A Clash of Cultures: The Governance and Valuation Effects of Corporate Cultural Distance

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Abstract

We find that the cultural distance between the CEO and a firm's directors increases the sensitivity of CEO turnover and compensation to performance while enhancing shareholder value. This effect is concentrated in the cultural distance between the CEO and independent directors. More culturally distant CEOs adopt less risky financial and operating policies. To establish causality, we use the sudden exit of directors as a source of exogenous change in cultural distance. Overall, our results suggest that cultural distance increases information collection costs. This causes the board to monitor with increased rigor and to rely on "hard" information to assess CEO performance.

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1. Introduction

The evaluation of managerial human capital remains a central question in the corporate governance literature. Such an assessment requires extensive information and repeated interactions between CEOs and boards if directors are to accurately evaluate compensation terms and make appropriate retention decisions. If the CEO and the board lack a common cultural affinity, then directors might incorrectly assess CEO capability and inefficiently employ the firm's human capital.

The adverse effect of cultural distance on the management of corporate executives can occur due to two reasons. First, cultural distance can increase communication costs (Cornell and Welch, 1996; Giannetti and Yafeh, 2012; Lim et al., 2016; Fisman et al., 2017), thereby affecting the quantity and quality of information shared between CEOs and directors. As such, directors are less able to correctly evaluate a CEO's capability. Thus, they are less capable of making informed decisions regarding the CEO's performance. Second, information frictions due to cultural distances can accumulate over time from repeated interactions between the CEO and directors. If a culturally distant CEO becomes reluctant to share private information with the board, it can reduce the quality of board advice and reduce shareholder value (Adams and Ferreira, 2007).

The issue of cultural distance becomes especially important in a globalized economy which makes the occurrence of foreign CEOs or directors more common. In spite of its increasing frequency, the effect of cultural distance between a CEO and the board of directors is little studied in the corporate finance and governance literatures. In this study, we examine how cultural distance

between a firm's directors and the CEO influences the evaluation of managerial human capital, specifically CEO compensation and retention. We provide some of the first evidence to show that cultural distance has a substantial effect on corporate governance as well as shareholder value.

Previous studies examine the effect of diversity within a board. That is, their focus is the diversity between the directors of a given board. For instance, Minton et al. (2014) examine financial expertise, Farrell and Hersch (2005), Adams and Ferreira (2009), and Griffin et al. (2018) focus on gender, Giannetti and Zhao (2019) study ethnicity while Frijns et al. (2016) analyze national culture. We extend our analysis beyond the board of directors and introduce the firm's CEO. We examine the diversity that exists between the board and the CEO. We measure this diversity by estimating the cultural distance that exists between the board and the CEO. Our analysis expands beyond the within-board diversity studies appearing in the literature and examines the broader issue of board-CEO cultural distance.

We find that cultural distance significantly increases the sensitivities of CEO turnover and pay to the firm's performance. The effects are economically meaningful: a one standard deviation increase in cultural distance combined with a one standard deviation decrease in the return on assets (ROA) is associated with a 2.8% higher likelihood of CEO turnover as well as a 22% reduction in total compensation. Our results further suggest that if acquiring information from the CEO is a costly or imperfect process, then "hard" information such as accounting performance can become a convenient substitute. Furthermore, the board can elect to intensify its scrutiny of the CEO and increase the sensitivities of executive turnover and compensation to the firm's operating performance.

We discover that the effects of cultural distance are mostly concentrated between the CEO and independent directors, rather than with the executive directors. This finding is consistent with

the value of independent directors and their recognized ability in monitoring management (Fama and Jensen, 1983). Culturally distant independent directors might also have stronger incentives to collect information and scrutinize a CEO. This implies that the lack of cultural affinity between a CEO and the board might actually strengthen a board's monitoring effectiveness.

Additionally, our study examines how CEO-board cultural distance affects shareholder value. Although cultural distance induces tougher managerial monitoring, it is not obvious that this creates shareholder wealth. A greater cultural distance can lead to increased scrutiny and link the firm's performance more closely to CEO turnover and compensation, thus enhancing shareholder value. It is also possible, however, that cultural distance exacerbates inter-personal conflict and disrupts the board's decision-making process. This makes the board's outcomes less optimal and more volatile (Giannetti and Zhao, 2019). Moreover, information frictions can bias a board's judgement and lead to suboptimal decisions regarding a firm's operations. Thus, increased CEO-board cultural distance might lead to lower shareholder value.

We find that an increase in CEO-board cultural distance leads to greater shareholder value. A one standard deviation increase in the CEO-board cultural distance is followed by a 1.9% increase in Tobin's Q (relative to its mean) in the following year. If we further separate independent directors from executive directors, we show that the positive effect of cultural distance is concentrated among independent directors, consistent with their monitoring role. This finding suggests that the net effect of CEO-board cultural distance is to create value for shareholders, with the benefits from monitoring exceeding information asymmetry costs.

We recognize, however, that establishing the causality of our results is particularly challenging due to the nature of CEO-board matching and board composition (Hermalin and Weisbach, 1998; Adams et al., 2010). To address this possible endogeneity, we employ two

methods. Our first identification strategy follows Fracassi and Tate (2012) to identify the sudden exit of independent directors unrelated to firm conditions.[1] This identification strategy ensures that changes in cultural distances across firms are nearly random in their distribution. We find a significant increase in both the likelihood of CEO turnover and shareholder value after the sudden exit of an independent director that increases the CEO-board cultural distance. This increase in turnover likelihood and shareholder value is significant compared to changes surrounding the sudden exit of a director that does not increase cultural distance.

Our second method uses propensity score matching approach. Specifically, we use a set of control firms that have a zero cultural distance and match them with firms that have a positive CEO-board cultural distance based on year, industry, country, and other firm-year covariates. Based on this matched sample, we continue to find that CEOs with a greater cultural distance from their boards experience higher turnover and increased pay sensitivity relative to the firm's performance.

Since our main findings suggest that cultural distance between management and the firm's board of directors increases communication costs, cultural diversity within the board itself might also have an effect. A diverse board could make CEO turnover more sensitive to cultural distance because a diverse board might rely more on objective data. Alternatively, a diverse board might make turnover less sensitive to cultural distance since such boards suffer from increased coordination costs, making its monitoring less efficient. Our findings are consistent with the observation that cultural distance increases information and a culturally heterogeneous board makes decision-making less efficient.

[1] We further perform an online search of keywords to ensure that independent directors exit boards due to personal or accidental reasons (e.g., deaths and health issues) that are independent of firm characteristics. Thus, these departures serve as an exogenous source of changes in the CEO-board cultural distance.

In an extended analysis, we examine the effect of CEO-board cultural distance on managerial behavior. If a CEO anticipates increased costs and risks arising from cultural misalignment, the CEO might alter her behavior in ways intended to minimize the effect of these frictions (Parsons et al., 2011). Consistent with this view, we find that a larger cultural distance leads to "safer" policies such as fewer R&D investments, less financial leverage, more cash holdings, and reduced capital expenditures.

We also conduct a battery of robustness tests to confirm that our empirical results are not specific to the way we construct our cultural distance measures, the cultural scores we use, the sample of countries, time-varying country-level regulatory changes, and the fixed effects we include in our regression specification.

Our study complements the corporate governance literature on social networking and personal connections by showing that CEO-board cultural distance increases information collection costs while simultaneously enhancing monitoring quality.[2] Increased scrutiny by the board affects decisions both about and by the CEO. Our empirical results are consistent with studies reporting that CEO-board ties weaken corporate governance, and eventually reduce firm value (Fracassi and Tate, 2012). Most of the existing studies measure personal ties between individuals based on the intensity of their past interactions. For example, Cohen, Frazzini, and Malloy (2010) examine school ties between sell-side analysts and senior corporate officers and find that the ties facilitate superior information gathering. Fracassi and Tate (2012) measure

[2] Our findings that cultural distance increases information collection costs relate to the literature on communication theory. For example, Rogers and Bhowmik (1970) show that communication is more effective when communicators on both sides share similar codes and norms, which is more likely to happen if individuals share common cultural values. Arrow (1974) and Akerlof (1997) provide theoretical arguments that greater social distance inhibits communication within an organization and adversely affects its ability to make decisions. Brett and Okumura (1998) and Adair et al. (2001) indicate that sharing similar norms and codes facilitates not only communication but also the exploration of alternatives in a contract. It is natural to form personal ties when communication is more efficient.
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personal ties using the overlap of nonprofessional organizations, employment and educational background in the past. In contrast to the existing literature, we introduce a new way of assessing the strength of CEO board ties. Specifically, we examine the cultural wedge between CEOs and their boards. We show that cultural background misalignment reduces the likelihood of building personal ties because cultural distance increases communication cost, making information collection less efficient. Consequently, the cultural distance between the CEO and board members increases the scrutiny of CEO performance and thus increases firm value.

We organize the remainder of this study as follows. In Section 2, we discuss the underlying theory regarding how cultural distance can influence the flow of information within a firm. This section also contains the development of our hypotheses. In Section 3, we describe the data sources and the construction of our cultural distance measures. In Section 4, we present our main empirical findings. In Section 5, we discuss the results from a number of robustness tests. In Section 6, we summarize our findings and discuss their importance to the corporate finance literature.

2. Theoretical Discussion and Hypothesis Development

2.1 Cultural Distance and CEO Assessments

An important challenge to CEO success is her overall effectiveness of communication with the board of directors. The CEO uses such communication to signal executive ability with the delivery of new strategies, initiatives, and proposals. On their side, directors acquire "soft" information from these communications and use it to assess the talent of the CEO (Kahneman and Tversky, 1979). These assessments are then reflected in labor outcomes such as compensation and retention decisions. In this context, CEO-board cultural distances are likely to determine the clarity of communication and the effectiveness of information exchange between parties. These cultural

distances become even more critical since the CEO and board must exchange information on a reoccurring basis.

The homophily principle of McPherson et al. (2001) asserts that individuals tend to bond with those who are culturally similar. Individuals sharing a common culture are more likely to experience affinity and exhibit greater tolerance between themselves. Homophily suggests that a greater cultural distance between the CEO and directors reduces the likelihood of them developing connections, thus limiting the directors' access to soft information about the CEO.[3] Given this reduced affinity and higher communication costs, cultural distance between a CEO and her board makes it less likely they will establish personal ties between them.

The existing literature on personal ties shows that previous interactions between the CEO and board directors can have a significant impact on shareholder value. For example, Fracassi and Tate (2012) use the overlap of previous memberships in nonprofessional organizations, common employers, and a shared academic alma mater to measure pre-existing personal ties between the CEO and the directors nominated by the CEO. They show that stronger personal ties between the CEO and board members predict lower shareholder value due to inadequate monitoring. The nature of personal ties captured by Fracassi and Tate (2012) is pre-existing or "*ex post*". In our study, however, we capture an "*ex ante*" measure of personal ties – cultural distance – and show that due to increased communication costs and reduced affinity, a larger cultural distance can make it more difficult to form personal ties. This, consequently, increases the likelihood of CEO turnover, but also enhances the intensity of CEO monitoring and shareholder value.

[3] There is a large literature that indicates that cultural similarity increases the likelihood of two individuals forming a social tie. See, for example, Cohen, Frazzini, and Malloy (2008, 2010) and Engelberg, Gao, and Parsons (2012).

Cultural distance can widen information asymmetry between groups by increasing the costs of communication (Cornell and Welch 1996; Giannetti and Yafeh, 2012; Fisman et al., 2017). Communication is more effective when the sender and receiver share common norms and social protocols (e.g., Giannetti and Yafeh, 2012). If greater cultural distance between the CEO and directors reduces the likelihood of sharing common values, beliefs, and attitudes, then it increases the costs of collecting information for assessing a CEO"s performance.

Cultural distance can also weaken the quantity and quality of the information obtained by the CEO. Culturally distant CEOs have fewer natural channels through which they can receive or share soft information with their boards. Consequently, less information is transmitted by the CEO to the board or the process by which information is shared is lengthened. In either case, there is less efficient communication between the board and its CEO.

If CEO-board cultural distances increase the cost of information collection, directors are likely to adjust their evaluation processes of the CEO. If acquiring information from the CEO is either costly or imperfect, then the use of "hard" information can serve as a convenient substitute. Directors find it more useful to evaluate a CEO's performance based on information that is easy to obtain such as accounting measures of performance. Further, to obtain the data needed for their decision-making, directors might decide to increase their monitoring of the CEO. This implies creating a closer link between the CEO's evaluation and the firm's accounting performance. With less information, culturally distant directors are likely to view the CEO as more risky than culturally proximate directors. A likely outcome of this perception is that culturally distant CEOs are signed to contracts with more stringent assessments (Bryan et al., 2015). Consequently, we propose the following set of hypotheses:

H1: *The sensitivity of CEO turnover to corporate performance increases as the CEO-board cultural distance increases.*

H2: *The sensitivity of CEO pay to corporate performance increases as the CEO-board cultural distance increases.*

2.*2 Cultural Distance and Firm Value*

Previous studies such as Li et al. (2013) and Lievenbruck (2014) examine the effect of cultural distance on risk-taking and hedging. We extend their analysis by investigating the effect of cultural distance on shareholder value. Based on the preceding discussion, we contend that CEO-board cultural distance can have competing effects on shareholder value.

If cultural distance creates a wider information gap, the subsequent increased monitoring can have a positive effect on shareholder value (Hermalin and Weisbach, 1998; Fich and Shivdasani, 2006). Given the additional performance monitoring when cultural distance is large, foreign CEOs might be expected to generate higher returns than their domestic peers. Further, it might be that culturally distant hires have stronger character and leadership attributes to overcome the frictions, costs, and challenges of cultural foreignness. Consequently, we hypothesize:

H3a: *Increasing cultural distance between the CEO and her board of directors has a positive effect on firm value*.

Alternatively, board monitoring might inversely impact the firm's value. It is possible that a larger CEO-board cultural distance improves board monitoring quality, but if the improved monitoring quality comes at the cost of weaker strategic advising, firm performance might decline (Faleye, Hoitash and Hoitash, 2011). As such, the impact of cultural distance on firm value is an empirical question that depends on whether the costs from reduced advising outweigh the benefits of enhanced monitoring. Further, communication theory suggests that differences in cultural values make CEO-board communication and coordination more difficult, thus increasing the collection costs of information. Arrow (1974) and Akerlof (1997) provide theoretical arguments

that greater social distance inhibits communication within an organization and adversely affects its ability to make decisions. Moreover, cultural distances can create more internal conflicts and reduce group cohesion (Becker, 1957; Li and Wu, 2014). It is plausible that CEO-board cultural distance reduces firm value. This leads to an alternative hypothesis:

> H3b*: Increasing cultural distance between the CEO and the board of directors has a negative effect on firm value.*

Having anticipated the costs and risks of working with a culturally distant board of directors, a CEO might respond strategically by reducing her risk-taking behaviors. This leads to a "quiet life" approach to executive decision-making. There are two reasons for a culturally distant CEO to adopt such a strategy. First, given the greater costs of communication with a culturally distant board, it can be difficult for the CEO to convince the board to adopt a risky or new policy. Second, riskier policies can exaggerate a firm's performance volatility, resulting in a higher probability of CEO dismissal. Therefore, we offer our last hypothesis:

> H4*: CEOs who are more culturally distant from their board of directors adopt less risky financial and operating policies.*

The costs of communication between a CEO and her board can play a major role in explaining the linkage between cultural distance and managerial behavior. If the CEO has to choose between a less risky project and a complicated one with higher risk, a culturally distant CEO will more likely choose to invest in the less risky project because it is easier to communicate with the board. The direct impact of cultural distance on firm policies is driven by the fact that cultural barriers between individuals increase communication costs. This makes less risky projects easier for the CEO to explain to the board and convince them to approve.

3. Data and Estimation of Cultural Distance

3.1 Data

Our sample consists of firms from 18 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the U.K. Cultural scores assigned to each country for calculating cultural distances are obtained from Geert Hofstede's website. Data regarding CEO and board characteristics are drawn from the BoardEx dataset. We construct financial variables using data from the Compustat Global database. In our sample, we exclude firms from the finance industry due to its extensive regulation. Given the initial availability of data from BoardEx, our sample period begins in 1999 and terminates in 2012. After matching the BoardEx data with Compustat Global, the maximum number of available firm-years in our sample is 8,337.

Our choice of a European sample is motivated by two reasons. First, custom and prior practice are arguably more important than formal regulation in European countries (Jenkinson et al., 2006). This emphasis on tradition makes it likely that cultural distance matters for firms operating in these nations. Second, due to the economic liberalization associated with the creation of the European Union, there are now more foreign CEOs and directors in these nations relative to other regions of the world.

3.*2 Estimating Cultural Distance*

We estimate cultural distance between the CEO and directors based on the Euclidean distance using all six of the Hofstede published dimensions.[4] We assign Hofstede cultural

[4] According to Hofstede (2001), there are six dimensions to a country's culture. This represents an expansion from the four dimensions he originally developed in 1980. Power Distance is defined as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. Individualism is the degree of interdependence a society maintains among its members. Masculinity captures an individuals' motivation: wanting to be the best (masculine) or liking what you do (feminine). Uncertainty Avoidance reflects the extent to which members of a culture feel threatened by ambiguous or unknown situations and create beliefs or institutions that try to avoid them. Long-Term Orientation describes how a culture maintains links to its past and traditions. Indulgence is defined as the extent to which people try to control their desires and impulses.

dimension values to each CEO and individual director using their nationality as reported in the BoardEx dataset. By assigning cultural scores based on an individual's nationality we implicitly assume that cultural preferences are determined at birth and transmitted inter-generationally (Becker, 1996; Giavazzi et al., 2014). We test the robustness of this approach by using an individual's educational background to assign cultural scores as well as a subsample of high immigration countries.[5] We obtain comparable results across all three methods.

Annually, we estimate the cultural distance between the CEO and each of the individual directors for a given firm. We then calculate an average across each of these pairwise cultural distances. More specifically, the Euclidean CEO-board cultural distance (CD) measure for firm *i* in year *t* is constructed as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t}, \quad (1)$$

where $S_{CEO\ i,h,t}$ refers to the Hofstede cultural score for a CEO at firm *i* on cultural dimension *h* in year *t*. $S_{BRD\ i,k,h,t}$ refers to the Hofstede cultural score for director *k* at firm *i* on dimension *h* in year *t*. K_t is the total number of directors at firm *i* in year *t*. We weight each of the cultural dimensions equally since our constructed CD measure captures the overall mean cultural distance instead of the dissimilarity along a specific dimension.[6]

Since cultural distance serves as a proxy for dissimilarities in shared values between groups, we have no prior beliefs regarding which cultural dimension is most important. The organizational behavior literature suggests that dissimilarities within an organization has many facets (Bernile et al., 2018). Furthermore, Baranchuk and Dybvig (2009) argue that multiple dimensions should be considered when analyzing board diversity. Therefore, we include all six of the Hofstede cultural

[5] We report and discuss the results of robustness tests in Section 5.
[6] We re-estimate our analysis by using only the four traditional Hofstede dimensions (i.e., Power Distance, Individualism, Masculinity, and Uncertainty Avoidance) and obtain qualitatively identical results.

dimensions in calculating our measure of CD. We verify the robustness of this approach by employing alternative cultural dimensions developed by Schwartz (2006) and confirm that the finding is not sensitive to an individual cultural dimension or method of measuring culture.

CEO-board CD reflects the extent to which there is a cultural difference between the CEO and the firm's directors. As the cultural distance widens, the information asymmetry between the parties increases. Inspired by the literature recognizing that independent directors are best able to monitor and discipline management (e.g., Fama and Jensen, 1983; Masulis and Mobbs, 2014), we separately estimate the CEO's cultural distance from independent (*CEO-ind. director CD*) and executive directors (*CEO-exec. director CD).*

Panel A of Table 1 reports the distribution of CD for firms across our sample countries. The number of observations, mean, and standard deviation are obtained using firm-year level data within a sample country. We observe considerable cross-country heterogeneity in CD. Luxembourg has the largest *CEO-board CD* (5.916) and *CEO-ind. director CD* (6.931) among our 18 sample countries. The U.K. has the smallest *CEO-board CD* (0.977), while Greece reports the lowest *CEO-board CD* (0.612).

To better understand these cultural distance measures, consider the following examples for a board of ten directors. A U.K. mean of 0.977 could result from a British CEO having a board of one French director with the remaining directors being British. The same result would occur if two of the director are Irish and the remaining directors are British. This is because the Irish directors are more culturally proximate to their British CEO than is the French director. A second example is a firm from Luxembourg with a mean cultural distance of 5.916. If the CEO is from Luxembourg, then a board with four German directors, four French directors and two Belgian directors generates this value for cultural distance.

Panel B of Table 1 presents a time-series of these CD measures. Our analysis reveals an increasing trend in *CEO-board CD* and *CEO-ind. director CD,* with a peak in 2011. These results are consistent with increased globalization and greater European integration, which facilitates the movement of human capital across countries.

Table 2 presents summary statistics of the key variables used in our analysis. Formal definitions of the variables are provided in the Appendix. All continuous variables are winsorized at their 1st and 99th percentiles to reduce the influence of outliers. The average of the *CEO-board CD* (*CEO-ind. director CD*) across the sample is 1.368 (1.604). We observe *CEO/Chairman duality* in 44.4% of the firm-year observations. The median firm in our sample has 9 board members, 64.4% of which are independent directors. CEOs in our sample have an average (median) tenure of 8.1 (6.3) years, and a mean (median) age of 53.1 (53). Among the sample CEOs, 1.6% of them are female. Our sample firms have a mean (median) ROA of 5% (6.5%), and a market-to-book ratio of 1.98 (1.5). We compute firm age as the difference between the IPO year and the year in question. The average of our sample firms is 12.5 years.[7]

3.3 What Accounts for Cultural Distance?

We begin our investigation of cultural distance with a discussion of why firms are led by foreign executives and/or directors. As noted by Adams et al. (2010) and Masulis et al. (2012), firms face significant challenges to international expansion. They face unfamiliar social, economic, political, and regulatory conditions. Lack of information about specific foreign markets or

[7] Since the first available year in the Compustat Global dataset is 1987, our firm age computation is bounded by 1987 and might be downward biased. We test the robustness of our computation of firm age by using two different approaches: 1) consistent with DeAngelo et al. (2006), we use retained earnings scaled by the book value of total assets as a proxy for firm age; 2) we remove the variable *Firm age* in our model specifications. With both approaches, our main results remain qualitatively identical.

industries introduces additional risk and reduces the profitability of overseas opportunities. As noted by Masulis et al. (2012), the hiring of a foreign CEO or the recruitment of foreign directors can provide a firm with the expertise and insights to be successful in these new markets. Even if firms do not pursue global opportunities, foreign executives or directors might be more skilled than their domestic peers.

In Table 3, we investigate which corporate characteristics can explain the cultural distance between a CEO and the firm's directors. The dependent variable in column (1) is an indicator variable that takes the value one if the CEO-board cultural distance is positive and zero otherwise. We find that the board's composition exerts a major role in determining CEO-board cultural distance. A firm with a positive CEO-board cultural distance tends to have a more culturally diverse board. Firms with a positive CEO-board cultural distance are usually larger, have a shorter CEO tenure, a lower co-option ratio, and enjoy stronger stock performance.

In column (2) [(3)] of Table 3, the dependent variable is an indicator variable that takes the value one if the cultural distance between a CEO and the independent (executive) directors is positive. We again find that firms with a more culturally diverse board tend to have a positive CEO-board cultural distance. These findings are consistent with the intuition that large and mature firms are more likely to have a culturally diversified set of executives and directors since they tend to have more international exposure. We obtain similar results in column (3) for the executive directors.

4. Empirical Findings

4.1 CEO Turnover-Performance Sensitivity (TPS) and Cultural Distance

In this section, we examine how cultural distance affects the ability of boards to discipline poorly performing CEOs. To test the extent to which cultural distance and CEO turnover-performance sensitivity (henceforth TPS) are associated, we estimate the following linear probability model:

$$\begin{aligned} Turnover_{i,t} = {} & \beta_0 + \beta_1\, Performance_{i,t} + \beta_2\, Cultural\ Distance_{i,t-1} \\ & + \beta_3\, Performance_{i,t} \times Cultural\ Distance_{i,t-1} \\ & + CEO\ \&\ Board\ controls_{i,t} + Firm\ controls_{i,t} \\ & + \delta_t + \eta_i + \epsilon_{i,t}\,, \end{aligned} \tag{2}$$

where the dependent variable *Turnover* is equal to one if firm *i* experiences CEO turnover in year *t* and zero otherwise. The variable of interest is the interaction of *Performance* (i.e., ROA) with the lagged cultural distance.

We also include firm-year level controls of governance and other characteristics in year *t*. Board controls include *Board cultural diversity*, *Board size*, *CEO age*, *CEO tenure*, *CEO/Chair duality*, *Co-option percentage*, *Female CEO dummy*, *Female director percentage*, and *Independence percentage*. Firm controls include *Abnormal accruals*, *Firm age*, *Log(Assets)*, *Market leverage*, *Market-to-book ratio*, *R&D expenses*, *Market-adjusted prior return*, and *Stock volatility*. To mitigate the effect of missing values for R&D expenses, we adopt the method of Koh and Reeb (2015).[8] All the variables are formally defined in the Appendix. Furthermore, we include appropriate fixed effects to control for unobserved firm characteristics (firm fixed effects) and common time-varying factors (year fixed effects). The standard errors are clustered at the firm level.

We present the estimation results of equation (2) in Table 4. In Panel A, the dependent variable is a binary indicator variable for all CEO turnover. That is, voluntary and forced turnovers

[8] Specifically, we also construct a variable *R&D Full* by replacing missing R&D observations with zero, and we create *Missing R&D Dummy* that takes a value of one if R&D is missing in a given firm-year, and zero otherwise.

are combined. In all columns, we find a significantly negative effect of ROA on the likelihood of CEO turnover. In column (1), the cultural distance of a company is measured by the difference between the CEO and all board directors (*CEO-board CD*). The coefficient for the interaction variable between ROA and cultural distance is significantly negative. This suggests that a board with a larger cultural distance from the CEO is more likely to remove a poorly performing CEO (i.e., a higher TPS).

In columns (2) and (3), we separately examine the effect of cultural distance on forced and voluntary turnovers. We then examine the effect of cultural distance between the CEO and those subsets of directors independently. In column (2) of Table 4, we examine the cultural distance between the CEO and independent directors. We find that the coefficient on the interaction term remains significantly negative. When we focus on executive directors in column (3), the coefficient of the interaction term becomes statistically insignificant. These findings suggest that CEO disciplining is more frequently accomplished by independent than executive directors.

In Panels B and C of Table 4, we examine the effects of cultural distance on forced and voluntary CEO turnover, respectively. Consistent with Parrino (1997) and Jenter and Kanaan (2015), we use the CEO's age at the time of departure as a proxy for forced turnover. We classify a turnover as "forced" if the departing CEO is younger than 65 and "voluntary" otherwise.[9]

In Panel B, the dependent variable is forced turnover. In column (1), the coefficient estimates on cultural distance and its interaction with ROA are largely identical to our baseline estimates in column (1) of Panel A. After separating independent and executive directors, we show that the effects of cultural distance are concentrated among independent directors (columns 2).

[9] To address the concern that the legal retirement ages vary across our sample countries, we use alternative ages ranging from 60 to 64. We obtain similar results regardless of which retirement age we use to define forced turnover.

This implies that independent directors are more likely to scrutinize CEOs in relation to the firm's performance.

In Panel C of Table 4, the dependent variable is voluntary CEO turnover. We find that the effect of ROA becomes only marginally significant across all three columns, consistent with the intuition that voluntary turnover is not strongly correlated with the firm's operating performance. The coefficient estimates of cultural distance and its interaction with ROA are insignificant. These results suggest that voluntary turnover and its sensitivity to firm performance cannot be explained by cultural distance.

We conclude from Table 4 that larger CEO-board cultural distance increases a CEO's TPS. The increased sensitivity of CEO turnover to corporate performance is consistent with the intuition that directors rely more on hard information due to information frictions arising from cultural distance. Further, we observe that CEO scrutiny and disciplining is most associated with independent directors.

4.2 Cultural Distance and Firm Performance

In this subsection, we investigate the association between cultural distance and firm value. Our estimation model is as follows:

$$\begin{aligned} \textit{Tobin's Q}_{i,[t \text{ or } t+1]} = {} & \textit{Cultural distance}_{i,t-1} + \textit{CEO \& Board controls}_{i,t} \\ & + \textit{Firm controls}_{i,t} + \delta_t + \eta_i + \epsilon_{i,t} \end{aligned} \tag{3}$$

The dependent variable is *Tobin's Q* which is defined as the market value of total assets to the book value of total assets for firm *i* in year *t* or *t+1*. *Cultural distance* is the same as the baseline equations and is measured between the CEO and board in year *t-1*. We control for the same set of firm characteristics variables as in the baseline equation. We include firm and year fixed effects while standard errors are clustered at the firm level.

The estimation results of equation (3) are presented in Table 5. Panel A shows that Tobin's Q increases as the cultural distance widens. In column (1), the coefficient on the CEO-board cultural distance implies that a one standard deviation increase in cultural distance is associated with a 1.9% increase in Tobin's Q (relative to its mean) in the following year. This effect on firm value is attributable to the cultural distance between the CEO and the independent directors (column 2) and not the executive directors (column 3). The results presented in columns (2) and (3) reemphasize the importance of monitoring when the CEO is culturally distant from the independent directors.

In columns (4) through (6) of Table 5, the dependent variable is Tobin's Q for firm *i* in year *t+1*. We find that the positive effect of cultural distance on firm value can persist for up to two years. Compared to the short-term effect reported in columns (1) through (3), the coefficient estimates for cultural distance have a similar economic magnitude and remain statistically significant. In column (4), the coefficient on the CEO-board cultural distance implies that a one standard deviation increase in cultural distance is associated with a 1.3% increase in Tobin's Q (relative to its mean) in the next two years.

4.3 Causality and Identification Strategy

To interpret the results from our baseline analyses as causal requires the assumption of no correlated time-varying unobservable factors. This assumption can be incorrect if treated firms experience idiosyncratic shocks that change both cultural distance and firm value. In our preceding analyses, we include firm fixed effects to control for possible cross-firm heterogeneity of the relation between cultural distances and firm governance quality. However, our estimates could still

be biased if within-firm changes in cultural distances are endogenous and driven by unobserved factors.

To estimate the *causal* effect of cultural distance on CEO turnover and firm value, we use an identification strategy that approximates a random allocation of directors to firms. In particular, we follow Fracassi and Tate (2012) and use the sudden exit of independent directors who serve on multiple boards as a shock to CEO-board cultural distance that is exogenous to unobserved firm-level factors. We do not include CEO exits among our set of events because CEOs are central for the daily operations of the firm. Thus, a CEO exit is likely to affect many decisions within the firm. The exit of an independent director, however, is unlikely to create operational changes that will confound our estimates. Rather, such an exit is most likely to generate a shock to the cultural distance between the CEO and the board.

We follow a two-step procedure to form our set of independent director exits. We use the following criteria to select our initial set of events:

1. select independent directors who leave all the boards they serve during the same year;

2. select independent directors who serve on at least two boards;

3. select firms that do not experience any other turnovers of top management during a five-year window around the sudden exit of an independent director.

The first criterion ensures that the exit of a selected independent director is more likely due to director-relevant reasons. The second criterion further solidifies our intention reflected in the first criterion. The third criterion ensures that the change in the within-firm estimates before and after the exit event is unlikely to be a result of other executive turnovers. This is because the decision to hire or to fire an executive or director is usually endogenous to conditions inside the firm. We limit the event window to a five-year period to minimize the possibility that firms

endogenously change their board structure to fill the vacancy created by an incumbent director's sudden departure.[10]

After selecting the exit events based on these filters, we identify the truly exogenous exits by undertaking a keyword search. Specifically, we search on Factiva and Lexis-Nexis using keywords such as "sudden", "unexpected", "health", and "passed away". We use this validated set of events as our final sample. Use of these keywords ensure that our set of sudden exits by independent directors are truly exogenous to governance and firm-related factors. Figure 1 illustrates the sample selection process for this identification strategy.

For our analysis of these sudden exit events, we construct subsets of "treatment" and "control" observations. We use those exit events that increase CD as our "treated" group. Those exits that do not increase CD are our "control" observations. Among the 557 exits of independent directors, 62 are due to death and 495 occur for other reasons. Of the 62 sudden-death events in this sample, 15 produce an increase in CD after the exit. Of the other 495 exit events, 71 increase CD. Thus, our sample consists of 86 "treated" events and 471 "control" events.

Our main identification strategy is to compute the difference in CEO turnover likelihood and firm value around the two types of events (i.e., treated firms vs. control firms). We define an indicator variable *After* that takes the value one for each full fiscal year after the sudden exit of an independent director and zero otherwise. We define another indicator variable *Close* that takes the value one if the firm's CEO-board CD measure increases after the exit of an independent director and zero otherwise. Both *After* and *Close* are defined within a five-year time window.[11] The

[10] In a robustness check, we also consider a seven-year time window which includes three years before and after the event and the event year. Our results remain qualitatively identical.

[11] For example, if a company had a sudden-exit event in 2002 and the CEO-board CD increased due to this event, and the company had another sudden-exit event in 2008 and this event caused the CEO-board CD to decline, we include 2000 to 2004 (two years before and after the first event) and 2006 to 2010 (two years before and after the second event) in our sample to run this identification test. Accordingly, the *After* dummy will be one during 2003-

variable of interest is the interaction of *After* and *Close*. We then regress CEO turnover likelihood as well as Tobin's Q on *After*, *Close*, and their interaction for the sample of firms that experience an independent director exit. All regressions contain year and firm fixed effects and include the full set of control variables with a one-year lag as in baseline equation (2). The coefficient for the interaction variable captures the difference in differences or the effect of the cultural difference increase on either the change in CEO turnover likelihood or firm value. Because individual firms can have multiple events, we include a panel of firm-years for each individual event. We cluster standard errors at the firm level to correct both for within-firm serial correlation of the residuals and for the repetition of firm-years across such event windows.

The results are reported in Table 6. In column (1), we present a regression with a full set of controls for a seven-year window surrounding the event. The coefficient for the interaction variable is 0.051, which is statistically significant. This suggests that the effect of increasing cultural difference increases the likelihood of CEO turnover. In column (2), we use a narrower five-year window and find that the coefficient of the interaction term declines slightly to 0.049. This suggests that the turnover likelihood we observe within a wider seven-year window might be affected by other events. If we focus on the narrower five-year window during which the firm does not experience other managerial turnover (i.e., the abovementioned third criterion), the effect of an increase in cultural difference is slightly smaller.

For the regressions in columns (3) and (4), the dependent variable is Tobin's Q. In column (3), the coefficient for the interaction variable is 0.142 for the seven-year window. In column (4), the coefficient for the interaction variable is 0.128 for the five-year window and is statistically significant. Overall, the results in Table 6 suggest that the increase in CD due to the sudden exit

2004 for this company's first event; it is one during 2009-2010 for this company's second event. The *Close* dummy will be one for the first five-year window of 2000-2004 and zero for the second window of 2006-2010.

of an independent director leads to a higher likelihood of CEO turnover, but improved firm performance.

4.4 CEO Pay-Performance Sensitivity (PPS) and Cultural Distance

In this subsection, we examine how cultural distance influences the sensitivity of CEO pay to the firm's operating performance (henceforth PPS). We estimate the following compensation model:

$$\begin{aligned} Log(CEO\ compensation)_{i,t} = {} & \beta_0 + \beta_1\, Performance_{i,t} + \beta_2\, Cultural\ Distance_{i,t-1} \\ & + \beta_3\, Performance_{i,t} \times Cultural\ Distance_{i,t-1} \\ & + CEO\ \&\ Board\ controls_{i,t} + Firm\ controls_{i,t} \\ & + \delta_t + \eta_i + \epsilon_{i,t}\,, \end{aligned} \tag{4}$$

where the dependent variable is the natural logarithm of CEO total compensation (i.e., cash plus equity-based compensation). The variable of interest is the firm's performance and its interaction with cultural distance. We control for the same set of governance and firm variables as in equation (2). We also include firm and year fixed effects in the model. Standard errors are again clustered at the firm level.

We report the estimation results of equation (4) in Table 7. We first examine the effect of cultural distance on total compensation (Panel A) and then distinguish between cash pay (i.e., salary plus bonus) in Panel B and equity-based pay in Panel C. In Panel A, we find that total CEO compensation is positively related to ROA in all columns. The coefficient for the interaction term between ROA and cultural distance is significantly positive. In column (1), for example, it shows that a one standard deviation (12.5%) increase in ROA is associated with an increase in log CEO pay by 8.2% for a firm with a zero cultural distance. For a firm with an average cultural distance of 1.368, the same increase in ROA is associated with an increase in the log of CEO pay by 12.5%. This shows that the CEO pay for performance sensitivity increases as the CEO-board cultural

distance widens. We further find that this effect is mostly concentrated in the cultural distance between the CEO and independent directors (column 2) rather than with the executive directors (column 3). This result is consistent with more rigorous monitoring provided by independent directors.

We then explore the effects of cultural distance on cash-based and equity-based pay separately. The dependent variable in Panel B is the logarithm of CEO total cash pay (i.e., salary plus bonus). The coefficient estimates are qualitatively similar to those in Panel A – the interaction term of ROA and cultural distance is positively correlated with the CEO's cash-based compensation. The coefficient on the interaction term between cultural distance and ROA suggests that cultural distance enhances the sensitivity of CEO cash pay to firm performance.

In Panel C, the dependent variable is the logarithm of CEO total equity-based pay. The coefficients of cultural distance and its interaction term with ROA are statistically insignificant. Overall, our results show that cultural distance appears to affect the PPS and this effect is concentrated in the cash component of CEO compensation.

4.5 Matched Sample Analysis

Our analysis shows that the CEO-board CD is correlated with a higher sensitivity of CEO pay and turnover to firm performance. There could be, however, other heterogeneity across firm that upwardly biases our estimates of the effect of cultural distance. The main empirical challenge is that firms with certain characteristics might be more likely to choose a board-CEO combination that is culturally distant. To mitigate this concern, we employ a propensity score matching procedure to identify a more comparable set of firms. We classify treated firms as those having a

non-zero CEO-board CD while the control firms have similar characteristics, but zero cultural distance between the board and the CEO.

We employ a two-step procedure to create a matched sample. In the first step, we investigate which firm characteristics are associated with cultural distance by estimating the linear probability regression model presented in column (1) of Table 3. Our regressors are selected for their high explanatory power regarding cultural distance: *Board culture diversity*, *CEO tenure*, *Co-opt percentage*, *Market-adjusted prior return*, and *Log(assets)*. We construct the matched sample based on propensity scores calculated from a logit regression.

In the second step, for all firm-years with a positive CD, we select control firm-years by matching potential control firms on the basis of country, four-digit SIC classification, and year. Then, within the pool of matched control firm-year observations, we select those firm-year observations having a value of the observables closest to that of the treatment firm-year.

We use the nearest-neighbor matching method, which provides one matched firm-year for each treatment firm-year observation. For each treated firm-year, we select controls with a propensity score within a 10% bandwidth. Our matching procedure yields a sample of 6,012 firm-year observations. By including the matched sample in our tests, we provide a benchmark where firm-level characteristics that strongly affect cultural distance are normalized.

We estimate the baseline regressions in equations (2) and (4) using the matched sample. We report our results in Table 8. In all columns, we include the full set of board and firm control variables described above as well as firm and year fixed effects. Due to the limited availability of data regarding certain control and dependent variables, the number of observations declines to 5,901 in columns (1) through (3) and 4,761 in columns (4) and (5). In column (6), the number of

observations is further reduced to 4,752 due to the limited availability of CEO equity-based compensation data.

The results are qualitatively similar to the baseline findings in Tables 4 and 7. In columns (1) through (3), the point estimate of the interaction of *CEO-board CD* and *ROA* show that poorly performing CEOs are more likely to be dismissed if they are culturally distant from their boards. In addition, the effect of cultural distance is mostly concentrated on forced rather than voluntary turnovers.

In columns (4) through (6) of Table 8, the estimated coefficients of cultural distance and its interaction with ROA using the matched sample reconfirm the results of the full sample. The coefficient of the interaction term in column (4) (i.e., 0.264) is larger than that in column (1) of Panel A, Table 7 (i.e., 0.253). In columns (5) and (6), the coefficient of the interaction term remains significant only for the cash pay component (column 5). In column (5), the point estimate of the interaction term of ROA and cultural distance is positive and significant at the 10% level. The magnitude of the coefficient estimate is similar to that in column (1) of Panel B, Table 7. Overall, our results from this matched sample analysis show that our main findings are not significantly driven by firm-level heterogeneity.

5. Extended Analyses and Robustness Tests

In this section, we present the results of our extended analyses. We also discuss a battery of additional tests that confirm our findings are robust to alternative constructs of cultural distance, various subsamples, different estimation techniques, diverse control variables, and alternative measures of firm performance.

5.1 Extended Analyses

5.1.1 The Effect of Within-Board Cultural Diversity

To understand the effect of cultural diversity between the CEO and board members, the composition of the board itself is a critical dimension. In this subsection, we examine how board cultural diversity affects the board's relation with its CEO. Prior studies such as Frijns et al. (2016) report that greater board diversity reduces firm performance due to increased coordination costs among directors. In this subsection, we examine whether a diverse board can manage these coordination challenges and provide effective monitoring of the CEO.

We begin our analysis by first constructing a within-board cultural distance measure comparable to that of Frijns et al. (2016) as follows:

$$\textit{Within-Board Cultural Diversity}_{\,i,t} = \frac{\sum_{i,j} \sqrt{\sum_{h=1}^{6}(S_{BRD\ i,h,t} - S_{BRD\ j,h,t})^2}}{6 \times K_t(K_t-1)/2}, \tag{5}$$

where $S_{BRD\ i,h,t}$ and $S_{BRD\ j,h,t}$ denote Hofstede cultural score for board member *i* and *j*, respectively, on dimension *h* in year *t*; K_t is the total number of directors at firm *i* in year *t*. We then interact the *CEO-Board Cultural Distance* with this *Within-Board Cultural Diversity (CD)* variable. Our model specification is as follows:

$$\begin{aligned} \textit{CEO Outcome}_{i,t} = {} & \beta_0 + \beta_1\, \textit{Board Cultural Diversity}_{i,t-1} + \beta_2\, \textit{CEO-Board Cultural Distance}_{i,t-1} \\ & + \beta_3\, \textit{Board Cultural Diversity}_{i,t-1} \times \textit{CEO-Board Cultural Distance}_{i,t-1} \\ & + \textit{CEO \& Board controls}_{i,t} + \textit{Firm controls}_{i,t} \\ & + \delta_t + \eta_i + \epsilon_{i,t}\,, \end{aligned} \tag{6}$$

where the dependent variable *CEO Outcome* is either CEO turnover or CEO compensation. The variable of interest is the interaction of *Within-Board CD* with *CEO-Board Cultural Distance*. We include the same firm-year level controls as in baseline equations (2) and (4).

Columns (1) through (3) of Table 9 presents our findings regarding the effect of within-board cultural diversity on CEO turnover. In column (1), the coefficient of the interaction term is

significantly negative, suggesting that a culturally heterogeneous board makes CEO turnover less sensitive to the cultural distance between the CEO and the board. This finding implies that since a culturally diverse board suffers higher coordination costs among directors, it makes CEO disciplining less effective. That is, a culturally heterogeneous board which suffers from increased coordination and communication costs among its directors, makes CEO turnover less likely. In column (2), we used forced turnover as the dependent variable and find a qualitatively similar result. Column (3) shows that the effect of within-board cultural diversity is not significant for voluntary turnover.

In columns (4) through (6), we examine the effect of within-board cultural diversity on CEO compensation. The coefficient of the interaction term between board cultural distance and the within-board cultural diversity is consistently insignificant. This suggests that CEO pay is unlikely to be jointly determined by within-board cultural diversity and the CEO-board cultural distance. This might reflect inflexibilities in the compensation terms set in the employment contract with the CEO.

Even after introducing within-board cultural diversity in our regression specification, we find that the cultural distance between the CEO and the board remains important for explaining CEO turnover and compensation decisions. Within-board cultural diversity appears to reduce the likelihood of CEO turnover, suggesting that communication and coordination costs hinder CEO disciplining. Within board cultural diversity, however, has no meaningful effect on the elements of CEO compensation.

5.1.2 Cultural Distance and Managerial Responses

Our results suggest that cultural distance produces interpersonal barriers and increased informational asymmetries which then introduces additional risk to career outcomes (e.g., employment and compensation). If a CEO anticipates increased costs and risks arising from cultural misalignment, she might alter her behavior in ways intended to minimize the effect of these frictions (Parsons et al., 2011). One such behavior is that the CEO minimizes risk-taking and employs "safer" policies to lower the chance of adverse performance reviews.

To test this possibility, we examine the association between cultural distance and other firm policies which involve risk-taking. Specifically, we consider firm policies such as investment in research and development (R&D), investments in property, plant and equipment (PPE), financial leverage, cash holdings, and capital expenditures (CAPEX).

We present our results in Table 10. The dependent variable is R&D expenses over total sales in columns (1) through (3), PPE investments over total assets in columns (4) through (6), financial leverage in columns (7) through (9), cash holdings over total assets in columns (10) through (12), and CAPEX over one-year lagged total assets in columns (13) through (15). Columns (1) and (2) show that a CEO reduces R&D expenses if she faces a large cultural distance from the board, especially with the independent directors. Columns (4) and (5) suggest that a culturally distant CEO is more likely to invest in PPE that usually has less uncertain values. Columns (7) and (8) show that a larger cultural distance discourages CEOs from borrowing, consistent with the intuition that culturally distant CEOs have more career concerns. Columns (10) and (11) imply that culturally distant CEOs are more likely to hold cash which is consistent with their reduced use of debt. We obtain significant evidence in column (14) that cultural distance is inversely related to CAPEX. In addition, the effect of cultural distance is largely concentrated with the independent directors as suggested in columns (2), (5), (8), (11), and (14). Overall, our findings are consistent

with Parsons et al. (2011) that CEOs anticipate cultural frictions and respond strategically by adopting "safer" firm policies.

5.2 Robustness tests

5.2.1 Schwarz-based Measures of Cultural Distance

Our first robustness test involves using an alternative to the Hofstede cultural scores. Schwartz (2006) develops a theory of cultural orientation that centers around seven different cultural values.[12] We use these Schwartz values in place of the Hofstede scores to estimate cultural distance. Our results are reported in Table 11. In columns (1) through (3) of Panel A, we explore the effect of cultural distance on CEO turnover performance sensitivity using the Schwartz values. The coefficient for the interaction variable of cultural distance with ROA in columns (1) and (2) is significantly negative. It is statistically insignificant in column (3) for the cultural distance between the CEO and the executive directors.

Panel B of Table 11 examines the effect of the Schwartz-based cultural distance on the pay for performance sensitivity. Columns (1) through (3) present the baseline regression in equation (3). We obtain qualitatively identical results to our baseline results. The coefficient on cultural distance is significantly positive. The coefficient for the interaction variable of cultural distance with ROA is significantly positive in columns (1) and (2). This is consistent with our previous finding in Table 7 that cultural distance increases CEO pay for performance sensitivity.

5.2.2 Educational Background to Assign Cultural Values

[12] The seven cultural dimensions of Schwartz (2006) are: Embeddedness, Harmony, Egalitarian Commitment, Intellectual Autonomy, Affective Autonomy, Mastery, and Hierarchy.

Our next robustness test uses the educational background of directors and CEOs to assign cultural values. Specifically, we assign national cultural scores based on the country where directors and CEOs receive their bachelor's degree or equivalent. The intuition of this approach is that social norms are dynamic and determined over time (e.g., during college). Columns (4) through (6) of Panel A in Table 11 present the baseline regression of TPS using the education-based measures of cultural distance. Our original results remain robust. The coefficient for the interaction term of cultural distance with ROA is significantly negative. The effect is especially prominent for independent directors (i.e., column 5). Columns (4) through (6) in Panel B examine the effect of the education-based measures of cultural distance on PPS. We find qualitatively similar results to the baseline results reported in Table 7.

5.2.3 Excluding the U.K.

Because the UK represents about half of our sample, a reasonable concern is that our main results could be dominated by the UK. To mitigate this concern, we check the sensitivity of our baseline results by removing firms in the UK and continue to find robust results (column 1 of Table 12, Panels A and B).

5.2.4 Market-based Performance Measure

Another concern related to the role of information asymmetries between CEO and directors is the use of accounting-based metrics (i.e., ROA) to evaluate firm performance. Because it is possible that managers might use discretion within the reporting framework to meet specific accounting-based performance targets, we examine a market-based performance measure, (i.e., stock return over the prior fiscal year), to replace ROA in our baseline tests of

turnover/compensation-performance sensitivity. As column (2) in Table 12 shows (in both Panels A and B), our results remain qualitatively robust to our use of this alternative performance measure.

5.2.5 Country-level Regulatory Changes

It is possible that some country-level idiosyncratic components are actually time-varying within a country. Some European countries in our sample have implemented different regulatory requirements, such as mandatory quotas to increase gender diversity on corporate boards at different times. Beginning in 2005, Norway for example, required companies to achieve a 40% female board member representation by 2008 and beyond. All these within-country time-varying changes cannot be fully captured by country fixed effects. To address this concern, we run baseline regressions by including country-by-year fixed effects to control for possible within-country changes that vary over time. These changes include regulatory modifications that can affect individual firms. We find that controlling for additional country-by-year fixed effects do not change our main results (column 3 of Table 12, Panels A and B).

5.2.6 Cultural Distance Outliers

A concern regarding the construct of our cultural distance measure is that our results might be driven by the presence of outlier directors. In other words, it might be that cultural distance is driven by one individual very different from the firm's average board member. To address this possibility, we construct two alternative cultural distance measures: 1) when computing the CD measure, we remove the member that has the largest CD with the CEO on each board; 2) we re-construct our CD measure using the median cultural distance of directors instead of the mean. As

our results in columns (4) and (5) of Table 12 show, these alternative constructs do not change our baseline findings.

5.2.7 Multinational Firms

It is possible that multinational firms operating across many countries introduce a bias into our analysis. This occurs if they expand into markets over time and hire directors from the countries in whose markets they wish to operate (Adams et al., 2010; Masulis et al., 2012). If this describes the labor market for directors, then we expect to see a much weaker effect of cultural distance on TPS and PPS if we remove multinational firms from our sample.

In our third robustness test, we continue to observe a robust effect of cultural distance even after the removal of multinational firms from the sample. Column (6) in Panel A of Table 12 show that cultural distance remain positively related to turnover likelihood and the coefficient for its interaction with ROA is significantly negative after the removal of the multinational firms. We confirm our finding on the PPS in column (6) in Panel B of Table 12.

5.2.8 Geographically Small Countries

For countries that are geographically small or have few listed firms, it is possible that the average firm in that country will lack a CEO or a board member who is a citizen of that country. Thus, cultural distance might matter less for firms located in these countries. To examine this possibility, we eliminate those countries that are geographically small (e.g., Luxembourg) and countries that have the fewest firm-year observations (i.e., less than 50 observations). Column (7) in Panels A and B of Table 12 show that cultural distance continues to be positively related to turnover and its interaction with ROA is negative. In Panel B, the interaction term of cultural

distance with ROA remains significantly positive. Thus, the effect of cultural distance remains invariant to the size of the country.

5.2.9 Immigration Effects

In certain countries of our sample, immigration plays a crucial role in the country's population demographics (e.g., France and Germany). In such countries, cultural distance measured with nationality can be inaccurate since an individual might have been exposed to cultures others than that of their birth. Further, in high immigration countries, the likelihood of national diversity among corporate executives is likely to be high.

We test this possibility by focusing on a subsample of high-immigration countries. We obtain population and immigrant data from the International Migration Database of the Organization for Economic Co-Operation and Development (OECD) in 2006.[13] We then calculate the ratio of immigrants to total population for the European countries in our sample. We then identify high-immigration countries as those with an above-median immigration ratio. These countries are Austria, Belgium, France, Germany, Ireland, Luxembourg, Spain, Sweden, Switzerland, and the U.K. Column (8) in Panels A and B of Table 12 report our findings. Our results remain largely identical to the baseline estimates, suggesting that immigration does not compromise our use of nationality when assigning cultural scores to directors and CEOs.

6. Summary and Discussion

In this study, we investigate the effect of cultural distance between the CEO and the firm's directors on executive labor market outcomes as well as firm value. We contend that the cultural

[13] We also find similar results using the immigration data in 2000 or 2012.

distance between CEOs and directors impedes network development and increases informational frictions. Consequently, more culturally distant CEOs face increased board scrutiny, greater risk of employment termination, and higher pay sensitivities to performance.

Consistent with our arguments, we find that more culturally distant CEOs have higher turnover and pay-for-performance sensitivities. These findings suggest an information asymmetry effect. If cultural distance hinders the information exchange between parties while increasing information collection costs, then the board receives a noisy signal regarding the quality of the CEO's human capital. Consequently, it will rely more on "hard" information, such as accounting performance, to evaluate a CEO's ability. This has the effect of linking CEO turnover and pay more closely to the firm's operating performance.

These findings for turnover and compensation remain valid in the presence of a number of robustness tests. These challenges to our findings include controls for within-board cultural diversity, alternatives to the Hofstede cultural measures, market-based performance measures, different methods for assigning individual cultural scores, multinational exposure of the firm, country size, and national immigration rates. Even after controlling for these alternative measures and explanations, the cultural distance between a firm's CEO and its board remains a critical factor concerning how that CEO is evaluated with respect to retention and compensation.

We also find that greater scrutiny of the CEO by the board ultimately results in higher firm value even while a culturally distant CEO tends to adopt less risky operating policies. We show that cultural distance is positively associated with a firm's *Q*. Further, using the sudden exit of directors as a source of exogenous change to cultural distance, we establish a causal link between cultural distance and firm value.

This study's contributions reside in its analysis of intra-firm cultural distances within the corporate leadership team to explain CEO labor markets and firm value. Our introduction of cultural distance within the firm's corporate governance structure is novel and offers new insights into decisions regarding CEO retention, employment, and compensation. Our findings also help to explain how CEO career concerns influence the adoption of various corporate financial and operating policies.

By introducing the concept of intra-firm culture, we extend the use of cultural factors into the analysis of other issues in corporate finance. Indeed, our concept of cultural distance within the firm extends beyond that of the CEO and the board. Future research should examine the effect of intra-firm cultural distance with other corporate stakeholders such as suppliers, customers, employees, investors, analysts, and regulators.

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Appendix: Variable Definitions

Type	Variable name	Definition
Cultural variables	CEO-board CD	The Hofstede distance between a CEO and the board is calculated as follows: $$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$ where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*.
	CEO-exc. director CD	The Hofstede distance between a CEO and the independent directors.
	CEO-ind. director CD	The Hofstede distance between a CEO and the executive directors.
Board controls	Board culture diversity	The Hofstede cultural distance between all board of directors is calculated as follows: $$Within\text{-}board\ CD_{\ i,t} = \frac{\sum_{i,j} \sqrt{\sum_{h=1}^{6}(S_{BRD\ i,h,t} - S_{BRD\ j,h,t})^2}}{6 \times K_t(K_t-1)/2},$$ where $S_{BRD\ i,h,t}$ and $S_{BRD\ j,h,t}$ denote Hofstede cultural score for board member *i* and *j*, respectively, on dimension *h* in year *t*; K_t is the total number of directors at firm *i* in year *t*.
	Board size	The total number of directors on the board.
	CEO age	The age of the CEO.
	CEO tenure	The length of the CEO's tenure in years.
	CEO/Chair duality	A dummy variable that equals one if a firm's CEO also holds the title of either the chairman or president of the board, and zero otherwise.
	Co-opt percentage	The ratio of the number of "co-opted" directors, meaning those appointed after the CEO assumes office, to board size.
	Female CEO	A dummy variable that equals one if a firm's CEO is female, and zero otherwise.
	Female director percentage	The ratio of the number of female directors to board size.
	Independence percentage	The ratio of the number of independent directors to board size.
Firm controls	Abnormal accruals	Defined as total accruals in year t minus predicted total accruals for year t, where Predicted accruals = {[Sales(t) × (current accruals(t-1)/sales(t-1))] – [gross PPE(t) × (depreciation(t-1)/gross PPE(t-1)]}/total assets(t-1); Total accruals = (Earnings before extraordinary items – Operating cash flows)/total assets(t-1); Earnings before extraordinary items = net income – extraordinary items; Operating cash flows = Earnings before extraordinary items (as above) + Depreciation and Amortization + change of deferred income tax + change of untaxed reserve + change in other liabilities + minority interest + current accruals (as defined below) (missing values on deferred income taxes, untaxed reserves, and minority interests are treated as zero); Current accruals = change in non-cash working capital

		= Δ[total current assets – cash and short term investments – treasury stock shown as current assets] - Δ[total current liabilities - total amount of debt in current liabilities - proposed dividends].
	Firm age	Current year minus firm's IPO year. If IPO year is missing, the first year of firm's data in Compustat Global is used.
	Log(Assets)	The natural logarithm of the book value of a firm's total assets.
	Financial leverage	The ratio of total book debt to the sum of total book debt and the market value of common stock.
	Market-to-book	The ratio of (book value of assets – book value of equity + market value of equity) to book value of assets.
	R&D	The ratio of research and development expense (XRD) to the book value of a firm's total assets.
	R&D (Full)	We construct R&D Full by replacing missing R&D observations with zero.
	R&D missing dummy	We create Missing R&D Dummy that takes a value of one if R&D is missing in a given firm-year, and zero otherwise (see, for example, Koh and Reeb, 2015).
	ROA	The ratio of earnings before interest and taxes to the book value of a firm's total assets.
	Market-adjusted return	Difference between the firm's stock return over the previous year and the return of the firm's country of incorporation.
	Stock volatility	The volatility of daily net equity returns in the 12-month period ending at each fiscal year-end. Daily equity returns are obtained from the Compustat Global.
Other variables	CAPEX	The ratio of capital expenditure (CAPEX) to total assets.
	CEO turnover	A dummy variable that equals one if a CEO is replaced in a year, and zero otherwise.
	CEO turnover (Forced)	A dummy variable that equals one if a CEO is replaced under the age of 65 in a year, and zero otherwise.
	CEO turnover (Voluntary)	A dummy variable that equals one if a CEO is replaced above the age of 65 in a year, and zero otherwise.
	Tobin's Q	The ratio of the market value of a firm's total assets to its book value. The market value of common stock is obtained from the firm's fiscal year-end stock price and shares outstanding. Preferred stock and debt are assumed to have a market value equal to book value.

Table 1. National and Annual Distribution of Intra-Firm Cultural Distance Measures

This table presents the number of firm-year observations for the various measures of intra-firm cultural distance (i.e., *CEO-board CD*, *CEO-ind. director CD*, and *CEO-exc. director CD*) and their summary statistics. Panel A presents summary statistics for the cultural distance measures based on the firm's country of incorporation. The countries are rank ordered alphabetically. Panel B provide annual summary statistics for each of the cultural distance measures over 1999-2012. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors.

Panel A: Country Distribution of Cultural Distances

			CEO-Board CD		**CEO-Ind. Director CD**		**CEO-Exc. Director CD**	
	Country	N	Mean	Std.	Mean	Std.	Mean	Std.
1	Austria	44	1.499	1.698	1.612	2.368	1.427	1.724
2	Belgium	226	1.286	1.660	1.512	1.934	0.137	0.748
3	Denmark	80	1.057	1.762	1.268	2.069	0.146	0.798
4	Finland	36	1.604	1.269	1.838	1.436	0.000	0.000
5	France	1144	1.417	2.159	1.653	2.479	0.346	1.253
6	Germany	685	1.601	2.394	1.671	2.725	1.428	2.265
7	Greece	51	0.612	1.071	0.841	1.365	0.110	0.667
8	Ireland	211	1.510	1.523	2.127	2.393	0.705	1.308
9	Italy	318	1.016	2.098	1.124	2.418	0.547	1.387
10	Luxembourg	28	5.916	1.503	6.931	2.078	0.774	1.915
11	Netherlands	477	2.931	2.812	3.262	3.278	1.756	2.456

12	Norway	69	1.678	2.637	2.535	3.945	0.112	0.537
13	Poland	7	4.885	1.968	6.907	0.867	3.682	2.753
14	Portugal	88	2.283	2.002	3.271	2.667	0.717	1.564
15	Spain	231	1.451	2.110	1.642	2.333	0.502	1.284
16	Sweden	386	1.037	2.133	1.174	2.406	0.009	0.174
17	Switzerland	272	3.195	2.314	3.475	2.540	1.179	2.388
18	UK	3984	0.977	1.941	1.222	2.443	0.524	1.431
	Total	8337	1.368	2.200	1.604	2.633	0.638	1.613

Panel B: Annual Distribution of Cultural Distances

		CEO-Board CD		**CEO-Ind. Director CD**		**CEO-Exc. Director CD**	
Year	N	Mean	Std.	Mean	Std.	Mean	Std.
1999	235	1.315	2.248	1.586	2.713	0.633	1.684
2000	278	1.368	2.058	1.506	2.328	0.925	1.799
2001	394	1.295	2.169	1.492	2.504	0.733	1.726
2002	574	1.218	2.046	1.435	2.433	0.661	1.667
2003	639	1.177	1.929	1.366	2.259	0.610	1.543
2004	719	1.224	2.117	1.424	2.491	0.611	1.583
2005	788	1.220	2.142	1.427	2.535	0.618	1.646
2006	872	1.308	2.196	1.581	2.683	0.644	1.665
2007	851	1.430	2.295	1.707	2.783	0.662	1.649
2008	803	1.468	2.259	1.737	2.706	0.643	1.641
2009	726	1.482	2.237	1.787	2.783	0.612	1.572
2010	671	1.560	2.349	1.854	2.832	0.567	1.481
2011	605	1.561	2.252	1.893	2.856	0.560	1.462
2012	182	1.353	2.406	1.741	2.971	0.392	1.303
Total	8337	1.368	2.200	1.604	2.633	0.638	1.613

Table 2. Sample Summary Statistics

This table presents summary statistics of the variables used in the empirical analyses. Observations are measured at the firm-year level. Cultural distance is estimated using the six Hofstede cultural dimensions. CEO and board characteristics are obtained from the BoardEx database. Firm-level financial data is drawn from Compustat Global. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

Variable	N	Mean	Median	Std Dev	Maximum	Minimum
Dependent variables						
CEO-board CD	8337	1.368	0	2.200	16.700	0
CEO-exc. director CD	8337	0.638	0	1.613	13.806	0
CEO-ind. director CD	8337	1.604	0	2.633	19.483	0
Board controls						
Board culture diversity	8337	3.916	0	4.876	24.896	0
Board size	8337	10.173	9	5.316	40	2
CEO age	8337	53.081	53	7.831	91	28
CEO tenure	8337	8.126	6.3	6.686	48.9	0
CEO/Chair duality	8337	0.444	0	0.497	1	0
Co-opt percentage	8337	0.454	0.5	0.346	1	0
Female CEO	8337	0.016	0	0.127	1	0
Female director percentage	8337	0.057	0	0.087	0.667	0
Independence percentage	8337	0.644	0.667	0.182	0.962	0.125
Firm controls						
Abnormal accruals	8337	-0.012	-0.011	0.160	0.133	-0.625
Firm age	8337	12.541	12	5.616	27	1
Log(Assets)	8337	6.859	6.887	2.459	11.765	1.059
Financial leverage	8337	0.115	0.074	0.132	0.938	0
Market-to-book	8337	1.980	1.499	1.382	6.556	0.188
R&D	3048	0.066	0.026	0.115	1.815	0.000
R&D (Full)	8337	0.024	0	0.077	1.815	0
R&D missing dummy	8337	0.627	1	0.484	1	0
ROA	8337	0.050	0.065	0.125	0.882	-0.478
Market-adjusted stock return	8337	0.051	0	0.414	2.584	-1.277
Stock volatility	8337	5.025	1.065	12.542	101.601	0.008

Table 3. Determinants of Intra-Firm Cultural Distance

This table estimates a linear probability model to examine the determinants of the cultural distance between CEO and board. The dependent variable in column (1) ((2) or (3)) is an indicator variable that takes the value one if *CEO-board CD* (*CEO-ind.director CD* or *CEO-exc.director CD*) is positive. Specifically, the three cultural distance measures are defined as follows. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors. In all regressions we include firm and year fixed effects. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All independent variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Dep. Var.	(1) CEO-Board CD>0	(2) CEO-Ind. Director CD>0	(3) CEO-Exc. Director CD>0
Board culture diversity	0.053***	0.051***	0.016***
	(0.003)	(0.003)	(0.003)
CEO/Chair duality	-0.004	-0.022	0.048**
	(0.018)	(0.019)	(0.021)
Board size	0.003	-0.000	0.007**
	(0.003)	(0.003)	(0.003)
CEO tenure	-0.003**	-0.002	-0.001
	(0.001)	(0.001)	(0.001)
CEO age	0.002	0.001	-0.001
	(0.001)	(0.001)	(0.001)
Female CEO	0.098	0.104	0.145*
	(0.068)	(0.066)	(0.076)
Independence percentage	0.020	0.110*	-0.406***
	(0.051)	(0.057)	(0.064)
ROA	0.095*	0.057**	-0.010
	(0.051)	(0.024)	(0.063)
Market-adjusted prior return	0.012**	0.011*	0.004
	(0.006)	(0.006)	(0.006)
EBITDA	0.023	0.020	-0.040

	(0.042)	(0.042)	(0.031)
Stock volatility	0.001	0.001**	0.000
	(0.001)	(0.001)	(0.001)
Log(Assets)	0.021*	0.009	0.017
	(0.011)	(0.011)	(0.011)
Market-to-book	0.009	0.003	0.003
	(0.006)	(0.006)	(0.004)
Firm age	0.004	0.007	0.003
	(0.005)	(0.018)	(0.013)
Financial leverage	-0.035	-0.059	0.047
	(0.067)	(0.069)	(0.056)
R&D (Full)	0.007	-0.005	-0.001
	(0.070)	(0.056)	(0.057)
R&D missing dummy	-0.008	0.017	-0.030*
	(0.017)	(0.017)	(0.015)
Co-opt percentage	-0.069**	-0.087***	-0.012
	(0.032)	(0.034)	(0.031)
Female director percentage	0.010	0.005	0.095
	(0.076)	(0.081)	(0.074)
Abnormal accruals	-0.002*	-0.002*	-0.001
	(0.001)	(0.001)	(0.001)
Observations	8,337	8,337	8,337
Adj. R2	0.813	0.804	0.712
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 4. Cultural Distances and CEO Turnover-Performance Sensitivity

This table presents the linear probability models examining the effect of cultural distance on CEO turnover-performance sensitivity. The performance measure is the return on assets (ROA). In Panel A, the dependent variable is a dummy variable that equals one if a CEO is replaced in a given year, and zero otherwise. In Panel B, the dependent variable is a dummy variable that equals one if a CEO is replaced prior to age 65 in a given year, and zero otherwise. In Panel C, the dependent variable is a dummy variable that equals one if a CEO is replaced after age 65 in a given year, and zero otherwise. Specifically, the three cultural distance measures are defined as follows. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors. In all panels, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, market leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all columns. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A. All CEO Turnovers

	(1)	(2)	(3)
Dep. Var.		**CEO turnover dummy**	
ROA	-0.075**	-0.079**	-0.100***
	(0.032)	(0.032)	(0.033)
CEO-Board CD	0.004		
	(0.003)		
CEO-Board CD × ROA	-0.037**		
	(0.016)		
CEO-Ind. Director CD		0.003	
		(0.002)	
CEO-Ind. Director CD × ROA		-0.027**	
		(0.012)	
CEO-Exc. Director CD			0.001
			(0.003)
CEO-Exc. Director CD × ROA			-0.007
			(0.020)
Board culture diversity	-0.002*	-0.002	-0.001
	(0.001)	(0.001)	(0.001)

CEO/Chair duality	0.009	0.009	0.010
	(0.010)	(0.010)	(0.010)
Board size	0.002*	0.002*	0.002
	(0.001)	(0.001)	(0.001)
CEO tenure	-0.006***	-0.006***	-0.006***
	(0.001)	(0.001)	(0.001)
CEO age	0.001**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)
Female CEO	-0.066***	-0.065***	-0.064***
	(0.023)	(0.023)	(0.023)
Independence percentage	0.024	0.023	0.026
	(0.026)	(0.026)	(0.027)
Market-adjusted prior return	-0.031***	-0.031***	-0.030***
	(0.008)	(0.008)	(0.008)
Stock volatility	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Log(Assets)	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)
Market-to-book	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.003)
Firm age	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)
Financial leverage	0.056*	0.056*	0.055*
	(0.033)	(0.033)	(0.033)
R&D (Full)	-0.027	-0.028	-0.031
	(0.040)	(0.040)	(0.040)
R&D missing dummy	0.001	0.001	0.001
	(0.009)	(0.009)	(0.009)
Co-opt percentage	-0.158***	-0.158***	-0.159***
	(0.010)	(0.048)	(0.010)
Female director percentage	0.036	0.037	0.032
	(0.040)	(0.040)	(0.040)
Abnormal accruals	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)
Observations	8,337	8,337	8,337
Adj. R2	0.0534	0.0531	0.0525
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Panel B. Forced CEO Turnovers

	(1)	(2)	(3)
Dep. Var.		**Forced CEO turnover dummy**	
ROA	-0.073**	-0.076**	-0.097***
	(0.032)	(0.032)	(0.033)
CEO-Board CD	0.004		
	(0.003)		
CEO-Board CD × ROA	-0.035**		
	(0.016)		
CEO-Ind. Director CD		0.003	
		(0.002)	
CEO-Ind. Director CD × ROA		-0.025**	
		(0.012)	
CEO-Exc. Director CD			0.002
			(0.003)
CEO-Exc. Director CD × ROA			-0.004
			(0.020)
Observations	8,337	8,337	8,337
Adj. R2	0.0594	0.0592	0.0586
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Panel C. Voluntary CEO Turnovers

	(1)	(2)	(3)
Dep. Var.		**Voluntary CEO turnover dummy**	
ROA	-0.047*	-0.048*	-0.045*
	(0.027)	(0.027)	(0.026)
CEO-Board CD	0.003		
	(0.002)		
CEO-Board CD × ROA	0.007		
	(0.007)		
CEO-Ind. Director CD		0.003	
		(0.002)	
CEO-Ind. Director CD × ROA		0.006	
		(0.005)	
CEO-Exc. Director CD			-0.000
			(0.002)
CEO-Exc. Director CD × ROA			0.009
			(0.009)
Observations	8,337	8,337	8,337
Adj. R2	0.0709	0.0710	0.0704
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 5. Cultural Distance and Firm Value

This table reports the results from regressions examining the effect of cultural distance on Tobin's Q. In columns (1) through (3), the dependent variable is Tobin's Q in year *t*. In columns (4) through (6), the dependent variable is Tobin's Q in year *t+1*. Specifically, the three cultural distance measures are defined as follows. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all columns. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	**Tobin's Q in year *t***			**Tobin's Q in year *t+1***		
CEO-Board CD	0.017***			0.012**		
	(0.006)			(0.006)		
CEO-Ind. Director CD		0.013**			0.011*	
		(0.006)			(0.006)	
CEO-Exc. Director CD			0.006			-0.007
			(0.015)			(0.015)
Observations	8,276	8,276	8,276	6,834	6,834	6,834
Adj. R2	0.749	0.749	0.748	0.766	0.766	0.766
Board controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 6. Sudden Exits of Directors

This table uses a subsample of the sudden exit of directors from all boards on which they serve. The dependent variable in columns (1) and (2) is a dummy variable that equals one if a CEO is replaced in a given year, and zero otherwise; in columns (3) and (4), the dependent variable is Tobin's Q. *After* is an indicator variable that takes the value one for each full fiscal year (during a five- or seven-year time window) after the sudden exit of an independent director, and zero otherwise. *Close* is an indicator variable that takes the value one if the firm's *CEO-board CD* increased after the exit of an independent director (during a five- or seven-year time window), and zero otherwise. *CEO-board CD* is the average Hofstede distance between a CEO and all board directors. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all regressions. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)
Dep. Var.	**CEO turnover**		**Tobin's Q**	
	[-3,3]	**[-2,2]**	**[-3,3]**	**[-2,2]**
After × Close	0.051**	0.049*	0.142*	0.128**
	(0.022)	(0.026)	(0.085)	(0.055)
After	0.035	0.033	0.056	0.062*
	(0.027)	(0.029)	(0.073)	(0.037)
Close	0.028	0.054**	0.033	0.060*
	(0.020)	(0.022)	(0.044)	(0.034)
Board culture diversity	-0.005	-0.009*	-0.023**	-0.012**
	(0.004)	(0.005)	(0.010)	(0.006)
CEO/Chair duality	-0.101**	-0.089	-0.221**	-0.212*
	(0.050)	(0.055)	(0.104)	(0.119)
Board size	0.002	0.003	0.000	-0.000
	(0.005)	(0.006)	(0.012)	(0.015)
CEO tenure	-0.010***	-0.011***	-0.009	-0.012
	(0.003)	(0.003)	(0.009)	(0.010)
CEO age	-0.004	-0.003	0.002	-0.001
	(0.003)	(0.003)	(0.006)	(0.007)
Female CEO	0.001	-0.052	-0.063	0.084
	(0.117)	(0.120)	(0.223)	(0.177)
Independence percentage	0.275**	0.258**	0.209	0.023

	(0.108)	(0.121)	(0.372)	(0.445)
ROA	-0.229**	-0.204*	1.556***	1.547***
	(0.109)	(0.121)	(0.590)	(0.593)
Market-adjusted prior return	-0.148***	-0.172***	-0.006	-0.011
	(0.051)	(0.059)	(0.016)	(0.020)
EBITDA	0.046	0.093	-0.429	-0.167
	(0.069)	(0.076)	(0.326)	(0.319)
Stock volatility	-0.003**	-0.003*	0.013***	0.012***
	(0.001)	(0.001)	(0.004)	(0.004)
Log(Assets)	-0.025	-0.034*	-0.324***	-0.417***
	(0.019)	(0.020)	(0.092)	(0.108)
Firm age	0.003	0.002	-0.004	-0.016**
	(0.002)	(0.002)	(0.014)	(0.007)
Financial leverage	0.082	0.096	-2.141***	-2.334***
	(0.105)	(0.123)	(0.340)	(0.399)
R&D (Full)	0.205	0.255**	-0.274	-0.502
	(0.125)	(0.121)	(0.860)	(0.841)
R&D missing dummy	0.007	0.014	-0.037	-0.058
	(0.033)	(0.037)	(0.072)	(0.077)
Co-opt percentage	-0.217***	-0.212***	-0.223	-0.449**
	(0.058)	(0.065)	(0.189)	(0.217)
Female director percentage	-0.126	-0.116	-0.632	-0.692
	(0.188)	(0.212)	(0.504)	(0.550)
Abnormal accruals	0.005	0.051	-0.356*	-0.336
	(0.035)	(0.041)	(0.212)	(0.208)
Observations	2,804	2,253	2,804	2,253
Adj. R2	0.0528	0.0450	0.776	0.779
Board controls	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 7. Cultural Distances and CEO Pay-Performance Sensitivity

This table presents OLS models examining the effect of cultural distance on CEO pay-performance sensitivity. The performance measure is the return on assets (ROA). In Panel A, the dependent variable is the logarithm of CEO total compensation. In Panel B, the dependent variable is the logarithm of CEO cash compensation (salary plus bonus). In Panel C, the dependent variable is the logarithm of CEO equity-based compensation. Specifically, the three cultural distance measures are defined as follows. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all columns. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A. CEO Total Compensation

	(1)	(2)	(3)
Dep. Var.		**Log(total compensation)**	
ROA	0.653***	0.591***	0.837***
	(0.209)	(0.218)	(0.231)
CEO-Board CD	0.033		
	(0.021)		
CEO-Board CD × ROA	0.253**		
	(0.107)		
CEO-Ind. Director CD		0.030*	
		(0.017)	
CEO-Ind. Director CD × ROA		0.223**	
		(0.093)	
CEO-Exc. Director CD			0.030*
			(0.016)
CEO-Exc. Director CD × ROA			-0.062
			(0.096)
Board culture diversity	-0.013*	-0.014**	-0.006
	(0.007)	(0.007)	(0.006)
CEO/Chair duality	-0.069	-0.067	-0.065

	(0.072)	(0.072)	(0.072)
Board size	0.022**	0.023**	0.021**
	(0.009)	(0.009)	(0.009)
CEO tenure	0.007	0.007	0.007
	(0.005)	(0.005)	(0.005)
CEO age	-0.005	-0.004	-0.005
	(0.004)	(0.004)	(0.004)
Female CEO	0.085	0.087	0.103
	(0.135)	(0.137)	(0.127)
Independence percentage	0.302*	0.292*	0.351**
	(0.165)	(0.163)	(0.165)
Market-adjusted prior return	0.132***	0.132***	0.132***
	(0.023)	(0.023)	(0.023)
Stock volatility	-0.002	-0.002	-0.002
	(0.002)	(0.002)	(0.002)
Log(Assets)	0.376***	0.377***	0.379***
	(0.038)	(0.038)	(0.038)
Market-to-book	0.030	0.030*	0.029
	(0.018)	(0.018)	(0.018)
Firm age	-0.008	-0.007	-0.006
	(0.023)	(0.023)	(0.025)
Financial leverage	-0.648***	-0.642***	-0.670***
	(0.172)	(0.171)	(0.176)
R&D (Full)	0.400	0.408	0.392
	(0.295)	(0.297)	(0.293)
R&D missing dummy	0.016	0.017	0.017
	(0.046)	(0.046)	(0.046)
Co-opt percentage	0.039	0.043	0.031
	(0.097)	(0.097)	(0.101)
Female director percentage	-0.431	-0.434	-0.415
	(0.290)	(0.290)	(0.290)
Abnormal accruals	-0.057	-0.056	-0.058
	(0.041)	(0.040)	(0.041)
Observations	6,518	6,518	6,518
Adj. R2	0.779	0.779	0.778
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Panel B. CEO Cash Compensation

	(1)	(2)	(3)
Dep. Var.		**Log(salary + bonus)**	
ROA	0.636***	0.550**	0.813***
	(0.234)	(0.239)	(0.260)
CEO-Board CD	0.018		
	(0.021)		
CEO-Board CD × ROA	0.289**		
	(0.131)		
CEO-Ind. Director CD		0.020	
		(0.017)	
CEO-Ind. Director CD × ROA		0.272**	
		(0.116)	
CEO-Exc. Director CD			0.030
			(0.022)
CEO-Exc. Director CD × ROA			-0.182
			(0.200)
Observations	6,518	6,518	6,518
Adj. R2	0.669	0.669	0.669
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Panel C. CEO Equity-Based Compensation

	(1)	(2)	(3)
Dep. Var.		**Log(equity-based pay)**	
ROA	0.491	0.483	0.704
	(0.547)	(0.539)	(0.530)
CEO-Board CD	0.111**		
	(0.056)		
CEO-Board CD × ROA	0.159		
	(0.223)		
CEO-Ind. Director CD		0.086**	
		(0.043)	
CEO-Ind. Director CD × ROA		0.127	
		(0.154)	
CEO-Exc. Director CD			0.115**
			(0.054)
CEO-Exc. Director CD × ROA			-0.112
			(0.330)
Observations	6,507	6,507	6,507
Adj. R2	0.542	0.541	0.541
Board controls	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 8. Cultural Distances and CEO TPS and PPS: Matched Samples

This table uses a matched sample to re-estimate the baseline regressions of turnover-performance sensitivity and pay-performance sensitivity. The dependent variable is indicated in the top row of the table. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$CEO\text{-}board\ CD_{\ i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	CEO	**Forced**	**Voluntary**	**Total**	**Salary +**	**Equity**
Dep. Var.	**Turnover**	**Turnover**	**Turnover**	**Compensation**	**Bonus**	**Pay**
ROA	-0.059**	-0.056**	-0.012	0.551**	0.428*	0.571
	(0.025)	(0.023)	(0.018)	(0.235)	(0.260)	(0.670)
CEO-Board CD	0.007*	0.007*	0.001	0.028	0.044*	0.107
	(0.004)	(0.004)	(0.001)	(0.024)	(0.025)	(0.070)
CEO-Board CD × ROA	-0.021**	-0.023**	0.006	0.264**	0.246*	0.019
	(0.009)	(0.010)	(0.004)	(0.124)	(0.135)	(0.243)
Board culture diversity	-0.002	-0.002	-0.000	-0.008	-0.008	-0.032
	(0.002)	(0.001)	(0.001)	(0.007)	(0.007)	(0.026)
CEO/Chair duality	0.009	0.003	0.003	-0.060	0.016	-0.329
	(0.012)	(0.012)	(0.006)	(0.073)	(0.088)	(0.276)
Board size	0.002	0.002	0.001	0.008	0.001	0.022
	(0.001)	(0.001)	(0.001)	(0.013)	(0.013)	(0.040)
CEO tenure	-0.006***	-0.006***	-0.001	0.011*	0.014***	-0.002
	(0.001)	(0.001)	(0.000)	(0.006)	(0.005)	(0.021)
CEO age	-0.001	-0.002***	0.001***	-0.007	0.005	-0.043**
	(0.001)	(0.001)	(0.000)	(0.005)	(0.006)	(0.017)
Female CEO	-0.081***	-0.076***	-0.014**	0.107	0.060	0.285
	(0.029)	(0.029)	(0.006)	(0.170)	(0.156)	(0.811)

Independence percentage	0.021	0.007	-0.003	0.212	0.139	1.114*
	(0.030)	(0.030)	(0.014)	(0.181)	(0.240)	(0.672)
Market-adj. prior return	-0.027***	-0.027***	-0.005*	0.138***	0.023	0.327***
	(0.010)	(0.010)	(0.003)	(0.026)	(0.025)	(0.086)
Stock volatility	-0.000	-0.000	-0.000	-0.001	0.000	-0.011
	(0.000)	(0.000)	(0.000)	(0.003)	(0.002)	(0.011)
Log(Assets)	0.004	0.003	0.000	0.379***	0.334***	0.530***
	(0.003)	(0.003)	(0.002)	(0.041)	(0.044)	(0.130)
Market-to-book	0.000	0.001	0.000	0.041**	0.002	0.070
	(0.003)	(0.003)	(0.001)	(0.018)	(0.020)	(0.057)
Firm age	0.003***	0.003***	0.001**	-0.022***	0.016***	-0.381***
	(0.001)	(0.001)	(0.000)	(0.004)	(0.005)	(0.017)
Financial leverage	0.067*	0.073*	-0.016	-0.678***	-0.626***	-1.153*
	(0.040)	(0.039)	(0.015)	(0.187)	(0.204)	(0.644)
R&D (Full)	-0.044	-0.037	-0.036**	0.237	0.108	1.003
	(0.049)	(0.049)	(0.017)	(0.418)	(0.413)	(0.969)
R&D missing dummy	-0.007	-0.007	-0.003	-0.030	-0.106*	0.027
	(0.010)	(0.010)	(0.005)	(0.049)	(0.059)	(0.191)
Co-opt percentage	-0.155***	-0.148***	-0.018***	0.145	0.031	0.527
	(0.050)	(0.050)	(0.006)	(0.108)	(0.097)	(0.397)
Female director perctg.	0.039	0.031	0.006	0.072	0.309	-0.236
	(0.047)	(0.046)	(0.021)	(0.284)	(0.257)	(1.020)
Abnormal accruals	0.002**	0.002**	0.000	-0.010	-0.080*	0.218
	(0.001)	(0.001)	(0.004)	(0.052)	(0.042)	(0.145)
Observations	5,901	5,901	5,901	4,761	4,761	4,752
Adj. R2	0.0444	0.0482	0.0709	0.752	0.679	0.505
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 9. CEO-Board Cultural Distances and Within-Board Cultural Diversity

This table presents the baseline models examining the effect of within-board cultural diversity. The dependent variable is indicated in the column head. *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows:

$$\textit{CEO-board CD}_{\text{ i,t}} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t},$$

where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. The within-board cultural distance measure is constructed as follows:

$$\textit{Within-Board Cultural Diversity}_{\text{ i,t}} = \frac{\sum_{i,j} \sqrt{\sum_{h=1}^{6}(S_{BRD\ i,h,t} - S_{BRD\ j,h,t})^2}}{6 \times K_t(K_t-1)/2},$$

where $S_{BRD\ i,h,t}$ and $S_{BRD\ j,h,t}$ denote Hofstede cultural score for board member *i* and *j*, respectively, on dimension *h* in year *t*; K_t is the total number of directors at firm *i* in year *t*. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, market leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all columns. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	**CEO turnover dummy**	**Forced turnover**	**Voluntary turnover**	**Log(Comp)**	**Log(Cash)**	**Log(Equity)**
Board culture diversity	-0.001	-0.001	-0.000	-0.017**	-0.013	-0.049**
	(0.001)	(0.001)	(0.001)	(0.009)	(0.010)	(0.022)
CEO-Board CD	0.009*	0.009*	0.003	-0.002	-0.001	-0.001
	(0.005)	(0.005)	(0.004)	(0.023)	(0.025)	(0.088)
CEO-Board CD × Board diversity	-0.001***	-0.001***	-0.000	0.004	0.002	0.012
	(0.000)	(0.000)	(0.000)	(0.003)	(0.003)	(0.008)
ROA	-0.075**	-0.073**	-0.047*	0.654***	0.636***	0.494
	(0.032)	(0.032)	(0.027)	(0.209)	(0.234)	(0.546)
CEO-Board CD × ROA	-0.037**	-0.035**	0.007	0.255**	0.291**	0.148
	(0.016)	(0.015)	(0.007)	(0.122)	(0.138)	(0.226)
Observations	8,337	8,337	8,337	6,518	6,518	6,507
Adj. R2	0.0535	0.0596	0.0707	0.779	0.669	0.542
Board controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 10. Cultural Distance and Other Firm Policies

This table examines the effect of cultural distance on other firm policies and investment behaviors. The dependent variable is R&D expenses over total sales in columns (1)-(3), PPE investments over total assets in columns (4)-(6), market leverage in columns (7)-(9), cash holdings over total assets in columns (10)-(12), and CAPEX over total assets in the previous year in columns (13)-(15). *CEO-board CD* is the Hofstede distance between a CEO and the board, which is calculated as follows: $\textit{CEO-board CD}_{i,t} = \frac{\sum_{k,t=1}^{K,t} \sqrt{\sum_{h=1}^{6}(S_{CEO\ i,h,t} - S_{BRD\ i,k,h,t})^2}}{6 \times K_t}$, where $S_{CEO\ i,h,t}$ and $S_{BRD\ i,k,h,t}$ denote Hofstede cultural score for a CEO at firm *i* on dimension *h* in year *t* and score for individual director *k* at firm *i* on dimension *h* in year *t*, respectively; K_t is the total number of directors at firm *i* in year *t*. *CEO-ind. director CD* is the Hofstede distance between a CEO and the independent directors. *CEO-exc. director CD* is the Hofstede distance between a CEO and the executive directors. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all regressions. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Dep. Var.	**R&D**			**PPE investments**			**Financial leverage**			**Cash holdings**			**CAPEX**		
CEO-Board CD	-0.003***			0.002**			-0.001**			0.009**			-0.001		
	(0.001)			(0.001)			(0.001)			(0.005)			(0.001)		
CEO-Ind. Director CD		-0.003***			0.002**			-0.001**			0.011**			-0.001**	
		(0.001)			(0.001)			(0.001)			(0.005)			(0.001)	
CEO-Exc. Director CD			-0.000			-0.002			-0.000			-0.001			-0.000
			(0.001)			(0.001)			(0.001)			(0.001)			(0.001)
Observations	3,043	3,043	3,043	8,239	8,239	8,239	8,337	8,337	8,337	7,281	7,281	7,281	7,168	7,168	7,168
Adj. R2	0.828	0.827	0.827	0.897	0.898	0.897	0.783	0.783	0.783	0.732	0.732	0.732	0.505	0.505	0.505
Board controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 11. Alternative Measures of Cultural Distance

This table tests the robustness of the baseline regressions of CEO turnover-performance sensitivity and pay-performance sensitivity using alternative cultural distance measures. In Panel A, the dependent variable is a dummy variable that equals one if a CEO is replaced in a given year, and zero otherwise. In Panel B, the dependent variable is the logarithm of CEO total compensation. In both panels, columns (1)-(3) present the results of baseline regressions using the Schwartz cultural scores; columns (4)-(6) present baseline results using the country of the educational background as an alternative cultural measure. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. Firm and year fixed effects are included in all regressions. Standard errors clustered at the firm level are reported in parentheses. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A. CEO Turnover-Performance Sensitivity

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.			**CEO turnover**			
ROA	-0.181***	-0.160**	-0.196***	-0.209**	-0.196**	-0.188**
	(0.062)	(0.062)	(0.058)	(0.093)	(0.094)	(0.079)
CEO-Board CD (Schwartz)	0.261					
	(0.340)					
CEO-Board CD (Schwartz) × ROA	-0.639**					
	(0.323)					
CEO-Ind. Director CD (Schwartz)		0.187				
		(0.174)				
CEO-Ind. Director CD (Schwartz) × ROA		-0.779**				
		(0.343)				
CEO-Exc. Director CD (Schwartz)			0.125			
			(0.350)			
CEO-Exc. Director CD (Schwartz) × ROA			0.679			
			(0.778)			
CEO-Board CD (Education)				0.009*		
				(0.005)		
CEO-Board CD (Education) × ROA				-0.020**		
				(0.009)		

CEO-Ind. Director CD (Education)					-0.006	
					(0.004)	
CEO-Ind. Director CD (Education) × ROA					-0.017**	
					(0.008)	
CEO-Exc. Director CD (Education)						-0.002
						(0.005)
CEO-Exc. Director CD (Education) × ROA						0.020
						(0.023)
Observations	8,266	8,266	8,266	5,824	5,824	5,824
Adj. R2	0.0538	0.0540	0.0530	0.0667	0.0665	0.0658
Board controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. CEO Pay-Performance Sensitivity

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.			**Log(total compensation)**			
ROA	0.681***	0.538**	0.872***	0.676*	0.720**	0.742**
	(0.212)	(0.219)	(0.235)	(0.363)	(0.317)	(0.355)
CEO-Board CD (Schwartz)	1.887					
	(1.493)					
CEO-Board CD (Schwartz) × ROA	9.578**					
	(4.432)					
CEO-Ind. Director CD (Schwartz)		0.842				
		(1.168)				
CEO-Ind. Director CD (Schwartz) × ROA		14.758**				
		(6.526)				
CEO-Exc. Director CD (Schwartz)			1.955*			
			(1.169)			
CEO-Exc. Director CD (Schwartz) × ROA			5.800			
			(6.992)			
CEO-Board CD (Education)				0.010		
				(0.017)		
CEO-Board CD (Education) × ROA				0.189**		
				(0.088)		

CEO-Ind. Director CD (Education)					0.012	
					(0.012)	
CEO-Ind. Director CD (Education) × ROA					0.153**	
					(0.068)	
CEO-Exc. Director CD (Education)						0.005
						(0.015)
CEO-Exc. Director CD (Education) × ROA						0.113
						(0.098)
Observations	6,463	6,463	6,463	4,515	4,515	4,515
Adj. R2	0.777	0.778	0.777	0.766	0.766	0.766
Board controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 12. Robustness Analysis

This table tests the robustness of the baseline regressions of CEO turnover-performance sensitivity and pay-performance sensitivity. In Panels A and B, the dependent variable is CEO turnover dummy and log(CEO compensation), respectively. Column (1) removes the UK; column (2) replaces ROA with prior-year stock return; column (3) controls for country-by-year fixed effects; column (4) removes the most culturally distant director when constructing *CEO-board CD*; column (5) uses median to construct *CEO-board CD*; column (6) removes multinational firms; column (7) removes small countries; column (8) uses the subsample of high-immigration countries. In all columns, we control for the full set of control variables including board controls (board cultural diversity, board size, CEO age, CEO tenure, CEO/chair duality dummy, co-option percentage, female CEO dummy, female director percentage, and independence percentage) and firm controls (abnormal accruals, firm age, log of assets, financial leverage, market-to-book ratio, R&D expenses, R&D missing dummy, market-adjusted prior return, and stock volatility). All variables are indicated and formally defined in the Appendix. We include firm and year fixed effects. Standard errors are clustered at the firm level. The sample period is 1999-2012. All continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A. CEO Turnover-Performance Sensitivity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var.					**CEO turnover**			
Sample:	Remove UK	Stock return	Within country	Remove outliers	Median CD	Exclude MNC	Exclude small countries	High immigration countries
ROA	-0.064**	-0.031***	-0.075**	-0.079**	-0.093**	-0.080**	-0.074**	-0.073**
	(0.028)	(0.009)	(0.036)	(0.037)	(0.043)	(0.037)	(0.037)	(0.035)
CEO-Board CD	0.007	0.003	0.004	0.005	0.009	0.004	0.004	0.003
	(0.007)	(0.002)	(0.003)	(0.004)	(0.010)	(0.003)	(0.003)	(0.002)
CEO-Board CD × ROA	-0.021**	-0.011***	-0.037**	-0.050**	-0.073**	-0.029**	-0.027**	-0.023***
	(0.009)	(0.005)	(0.018)	(0.021)	(0.036)	(0.014)	(0.013)	(0.008)
Observations	4,353	8,337	8,249	8,337	8,337	7,970	8,223	7,275
Adj. R2	0.0582	0.0513	0.0443	0.0531	0.0530	0.0552	0.0535	0.0529
Board controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. CEO Pay-Performance Sensitivity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var.				**Log(total compensation)**				
Sample:	Remove UK	Stock return	Within country	Remove outliers	Median CD	Exclude MNC	Exclude small countries	High immigration countries
ROA	0.570***	0.136***	0.645***	0.655***	0.619***	0.578***	0.594***	0.556**
	(0.216)	(0.024)	(0.210)	(0.210)	(0.216)	(0.219)	(0.219)	(0.221)
CEO-Board CD	0.017	0.039**	0.039*	0.031	0.028	0.033*	0.029*	0.027
	(0.015)	(0.018)	(0.022)	(0.021)	(0.023)	(0.018)	(0.017)	(0.023)
CEO-Board CD × ROA	0.132***	0.078**	0.192**	0.274**	0.298**	0.191**	0.220**	0.263**
	(0.045)	(0.036)	(0.098)	(0.140)	(0.143)	(0.091)	(0.094)	(0.120)
Observations	3,013	6,466	6,366	6,466	6,466	6,172	6,415	5,788
Adj. R2	0.712	0.777	0.790	0.779	0.779	0.774	0.778	0.788
Board controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figure 1. Sudden exit of directors

This figure illustrates the identification strategy that uses the sudden exit of non-executive directors who serve on multiple boards. In the figure, the non-executive director suddenly leaves all *N* of the boards on which she serves during the same year. This produces changes in CEO-board cultural distances across these *N* firms. Since she doesn't serve on the board of the $(N+1)^{th}$ firm, her exit doesn't change the CEO-board cultural distance within that firm.