these values are comparable to recent studies such as Masulis and Mobbs (2014) or Lel and Miller (2008). Average board size, obtained from Thomson Reuters and defined as the number of both executive and non-executive directors as well as senior managers (i.e., board members) at a firm's fiscal year end date, is 17.16. Again, this value is relatively high since board size and firm size are positively correlated and I only look at the largest firms. Furthermore, I also take non-director senior managers into account when calculating board size. This is because board types vary from country to country (e.g., Adams and Ferreira, 2007) and based on this broad definition I wish to ensure a high degree of comparability across the sample countries. In addition, BUSYNESS is the fraction of both executive and non-executive directors as well as senior managers with at least two outside positions at a firm's fiscal year end date. Average busyness in the sample is 0.25, which is close to busyness levels in S&P 500 firms (e.g., Cashman et al., 2012).

Figure 4.2 depicts operating performance (PROFITABILITY) and capital market performance (EXCESS RETURNS) around voluntary and forced turnover events that take place in year t. The graph suggests that, in the two years before a CEO is fired, operating performance decreases by more than 50%, while, in the two years following the turnover, it almost arrives at the old level again. The same pattern holds true for capital market performance. In the years before forced turnover, returns decrease considerably, while they quickly increase to normal levels after the turnover event. As expected, firm performance does not change materially around voluntary successions because these turnover events should be unrelated to a CEO's performance. I therefore conclude that the classification algorithm by Huson et al. (2001) allows me to reliably distinguish voluntary from forced successions.

Table 4.5: Sample descriptive statistics.

Variable	N	Mean	1^{st} Quartile	Median	3^{rd} Quartile	SD
			Turnover-related variables			
Forced	44,660	0.04	0.00	0.00	0.00	0.19
Voluntary	44,660	0.07	0.00	0.00	0.00	0.26
Age	19,818	53.53	48.00	54.00	59.00	8.68
Tenure	38,437	7.56	2.67	5.00	10.00	7.21
Insider	20,321	0.73	0.00	1.00	1.00	0.44
			Other firm-level variables			
Profitability	43,691	0.08	0.04	0.08	0.13	0.11
Excess Return	34,801	-0.02	-0.31	-0.08	0.17	0.64
Growth	42,525	0.13	-0.02	0.11	0.25	0.31
Leverage	44,170	0.24	0.09	0.23	0.36	0.18
Size	44,189	5,168	198	723	3,081	13,618
Volatility	34,572	0.11	0.07	0.10	0.14	0.07
Tobin's Q	43,479	1.75	1.01	1.30	1.90	1.51
Board Size	40,435	17.16	11.00	16.00	22.00	8.57
Busyness	40,435	0.25	0.11	0.22	0.37	0.20
			Country-level variables			
PDI	44,698	56.03	36.00	58.00	74.00	21.93
Schwartz_Hierarchy	28,982	2.55	2.16	2.39	2.85	0.54
Strong_Leader	37,941	-2.82	-3.17	-2.81	-2.48	0.37
MAS	44,698	51.00	43.00	56.00	64.00	19.34
IDV	44,698	50.64	26.00	48.00	71.00	24.90
IVR	44,698	51.18	40.00	50.00	68.00	18.12
UAI	44,698	57.11	36.00	50.00	76.00	24.86
LTOWVS	44,698	52.65	35.00	51.00	67.00	22.18
GDP per Capita	43,565	17,713	3,934	20,388	27,348	12,850
Market Cap to GDP	43,565	0.98	0.42	0.72	1.26	0.86
ADRI	44,698	3.68	3.00	4.00	5.00	1.12
ADRI_S	39,964	4.11	4.00	4.00	5.00	0.87
Protection	41,503	0.52	0.36	0.48	0.77	0.25

The table provides summary statistics over the 1998-2010 period. A detailed description of all variables can be found in Appendix C. All other firm-level variables are winsorized annually at the 1%-level.

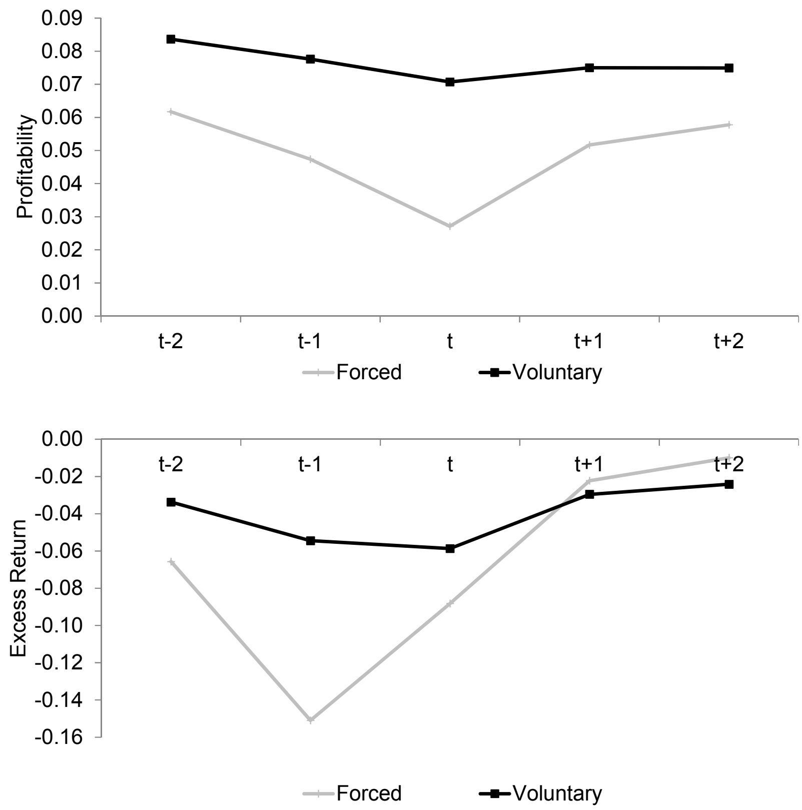

Figure 4.2: The figure shows PROFITABILITY (upper graph) and EXCESS RETURNS (lower graph) around CEO turnover events. *t* denotes the year of the turnover event. A detailed description of all variables can be found in Appendix C.

4.2.4 Country-level variables

To measure the extent to which people accept that hierarchies, power, and roles in a society are more unequally distributed, I primarily rely on the power distance index (PDI) provided by Hofstede (1980, 2001). According to Geert Hofstede's website, "this dimension expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people. People in societies exhibiting a large degree of power distance accept a hierarchical order in which everybody has a place and which needs no further justification. In societies with low power distance, people strive to equalise the distribution of power and demand justification for inequalities of power". The measure is higher in countries or organizations with a more authoritarian hierarchy. Countries with high PDI values rely on authorities (e.g., a CEO) to make decisions and to separate their roles from those governed.

In addition to PDI, I also employ SCHWARTZ_HIERARCHY, which captures a country's level of hierarchy. Like Hofstede's power distance dimension, this measure also emphasizes hierarchy and the acceptance of an unequal distribution of power and roles. Data for this variable is obtained from Schwartz (1994, 2009). Finally, I use STRONG_LEADER. This variable refers to one question of the World Values Survey. People were asked whether they think that a strong leader who does not have to bother with parliament and elections is very good, fairly good, fairly bad or very bad. I code very good with -1, fairly good with -2, fairly bad with -3, and very bad with -4 (source: World Values Survey 1981-2014 Official Aggregate). Values for the three hierarchy measures across the 37 sample countries as well as correlation coefficients can be found in Table 4.6. Across the three measures, the acceptance of an unequal distribution of power and roles is high in Asia, Russia, and South America, while the opposite holds true for Europe and North America.

I also employ five other measures of national culture provided by Geert Hofstede to distinguish the effects of power distance from other cultural influences on the turnover-performance sensitivity. These measures approximate a countries degree of masculinity, individualism, indulgence, uncertainty avoidance, and relative prioritization of the past, present and future. To deal with unobserved time-variant cross-country heterogeneity, I also include a country's GDP per capita as well as its market capitalization relative to its GDP as a measure for stock market development in the regression equations. Data for these two variables is obtained from the World Bank. Finally, I control for three measures of investor protection as Defond and Hung (2004) show that investor protection moderates the turnover-performance relation. All variable definitions and their summary statistics can be found in Appendix C and Table 4.5, respectively.

Table 4.6: Hierarchy measures across the sample countries.

Country	PDI	Schwartz_Hierarchy	Strong_Leader
Argentina	49		-2.81
Australia	36	2.36	-3.17
Austria	11		
Belgium	65		
Brazil	69	2.64	-2.24
Canada	39		-3.21
China	80	3.70	-2.70
Denmark	18	1.86	
Finland	33	2.03	-3.07
France	68	2.16	-2.92
Germany	35	2.27	-3.37
Greece	60	2.01	
Hong Kong	68	2.83	-2.77
India	77		-2.14
Indonesia	78		-2.93
Ireland	28		
Italy	50	1.69	-3.38
Japan	54	2.86	-3.00
Malaysia	104	2.43	-2.44
Mexico	81	2.35	-2.48
Netherlands	38	2.26	-2.88
New Zealand	22	2.38	-3.34
Norway	31		-3.41
Philippines	94		-2.32
Portugal	63	2.08	
Russia	93		-2.25
Singapore	74	2.75	-2.73
South Africa	49		-2.69
South Korea	60		-2.73
Spain	57	2.03	-2.91
Sweden	31		-3.22
Switzerland	34	2.20	-3.18
Taiwan	58	2.85	-2.33
Thailand	64	3.32	-2.48
Turkey	66	3.30	-2.37
United Kingdom	35		
USA	40	2.39	-3.05
Total	56	2.55	-2.82
Correlations			
PDI	1.00	0.44	0.79
Schwartz_Hierarchy		1.00	0.58
Strong_Leader			1.00

The table provides values for various country-level hierarchy measures across the sample countries over the 1998-2010 period. A detailed description of all variables can be found in Appendix C.

4.3 Empirical results

4.3.1 Power distance and CEO turnover

I now test whether CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. The intuition is that, in more hierarchical countries, people's minds are supposed to be programmed in a way that a given distribution of power is perceived as legitimate. People adhere to the duties and expectations that come along with their role in society (e.g., Schwartz, 2004).

In a professional setting, this has implications on how companies are organized. A formal chain of command is more likely to be taken for granted. Subordinates and other executives are more reluctant to critically challenge their supervisors and express negative feedback because such behavior may be considered as threatening status positions. Therefore, CEOs will be less likely to be held accountable for bad firm performance and hence enjoy greater power. I thus expect a lower performance-turnover sensitivity in more hierarchical countries.

In Model I of Table 4.7, I perform pooled logit regressions of forced CEO turnover on an interaction of (operating) PROFITABILITY and Geert Hofstede's measure of power distance, PDI, as a proxy for the (accepted) organizational or hierarchical distance between the CEO and the firm's subordinates such as other executives. The dependent variable is a dummy variable that takes a value of one if a CEO is forcefully terminated and zero otherwise. In the model, I control for firm characteristics and a set of industry, country, and year dummies. Adding country dummies to the specification allows me to control for unobserved heterogeneity at the country-level, which is of particular importance in a cross-country study. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses.

As suggested by previous literature and Figure 4.2, I find a lower probability of CEO turnover when profitability is high. The coefficient for profitability is negative and highly significant (t-value of -5.88). There is also a positive and significant association between forced CEO turnover and both firm size and stock return volatility (t-values of 3.23 and 2.86, respectively). Thus, larger firms and firms undergoing more turbulent conditions are more likely to terminate CEOs. The other control variables in the model do not exhibit regression coefficients that are statistically distinguishable from zero.

Table 4.7: CEO turnover and power distance.

Dep. Variable	FORCED	FORCED	FORCED	FORCED
Model	I	II	III	IV
Growth	-0.052	-0.067	-0.038	-0.056
	(-0.45)	(-0.51)	(-0.33)	(-0.42)
Leverage	-0.066	-0.036	-0.10	-0.074
	(-0.35)	(-0.19)	(-0.56)	(-0.39)
Size	0.086***	0.072**	0.086***	0.071**
	(3.23)	(2.20)	(3.24)	(2.20)
Volatility	1.33***	1.21***	1.20***	1.07**
	(2.86)	(2.62)	(2.61)	(2.33)
Tobin's Q	-0.018	-0.011	-0.0037	0.0031
	(-0.48)	(-0.26)	(-0.100)	(0.076)
GDP per Capita	-0.20	-0.41	-0.21	-0.41
	(-0.33)	(-0.79)	(-0.37)	(-0.82)
Board Size		0.20**		0.20**
		(2.00)		(2.00)
Busyness		-0.67***		-0.65***
		(-2.89)		(-2.84)
Profitability	**-1.99*** **	**-1.96*** **	**-2.17*** **	**-2.12*** **
	(-5.88)	**(-5.35)**	**(-7.25)**	**(-6.92)**
Profitability * PDI	**0.026*** **	**0.026*** **		
	(2.93)	**(2.68)**		
Excess Return	**-0.40*** **	**-0.43*** **	**-0.47*** **	**-0.50*** **
	(-4.45)	**(-4.47)**	**(-6.43)**	**(-6.68)**
Excess Return * PDI			**0.011** **	**0.011** **
			(2.49)	**(2.26)**
Observations	28,520	25,861	28,520	25,861
Pseudo R^2	0.058	0.062	0.059	0.063
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes

The dependent variable is FORCED. Estimation models are pooled logit regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

Most importantly, however, the interaction of PROFITABILITY and PDI is positive and statistically different from zero (t-value of 2.93). The size of the coefficient suggests that the average marginal effect of going from the 25% to the 75% percentile of PDI corresponds to an average decrease in the probability of a forced CEO turnover by 4 percentage points, while holding all the other variables constant at their means. As culture is a relatively exogenous variable, the results are likely not driven by reverse causality. In addition, since I control for unobserved heterogeneity at the country-level, I can mitigate concerns related to omitted variables. The result is consistent with the view that CEOs in more hierarchical countries enjoy greater power. CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles.

In Model II of Table 4.7, I additionally control for board size and board busyness because both variables have been shown to be correlated with a firm's corporate governance (e.g., Yermack, 1996; Ferris et al., 2003; Coles et al., 2008), and the quality of corporate governance is likely to determine CEO turnover decisions (e.g., Defond and Hung, 2004; Lel and Miller, 2008). I find that larger boards are more likely to terminate CEOs, while the opposite holds true for boards with higher levels of busyness, possibly because of over-commitment (e.g., Core et al., 1999; Cashman et al., 2012; Fich and Shivdasani, 2006).

In Models III and IV, I repeat the analysis from Models I and II, but now I employ EXCESS RETURNS as a measure of firm performance. As expected, there is a negative and significant relation between market performance and the likelihood of an ousted CEO. Further, the interaction of EXCESS RETURNS and PDI is positive and highly significant. I therefore conclude that there is a lower turnover-performance sensitivity in countries where people accept a more unequal power distribution irrespective of the performance measure under consideration.

4.3.2 Robustness tests

In the remainder of this paper, I perform several robustness tests to show that the main result is robust to alternative measures of hierarchy, placebo tests, subsample analysis, controls for investor protection, and different empirical methodologies.

Cox Proportional Hazard model

In line with recent research (e.g., Hazarika et al., 2012; Cziraki and Xu, 2014; Jenter and Kanaan, 2014), I also use Cox (1972) proportional hazard models to test the joint effect of power distance and firm performance on CEO turnover events. Cox models have been designed for situations in which one wants to analyze the time to certain events such as deaths of patients or laboratory animals. In my setting, time to event is time-to-forced-turnover. The main advantage of the Cox model is that it takes a CEO's history in the firm into account, i.e., the probability of a forced turnover at a certain point of time is a function of a CEO's tenure. Furthermore, the model also allows for right-censoring, which becomes necessary as CEOs have yet to leave their positions at the end of the sample period.

Results for the Cox model can be found in Table 4.8. The dependent variable is the hazard rate, which approximately corresponds to the likelihood of a forced turnover event during the next period. The models are estimated with a CEO's time-to-forced-turnover measured as the number of years the CEO is in position. A positive coefficient suggests that the variable increases the hazard rate and reduces the expected time to a forced CEO turnover event. The opposite holds true for negative coefficients.

Across all the models in the table, I find that the hazard rate is negatively related to both operating and market performance, with the effect being less pronounced in countries with higher levels of power distance. This finding is consistent with the results from Table 4.7. CEOs in countries with greater power distance are less likely to be questioned for their actions and therefore they are less likely to be held accountable for bad firm performance.

Table 4.8: CEO turnover and power distance: Cox proportional hazard model.

Dep. Variable	FORCED	FORCED	FORCED	FORCED
Model	I	II	III	IV
Growth	-0.38***	-0.29***	-0.37***	-0.28**
	(-3.46)	(-2.64)	(-3.38)	(-2.55)
Leverage	-0.033	-0.079	-0.089	-0.14
	(-0.14)	(-0.37)	(-0.39)	(-0.63)
Size	0.079***	0.062**	0.077***	0.060**
	(3.52)	(2.18)	(3.46)	(2.16)
Volatility	2.80***	2.89***	2.67***	2.75***
	(4.52)	(4.69)	(4.47)	(4.61)
Tobin's Q	-0.0048	-0.014	0.014	0.0042
	(-0.13)	(-0.38)	(0.39)	(0.11)
GDP per Capita	0.37	0.18	0.35	0.17
	(0.51)	(0.29)	(0.49)	(0.27)
Board Size		0.18**		0.17**
		(2.22)		(2.23)
Busyness		-0.61***		-0.59***
		(-3.45)		(-3.37)
Profitability	**-2.49*****	**-2.40*****	**-2.80*****	**-2.66*****
	(-8.90)	**(-7.89)**	**(-12.4)**	**(-11.6)**
Profitability * PDI	**0.032*****	**0.030****		
	(2.75)	**(2.32)**		
Excess Return	**-0.16****	**-0.19****	**-0.21*****	**-0.25*****
	(-2.20)	**(-2.34)**	**(-2.63)**	**(-2.64)**
Excess Return * PDI			**0.0083*****	**0.0088*****
			(3.37)	**(2.82)**
Observations	28,493	25,847	28,493	25,847
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes

The dependent variable is the hazard rate. Estimation models are Cox (1972) proportional hazard models. The models are estimated with a CEO's time-to-forced-turnover measured as the number of years the CEO is in position. Time-to-forced-turnover for the CEOs in office in 2010 is right censored. A positive coefficient suggests that the variable increases the hazard and reduces the expected time to forced CEO turnover. The opposite holds true for negative coefficients. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

Alternative proxies for hierarchy

The main specification in Table 4.7 is based on Geert Hofstede's power distance index (PDI). To show that the results are not driven by the selection of a specific measure for a country's level of hierarchy, I employ SCHWARTZ_HIERARCHY and STRONG_LEADER as two alternative empirical proxies. Comparable to Hofstede's power distance dimension, SCHWARTZ_HIERARCHY also emphasizes hierarchy and the acceptance of unequal distribution of power and roles. STRONG_LEADER, based on a question from the World Values Survey, relates to the acceptance of strong leaders who do not have to bother with parliaments or elections.

The results can be found in Table 4.9. For both hierarchy measures and both operating and capital market performance, I observe that the turnover-performance sensitivity is lower in more hierarchical countries.

Controls for other cultural proxies

Another objection with the above results is that the three cultural variables proxy for other aspects of culture such as masculinity or uncertainty avoidance. To mitigate these concerns, I add interactions of operating performance and the five cultural variables defined by Hofstede to the specification. Definitions of the cultural variables by Hofstede can be found in Appendix C.

The results can be found in Table 4.10. Across all specifications, I observe that the interaction of PROFITABILITY and power distance remains positive and significant. The interaction based on uncertainty avoidance in Model IV (UAI) exhibits a negative and significant coefficient, suggesting that CEOs are terminated more quickly for bad firm performance in countries where people feel uncomfortable with uncertainty and ambiguity. One possible explanation for this finding is that firms in such countries act relatively swiftly in situations of deteriorating firm performance as the uncertainty about a CEO's ability to improve performance again increases and uncertainty is perceived negatively. Finally, the interaction based on the proxy for the relative prioritization of the past, present and future in Model V (LTOWVS) is also negative, which is in line with the reasoning that the CEO turnover-performance sensitivity is higher in countries where people are more open to change. The other interaction terms based on the masculinity, individualism, and indulgence measures are not statistically distinguishable from zero.

Table 4.9: Alternative proxies for power distance.

Dep. Variable	FORCED	FORCED	FORCED	FORCED
Model	I	II	III	IV
Growth	-0.025	-0.13	-0.027	-0.12
	(-0.16)	(-1.07)	(-0.18)	(-0.98)
Leverage	0.15	-0.13	0.12	-0.16
	(0.75)	(-0.64)	(0.54)	(-0.80)
Size	0.054	0.062*	0.052	0.058*
	(1.26)	(1.83)	(1.23)	(1.74)
Volatility	1.68***	1.75***	1.44***	1.74***
	(2.89)	(4.18)	(2.61)	(4.08)
Tobin's Q	-0.0063	-0.0047	-0.012	0.0085
	(-0.14)	(-0.11)	(-0.28)	(0.20)
GDP per Capita	-1.06***	-0.51	-0.95***	-0.52
	(-2.93)	(-0.98)	(-2.58)	(-1.02)
Board Size	0.23	0.19	0.21	0.19*
	(1.63)	(1.63)	(1.55)	(1.66)
Busyness	-0.59**	-0.81***	-0.60**	-0.79***
	(-2.00)	(-3.32)	(-2.02)	(-3.28)
Profitability	**-2.02*****	**-1.76*****	**-2.09*****	**-1.99*****
	(-4.15)	**(-4.57)**	**(-4.50)**	**(-5.47)**
Profitability * Schwartz_Hierarchy	**1.15**** **(2.03)**			
Profitability * Strong_Leader		**2.01**** **(2.32)**		
Excess Return	**-0.39*****	**-0.42*****	**-0.46*****	**-0.48*****
	(-3.37)	**(-3.95)**	**(-5.07)**	**(-4.09)**
Excess Return * Schwartz_Hierarchy			**0.46***** **(4.01)**	
Excess Return * Strong_Leader				**0.44**** **(2.17)**
Observations	16,852	21,724	16,852	21,724
Pseudo R^2	0.060	0.064	0.062	0.064
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes

The dependent variable is FORCED. Estimation models are pooled logit regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

Table 4.10: Influence of other proxies of national culture.

Dep. Variable	FORCED	FORCED	FORCED	FORCED	FORCED
Model	I	II	III	IV	V
Growth	-0.067	-0.067	-0.066	-0.068	-0.060
	(-0.50)	(-0.50)	(-0.50)	(-0.51)	(-0.45)
Leverage	-0.038	-0.036	-0.044	-0.046	-0.051
	(-0.20)	(-0.19)	(-0.24)	(-0.25)	(-0.27)
Size	0.072**	0.072**	0.073**	0.072**	0.073**
	(2.20)	(2.21)	(2.23)	(2.20)	(2.27)
Volatility	1.21***	1.21***	1.20***	1.21***	1.18**
	(2.62)	(2.62)	(2.59)	(2.60)	(2.53)
Tobin's Q	-0.010	-0.011	-0.011	-0.013	-0.012
	(-0.24)	(-0.26)	(-0.26)	(-0.32)	(-0.29)
GDP per Capita	-0.41	-0.41	-0.42	-0.43	-0.42
	(-0.79)	(-0.79)	(-0.80)	(-0.84)	(-0.81)
Board Size	0.20**	0.20**	0.20**	0.20**	0.20**
	(1.99)	(1.99)	(2.00)	(2.01)	(2.02)
Busyness	-0.66***	-0.67***	-0.67***	-0.66***	-0.67***
	(-2.86)	(-2.88)	(-2.90)	(-2.85)	(-2.88)
Excess Return	-0.43***	-0.43***	-0.43***	-0.43***	-0.43***
	(-4.47)	(-4.46)	(-4.46)	(-4.47)	(-4.45)
Profitability	**-1.98*** **	**-1.96*** **	**-1.98*** **	**-2.07*** **	**-2.00*** **
	(-4.95)	**(-5.38)**	**(-5.51)**	**(-5.46)**	**(-5.99)**
Profitability * PDI	**0.027** **	**0.027* **	**0.032*** **	**0.032*** **	**0.031*** **
	(2.48)	**(1.82)**	**(3.04)**	**(3.06)**	**(3.66)**
Profitability * MAS	-0.0033				
	(-0.34)				
Profitability * IDV		0.0010			
		(0.058)			
Profitability * IVR			0.013		
			(0.78)		
Profitability * UAI				-0.024**	
				(-2.29)	
Profitability * LTOWVS					-0.025**
					(-2.18)
Observations	25,861	25,861	25,861	25,861	25,861
Pseudo R^2	0.062	0.062	0.062	0.062	0.062
Year fixed effects	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes

The dependent variable is FORCED. Estimation models are pooled logit regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

Controls for investor protection

Defond and Hung (2004) show in their paper that the CEO turnover-sensitivity is higher in countries with better investor protection. In addition, Lel and Miller (2008) find that CEOs in countries with weak investor protection are more likely to be terminated for bad performance in the case there is a cross-listing on a major U.S. Exchange. Thus, investor protection is likely to affect the turnover-performance relation. Therefore, I repeat the main analysis and add interactions of performance and investor protection to the regression specification. I employ three measures of investor protection: the revised antidirector rights index by Djankov et al. (2008) (ADRI), the revised antidirector rights index by Spamann (2010) (ADRI_S), and PROTECTION, defined as the first principal component of several measures for investor protection (La Porta et al., 2006). I further add an interaction based on a country's market capitalization to GDP and performance to the models since it could be that CEOs are terminated more quickly in countries with more developed stock markets.

The results are provided in Table 4.11. Overall, I find that there is a lower turnover-performance sensitivity in countries where people accept a more unequal power distribution irrespective of the performance measure under consideration, even when I control for interactions with investor protection and stock market development.[3] With respect to the interactions of performance and investor protection, I partly confirm previous evidence by Defond and Hung (2004) and Lel and Miller (2008). When using EXCESS RETURNS as performance measure, I find that the turnover-performance sensitivity is higher in countries with better investor protection regimes. Results based on operating profitability in Model I, however, are less conclusive as I find positive and somewhat significant coefficients for the interaction terms of performance and investor protection.

[3]The results also remain unchanged when I control for an interaction of performance and changes in the quality of national corporate governance regimes (Martynova and Renneboog, 2008).

Table 4.11: Influence of investor protection.

Dep. Variable	FORCED	FORCED	FORCED	FORCED	FORCED	FORCED
Model	Ia	Ib	Ic	IIa	IIb	IIc
Growth	-0.068	-0.090	-0.079	-0.062	-0.083	-0.064
	(-0.51)	(-0.56)	(-0.53)	(-0.46)	(-0.52)	(-0.43)
Leverage	-0.048	0.010	-0.017	-0.063	-0.022	-0.043
	(-0.25)	(0.048)	(-0.083)	(-0.33)	(-0.099)	(-0.21)
Size	0.073**	0.089**	0.084**	0.069**	0.086**	0.081**
	(2.27)	(2.41)	(2.40)	(2.13)	(2.31)	(2.30)
Volatility	1.22***	1.14**	1.10**	1.01**	1.07*	1.00**
	(2.64)	(2.10)	(2.22)	(2.21)	(1.94)	(1.98)
Tobin's Q	-0.012	-0.032	-0.014	0.0047	-0.011	0.0096
	(-0.30)	(-0.71)	(-0.30)	(0.11)	(-0.24)	(0.21)
GDP per Capita	-0.51	0.61	0.77	-0.46	0.53	0.66
	(-0.96)	(0.57)	(0.80)	(-0.92)	(0.50)	(0.69)
Board Size	0.20**	0.20*	0.19*	0.20**	0.20*	0.19*
	(1.98)	(1.75)	(1.71)	(2.03)	(1.78)	(1.73)
Busyness	-0.67***	-0.81***	-0.73***	-0.64***	-0.79***	-0.71***
	(-2.89)	(-3.08)	(-2.95)	(-2.79)	(-3.00)	(-2.87)
Profitability	**-2.00*** **	**-1.62*** **	**-1.76*** **	**-2.15*** **	**-1.99*** **	**-2.02*** **
	(-5.86)	**(-3.99)**	**(-4.54)**	**(-6.85)**	**(-5.87)**	**(-6.50)**
Profitability * PDI	**0.024*** **	**0.033*** **	**0.027** **			
	(2.74)	**(2.78)**	**(2.31)**			
Excess Return	**-0.43*** **	**-0.53*** **	**-0.50*** **	**-0.52*** **	**-0.54*** **	**-0.58*** **
	(-4.46)	**(-6.20)**	**(-6.29)**	**(-8.27)**	**(-7.76)**	**(-8.28)**
Excess Return * PDI				**0.011*** **	**0.0098** **	**0.011*** **
				(3.08)	**(1.98)**	**(2.75)**

Continued on next page.

Table 4.11: Influence of investor protection (continued).

Dep. Variable	FORCED	FORCED	FORCED	FORCED	FORCED	FORCED
Model	Ia	Ib	Ic	IIa	IIb	IIc
Market Cap to GDP	0.064	0.047	0.044	0.052	0.025	0.025
	(0.48)	(0.31)	(0.28)	(0.41)	(0.18)	(0.17)
Profitability * Market Cap	-0.10	-0.084	-0.18			
to GDP	(-0.23)	(-0.17)	(-0.36)			
Profitability * ADRI	0.48**					
	(2.07)					
Profitability * ADRI_S		-0.038				
		(-0.13)				
Profitability * Protection			1.03			
			(0.72)			
Excess Return * Market Cap				-0.18	-0.22	-0.11
to GDP				(-1.47)	(-1.51)	(-0.74)
Excess Return * ADRI				-0.17***		
				(-4.05)		
Excess Return * ADRI_S					-0.16**	
					(-2.06)	
Excess Return * Protection						-0.67*
						(-1.70)
Observations	25,861	22,976	23,979	25,861	22,976	23,979
Pseudo R^2	0.062	0.070	0.068	0.064	0.071	0.069
Year fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes	yes

The dependent variable is FORCED in all models. Estimation models are pooled logit regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

Further robustness tests

In Table 4.12, I perform additional regression analyses to show the robustness of the results. First, I conduct a placebo test. To this end, I exploit the distinction between forced and voluntary CEO turnover events. Instead of regressing an indicator for forced turnover events on an interaction of performance and power distance, I now set the dependent variable to one if a CEO turnover event is classified as voluntary, and zero otherwise. I now expect that the turnover-performance relation is not affected by cross-country differences in the perception of hierarchies since voluntary turnovers are not supposed to be associated with decisions to replace poorly performing CEOs. In line with this reasoning, I find that, both for operating as well as market performance, *voluntary* CEO turnover-sensitivity does not vary across countries with different values of PDI. Thus, only the forced turnover-performance sensitivity is affected by cultural considerations.[4]

Second, I remove all observations from Greece, Indonesia, and South Korea from the sample as the fraction of turnover events that could not be classified either as forced or voluntary is relatively high in those countries. Again, in Model II of Table 4.12, the interaction of performance and power distance remains positive and highly significant.

Third, I also control for CEO-level characteristics such as age and tenure in Model III. In addition, I further add a dummy variable to the specification which distinguishes insider from outsider CEO successions. Although the number of observations drops considerably, I can confirm previous regression results. CEOs are less likely to be terminated for bad firm performance in more hierarchical countries. CEOs are also less likely to be ousted when they are older or have longer tenure. Finally, outside successions are positively associated with forced turnover events, which is in line with existing literature (e.g., Hermalin and Weisbach, 1998; Borokhovich et al., 1996).

[4]Note that both PROFITABILITY and EXCESS RETURNS are negatively associated with the voluntary dummy. For instance, this is because vague news reports on CEO turnovers do not always allow me to distinguish forced from voluntary CEO turnover events properly. Nevertheless, Figure 4.2, for example, suggests that the distinction between forced and voluntary CEO turnover works fairly well in my dataset. Furthermore, the regression coefficients for both performance measures are smaller in magnitude and less significant when the dependent variable is voluntary turnover.

Table 4.12: Further robustness tests.

Dep. Variable	VOLUNTARY	VOLUNTARY	FORCED	FORCED	FORCED	FORCED
Model	Ia	Ib	IIa	IIb	IIIa	IIIb
Growth	-0.27***	-0.27***	-0.083	-0.075	0.013	0.028
	(-2.88)	(-2.96)	(-0.56)	(-0.51)	(0.091)	(0.20)
Leverage	-0.10	-0.090	0.025	-0.018	0.46**	0.44**
	(-0.55)	(-0.48)	(0.12)	(-0.087)	(2.18)	(2.07)
Size	0.082***	0.083***	0.067*	0.065*	0.062*	0.058
	(3.90)	(3.93)	(1.95)	(1.93)	(1.69)	(1.60)
Volatility	0.48	0.45	1.67***	1.53***	0.85	0.74
	(1.03)	(0.97)	(3.72)	(3.44)	(1.37)	(1.18)
Tobin's Q	0.052***	0.051***	-0.030	-0.015	-0.056	-0.039
	(2.94)	(2.77)	(-0.71)	(-0.35)	(-1.28)	(-0.92)
GDP per Capita	-0.22	-0.22	-0.58	-0.56	-0.67*	-0.67*
	(-0.56)	(-0.56)	(-1.33)	(-1.33)	(-1.91)	(-1.94)
Board Size	0.16**	0.16**	0.20*	0.19*	-0.031	-0.034
	(2.45)	(2.42)	(1.76)	(1.75)	(-0.27)	(-0.30)
Busyness	-0.35**	-0.35**	-0.69***	-0.67***	-0.32	-0.29
	(-2.15)	(-2.16)	(-2.73)	(-2.67)	(-0.84)	(-0.78)
Profitability	**-0.61****	**-0.49***	**-1.72*****	**-1.99*****	**-0.80**	**-1.09****
	(-2.54)	**(-1.95)**	**(-4.39)**	**(-6.13)**	**(-1.55)**	**(-2.38)**
Profitability * PDI	**-0.014***		**0.030*****		**0.040****	
	(-1.74)		**(2.77)**		**(2.23)**	
Excess Return	**-0.12*****	**-0.13*****	**-0.45*****	**-0.50*****	**-0.37*****	**-0.43*****
	(-2.59)	**(-2.65)**	**(-3.92)**	**(-5.42)**	**(-3.46)**	**(-4.04)**
Excess Return * PDI		**0.0019**		**0.010****		**0.010***
		(0.87)		**(1.98)**		**(1.93)**
Age					-0.045***	-0.045***
					(-6.72)	(-6.69)
Tenure					-0.028***	-0.028***
					(-3.09)	(-3.08)
Insider					-0.25***	-0.25***
					(-2.92)	(-2.98)
Observations	25,873	25,873	23,585	23,585	9,295	9,295
Pseudo R^2	0.021	0.021	0.062	0.062	0.10	0.10
Year fixed f.e.	yes	yes	yes	yes	yes	yes
Industry f.e.	yes	yes	yes	yes	yes	yes
Country f.e.	yes	yes	yes	yes	yes	yes

The dependent variable is VOLUNTARY in Models I and FORCED in all other models. Model II excludes observations from Greece, Indonesia, and South Korea. Estimation models are pooled logit regressions. All independent variables are lagged by one period. Variables used in interaction terms are centered. T-statistics based on Huber/White robust standard errors clustered by country are presented in parentheses. ***, **, and * indicate significance at the 1%-, 5%-, and 10%-levels, respectively. A detailed description of all variables can be found in Appendix C.

4.4 Conclusion

In this paper, I gather a hand-collected international CEO dataset that distinguishes forced from voluntary executive transitions. Overall, the sample encompasses 5,006 turnover events across 37 countries. I first find that the probability of forced CEO turnover varies considerably across the 37 sample countries. The fraction of forced turnovers, for example, is relatively high in Malaysia, Sweden, and Germany, while it is relatively low in Mexico, Japan, and Argentina.

I then show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of hierarchies, power, and roles. As culture is a relatively exogenous variable, the results are likely not driven by reverse causality. In addition, since I control for unobserved heterogeneity at the country-level, I can mitigate concerns related to omitted variables. The evidence is also robust to alternative measures of firm performance and hierarchy, placebo tests, subsample analysis, and different empirical methodologies. I further show that the results do not change once I control for differences in the turnover-performance sensitivity due to other cultural proxies and investor protection. Overall, the evidence is consistent with the view that CEOs in more hierarchical countries enjoy greater power.

The paper contributes to the literature along several dimensions. First, I provide a novel international CEO turnover dataset that distinguishes forced from voluntary CEO turnover events. Based on my sample, I am able to document economically important differences in the fraction of forced CEO turnovers across the sample countries. Second, the paper contributes to a better understanding of the reasons of CEO turnover events. I find that the CEO turnover-performance sensitivity is affected by culture. In particular, I show that CEOs in countries with higher levels of power distance appear to enjoy greater power as they are less likely to be held accountable for bad firm performance. Differences in turnover risk, in turn, affect then managerial decision-making and corporate outcomes (e.g., Peters and Wagner, 2014; Liu, 2014; Cziraki and Xu, 2014; Lel and Miller, 2015). Finally, the paper is related to the growing literature on culture and finance (e.g., Stulz and Williamson, 2003; Giannetti and Yafeh, 2012; Guiso et al., 2009; Ahern et al., 2012) as well as managerial entrenchment (e.g., Jensen, 1986; Gompers et al., 2003; Dow, 2013).

5 Conclusion

In the aftermath of the accounting scandals at Enron and WorldCom, considerable research has examined the role of corporate boards. However, there is scarce evidence on corporate boards outside the U.S., possibly because data on corporate boards for non-U.S. firms is not readily available. Based on a sample of 35,000 firms and 500,000 board members across 54 countries, this thesis provides new large-scale evidence on boards around the world. It is organized around three specific research questions that focus on certain aspects of officers and directors. The first research question is related to performance implications of female board members. The second essay seeks to distinguish good from bad busy board members by putting forward a new measure of board member quality. The third research question examines the impact of national culture on the CEO turnover-performance relation.

5.1 Main results

5.1.1 Female board representation and firm performance

Throughout the previous decade, many countries have established gender quotas for the board of directors (cf. Ahern and Dittmar, 2012, for an overview). Therefore, considerable corporate finance research has addressed implications of *mandatory* female board representation as a result of binding gender quotas. However, there is only scarce and mixed evidence on valuation implications of *voluntarily* appointed female board members, which is possibly driven by the endogeneity of the board member selection process (Hermalin and Weisbach, 1998) as omitted variables and simultaneity issues make causal inferences on gender difficult.

In the first essay of this thesis, I exploit hand-collected information on over 2,000 deaths of male and female board members to provide causal evidence of voluntary female board representation on firm performance. In doing so, I follow recent research such as Nguyen and Nielsen (2010), Fracassi and Tate (2012), and Fee et al. (2013). The advantage of using board member deaths is that these events take place relatively independent of changes in corporate policies, endogenous board member motivation, or private information of a retiring board member and therefore enable causal inference.

Based on long-run and short-run event studies around these events, I show that voluntary female board representation increases firm valuation. This result is also supported by pooled OLS and firm fixed effects regressions for the entire board dataset of 35,000 firms over the 1998 to 2010 period and remains robust to controls for person-level characteristics such as education and networks. The evidence also holds true for both directors as well as senior managers. The finding further suggests that negative effects due to gender quotas are not driven by women per se and that firms can even benefit from voluntary female board representation.

The size of the sample also enables me to provide representative evidence on female board representation around the world. I find that the proportion of women on corporate boards increased only slightly from an average of below 8% to about 9% between 1998 and 2010. The proportion of female board members also varies from country to country. For instance, the proportion of women is 3% in Japan, 8% in the U.S., and 20% in the Philippines. I further document that there are also significant cross-country differences in the impact of female board members on firm value. The most positive effects can be found in Belgium, Norway (before the introduction of the quota), Spain, Switzerland, and New Zealand, while the opposite applies to Chile, Turkey, Brazil, Argentina, and Egypt.

The results indicate that the positive valuation impact stems from a more rigorous selection of female board members. This suggests that not women per se, but the fact that they have to traverse a more difficult path to the top leads to higher "quality" of female board members, which increases firm valuation. By contrast, women who entered the boardroom due to family connections reduce firm value. Thus, it is not necessarily the women themselves who increase firm value, but the glass-ceiling that leads to higher "quality" of female board members, which then increases firm valuation. Overall, firms can benefit from voluntary female board representation, at least if the appointment is based on objective reasons and not family connections. Firm value only suffers if there is legal pressure such as mandatory gender quotas to appoint women. Thus, firms might want to increase female board representation voluntarily to avoid the introduction of mandatory quotas.

5.1.2 Travel distance and firm performance

In the second essay, I observe that a relatively high proportion of busy directors holds board positions in remote locations. Therefore, I examine travel distances of busy board members between the headquarters of their firms. Travel distances are supposed to capture the remoteness of the geographic location of one board position relative to the other board positions of that board member. For example, consider a board member who holds simultaneous board positions in New York City, London, Berlin, and Rome. From the perspective of the firm located in New York City, for instance, all three other positions of that person are relatively far away (*remote*). In contrast, from the perspective of the firm with headquarters in London, there is only one relatively distant board position located in New York City, while the other two board positions are relatively close. Thus, from the viewpoint of the firm in London, average travel distance to the other board positions is lower than the one of the firm in New York City.

I then argue that higher travel distances serve as an empirical proxy for board member quality. In line with this reasoning, I document a positive association between firm valuation and travel distance in person-level OLS regressions. To mitigate endogeneity concerns, I control for several person-level characteristics such as betweenness centrality as well as person fixed or firm fixed effects. In addition, I exploit natural retirements of busy board members for identification. I assume that a busy board member will retire if, in the next year, he or she gives up all board positions simultaneously and then disappears from the dataset completely. The intuition behind this approach is that giving up all positions simultaneously is likely to be driven by personal reasons and not (the anticipation of) a particular event (e.g., bad performance) in only one of the firms in which a certain board member holds a position.

Additional tests reveal that higher travel distances are likely to signal superior board member skills and abilities, value-increasing person-firm matching, and higher levels of boardroom independence. Furthermore, I find that busyness on average reduces firm value, possibly due to over-commitment that comes along with time-consuming officer or director positions. Interestingly, this effect is less pronounced or even disappears in the presence of busy board members with high travel distances. To shed light on the underlying mechanism, I show that firms with busy boards perform more, potentially value-destroying M&A transactions with greater volumes. In the presence of distant board members, however, this effect disappears.

5.1.3 Culture and CEO turnover

Finally, I obtain a hand-collected international CEO dataset that distinguishes forced from voluntary executive turnover events. Overall, the sample encompasses 5,006 CEO transitions across 37 countries, which makes it one of the largest turnover datasets that distinguishes forced from voluntary turnover, in particular in an international setting. I show that the probability of forced CEO events varies considerably from country to country. The proportion of forced turnovers, for example, is highest in Malaysia, Sweden, and Germany, and lowest in Mexico, Japan, and Argentina. In addition, there is huge variation in CEO tenure, CEO age, and the probability of an insider replacement across the sample countries. For instance, while firms appoint an insider in 73% of all cases, firms in Japan, Mexico, and Spain are much more likely to appoint an insider as the next

CEO, while the opposite holds true for Scandinavian countries.

Based on this dataset, I then show that CEOs are less likely to be dismissed for bad firm performance in countries where people are more willing to accept an unequal distribution of power and hierarchies. As I control for unobserved heterogeneity at the country-level, I am able to mitigate concerns related to omitted variables. Furthermore, with culture being relatively exogenous, the results are less likely biased by reverse causality. My findings are also robust to alternative measures of firm performance and hierarchy, placebo tests, subsample analysis, and different empirical methodologies. I further show that the results do not change once I control for differences in the turnover-performance sensitivity due to other cultural proxies and investor protection.

Overall, the evidence is consistent with the view that CEOs in more hierarchical countries are less likely to be held accountable for poor firm performance. In more hierarchical societies, formal chains of command are more naturally taken for granted and a CEO's actions will less likely be questioned by subordinates and other executives. Therefore, CEOs enjoy greater power and will be less likely to be held accountable for bad firm performance.

5.2 Contribution and implications

Overall, the dissertation contributes to a better understanding of corporate boards around the world. First, I present descriptive information on corporate boards around the world. Although there is considerable evidence on boards in the U.S., less is known about boards in countries other than the U.S., possibly because data on corporate boards for non-U.S. firms is not readily available. In this thesis, I provide three unique international datasets on officers and directors. I obtain a large-scale international board dataset of 35,000 firms across 54 countries, information on over 2,000 board member deaths, and data on 5,000 turnover events across 37 countries.

Second, I add to the literature related to the upper echelons and resource dependency theories. Based on capital market performance around board member deaths, I show that *voluntary* female board representation increases firm value, which is in contrast to previous evidence on forced female board representation due to mandatory quotas. In view of the low proportion of female board members, my dissertation has an important implication. It appears that firms can benefit from voluntarily appointing female officers and directors. Thus, only forced appointments related to mandatory gender quotas are detrimental to firm value. To avoid the introduction of value-destroying quotas due to the low proportion of female board members, firms might want to intensify their efforts to appoint female board members without legal pressure. For instance, firms might want to establish a corporate culture that fosters gender equality. The importance of corporate culture to increase the proportion of female directors is, for example, highlighted by a survey of McKinsey (2013), which concludes that "companies must also work hard to transform mindsets and culture. These are crucial elements in the achievement of gender diversity" (p. 17).

Third, I argue that travel distance serves as a credible measure of busy board member quality and, accordingly, I find a positive relation between distance and performance. Thereby, I add to recent studies such as Perry and Peyer (2005), Field et al. (2013), and Masulis and Mobbs (2014) and contribute to the literature on the agency and resource dependence theories. I also provide international evidence that busyness generally reduces firm value, with the effect disappearing in the presence of board members with long travel distances. As the average valuation effect of busyness is negative, a firm's shareholders should critically view the costs associated with busy officers and directors before appointing them. Due to negative valuation implications of busyness, regulators may also want to think of restricting busyness among officers and directors. However, they may also want to improve ways of accessing foreign human capital so that firms can more easily appoint officers and directors from other countries when they are in need of expertise that cannot be found locally.

Fourth, I examine cross-country variation in culture. In particular, I find that CEOs in countries with higher levels of power distance seem to enjoy greater power as they are less likely to be held accountable for bad firm performance. Differences in turnover risk, in turn, are supposed to affect managerial decision-making and corporate outcomes (e.g., Peters and Wagner, 2014; Liu, 2014; Cziraki and Xu, 2014; Lel and Miller, 2015). Therefore, cultural reasons may give rise to CEO behavior that is undesired from a shareholder's perspective. For example, it could be that CEOs who enjoy greater power distance engage in excessive risk-taking. Thereby, I add to the literature on CEO turnover, which is closely related to agency theory.

5.3 Avenues for future research

In my dissertation, I highlight considerable differences in board structures and dynamics across the sample countries. It would be interesting to shed light on the underlying reasons. For example, why are there some countries (e.g., in Asia) with higher levels of female board representation than other countries (e.g., in Continental Europe)? One possible explanation, for instance, are cultural reasons. It could well be that countries with higher levels of masculinity (e.g., Hofstede, 1980, 2001), assertiveness, or gender inequality, among other things, exhibit lower levels of female board representation because women face greater obstacles or barriers for their careers in those countries. In addition, why is busyness higher in some countries (e.g., Israel, Philippines, or Luxembourg) and lower in other countries (e.g., Argentina or Japan)? For instance, does weak investor protection foster the presence of value-destroying busy board members?

Furthermore, in Chapter 4, I show that cultural differences give rise to differences in CEO power and managerial discretion. More generally, are there other cross-country patterns that affect managerial discretion? Do cross-country differences in managerial discretion affect corporate policies such as payout or leverage decisions? For example, do CEOs pursue more idiosyncratic corporate policies in countries where they enjoy greater freedom? To this end, one could, for instance, investigate policy changes around exogenous CEO turnovers (e.g., deaths) in the spirit of Fee et al. (2013).

Finally, when analyzing travel distances, I identify a large number of busy board members with foreign board positions. It would be instructive to examine the determinants of cross-country board seats. When are officers or directors appointed as board members in another country? For example, are there local or regional shortcomings in the supply of board members? If so, is this detrimental to firm value? Furthermore, it would be interesting to ask whether the labor market for officers or directors is a local or global market.

Appendix A: Variables used in the essay on female board representation (Chapter 2).

Variable	Description
Firm-level board variables	
Women	Fraction of women on a firm's board at the fiscal year end date (source: Thomson Reuters).
Women [Dummy]	Dummy variable that equals one if at least on female board member is present at the fiscal year end date and zero otherwise (source: Thomson Reuters).
Women [Director]	Fraction of women on a firm's board at the fiscal year end date; only directors are considered. (source: Thomson Reuters).
Board Size	Board Size is the number of both executive and non-executive directors as well as senior managers at a firm's fiscal year end date (source: Thomson Reuters).
Board Size [Director]	Board Size [Director] is the number of both executive and non-executive directors at a firm's fiscal year end date (source: Thomson Reuters).
Other firm- and country-level variables	
Tobin's Q	Tobin's Q is total assets (WC02999) minus common stock (WC03501) plus the market value of equity (WC08001) deflated by total assets (source: Worldscope).
Size	Size is total assets in millions of $US. When performing regressions, we employ the natural logarithm of the variable (source: Worldscope).
Leverage	Leverage is book leverage defined as total debt (WC03255) deflated by total assets (source: Worldscope).
Profitability	Profitability is earnings before interest and taxes (WC18191) to total assets (source: Worldscope).
Retained Earnings	Retained earnings is retained earnings (WC03495) deflated by total assets (source: Worldscope).
Tangibility	Tangibility is defined as net property, plant, and equipment (WC02501) deflated by total assets (source: Worldscope).
Growth	Growth is the one-year logarithmic sales growth (WC01001) (source: Worldscope).
GDP per Capita	GDP per Capita is a country's GDP per capita in constant 2005 $US. When performing regressions, we employ the natural logarithm of the variable (source: World Bank).
Market Cap to GDP	Market Cap to GDP is the share price times the number of shares outstanding in percent of a country's GDP (source: Worldbank).
Board Inequality	Annual difference between the fraction of women in the total labor force in 1990 in a given country minus the average fraction of female board members in a given country and year, excluding the firm under consideration (source: World Bank, Thomson Reuters).
AVG_Women (Country)	Average fraction of female board members in a given country and year, excluding the firm under consideration (source: Thomson Reuters).
AVG_Women (Region)	Average fraction of female board members in all firms that are less than 100 kilometers away from a given firm, excluding the firm under consideration. Values are calculated using the "nearstat" Stata module developed by P. Wilner Jeanty. Firm address data is from the Worldscope database, which is then used to obtain geographic coordinates via the Google Maps API (source: Thomson Reuters, Worldscope, Google Maps).

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Appendix A (continued).

Variable	Description
Person-level variables	
Director	Director is a dummy variable set to one if a board member is a director and zero otherwise (source: Thomson Reuters).
Gender	Dummy variable that equals one for female board members and zero for men.
Education	Board member-specific index that equals one for a bachelor's degree, two for a master's degree, three for a MBA, and four for a Ph.D. (source: Thomson Reuters).
Betweenness	Betweenness centrality is the proportion of shortest paths between two board members in the network that pass through a certain board member. A high betweenness centrality indicates that a large flux of information may pass through a board member and that he or she may act as a broker connecting board members (source: own calculations based on data by Thomson Reuters).
Double Name	Dummy variable that equals one if another board member in the same firm shares the same surname and zero otherwise (source: Thomson Reuters).
Age	Age refers to the age of a board member in a given year (source: Thomson Reuters).

Appendix B: Variables used in the essay on travel distance (Chapter 3).

Variable	Description
Firm-level board variables	
Board Size	Board size is the number of both executive and non-executive directors as well as senior managers (i.e., board members) at a firm's fiscal year end date. When performing regressions, we employ the natural logarithm of the variable (source: Thomson Reuters).
Positions	Positions is the average number of executive and non-executive directorships as well as senior management positions per board member at a firm's fiscal year end date (source: Thomson Reuters).
Busyness	Busyness refers to the fraction of both executive and non-executive directors as well as senior managers (i.e., board members) with at least two outside positions at a firm's fiscal year end date (source: Thomson Reuters).
Busy Board	Busy Board is an indicator variable that is set to one if the majority of both executive and non-executive directors as well as senior managers (i.e., board members) is busy and zero otherwise (source: Thomson Reuters).
Board Size [Dir]	Board size [Dir] is the number of both executive and non-executive directors at a firm's fiscal year end date. When performing regressions, we employ the natural logarithm of the variable (source: Thomson Reuters).
Positions [Dir]	Positions [Dir] is the average number of executive and non-executive directorships as well as senior management positions per director at a firm's fiscal year end date (source: Thomson Reuters).
Busyness [Dir]	Busyness [Dir] refers to the fraction of both executive and non-executive directors with at least two outside positions at a firm's fiscal year end date (source: Thomson Reuters).
Busy Board [Dir]	Busy Board [Dir] is an indicator variable that is set to one if the majority of both executive and non-executive directors is busy and zero otherwise (source: Thomson Reuters).
Variables related to travel distances	
Distance	For each firm, year, and busy board member, we calculate crow distances to the corporate headquarters where a given busy board member holds outside positions starting from the respective firm. Distance is then defined as the average travel distance per connection and busy board member in miles. The variable is set to zero when there is no busy board member. Crow distances are obtained using Vincenty's formulae. When performing regressions, we employ the natural logarithm of the variable after adding one unit (source: own calculations based on data by Thomson Reuters and Google Maps).
Distance [Dir]	For each firm, year, and busy director, we calculate crow distances to the corporate headquarters where a given busy director holds outside positions starting from the respective firm. Distance is then defined as the average travel distance per connection and busy director in miles. The variable is set to zero when there is no busy director. Crow distances are obtained using Vincenty's formulae. When performing regressions, we employ the natural logarithm of the variable after adding one unit (source: own calculations based on data by Thomson Reuters and Google Maps).

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Appendix B (continued).

Variable	Description
Other firm-level variables	
Tobin's Q	Tobin's Q is total assets (WC02999) minus common stock (WC03501) plus the market value of equity (WC08001) deflated by total assets (source: Worldscope).
Size	Size is total assets in millions of $US. When performing regressions, we employ the natural logarithm of the variable (source: Worldscope).
Leverage	Leverage is book leverage defined as total debt (WC03255) deflated by total assets (source: Worldscope).
Profitability	Profitability is earnings before interest and taxes (WC18191) to total assets (source: Worldscope).
Retained Earnings	Retained earnings is retained earnings (WC03495) deflated by total assets (source: Worldscope).
Tangibility	Tangibility is defined as net property, plant, and equipment (WC02501) deflated by total assets (source: Worldscope).
Growth	Growth is the one-year logarithmic sales growth (WC01001) (source: Worldscope).
Vol_WS	Net assets from acquisitions (WC04355) deflated by sales (source: Worldscope).
N_SDC	Number of M&A transactions in a given year as reported in SDC Platinum where the deal value exceeds one million $. Deals are only selected if the acquirer owns less than 50% of the target's stock before and at least 50% after the acquisition. If there are no reported deals in SDC Platinum for a given acquirer firm, the variable is set to zero. When performing regressions, we employ the natural logarithm of the variable after adding one unit (source: SDC Platinum).
Vol_SDC	Dollar value of all M&A transactions in a given year as reported in SDC Platinum where the deal value exceeds one million $. Deals are only selected if the acquirer owns less than 50% of the target's stock before and at least 50% after the acquisition. If there are no reported deals in SDC Platinum for a given acquirer firm, the variable is set to zero. When performing regressions, we employ the natural logarithm of the variable after adding one unit (source: SDC Platinum).
Other country-level variables	
GDP per Capita	GDP per Capita is a country's GDP per capita in $US. When performing regressions, we employ the natural logarithm of the variable (source: Worldbank).
Market Cap to GDP	Market Cap to GDP is the share price times the number of shares outstanding in percent of a country's GDP (source: Worldbank).
Large Airports	Number of airports with paved runways (concrete or asphalt surfaces) longer than 3,047 meters per capita. (source: CIA World Factbooks, 2003-2010).
Person-level variables	
Director	Director is a dummy variable set to one if a board member is a director and zero otherwise (source: Thomson Reuters).
Busyness [Person]	Dummy variable that equals one if a board member holds at least three board memberships and zero otherwise (source: Thomson Reuters).
Positions [Person]	Positions [Person] is the number of executive and non-executive directorships as well as senior management positions a person holds at a firm's fiscal year end date. When performing regressions, we employ the natural logarithm of the variable (source: Thomson Reuters).

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Appendix B (continued).

Variable	Description
#Industries	Number of industries, in which a given board member holds positions at the same time, where industries are defined based on the 49 industry portfolios by Fama and French. When performing regressions, we employ the natural logarithm of the variable (source: Worldscope, Thomson Reuters).
Betweenness	Betweenness centrality is the proportion of shortest paths between two board members in the network that pass through a certain board member. A high betweenness centrality indicates that a large flux of information may pass through a board member and that he or she may act as a broker connecting board members (source: own calculations based on data by Thomson Reuters).
Double Name	Dummy variable that equals one if another board member in the same firm shares the same surname and zero otherwise (source: Thomson Reuters).
Age	Age is a board member's age in years (source: Thomson Reuters).
Education	Board member-specific index that equals one for a bachelor's degree, two for a master's degree, three for a MBA, and four for a Ph.D. (source: Thomson Reuters).
University Quality	University Quality refers to the overall score of a board member's highest-ranked university among the 200 best universities according to the 2010-2011 World University Rankings (source: Times Higher Education and Thomson Reuters).
Distance [Person]	For each firm, year, and busy board member, we calculate the average crow distance to the corporate headquarters where a given busy board member holds outside positions starting from the respective firm. The variable is set to zero when the board member is not busy. Crow distances are obtained using Vincenty's formulae. When performing regressions, we employ the natural logarithm of the variable after adding one unit (source: own calculations based on data by Thomson Reuters and Google Maps).
Compensation	Total fiscal year compensation in $US for executive positions (source: Thomson Reuters).
Compensation [Dir]	Total fiscal year compensation in $US for director positions (source: Thomson Reuters).
Dropout	Dummy variable that equals one if a busy board member gives up all his board seats at the same time and disappears from the sample, and zero otherwise (source: Thomson Reuters).

Appendix C: Variables used in the essay on CEO turnover (Chapter 4).

Variable	Description
Turnover-related variables	
Forced	Dummy variable that is set to one if a CEO turnover event is classified as forced, and zero otherwise. The definition of "forced" follows Huson et al. (2001) and Hazarika et al. (2012).
Voluntary	Dummy variable that is set to one if a CEO turnover event is classified as voluntary, and zero otherwise. The definition of "voluntary" follows Huson et al. (2001) and Hazarika et al. (2012).
Age	Age is a CEO's age in years.
Tenure	Number of years the incumbent CEO is in position.
Insider	Dummy variable that is set to one if the successor of the departing CEO is an insider, i.e., the successor has been within the firm or one of its subsidiaries for at least six months prior to the turnover, and zero otherwise.
Other firm-level variables	
Profitability	Profitability is earnings before interest and taxes (WC18191) to total assets (WC02999) (source: Worldscope).
Excess Return	Annual total shareholder return throughout a firm's fiscal year in excess of the average return in the firm's country in that fiscal year (source: Datastream).
Growth	Growth is the one-year logarithmic sales (WC01001) growth (source: Worldscope).
Leverage	Leverage is book leverage defined as total debt (WC03255) deflated by total assets (source: Worldscope).
Size	Size is total assets in millions of $US. When performing regressions, we employ the natural logarithm of the variable (source: Worldscope).
Volatility	Standard deviation of twelve monthly total shareholder returns throughout a firm's fiscal year (source: Datastream).
Tobin's Q	Tobin's Q is total assets minus common stock (WC03501) plus the market value of equity (WC08001) deflated by total assets (source: Worldscope).
Board Size	Number of both executive and non-executive directors as well as senior managers (i.e., board members) at a firm's fiscal year end date. When performing regressions, we employ the natural logarithm of the variable (source: Thomson Reuters).
Busyness	Fraction of both executive and non-executive directors as well as senior managers (i.e., board members) with at least two outside positions at a firm's fiscal year end date (source: Thomson Reuters).

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Appendix C (continued).

Variable	Description
Country-level variables	
PDI	A country's level of power distance. According to Geert Hofstede's website (www.geert-hofstede.com/dimensions.html), "this dimension expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people. People in societies exhibiting a large degree of power distance accept a hierarchical order in which everybody has a place and which needs no further justification. In societies with low power distance, people strive to equalise the distribution of power and demand justification for inequalities of power" (sources: Hofstede, 1980, 2001).
Schwartz_Hierarchy	A country's level of hierarchy. Like Hofstede's power distance dimension, this measure also emphasizes hierarchy and the acceptance of an unequal distribution of power and roles (sources: Schwartz, 1994, 2009).
Strong_Leader	Refers to one question of the World Values Survey. People were asked whether they think that a strong leader who does not have to bother with parliament and elections is very good, fairly good, fairly bad or very bad. I code very good with -1, fairly good with -2, fairly bad with -3, and very bad with -4 (source: World Values Survey 1981-2014 Official Aggregate).
MAS	Defined as the "preference in society for achievement, heroism, assertiveness and material rewards for success" (sources: Hofstede, 1980, 2001).
IDV	Defined as the "preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families" (sources: Hofstede, 1980, 2001; Hofstede et al., 2010).
IVR	Defined as the ease of "gratification of basic and natural human drives related to enjoying life and having fun" (sources: Hofstede, 1980, 2001).
UAI	Defined as the "degree to which the members of a society feel uncomfortable with uncertainty and ambiguity" (sources: Hofstede, 1980, 2001).
LTOWVS	Proxy for the relative prioritization of the past, present and future. Low values suggest that people "prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion" (sources: Hofstede, 1980, 2001).
GDP per Capita	GDP per Capita is a country's GDP per capita in $US. When performing regressions, we employ the natural logarithm of the variable (source: Worldbank).
Market Cap to GDP	Market Cap to GDP is the share price times the number of shares outstanding in percent of a country's GDP (source: Worldbank).
ADRI	ADRI is the revised antidirector rights index by Djankov et al. (2008).
ADRI_S	ADRI_S is the revised antidirector rights index by Spamann (2010).
Protection	Protection, developed by La Porta et al. (2006), is the first principal component of several measures for investor protection.

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