

The Impact of Cultural Diversity in Corporate Boards on Firm Performance[§]

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Abstract

We examine the impact of cultural diversity in boards of directors on firm performance. We construct a measure of cultural diversity by calculating the centroid of cultural distances between each board member using Hofstede's cultural framework. Our findings indicate that cultural diversity in boards negatively affects firm performance measured with Tobin's Q and ROA. These results hold after controlling for potential endogeneity using a non-contemporaneous specification and instrumental variables. The results are also robust to a wide range of board and firm characteristics, including various measures of 'foreignness' of the firm, and alternative culture frameworks. The negative impact of cultural diversity on performance is mitigated by the complexity of the firm and the size of foreign sales and operations. In addition, we find that not all aspects of cultural differences are equally important and that it is mainly the diversity in individualism and masculinity that affect the effectiveness of boards of directors.

Keywords: cultural diversity, cultural distance, board of directors' diversity, firm performance

JEL Classifications: G3.

1. Introduction

Numerous studies have documented that culture affects financial decision making and financial outcomes. In corporate finance, this evidence relates mostly to strategic decision making and firm-level outcomes.¹ Studies in this arena either use culture as a national trait that can explain cross-country differences in corporate practices (e.g. Zheng et al., 2012; Bryan et al., 2014, among others), or focus on cultural differences and how they affect financial outcomes (e.g. Beugelsdijk and Frijns, 2010; Ahern et al., 2012, among others). Whereas previous research on cultural differences examines the impact of cultural differences *between* groups, in this paper, we focus on *cultural diversity* which measures cultural differences *within* groups. Within-group cultural diversity is a novel concept in the culture and finance literature. We introduce this measure to examine the relation between the cultural diversity of the board of directors and firm performance.

The board of directors is the key governing body in a corporation. Boards work as corporate monitors and advisors, are involved in the company's most important strategic, investment and financing decisions and in hiring, assessing and firing top managers.² Given the importance of boards as one of the principal groups to make corporate decisions, many studies have focussed on the connection between board effectiveness and different board characteristics, including

¹Regarding decision making, see Aggarwal and Goodell (2009), Aggarwal et al. (2012) and Zheng et al. (2012) on financing decisions; Ahern et al. (2012), Ferris et al. (2013) and Frijns et al. (2013) on mergers and acquisitions; Dodd et al. (2013) on cross-listing decisions; Li et al. (2013) and Lievenbrück and Schmid (2014) on corporate risk-taking and hedging decisions. Regarding firm-level outcomes, Tosi and Greckhamer, (2004), Bryan et al. (2014) and Burns et al. (2013) document importance of culture for compensation of the CEOs; Chui et al. (2002) for capital structure and Shao et al. (2010) for dividend policy.

²Both the management and economic literature recognize the two main roles for boards, the advisory and the monitoring role, and both strands of literature agree that firms choose directors according to their needs (Hillman and Dalziel, 2003; Ferreira, 2010).

various aspects of board diversity, such as independence, gender, ethnicity, education, experience and tenure (e.g. Adams and Ferreira, 2009; Ferreira, 2010; Anderson et al., 2011b). Despite a significant number of studies conducted on the issue, the debate on the effects of diversity in boards is still ongoing.³ The importance of understanding the role of diversity is also recognized by regulators. In particular, the 2014 UK Corporate Governance Code articulates this as follows:

“One of the ways in which constructive debate can be encouraged is through having sufficient diversity on the board. This includes, but is not limited to, gender and race. Diverse board composition in these respects is not on its own a guarantee. Diversity is as much about differences of approach and experience, and it is very important in ensuring effective engagement with key stakeholders and in order to deliver the business strategy.” (Financial Reporting Council, 2014, p. 2)

Although the issue of diversity in boards has been extensively studied, to our knowledge, national cultural diversity within the board has not been considered in the corporate finance literature. Outside the corporate finance literature, however, there is a long-standing theoretical debate on cultural diversity and how it affects group outcomes. The management literature generally identifies cultural diversity as a “double-edged sword” (Milliken and Martins, 1996), recognizing both positive and negative aspects that come from cultural diversity. On the positive side, cultural diversity engenders information elaboration, offering a diverse range of

³Empirical evidence on the effects of diversity in boards is not conclusive. For instance, in terms of the relationship between gender diversity in boards and firm performance, Farrell and Hersch (2005) report no effects, Carter et al. (2003) and Liu et al. (2014) report positive effects, and Adams and Ferreira (2009) and Ahern and Dittmar (2012) negative effects.

knowledge and perspectives (Nederveen Pieterse et al., 2013). In addition, foreign nationals can bring in specific knowledge of their home countries that can benefit the firm if it has operations in that market (Maznevski, 1994). This aspect of cultural diversity could explain, for instance, the findings of Masulis et al. (2012) who demonstrate that firms with foreign independent directors make better cross-border acquisitions when the targets are from their home country. On the negative side, cultural diversity imposes frictions. In culturally diverse groups, coordination is more difficult, communication is slower, more confused and more frequently a source of misunderstandings (Doney et al., 1998; Anderson et al., 2011b). This aspect of cultural diversity can be linked to the findings of Ahern et al. (2012), who document strong evidence that cultural distance between an acquiring firm and its target reduces the likelihood of the acquisition being successful. Hence, we could expect both positive and negative consequences of cultural diversity.⁴

In this paper we evaluate the impact of cultural diversity in corporate boards on firm performance (measured with Tobin's Q and ROA). We focus on a sample of UK firms that represent more than 95% of the market capitalization of the London Stock Exchange between 2002 and 2012.⁵ We introduce a new measure of cultural diversity of a firm's board, defined as the centroid of cultural distance between each board member. For our main analysis, this measure of cultural diversity is based on the culture framework of Hofstede (1980, 2001). We document a significant negative relationship between cultural diversity and firm performance, suggesting that the frictions imposed by cultural diversity, on average, outweigh the positive

⁴Positive and negative aspects of diversity in boards are also discussed in the business press. For example, the Wall Street Journal article from January 25, 2010, entitled "Why diversity can backfire on company boards", gives a practitioner's account of the workings of diverse boards.

⁵We choose a UK sample, as boards of UK firms are considerably more foreign than boards in the US. In our sample, more than 60% of the firms have at least one foreigner on the board, compared with the US, where only 13% of firms have at least one foreign independent director on the board (Masulis et al., 2012).

aspects. This result is robust to the inclusion of various firm and board characteristics that potentially affect firm performance, and to the use of alternative culture frameworks (Tang and Koveos, 2008; GLOBE - House et al., 2004; and Schwartz, 2006) in the computation of cultural diversity. Our findings are also economically significant. Firms at the 75th cultural diversity percentile achieve a Tobin's Q that is 0.18 (about 9% of average Tobin's Q) less than firms at the 25th percentile. Similarly, ROA is 1.26% (about 11% of average ROA) lower for firms at the 75th percentile compared with firms at the 25th percentile.

We address the issue of potential endogeneity by estimating a dynamic specification of lagged cultural diversity on current firm performance, and by implementing an instrumental variables approach. In both specifications, the negative effect of cultural diversity on firm performance remains, lending support to a causal interpretation of our findings.

We also consider other factors that may be related to both board composition and firm performance. We examine whether cultural diversity is merely a proxy for the degree of a firm's foreign orientation, i.e. 'foreignness' of a firm. At the board level, we note that our results are not just a consequence of having foreign directors on the board. Further, the inclusion of a dummy for the presence of a foreign independent director or the percentage of foreign independent directors, which are the two main variables of interest in Masulis et al. (2012), does not drive our results. While many of the variables that measure the foreignness of the board are significantly related to firm performance on their own accord, they become insignificant after the inclusion of a cultural diversity variable. At the firm level, we observe that neither the inclusion of foreign sales nor foreign assets of the firm, nor controlling for whether the firm has a listing on the NYSE or other foreign markets, explain away our findings.

The notion that cultural diversity is a “double-edged sword” with both positive and negative consequences suggests that not all firms may be affected equally by cultural diversity. We find that for complex firms, performance is not affected by cultural diversity, whereas for non-complex firms performance is negatively affected. This may be due to the positive aspects of diversity (such as a more diverse range of knowledge) outweighing the negative ones in complex firms. Likewise, we find that for firms with a strong presence in foreign product markets, the negative relation between performance and cultural diversity disappears. This could be attributed to market-specific knowledge that foreign directors bring to the board, and is in line with the observation of Masulis et al. (2012) on the role of foreign directors in foreign acquisitions and firm performance.

Finally, we assess the importance of each of the different cultural dimensions of Hofstede (1980, 2001) separately. Our findings suggest that differences in the individualism-collectivism and masculinity-femininity dimensions of culture most strongly affect firm performance. The findings are in line with the observations of Gudykunst and Bond (1997) and Kirkman et al. (2006), who report that the individualism dimension of culture is the most salient dimension of cultural heterogeneity in intergroup processes. In addition, Elron (1997) finds that the individualism and masculinity dimensions are the most relevant for top management team performance, and, consequently, for firm performance.

Overall, our paper makes two important contributions. First, we contribute to the growing literature on culture and finance by introducing a new measure of cultural diversity of corporate boards. While previous studies in finance mainly use culture to explain cross-country

differences in financial outcomes and decision making, or use cultural distance to test the impact of differences *between* groups on firm outcomes, we explore cultural diversity as an avenue of assessing the impact of differences *within* groups on firm outcomes. We show that cultural diversity represents an important aspect of board diversity. To our knowledge, this is the first study that examines the role of cultural diversity of the board on firm performance.

Second, we expand on insights from the board diversity literature and, in line with the well-established finance studies in the area, caution against “romanticizing” cultural diversity when it comes to company outcomes. Our baseline results suggest that, on average, the negative aspects of cultural diversity prevail over the positive aspects. However, factors, such as firm complexity and presence in foreign markets, mitigate the negative effects of cultural diversity. Our study on the relation between board diversity and firm performance offers a more nuanced story of board effectiveness.

This paper is related to a few studies in corporate finance. First, our study relates to Masulis et al. (2012), who examine the role of foreign independent directors in corporate governance and firm performance. Masulis et al. (2012) find that having a foreign independent director on the board is detrimental to firm performance and attribute this to a decreased ability of foreign independent directors to effectively monitor the firm due to higher coordination costs. We confirm the finding that foreign directors have a detrimental effect on firm performance, but show that this is primarily due to cultural differences. Another study to which our work is related is that of Anderson et al. (2011b). To evaluate the effect of board heterogeneity on firm performance, Anderson et al. (2011b) construct a board heterogeneity index that considers occupational heterogeneity (education, experience and profession) and social heterogeneity

(gender, ethnicity, and age). Overall, they find a positive relation between board heterogeneity and firm performance, which can be attributed to the benefits of overall diversity outweighing the costs. However, when they examine the role of board heterogeneity in complex versus non-complex firms, they find that board heterogeneity is negatively related to the performance of non-complex firms. We extend their work by considering the cultural diversity of boards. Although we do not find a positive relation between cultural diversity and firm performance⁶, we do find a negative relation between cultural diversity of the board and firm performance for non-complex firms.

The paper proceeds as follows. Section 2 offers a discussion on diversity on boards and on our measurement of cultural diversity. Section 3 describes the data and discusses the results from our univariate analysis. In Section 4, we present our baseline results as well as the results from robustness tests, and discuss the findings. Section 5 concludes.

2. Background

2.1 Diversity in boards

If, rather than a single entity, we view boards as “groups of diverse individuals who have different biases and prejudices and whose behavior is affected by social constraints and power relations” (Ferreira, 2010, p. 225), diversity on boards emerges as a significant governance issue. Indeed, the current board diversity debate raises numerous contentious issues and extends to a wide array of stakeholders. The importance of diversity is often highlighted in

⁶This could be due to the fact that we focus on one particular aspect of diversity whose benefits may be smaller. Indeed Anderson et al. (2011b) find that the positive impact of social heterogeneity is much weaker than that of occupational heterogeneity.

terms of gender, age, experience, etc. The question remains, however, whether different types of diversity in corporate boards actually have economic impacts and enhance shareholder value, or whether striving for diversity simply reflects overall social trends towards assuring equity (Carter et al., 2003).

In examining the role of board diversity and its impact on firm value, many studies consider director independence, i.e. distinguishing between executive and non-executive directors on boards (e.g. Coles et al., 2008; Linck et al., 2008; Duchin et al., 2010; Crespí-Cladera and Pascual-Fuster, 2014), or gender diversity in corporate boards (e.g. Farrell and Hersch, 2005; Adams and Ferreira, 2009; Ahern and Dittmar (2012); Bøhren and Staubo, 2014). Other studies tackle board diversity by taking into account a number of director characteristics simultaneously, such as gender, age, ethnicity, race, education, experience, function, rank, and profession (Anderson et al., 2011b; Wahid, 2012; White et al., 2014).

One factor that thus far has been ignored in the board diversity literature is national cultural diversity. We view national culture as a set of values and beliefs that guides how people select or evaluate actions, policies, events or other people (Schwartz, 2012), and argue that culture represents one of the bases for decision making.⁷ Culture is intrinsic to the person, practically unchangeable, and not necessarily public or obvious; hence Maznevski (1994) classifies cultural diversity as an inherent type of diversity.

⁷Although the output of boards' work is entirely cognitive, the effective functioning of boards largely depends on social and psychological processes (Forbes and Milliken, 1999). One of the factors to impact such group processes is culture: culture influences how all individuals, even members of elite decision-making groups such as corporate boards, perceive and interpret information and relate to others (Schneider and De Meyer, 1991; Maznevski, 1994). Hence, directors are not immune to cultural biases, and cultural diversity may introduce "negative externalities" that might undermine board effectiveness (e.g. Manzoni et al., 2010; Nederveen Pieterse et al., 2013).

Cultural diversity is recognized as bringing about advantages and disadvantages. The advantages of cultural diversity to group decision making can be classified as either general or specific (Maznevski, 1994). General advantages of cultural diversity come from the introduction of new worldviews, and different ways of perception and interpretation of information to the group (Nederveen Pieterse et al., 2013). Specific advantages of cultural diversity exist when group members become a valuable source of information about a foreign culture due to their communication networks, linguistic resources and familiarity with a given country's customs (Maznevski, 1994). On the other hand, inexperience makes it difficult for group members to understand and accept cultural diversity. Notably, cultural diversity can be more disruptive to group problem-solving processes than other aspects of group heterogeneity (Adler, 1991). In diverse groups, communication is slower, more difficult, more confused and more frequently a source of misunderstandings, differences in style and attribution of meanings curtail conflict resolution (Doney et al., 1998; Ling, 1990; and Anderson, 2011b).⁸ The net effect of cultural diversity on firm performance will, therefore, depend on whether the positive aspects outweigh the negative aspects. This is the empirical question we address in this paper.

The negative aspects of cultural diversity may be mitigated when there are particular benefits of having culturally diverse boards. For cultural diversity, these mitigating factors would sit in the knowledge each member brings to the board. For example, in more complex firms or firms with higher percentages of foreign sales or foreign operations, directors from different national

⁸These arguments relate closely to findings from cross-cultural and social psychology research that diversity brings about two forms of conflict: cognitive and affective. The former is a productive, functional type of conflict which improves decision quality, consensus and affective acceptance in groups, and allows for sustained successful implementation of group decisions. The latter is a disruptive, dysfunctional type of conflict that undermines the group decision making process (e.g. Amason, 1996; Gibson and McDaniel, 2010).

cultural backgrounds are more likely to represent an information source (see also Anderson et al., 2011b; and Masulis et al., 2012). We thus expect that firms with complex operations or a strong presence in foreign markets would benefit more from cultural diversity.

2.2 Measuring Cultural Diversity

According to Hofstede (1980), “culture is the collective programming of the mind distinguishing the members of one group or category of people from others.” There are systematic differences in people’s beliefs and values which generate far-reaching economic and social implications. (e.g. Guiso et al., 2004, 2006; Tabellini, 2008a, b). Although culture in itself is not observed, several initiatives have been undertaken to quantify different aspects of culture. The most well-known such initiative is by Hofstede (1980, 2001), who constructs various cultural dimensions that characterize different cultural traits of a nation.⁹ Initially, Hofstede introduced four dimensions: uncertainty avoidance, individualism-collectivism, masculinity-femininity and power distance, but later added a fifth (long-term orientation) and sixth dimension (indulgence versus restraint). We focus on the initial four dimensions of Hofstede as these have been used most frequently in prior studies (Kirkman et al., 2006).¹⁰ Each country in Hofstede’s sample is given a score on each of the dimensions. The individualism score indicates how much value members of a society place on taking care of themselves and their close families. The masculinity score measures the importance societies’ members place on achievement, assertiveness and material reward for success. The power

⁹Hofstede analysed value scores obtained from a large respondent group of IBM managers from 70 countries between 1967 and 1973. The first version of the model included four dimensions and covered value scores for 40 countries, later for 50 countries and then for 76 countries. The importance of Hofstede’s culture dimensions is highlighted by Kirkman et al. (2006), who document 180 empirical studies that rely on Hofstede’s cultural dimension and are published in leading journals between 1980 and 2002.

¹⁰In finance, several studies employ the Hofstede culture framework. These studies include Aggarwal and Goodell (2009), Aggarwal et al. (2012), Beugelsdijk and Frijns (2010), Anderson et al. (2011a), Zheng et al. (2012), Dodd et al. (2013), Frijns et al. (2013), Bryan et al. (2014), Burns et al. (2013), Lievenbrück and Schmid (2014).

distance score captures the acceptance of societies' members of an unequal distribution of power amongst people. Finally, the uncertainty avoidance score represents the degree to which people from that country feel uncomfortable with uncertainty and ambiguity.

To construct our measure of cultural diversity of the board, we first compute cultural distance between each pair of directors. We do this by taking the cultural scores on the above mentioned individual cultural dimensions of the country of nationality for each director, and compute cultural distance following Kogut and Singh (1988), i.e.

$$CD_{ij} = \sqrt{\sum_{k=1}^4 \{(I_{ki} - I_{kj})^2 / V_k\}} \quad \forall i \neq j, \quad (1)$$

where CD_{ij} is the cultural distance between each pair (i, j) of directors, I_{ki} is the cultural score on dimension k for a director from country i , I_{kj} is the cultural score on dimension k for a director from country j , and V_k is the variance of the score of the specific cultural dimension. This measure of cultural distance has been applied in various finance studies, e.g. Beugelsdijk and Frijns (2010), Anderson et al. (2011a), and Dodd et al. (2013).

Based on the cultural distance scores, we compute the firm-level cultural diversity of the board, similarly to Hutzschenreuter and Voll (2008). Hutzschenreuter and Voll (2008) explore the role of cultural diversity in the context of multinational organizations and how cultural diversity within a multinational firm (measured by cultural differences between subsidiaries and parent

firms) affects the performance of these multinational firms. We define cultural diversity as the centroid of cultural distance, i.e.

$$CD\ BOARD_{nt} = \frac{\sum_{i,j} CD_{ij,nt}}{m(m-1)/2} \quad \forall \quad i < j, \quad (2)$$

where $CD\ BOARD_{nt}$ is the measure of cultural diversity of the board of firm n in year t , and m is the number of board members. The measure of cultural diversity is scaled by the number of pairs of board members, so that the measure is normalized for the size of the board.

3. Data

For our empirical analysis, we focus on a sample of British firms, as the UK market provides a reasonable variation in terms of cultural diversity in corporate boards.¹¹ Our sample covers the top 95% of market capitalization of all British firms available in Datastream, excluding firms from the finance industry. After checking for data availability on directors and firm characteristics, we have a sample of 244 firms. We collect director- and firm-level data biannually for the years 2002 to 2012.¹² Our final sample has 1,290 firm-year observations. We provide a full description of each variable in Appendix A.

3.1 Director-level Data

¹¹We focus on the UK, as boards of UK firms are considerably more foreign than boards in the US. In our sample, more than 60% of the firms have at least one foreigner on the board. Masulis et al. (2012) document 13% of firms having at least one foreign independent director on the board.

¹²We sample data biannually as board membership is persistent over time.

We obtain information on board membership from the Orbis database maintained by Bureau van Dijk. This database contains name, gender, age, and nationality for many directors on boards. Where data on a director are missing, we search through annual reports of companies and Internet sources, such as Bloomberg Businessweek or LinkedIn. Our final sample of directors includes 11,185 individuals from 47 different countries.

Table 1 provides a breakdown of directors from each country by year, and reports the total percentage of directors coming from a specific country in the last column. When we consider the total percentages, we note that close to 80% of directors come from the UK. The second largest group of directors are from the US, representing about 7% of our sample. For the remainder, we note that there are relatively high percentages for other Anglo-Saxon countries (Australia, Canada, Ireland) and the more developed countries with close economic ties to the UK (France, Germany, and the Netherlands). Over time, there appears to be an increase in the percentage of foreign directors with a low of 17.98% in 2004 and a high of 24.19% in 2012.

INSERT TABLE 1 HERE

In Table 2, we compare characteristics of directors from the UK with those of foreign directors, where we report the percentage of males, the average age of directors, and the percentage of independent directors. On average, 92% of UK directors are male versus 87% of the foreign directors. This difference of about 5% is significant at the 1% level, indicating that there are significantly more female foreign directors than female UK directors. Foreign directors are significantly older than UK directors, 55 years old on average for UK directors versus 56.5 for

foreign directors. Finally, we note that 57.16% of foreign directors are independent versus 51.5% of UK directors. The difference is again highly statistically significant.

INSERT TABLE 2 HERE

In Table 3, we present the distribution of the number of foreign directors over time. In total, about 60% of the firms have at least one foreigner on their board, and since 2004 there seems to be a steady increase in the percentage of firms with foreign directors (from 54.17% in 2004 to 66.80% in 2012). Panel A presents the distribution for the number of foreigners on boards, and shows that for 513 firm-year observations there are no foreigners on the boards. The greatest number of foreigners on a board is 11. In Panel B, we present the distribution of the number of different nationalities present on the board. The maximum number of nationalities represented on a board is seven. We note that 67% of the firm-year observations either have zero or one foreign nationality on their board.

INSERT TABLE 3 HERE

3.2 Firm-level Data

3.2.1 Board Characteristics

Based on the director-level data presented above, we compute firm-level measures of board diversity. In Table 4, we report summary statistics on firm-level board diversity measures. For our cultural board diversity measure (CD BOARD) as defined in Section 2.2, the mean cultural

diversity measure is 0.5148, with a median of 0.2222 and maximum of 3.3603. If all directors are of the same nationality, then the cultural diversity of such boards equals zero. We observe that over our sample period, there has been a steady increase in cultural diversity from 0.4416 in 2002 to 0.6007 in 2012 (reported in Panel B).¹³

INSERT TABLE 4 HERE

While our focus is on cultural diversity, we consider other important board characteristics in our analysis, such as board size, gender diversity, independence, age, and CEO/Chairman duality. In Panel A of Table 4, we report summary statistics of the above mentioned board characteristics and in Panel B distributions of their values over time. We observe that the average number of directors on a board is 8.67 with variation from two to 19 directors and this number is relatively stable over our sample period. Firms with foreign directors tend to have larger boards than firms without. The average number of foreign directors on a board is 1.82 with a maximum of 11. Over the sample period this number increases steadily from 1.57 in 2004 to 2.12 in 2012. Males on average constitute 91.41% of directors and we observe a downward trend in this percentage from 95.06% of male directors in 2002 to 86.82% in 2012. Firms with foreign directors tend to have fewer males on the board than firms without. The average percentage of independent directors is 51.81% with an upward trend from 44.74% in 2002 to 58.10% in 2012. There is a significant positive difference in the percentage of

¹³Our measure of cultural diversity is based on cultural differences between pairs of directors sitting on a board. To give some indication of what drives the cultural diversity scores, we provide some examples of cultural distance relative to the UK. We stress, however, that our measure is computed as the centroid measure, and not UK centred. Cultural distance relative to a UK board member is small for foreigners from e.g. the US, Australia, Ireland; moderate for foreigners from Germany, Italy, and Switzerland, and large for foreigners from Malaysia, Chile, and Russia. Cultural diversity is a function of both the distance between any two directors and the number of pairs with different nationalities.

independent directors for firms with and without foreign directors. The average age of members on boards is 55.11, which has increased from 53.51 in 2002 to 56.68 in 2012. In line with the observation from Table 2, directors are, on average, older for firms with foreign directors than for firms without foreign directors. However, while the average age has increased, the age range (the age difference between oldest and youngest director) has decreased from 25 years in 2002 to 23.18 years in 2012. Age range tends to be larger in firms without foreign directors. Finally, 8.9% of firms in the sample have a CEO who is also the Chairman of the board, with a steady downward trend in this number from 10.6% in 2004 to 6.4% in 2012. Firms with foreign directors tend to have a higher occurrence of CEOs also serving as the Chairman of the board.

3.2.2 Firm Performance Measures

In our empirical analysis, we examine the impact of cultural diversity of boards on firm performance. We employ two commonly used measures of firm performance: 1) Tobin's Q and 2) ROA. Tobin's Q is calculated as book value of total assets minus book value of equity plus market value of equity, all divided by book value of total assets. ROA is calculated as operating income divided by year-end book value of total assets. We winsorize Tobin's Q and ROA at 1% on each side of the distribution. Panel A of Table 5 reports summary statistics of our firm performance measures. The mean Tobin's Q is 1.97, with a median of 1.57 and range from 0.65 to 8.29. Average ROA is 11.05%, with a median of 9.60 and range from -14.02 to 38.46. The differences in means of Tobin's Q and ROA between firms with foreign directors and firms without foreign directors are not statistically significant.

INSERT TABLE 5 HERE

3.2.3 Firm Characteristics

In our empirical analysis, we account for an array of firm characteristics that may affect firm performance and board composition such as firm size, leverage, firm age, firm complexity, return volatility, sales growth. Panel B of Table 5 reports summary statistics for firm-level variables for the full sample and mean values for sub-samples of firms with and without foreign directors. Average size of firms is 4,752.3 million GBP. However, there is a significant difference in average firm size between firms with and without foreign directors: 7,170.1 vs. 1,209.6 million GBP, respectively. Leverage, on average, is 0.23 with no significant difference between firms with and without foreign directors. Average firm age is 69.28 years and average number of business segments (our measure of firm complexity) is 3.11. Firms with foreign directors are significantly older (74.24 vs. 61.77 years) and operate in a significantly greater number of business segments (3.32 vs. 2.81 segments) than firms without foreign directors. Daily stock return volatility is 2.25%, on average, with no significant difference between firms with and without foreign directors. Average sales growth is 11%, a number that is similar for firms with and without foreign directors.

4. Results

4.1 Cultural diversity of boards and firm performance: Main Results

We start our analysis with an examination of the fundamental question on the relation between cultural diversity in boards and measures of firm performance. To assess this relation, we estimate several regressions of firm performance (measured with Tobin's Q and ROA) on

cultural diversity of the board (CD BOARD). In these regressions, we control for a range of board and firm characteristics. For board characteristics, we control for board size, as it is an important reflection of the firm's advising and monitoring needs (e.g. Cheng, 2008; Coles et al., 2008). We also control for gender diversity, board independence, age differences between board members and CEO/Chairman duality (e.g. Adams and Ferreira, 2009; Raheja, 2005; Wahid, 2012; Anderson et al., 2011b). Regarding firm characteristics, we control for firm size and age, leverage, firm complexity, return volatility and sales growth. Finally, we include industry and year fixed effects, and compute standard errors controlling for clustering at the firm level (see Petersen, 2009).

INSERT TABLE 6 HERE

In Table 6, we report the results for our main regressions. In the first column, we report the results for Tobin's Q as the dependent variable, where we include CD BOARD and firm characteristics. We observe that the coefficient on cultural diversity is negative and significant at the 1% level. The negative impact of cultural diversity on Tobin's Q suggests that the costs and frictions that come with cultural diversity outweigh the potential benefits of having culturally diverse boards. The impact of CD BOARD is economically significant as well: a firm at the 75th percentile of the CD BOARD distribution achieves a Tobin's Q that is 0.18 lower than a firm at the 25th percentile.

INSERT TABLE 6 HERE

In terms of other characteristics, we note that firm size is significantly positive, suggesting that the larger firms achieve higher valuations. Firm age is negative and significant, suggesting that older firms achieve lower valuations. Likewise, we find a significantly negative relation between Tobin's Q and firm complexity, suggesting that more complex firms achieve lower valuations. We finally document a positive and significant relation between Tobin's Q and sales growth.

Given that cultural diversity of the board may reflect other board characteristics, it is important to control for these. When we include board characteristics, we note that the significant negative relation between cultural diversity of the board and Tobin's Q is not affected. Of the other board characteristics, we note that only board size is marginally significant, and negative, suggesting that firms with larger boards achieve lower valuations.

The next two columns of Table 6 report the results for ROA as the dependent variable. The results for these regressions are similar to those for Tobin's Q. We observe a negative and significant relation (at the 1% level) between cultural diversity of the board and ROA, irrespective of whether we control for other board characteristics or not. Again this result is economically significant: firms at the 75th percentile of the CD BOARD distribution achieving a ROA that is 1.26% less than firms at the 25th percentile. Among the firm characteristics, firm size remains significantly positive, as does sales growth. We also observe that firm complexity and return volatility have a negative effect on ROA.

4.2 Endogeneity of Cultural Diversity in Boards

One issue that needs to be addressed is that of a potential endogenous relation between firm performance and cultural diversity. We address this issue in two ways. First, we estimate dynamic specifications where we lag the variable of interest. Second, we employ an instrumental variables approach.

OLS regressions can only establish a relation between variables, but do not imply causal relations. If causality were to run in the other direction, i.e. the performance of a firm affects the degree of cultural diversity of the board, then inference from an OLS regression will be biased. To test for a causal relation from CD BOARD to firm performance, we estimate a regression with a lagged cultural diversity measure. To increase the power of this test we only lag the variable of interest and keep all other control variables as contemporaneous variables. Since our sample includes biannual observations, lagging the cultural diversity measure variable means that we are estimating whether cultural diversity determines firm performance in two years' time, while controlling for all other contemporaneous board and firm characteristics.¹⁴ The first column of Table 7 reports results for Tobin's Q. The cultural diversity variable is negative and significant at the 5% level. This result confirms that cultural diversity has a significant, negative impact on future firm performance and suggests that there is a causal effect of cultural diversity of the board on future performance.

INSERT TABLE 7 HERE

¹⁴We also estimate our model with firm performance and firm characteristics variables led forward by one year to estimate whether cultural diversity determines firm performance in one year's time, controlling for other board and firm characteristics. The results (not reported but available upon request) are similar to the results reported in Table 7.

Since Tobin's Q may be persistent over time, the effect of lagged CD BOARD on firm performance could be a consequence of a correlation between lagged CD BOARD and lagged Tobin's Q. To rule out this possibility, in addition we include lagged Tobin's Q (i.e. firm performance two years ago) and report the results in the second column of Table 7. Indeed, past Tobin's Q is highly significant and its inclusion increases R^2 of the model considerably. Nevertheless, even after controlling for past firm performance, the cultural diversity measure remains negative and highly significant (at the 1% level).

The last two columns of Table 7 report the results for ROA. Similar to the results for Tobin's Q, cultural diversity is found to determine ROA in two years' time. Lagged ROA is an important determinant of current ROA. After controlling for lagged ROA, cultural diversity remains a negative determinant of firm performance but its statistical significance reduces ($p = 0.11$). Overall, we find strong evidence for a causal effect of cultural diversity on future firm performance.

Another source of potential endogeneity is simultaneity, i.e. the presence of foreign directors on boards may be determined by the firm's need for foreign directors that, in turn, is potentially related to firm performance. A solution to this type of endogeneity problem is to use an instrumental variables approach. In this approach, instrumental variables are selected that correlate highly with the variable of interest, but have no effect on the dependent variable after controlling for all other effects. The use of instrumental variables also addresses the potential issue of errors-in-variables, which typically induces a bias in the estimation when the variable of interest is measured with noise. We select two instrumental variables. The first instrument we use is a dummy variable for whether a firm is headquartered outside a large metropolitan

area (i.e. in a town with a population of less than 250,000 people). The motivation for the selection of this instrument is that firms that are headquartered in these areas will be less culturally diverse than large metropolitan areas (and this is in line with the motivation of Anderson et al. (2011b) who use a measure of county heterogeneity for their instrument of board heterogeneity). In addition, one can argue that firms that are headquartered outside large metropolitan areas are more difficult to reach for foreign directors, and therefore the firm may end up with fewer foreign directors on the board (this argument is in line with the instrument used by Masulis et al. (2012) who use a dummy variable for whether a firm is headquartered within 100 km of a large US airport). The second instrument we employ is the average age of board members. As reported in Table 2, foreign directors are, on average, older than UK directors, and hence we expect that boards with more cultural diversity tend to be older boards. This relation may be expected as the selection of foreign directors may be based more on externally verifiable performance, whereas the selection of domestic board members may be based more on informal measures of performance (such as recommendations from peers or connections through networks).¹⁵

In Table 8, we present the results for the instrumental variables regression estimated using a two-stage least squares procedure. For the first stage regression of CD BOARD, reported in column 1, we observe that both instrumental variables have the expected signs, and are highly significant. Firms located outside large metropolitan areas have significantly less culturally diverse boards, and boards with older directors tend to be more culturally diverse. As for the other controls, we observe that board size and board independence are both significant and

¹⁵We also estimate instrumental variables regressions using a diversity measure based on somatic distance as an instrument for cultural diversity (see Guiso et al., 2009). Somatic distance is based on the predominant external features of individuals within a country, such as height, cephalic index and predominant hair colour. However, these data are only available for a set of European countries and the use of this instrument considerably reduces the sample size. These regressions confirm our main results, and are available upon request.

positive, indicating that larger boards and boards with more independent directors are more culturally diverse. For the firm characteristics, we observe that firm size is significantly positive, i.e. larger firms tend to have more culturally diverse boards. In addition, we find that firm age is negative and significant, suggesting that older firms have less culturally diverse boards. We further note that firm complexity has a significant negative relation with CD BOARD. Return volatility is positively related to CD BOARD.

INSERT TABLE 8 HERE

In columns (2) and (3) of Table 8, we report the results for the second stage regressions for Tobin's Q and ROA. For both regressions we observe that CD BOARD is negative and statistically significant. This suggests that the relation found with the OLS regression can indeed be interpreted in a causal way, i.e. the more culturally diverse a board is, the lower the performance of the firm will be. Of note is the fact that the estimated coefficients increase in magnitude relative to the OLS regressions. This can be attributed to the instrumental variables approach reducing the errors-in-variables bias, and reconfirms the strong negative relation between cultural diversity and firm performance.

For both instrumental variables regressions of Tobin's Q and ROA, we perform Hausman-Wu tests for endogeneity. The tests for both regressions produce insignificant χ^2 -statistics, suggesting that there are no endogeneity issues with our CD BOARD measure. We also test for the validity of the instruments by performing a Sargan test for over-identifying restrictions. Both regressions produce insignificant Sargan χ^2 -statistics, suggesting that both instruments are valid.

4.3 Further analysis

4.3.1 Other Measures of 'Foreignness' of the Board

The results reported thus far suggest a strong negative relation between cultural diversity and firm performance. However, cultural diversity may just be a proxy for the degree of foreignness of the board. Indeed, Masulis et al. (2012) demonstrate that firm performance is negatively affected when firms have foreign independent directors on the board and explain this negative relation by foreign directors being less effective due to the physical distance they have from the firm, which affects their ability to attend board meetings and to effectively monitor management. It may be the case that our measure of cultural diversity just captures the presence of foreigners on boards. To address this issue, we include a range of alternative variables that measure the degree of foreignness of the board. These regressions are estimated for the sample that excludes firms without any foreign directors.¹⁶

INSERT TABLE 9 HERE

In Panel A of Table 9, we report the results for different measures of foreignness of the board. In the first column, we show that the exclusion of firms without any foreign directors strengthens the results for the role cultural diversity within the board. The coefficient remains negative and highly significant.

¹⁶We exclude these firms, as for all firms without any foreign directors cultural diversity will be zero and other measures of foreignness will be zero as well. Since we have a substantial number of firms without foreign directors, this mechanically inflates the correlation between cultural diversity and other measures of foreignness.

The second measure of foreignness that we include is the percentage of foreign directors that sit on the board. In column 1.2, we include this variable (without the inclusion of a cultural diversity measure). On its own accord this variable is negative and highly significant, suggesting that firms with more ‘foreign’ boards have lower firm performance. However, when we add our measure of cultural diversity (column 1.3), we note that the percentage of foreign directors becomes insignificant, whereas our measure of cultural diversity is negative and significant (at the 10% level). This suggests that it is not just having foreigners on the board that affects firm performance, but the cultural diversity among them.

An alternative measure of foreignness is the ratio of nationalities represented on the board. This controls for the possibility that performance may not just be affected by the percentage of foreigners, but could be affected by the number of different nationalities on the board. We report the results for the regressions where we include the ratio of nationalities in columns 1.4 and 1.5. We note that this variable on its own is again significant and negatively related to Tobin’s Q. However, when we include CD BOARD, the ratio of nationalities becomes insignificant, whereas CD BOARD remains significant and negative.

The next measure of the foreignness of the board follows Masulis et al. (2012). They use a dummy variable equal to one if the firm has any foreign independent directors on the board as their main variable of interest.¹⁷ In columns 1.6 and 1.7, we include the foreign independent director dummy (FID dummy). We find that this dummy variable is not significant and its

¹⁷Note that while our definition of foreign directors is based on directors’ nationalities, Masulis et al. (2012) define foreign directors based on their physical locations irrespective of their nationalities.

inclusion does not affect the significance and negative sign of CD BOARD. In addition to the FID dummy variable, we also consider the ratio of foreign independent directors to the total number of directors on the board. The inclusion of the share of foreign independent directors (FID share) reveals that on its own accord FID share negatively affects Tobin's Q (reported in Columns 1.8 and 1.9). However, the inclusion of CD BOARD in the regression leads to an insignificant coefficient on FID share while CD BOARD remains significantly negative.

Columns 2.1 – 2.9 in Panel A of Table 9 report the results for ROA. We observe that the exclusion of firms without foreign directors strengthens the results on the negative relation between cultural diversity and firm performance. The FID dummy variable is a negative and significant determinant of ROA; however, after accounting for CD BOARD it becomes insignificant while CD BOARD remains negative and statistically significant. Overall, the inclusion of various alternative measures of foreignness of the board does not affect the magnitude and statistical significance of CD BOARD.

Overall, the results of this analysis indicate that our cultural diversity measure is not merely a proxy for foreignness of boards, but actually offers an explanation why foreignness of the board matters to firm performance. These results also extend the findings of Masulis et al. (2012) and suggest that in addition to the inability of foreign independent directors to effectively fulfil their role due to physical distance, cultural diversity also plays an important role.

4.3.2 Other Measures of 'Foreignness' of the Firm

In addition to cultural diversity being a proxy for other measures of foreignness of the board, CD BOARD could also be correlated with the degree of the firm's presence in foreign product and financial markets. Since companies choose directors according to their advising and monitoring needs, firms with higher degrees of foreign orientation are likely to have a greater share of foreign directors and, accordingly, greater cultural diversity within the board (Hillman et al., 2003; Ferreira, 2010; Oxelheim and Randøy, 2003; Masulis et al., 2012). The extent of foreign operations, in turn, may be related to firm performance. Hence, the observed impact of cultural diversity on firm performance could be a consequence of a firm's presence in foreign markets, and our CD BOARD measure could just be a proxy for this.

We consider two variables that capture the degree of a firm's presence in foreign product markets and the degree of foreign operations: a firm's foreign sales and a firm's foreign assets. While our sample firms, on average, have 43% of their total sales coming from foreign markets, this number is 55% for firms with foreign directors and only 23% for firms without foreign directors. Similarly, foreign assets constitute an average of 26% of total assets for the full sample, 34% for the sub-sample of firms with foreign directors and only 3% for the sub-sample of firms without foreign directors.

In addition, we control for a firm's presence in foreign financial markets. First, we consider whether a firm is listed on the NYSE. Doidge et al. (2004) report that non-US firms listed on the NYSE have significantly higher valuations measured with Tobin's Q compared to firms from the same country that do not list on the NYSE. Also, a listing on the NYSE potentially calls for foreign expertise on the board and, therefore, a greater number of foreigners and

cultural diversity on the board. Lastly, we account for a firm having its shares listed on any foreign stock exchange outside of the home market (UK). Around 9% of our sample firms have an NYSE listing; this number is 14% for firms with foreign directors and 1% for firms without foreign directors. Similarly, firms with foreign directors are more likely to have a foreign listing compared to firms without foreign directors (26% vs. 3%, with a sample average of 17%). To control for a firm's presence in foreign financial markets, we construct a dummy variable that equals one if a firm is listed on the NYSE and a dummy variable that equals one if a firm is listed on a stock exchange outside of the UK.

In Panel B of Table 9, we report the results for Tobin's Q and ROA where we control for different measures of foreignness of the firm. We conduct these regressions for the full sample. Columns 1.2 and 1.3 of Panel B report the results for foreign sales. We observe that the ratio of foreign sales is not related to Tobin's Q and its inclusion does not affect the negative relation between CD BOARD and Tobin's Q. Foreign assets is a negative and highly significant determinant of Tobin's Q (reported in columns 1.4 and 1.5), indicating that firms with higher shares of assets located overseas have lower valuations. Nevertheless, CD BOARD remains negative and significant, even after controlling for the extent of a firm's foreign operations. Further, we observe that the inclusions of the NYSE listing (columns 1.6 and 1.7) and the foreign listing variable (columns 1.8 and 1.9) do not affect Tobin's Q, and CD BOARD is not affected by the inclusion of these two variables.

Columns 2.2 – 2.9 in Panel B of Table 9 report the results for ROA. The results for ROA are broadly consistent with those for Tobin's Q, and our measure of cultural diversity of the board continues to have a significantly negative impact on ROA in all specifications. For the

alternative measures of foreignness of the firm, we observe that the foreign assets variable is significantly negative suggesting that ROA is negatively affected when a firm has foreign operations. Also, we observe that firms listed on the NYSE have a significantly higher ROA.

The results of these tests demonstrate that our measure of cultural diversity of the board is not a proxy for other measures of a firm's foreignness. The negative impact of cultural diversity on firm performance goes beyond what can be attributed to a firm having a presence in foreign markets.

4.3.3 Cultural Diversity and Firm Operations

In this section, we extend the analysis of Anderson et al. (2011b) and Masulis et al. (2012) and examine how the degree of complexity of a firm's operations and the degree of a firm's foreign operations affect the relation between cultural diversity and firm performance. The observed negative effect of cultural diversity on firm performance may be mitigated when firms have more complex operations or have extensive presence in foreign product markets and significant foreign operations. This is because such firms have a greater need for international expertise and foreign market-specific knowledge in their boards. Anderson et al. (2011b) show that the impact of board heterogeneity on firm performance depends on the degree of firm complexity. In particular, they find that for firms with more complex operations, board heterogeneity has a positive impact on firm performance, while for firms with less complex operations, board heterogeneity has a negative impact. In addition, Masulis et al. (2012) show that the negative impact of foreign independent directors (FIDs) on performance is mitigated if the firm has a stronger presence in the FID's country (measured by foreign sales).

To assess the moderating role of firm complexity, we split the sample into two sub-samples, classifying a firm as having complex operations if it operates in more than four business segments (the 75th percentile value of this variable), and as having less complex operations if it operates in four or less business segments. Panel A of Table 10 reports the results. For Tobin's Q and ROA, cultural diversity is negative and significant in the sub-sample of less complex firms and is insignificant in the sub-sample with more complex firms. This finding is in line with Anderson et al. (2011b), and suggests that the negative effect of cultural diversity is mitigated in complex firms that require a wider range of expertise.

Next, we consider the extent of a firm's export orientation. We split the sample into two sub-samples based on a firm's foreign sales. We classify a firm as having strong export orientation if more than 75.87% of its sales come from foreign markets (the 75th percentile value of this variable). Panel B of Table 10 reports the results. For both Tobin's Q and ROA, cultural diversity is insignificant in the sub-sample of firms with a strong export orientation. This result supports the findings of Masulis et al. (2012), and suggests that firms that require higher levels of foreign expertise are not negatively affected by cultural diversity.

Lastly, we consider the extent of a firm's foreign operations measured by a firm's foreign assets, and classify a firm as having substantial foreign operations if more than 51.02% of its assets are located abroad (the 75th percentile value of this variable). We report the results in Panel C of Table 10. For Tobin's Q and ROA, cultural diversity is negative and significant in the sub-sample of firms that have 51.02% or less foreign assets and is insignificant for the sub-sample of firms with significant foreign operations. Similar to the results for export orientation,

the negative effect of cultural diversity is mitigated in firms that require foreign market expertise.

INSERT TABLE 10 HERE

4.4 Alternative Cultural Frameworks

In this section, we employ three alternative culture frameworks to assess whether our main findings are robust. First, we use the culture scores of Tang and Koveos (2008), who update Hofstede's culture scores by controlling for changes in economic conditions, such as GDP per capita. Although these updated culture scores are different from Hofstede's, they build on a cultural framework with the same individual culture dimensions. Second, we employ culture scores from the GLOBE project (House et al., 2004). The GLOBE project relies on an alternative framework and produces nine different dimensions along which cultures can differ: performance orientation, assertiveness orientation, future orientation, humane orientation, institutional collectivism, family collectivism, gender egalitarianism, power distance, and uncertainty avoidance. Although some of the dimensions of Hofstede and the GLOBE are comparable, there are conceptual and methodological differences between the two cultural frameworks (e.g. Smith, 2006). Third, we use the culture framework of Schwartz (2006), which contains seven value orientations that are based on three culture dimensions: embeddedness versus autonomy, hierarchy versus egalitarianism, and mastery versus harmony. We use these three dimensions to calculate the cultural diversity measure.

INSERT TABLE 11 HERE

For each alternative cultural framework, we recalculate the cultural diversity measure as in Equation (2) (see section 2.2) and estimate our main model for the full sample and for the subsample of firms that have at least one foreign director on the board. In Table 11, we report the results for Tobin's Q in Panel A and ROA in Panel B. In Panel A, we observe that the coefficients on CD BOARD are negative and significant, the only exception being the relation between the Schwarz-based measure of cultural diversity and Tobin's Q using the full sample. For ROA (Panel B) cultural diversity is negative and significant for all alternative culture frameworks. Overall, the results suggest that irrespective of the choice of culture framework, cultural diversity has a significant negative impact on firm performance.

4.5 Individual Culture Dimensions

Our results suggest that cultural diversity has a negative effect on firm performance. In this section, we investigate whether some specific cultural traits are more important than others. We do this by considering each individual Hofstede score in calculating measures of cultural diversity of the board (using the centroid measure as in Equation (2)). We report the results of these regressions for a full sample and for firms with foreign directors in Table 12.

INSERT TABLE 12 HERE

When we consider the individual culture dimensions, we find that all measures of board diversity produce a negative coefficient for both Tobin's Q (Panel A) and ROA (Panel B). However, we observe significant coefficients only for cultural diversity based on individualism

and masculinity. These findings are in line with e.g. Gudykunst and Bond (1997) and Kirkman et al. (2006) who report that the individualism and masculinity dimensions of culture are the most salient dimensions of cultural heterogeneity in intergroup processes. Differences in the perceived importance of self-assertion, competitiveness, group cohesiveness and group integration (examples of differences that characterize the individualism-collectivism dimension), and also differences in the perceived importance of assertive behavior, competition, material success, and interpersonal relationships (examples of differences pertaining to the masculinity-femininity dimension), seem to be the principal source of affective conflict on boards. Also, Elron (1997) finds that individualism and masculinity dimensions are the most relevant for top management team performance, and, consequently, for firm performance. We do not find that the differences in power distance and uncertainty avoidance among members in corporate boards are significant in explaining firm performance.

5. Conclusion

In this paper, we examine the impact of cultural diversity in corporate boards of directors on firm performance. We construct a measure of cultural diversity by calculating the centroid of cultural distances between each director using Hofstede's cultural framework. We find that cultural diversity in boards negatively affects firm performance (measured with Tobin's Q and ROA), indicating that the frictions imposed by cultural diversity outweigh the potential advantages. We conduct a range of tests to assess the robustness of our results. The results hold after controlling for potential endogeneity using a dynamic specification of lagged cultural diversity on current performance, and by implementing an instrumental variables approach. The results are further robust to a wide range of board and firm characteristics, including various measures of 'foreignness' of the board (i.e. presence on the board of foreigners and

representatives of various nationalities) and ‘foreignness’ of the firm (i.e. a firm’s presence in foreign product markets and foreign financial markets). Furthermore, we find that not all firms are affected equally by cultural diversity. The negative impact of cultural diversity is mitigated by the complexity of the firm and the size of the firm’s foreign sales and foreign operations. Finally, we find that not all aspects of cultural differences are equally important and that it is mainly the diversity in individualism and masculinity that affects the effectiveness of boards of directors.

Cultural diversity in modern boardrooms is a hot topic. In discussions about the economic value of cultural diversity, practitioners rarely acknowledge “where diversity goes awry” (see Manzoni et al., 2010). Our study uncovers the potential of employing culture measures in corporate finance and highlights the considerable explanatory power of sophisticated cultural diversity measures. We contribute to the discussion with the empirical finding that cultural diversity in boards is economically important, highlighting the considerable explanatory power of more refined cultural diversity measures. Our results suggest that realizing the positive effects of cultural diversity on corporate boards, however, is not straightforward. The relevance both of foreign directors’ knowledge and experience to the firm’s needs seems to be the key to making cultural diversity an asset for firms. But unlocking the potential of cultural diversity might also require dealing with its disruptive, negative consequences through initiatives that improve communication and promote group integration on boards (see, e.g. Nederveen Pieterse et al., 2013, or for a practitioners’ perspective, Manzoni et al., 2010). For practical purposes, our results provide a warning about romanticizing cultural diversity, as it negatively affects firm performance and highlights the need for selecting board members on the basis of their expertise and relation with foreign operations.

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Table 1. Number of Directors from each Country by Year

Nationality	2002	2004	2006	2008	2010	2012	Total	% Total
Australia	16	16	21	22	25	31	131	1.19%
Austria	1	1	1	3	3	7	16	0.14%
Belgium	5	5	6	7	6	7	36	0.33%
Brazil	1	2	1	1	1	2	8	0.07%
Canada	7	10	9	13	20	23	82	0.74%
Chile	3	5	7	7	6	5	33	0.30%
China	1	2	1	1	1	1	7	0.06%
Colombia	0	0	1	1	1	1	4	0.04%
Czech Republic	1	0	0	0	0	2	3	0.03%
Denmark	0	0	4	2	4	4	14	0.13%
Finland	0	0	2	2	1	1	6	0.05%
France	22	25	26	30	31	35	169	1.53%
Germany	17	15	19	34	22	26	133	1.20%
Ghana	1	0	0	0	1	1	3	0.03%
Greece	3	4	6	5	4	4	26	0.24%
Hong Kong	1	1	1	1	0	0	4	0.04%
India	1	4	9	7	11	15	47	0.43%
Indonesia	0	0	0	0	0	4	4	0.04%
Ireland	23	27	31	26	26	28	161	1.46%
Israel	1	1	4	4	2	1	13	0.12%
Italy	5	5	5	4	5	10	34	0.31%
Jordan	0	0	3	4	4	4	15	0.14%
Kazakhstan	0	0	3	3	4	4	14	0.13%
Kenya	0	0	0	0	2	4	6	0.05%
Korea	0	0	1	0	0	0	1	0.01%
Malaysia	3	2	2	3	2	2	14	0.13%
Mexico	0	0	0	5	4	6	15	0.14%
Netherlands	17	16	24	35	32	35	159	1.44%
New Zealand	2	2	0	3	7	8	22	0.20%
Nigeria	0	0	2	3	2	1	8	0.07%
Norway	0	1	3	2	3	2	11	0.10%
Pakistan	0	1	1	0	1	1	4	0.04%
Peru	0	0	2	1	2	2	7	0.06%
Philippines	0	0	1	1	1	1	4	0.04%
Poland	0	0	0	1	0	0	1	0.01%
Portugal	1	1	1	1	2	3	9	0.08%
Russian Federation	2	2	3	4	1	8	20	0.18%
Singapore	5	5	4	5	5	5	29	0.26%
South Africa	22	17	20	20	26	29	134	1.21%
Spain	0	3	5	8	7	5	28	0.25%
Sweden	14	13	14	11	14	16	82	0.74%
Switzerland	2	2	2	8	8	8	30	0.27%
Turkey	1	1	1	0	0	0	3	0.03%
Ukraine	0	0	0	2	2	3	7	0.06%
United Arab Emirates	1	1	2	3	3	4	14	0.13%
United Kingdom	1,192	1,373	1,479	1,560	1,613	1,620	8,837	79.94%
United states of America	96	111	132	145	135	158	777	7.03%
Total	1,467	1,674	1,859	1,998	2,050	2,137	11,185	
% of foreign directors	18.75%	17.98%	20.44%	21.92%	21.32%	24.19%	20.99%	

Note: This table reports the number of directors from different countries by year. Data are reported biannually for the years 2002-2012. ‘% Total’ column reports the percentage of directors coming from a particular country.

Table 2. Characteristics of Domestic versus Foreign Directors

Nationality	Gender (Male)	Directors' Age	Directors' Independence
All Directors	91.10%	55.31	52.67%
UK	92.20%	54.99	51.48%
Foreign	86.93%	56.53	57.16%
Difference	-5.28%***	1.54***	5.68%***

Note: This table reports differences in Gender, Age and Independence for the UK directors versus foreign (non-UK) directors. Gender (Male) is the percentage of males in the total number of directors. Directors' Age is the average age of directors in years. Directors' Independence is the percentage of independent directors in the total number of directors. The last row of the table reports the differences in characteristics between foreign versus UK directors and their statistical significance based on a t-test. *** indicates significance at the 1% level.

Table 3. Foreign Directors and Nationalities in Boards

	2002	2004	2006	2008	2010	2012	Total
Total # of firms	173	192	214	229	238	244	1,290
% of Firms with Foreign Directors	56.65%	54.17%	56.81%	62.01%	62.18%	66.80%	60.20%
<i>Panel A: Number of Foreign Directors on the Board</i>							
0	75	88	92	87	90	81	513
1	34	29	33	39	53	52	240
2	25	29	30	38	29	34	185
3	13	17	15	16	18	18	97
4	10	9	15	14	16	17	81
5	1	10	14	15	12	18	70
6	6	1	5	6	9	7	34
7	4	5	5	7	5	6	32
8	3	2	1	6	1	4	17
9	1	1	2	0	1	3	8
10	1	0	1	0	2	2	6
11	0	1	1	1	2	2	7
<i>Panel B: Number of Nationalities Represented on the Board</i>							
0	75	88	92	87	90	81	513
1	53	50	55	60	67	74	359
2	26	29	36	43	40	38	212
3	14	18	16	21	20	23	112
4	4	4	11	13	15	17	64
5	0	2	3	4	4	8	22
6	1	1	1	0	2	1	6
7	0	0	0	0	0	2	2

Note: This table reports the distribution of firm-year observations biannually for the sample period 2002-2012. Panel A reports the number of firms with a particular number of foreign directors on the board. Panel B reports the number of firms with a particular number of different nationalities on the board.

Table 4. Firm-level Characteristics of Boards

	CD BOARD	Board Size	# of Foreign Directors	Gender (Male)	Board Independence	Avr. Directors' Age	Directors' Age Range	CEO/Chairman duality
<i>Panel A. Summary Statistics</i>								
Mean	0.5148	8.67	1.82	91.41%	51.81%	55.11	24.18	8.91%
Median	0.2222	8.00	1.00	92.31%	50.00%	55.27	23.00	0.0
Min	0.0	2.00	0.0	40.00%	0.0%	39.00	3.00	0.0
Max	3.3603	19.0	11.0	100.0%	100.0%	70.33	50.00	100.0%
Firms								
with FDs	0.8546	9.37	3.02	90.82%	53.74%	55.51	23.18	10.04%
without FDs	0.0	7.60	0.0	92.30%	48.90%	54.52	24.58	7.21%
<i>Difference</i>	<i>0.855***</i>	<i>1.77***</i>	<i>3.02***</i>	<i>-</i>	<i>4.84%***</i>	<i>0.99***</i>	<i>-1.40**</i>	<i>2.85%*</i>
<i>Panel B. Average Value By Year</i>								
2002	0.4416	8.48	1.58	95.06%	44.74%	53.51	25.00	9.83%
2004	0.4284	8.72	1.57	94.13%	46.24%	54.05	24.98	10.94%
2006	0.5022	8.69	1.78	91.68%	50.52%	54.50	24.50	9.81%
2008	0.5426	8.72	1.92	91.49%	52.55%	55.14	24.38	9.61%
2010	0.5341	8.61	1.84	90.95%	55.47%	56.06	23.50	7.56%
2012	0.6007	8.76	2.12	86.82%	58.10%	56.68	23.18	6.56%

Note: Panel A of the table reports summary statistics of firm-level characteristics of boards. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Panel A also reports means separately for firms that have foreign directors on the board (with FDs) and firms that do not have foreign directors on the board (without FDs) and the differences in the means and their statistical significance based on a t-test. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level. Panel B reports average values of firm-level characteristics of boards by year.

Table 5. Summary Statistics: Firm Performance and Firm Characteristics

Variable	Mean	Median	Min	Max	Mean for sub-samples		
					Firms with FDs	Firms without FDs	Difference
<i>Panel A. Firm performance</i>							
Tobin's Q	1.97	1.57	0.65	8.29	1.99	1.95	0.04
ROA	11.05	9.60	-14.02	38.46	10.77	11.49	-0.73
<i>Panel B. Firm Characteristics</i>							
Firm size	4,752.3	976.2	9	111,714.9	7,170.1	1,209.6	5,940.5***
Leverage	0.23	0.21	0	1.33	0.229	0.234	-0.01
Firm age	69.28	48.0	0	297.0	74.24	61.77	12.47***
Firm complexity	3.11	3.00	1	10	3.32	2.81	0.51***
Return volatility	2.25	1.90	0.61	10.79	2.26	2.24	0.02
Sales growth	0.11	0.08	-0.42	1.05	0.114	0.104	0.01

Note: This table reports summary statistics of firm performance and firm characteristics. Panel A of the table reports summary statistics of firm performance measures and Panel B reports summary statistics of firm characteristics. Panel A and panel B also report means separately for firms that have foreign directors on the board (Firms with FDs) and firms that do not have foreign directors on the board (Firms without FDs) and the differences in the means and their statistical significance based on a t-test. All variables are defined in Appendix A. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 6. Cultural Diversity and Firm Performance

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
CD BOARD	-0.23*** (-2.81)	-0.21** (-2.46)	-1.57*** (-2.62)	-1.45** (-2.42)
<i>Board characteristics</i>				
Board size		-0.43* (-1.74)		-2.01 (-1.26)
Gender (male)		-0.29 (-0.52)		2.62 (0.65)
Board independence		-0.12 (-0.31)		-2.23 (-0.99)
Directors' age range		0.16 (0.98)		0.81 (0.59)
Chairman/CEO duality		0.13 (0.65)		0.05 (0.04)
<i>Firm characteristics</i>				
Firm size	0.10** (2.11)	0.14** (2.58)	0.76** (2.31)	1.04*** (2.84)
Leverage	-0.60 (-1.50)	-0.54 (-1.39)	-1.44 (-0.49)	-1.01 (-0.35)
Firm age	-0.15** (-2.54)	-0.15** (-2.44)	-0.28 (-0.72)	-0.21 (-0.51)
Firm complexity	-0.20** (-2.36)	-0.19** (-2.19)	-2.04*** (-3.25)	-1.97*** (-3.11)
Return volatility	-0.06 (-0.98)	-0.05 (-0.81)	-0.96** (-2.57)	-0.89** (-2.35)
Sales growth	0.73*** (3.45)	0.69*** (3.23)	5.21*** (2.79)	4.80** (2.59)
Constant	2.10*** (4.32)	2.49** (1.49)	14.31*** (4.00)	11.94 (1.55)
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200
R-squared	0.18	0.18	0.11	0.11

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Standard errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 7. Tobin's Q & ROA: Dynamic Specification

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
CD BOARD _{t-2}	-0.18** (-2.38)	-0.20*** (-2.86)	-1.79** (-2.29)	-0.92 (-1.57)
Firm Performance _{t-2}		0.52*** (8.31)		0.46*** (8.02)
<i>Board characteristics</i>				
Board size	-0.52* (-1.96)	-0.37* (-1.86)	-1.49 (-0.85)	-1.09 (-0.86)
Gender (male)	-0.58 (-0.93)	-0.23 (-0.53)	0.86 (0.19)	1.40 (0.42)
Board independence	-0.20 (-0.47)	-0.13 (-0.38)	-1.07 (-0.39)	-0.25 (-0.13)
Directors' age range	0.13 (0.77)	0.04 (0.31)	-0.28 (-0.21)	-0.65 (-0.75)
CEO/Chairman duality	0.30 (1.04)	0.05 (0.28)	1.46 (0.84)	1.00 (0.86)
<i>Firm characteristics</i>				
Firm size	0.09 (1.55)	0.10** (2.01)	0.97** (2.24)	0.57* (1.95)
Leverage	-0.34 (-0.73)	-0.30 (-1.06)	0.61 (0.16)	0.19 (0.08)
Firm age	-0.14** (-2.29)	-0.03 (-0.62)	-0.36 (-0.76)	-0.17 (-0.52)
Firm complexity	-0.19** (-2.18)	-0.08 (-1.40)	-1.81*** (-2.73)	-0.97* (-1.88)
Return volatility	-0.18*** (-2.89)	-0.10* (-1.82)	-0.99** (-2.17)	-0.93** (-2.39)
Sales growth	0.62*** (2.98)	0.12 (0.57)	4.58** (2.09)	4.93** (2.53)
Constant	4.31*** (3.76)	2.36*** (2.89)	17.72** (2.01)	12.10** (2.13)
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	780	765	780	779
R-squared	0.20	0.42	0.11	0.35

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Standards errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 8. Instrumental Variables Regressions

	First Stage	Second Stage	
	CD BOARD	Tobin's Q	ROA
	(1)	(2)	(3)
<i><u>Instrumental variables</u></i>			
UK small town	-0.22*** (-7.25)		
Directors' average age	0.94*** (3.69)		
CD BOARD		-0.58** (-2.11)	-3.45* (-1.92)
<i><u>Board characteristics</u></i>			
Board size	0.30*** (3.93)	-0.32 (-1.59)	-1.41 (-1.17)
Gender (male)	0.08 (0.46)	-0.25 (-0.61)	2.87 (1.05)
Board independence	0.19* (1.62)	-0.04 (-0.16)	-1.81 (-1.26)
Directors' age range	0.03 (0.40)	0.18* (1.67)	0.92 (1.10)
CEO/Chairman duality	-0.08 (-1.58)	0.12 (0.94)	-0.03 (-0.04)
<i><u>Firm characteristics</u></i>			
Firm size	0.07*** (4.99)	0.18*** (3.77)	1.24*** (4.06)
Leverage	0.11 (1.24)	-0.50* (-1.76)	-0.82 (-0.42)
Firm age	-0.06*** (-3.58)	-0.17*** (-4.33)	-0.32 (-1.29)
Firm complexity	-0.07*** (-2.61)	-0.21*** (-3.74)	-2.09*** (-5.12)
Return volatility	0.04** (2.08)	-0.03 (-0.49)	-0.79** (-2.35)
Sales growth	0.14 (1.56)	0.73*** (3.43)	5.03*** (3.11)
Constant	-3.91*** (-3.84)	2.29*** (3.29)	10.87** (2.26)
Industry fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
Observations	1,200	1,200	1,200
R-squared	0.30	0.16	0.09
Hausman-Wu $\chi^2(1)$ (p-value)		1.989 (0.1584)	1.2734 (0.2591)
Sargan $\chi^2(1)$ (p-value)		0.7241 (0.3948)	1.5801 (0.2087)

Note: This table reports instrumental variables regression estimation results. Column (1) reports the first-stage results of the 2SLS regressions with CD BOARD as the dependent variable. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Columns (2) and (3) report the second-stage results from 2SLS regressions. Standards errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 9. Alternative Measures of ‘Foreignness’ of Board and Firm

	Tobin's Q									ROA									
	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8)	(1.9)	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)	(2.8)	(2.9)	
<i>Panel A. 'Foreignness' of Board</i>																			
Foreign directors share		-1.10*** (-2.96)	-0.56 (-1.06)								-2.07 (-0.81)	1.85 (0.58)							
Nationalities ratio				-1.10* (-1.74)	0.29 (0.30)								-5.15 (-1.21)	1.28 (0.22)					
FID dummy						-0.19 (-1.14)	-0.06 (-0.37)								-2.43** (-1.97)	-1.92 (-1.56)			
FID share								-1.16** (-2.19)	-0.37 (-0.57)									-4.08 (-0.90)	-0.02 (-0.00)
CD BOARD	-0.37*** (-2.92)		-0.28* (-1.66)		-0.40** (-2.14)		-0.36*** (-2.75)		-0.33** (-2.24)	-1.71** (-2.17)		-2.01** (-2.10)		-1.86* (-1.74)		-1.42* (-1.79)		-1.71* (-1.95)	
Control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Industry FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Year FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Observations	714	714	714	714	714	714	714	714	714	714	714	714	714	714	714	714	714	714	
R-squared	0.18	0.17	0.18	0.16	0.18	0.15	0.18	0.16	0.18	0.15	0.13	0.15	0.14	0.15	0.14	0.15	0.13	0.15	
<i>Panel B. 'Foreignness' of Firm</i>																			
Foreign sales		-0.00 (-1.31)	-0.00 (-0.82)								-0.01 (-0.54)	0.00 (0.07)							
Foreign assets				-0.66*** (-3.45)	-0.60*** (-3.18)								-2.99** (-2.37)	-3.58*** (-2.69)					
NYSE listing						0.13 (0.59)	0.17 (0.73)								2.65* (1.93)	2.91** (2.10)			
Foreign listing								-0.06 (-0.43)	-0.03 (-0.21)									-0.05 (-0.06)	0.18 (0.18)
CD BOARD			-0.18** (-2.24)		-0.14* (-1.79)		-0.21** (-2.47)		-0.20** (-2.40)			-1.46** (-2.40)		-1.36** (-2.25)		-1.53*** (-2.63)		-1.47** (-2.52)	
Control variables		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES	YES	YES	YES	YES	YES	
Industry FEs		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES	YES	YES	YES	YES	YES	
Year FEs		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES	YES	YES	YES	YES	YES	
Observations		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	
R-squared		0.18	0.19	0.20	0.20	0.18	0.19	0.18	0.19		0.10	0.11	0.11	0.12	0.11	0.12	0.10	0.11	

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Standards errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 10. Cultural Diversity, Firm Performance and Firm's Operations

	Tobin's Q		ROA	
<i>Panel A. By Firm Complexity</i>				
	# of business segments <=4	# of business segments >4	# of business segments <=4	# of business segments >4
CD BOARD	-0.22** (-2.42)	0.23 (0.88)	-1.31* (-1.94)	-1.69 (-1.61)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	955	273	955	273
R-squared	0.20	0.17	0.09	0.23
<i>Panel B. By Foreign Sales</i>				
	foreign sales <=75.87%	foreign sales >75.87%	foreign sales <=75.87%	foreign sales >75.87%
CD BOARD	-0.21** (-2.11)	-0.03 (-0.29)	-1.59** (-2.37)	0.09 (0.09)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	892	308	892	308
R-squared	0.20	0.32	0.13	0.22
<i>Panel C. By Foreign Assets</i>				
	foreign assets <=51.02%	foreign assets >51.02%	foreign assets <=51.02%	foreign assets >51.02%
CD BOARD	-0.23** (-2.15)	-0.08 (-0.83)	-1.52** (-2.23)	-0.76 (-0.92)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	893	307	893	307
R-squared	0.20	0.28	0.13	0.22

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Standards errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 11. Alternative Cultural Frameworks

<i>Panel A: Tobin's Q</i>						
	Tang & Koveos		GLOBE		Schwartz	
	All firms	Firms with FDs	All firms	Firms with FDs	All firms	Firms with FDs
CD BOARD	-0.21** (-2.40)	-0.43*** (-2.86)	-0.12* (-1.70)	-0.32*** (-2.76)	-0.33 (-1.24)	-0.95** (-2.24)
Control variables	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
Observations	1,155	669	1,123	637	1,081	595
R-squared	0.19	0.18	0.19	0.17	0.19	0.17

<i>Panel B: ROA</i>						
	Tang & Koveos		GLOBE		Schwartz	
	All firms	Firms with FDs	All firms	Firms with FDs	All firms	Firms with FDs
CD BOARD	-1.67*** (-2.63)	-2.05** (-2.11)	-1.08** (-2.27)	-1.44** (-2.00)	-2.89* (-1.73)	-4.48* (-1.90)
Control variables	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
Observations	1,155	669	1,123	637	1,081	595
R-squared	0.11	0.14	0.11	0.12	0.11	0.14

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2). All other variables are defined in Appendix A. Standards errors are clustered at firm level and t-statistics are reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Table 12. Individual Culture Scores

<i>Panel A: Tobin's Q</i>								
	All firms				Firms with FDs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CD BOARD (IDV)	-0.19*** (-2.54)				-0.40*** (-3.06)			
CD BOARD (MAS)		-0.15* (-1.91)				-0.30*** (-2.77)		
CD BOARD (PDI)			-0.09 (-1.10)				-0.20* (-1.73)	
CD BOARD (UAI)				-0.02 (-0.32)				-0.06 (-0.67)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200	714	714	714	714
R-squared	0.19	0.18	0.18	0.18	0.18	0.17	0.16	0.15
<i>Panel B: ROA</i>								
	All firms				Firms with FDs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CD BOARD (IDV)	-1.45*** (-2.75)				-1.88** (-2.39)			
CD BOARD (MAS)		-1.15** (-2.24)				-1.49** (-2.24)		
CD BOARD (PDI)			-0.84 (-1.48)				-0.68 (-1.010)	
CD BOARD (UAI)				-0.63 (-1.19)				-0.43 (-0.65)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200	714	714	714	714
R-squared	0.12	0.11	0.11	0.11	0.15	0.15	0.14	0.14

Note: This table reports OLS regression estimation results of firm performance measures on board and firm characteristics. CD BOARD is the centroid measure of cultural board diversity computed as in Equation (2) (see section 2.2); the cultural distance between each pair of directors is the difference in one of the following individual cultural dimensions: individualism (IDV), masculinity (MAS), power distance (PDI) and uncertainty avoidance (UAI). All other variables are defined in Appendix A. Standards errors are clustered at firm level and t-statistics is reported in parentheses. *** indicates significance at the 1% level; ** at the 5% level; * at the 10% level.

Appendix A. Variable definitions and data sources

Variable	Source	Definition
<i>Firm Performance</i>		
Tobin's Q	Calculated based on data from Datastream	Market value of assets over book value of assets: [(Book value of total assets - Book value of equity + Market value of equity)/Book value of total assets] - all components measured at the end of the calendar year; winsorized at 1% at each end of the distribution
ROA	Calculated based on data from Datastream	Return on assets (in %): (Operating income / Book value of total assets); all calendar-year-end values; winsorized at 1% at each end of the distribution
<i>Firm Characteristics</i>		
Firm size	Datastream	Market value measured at the end of the calendar year (in GBP millions); log-transformed
Leverage	Calculated based on data from Datastream	Total debt scaled by total assets; calendar-year-end values
Firm age	Datastream	The number of years since the company was established; log-transformed
Firm complexity	Datastream	The number of business segments (i.e. product lines); log-transformed
Return volatility	Calculated based on data from Datastream	The standard deviation of daily stock returns during a calendar year (in %)
Sales growth	Calculated based on data from Datastream	The annual growth rate of the firm's total sales (in %); winsorized at 1% at each end of the distribution
<i>Cultural diversity</i>		
CD BOARD		The centroid of cultural distances between each pair of board members, cultural distances are based on value scores from the Hofstede culture framework, or alternative culture frameworks
<i>Board characteristics</i>		
Directors' age range	Orbis, annual reports	The age difference (in years) between the oldest and youngest members of the board; log-transformed
Average age	Orbis, annual reports	The average age (in years) of all directors; log-transformed
Gender (male)	Orbis, annual reports	The proportion of male directors (in %)
Board size	Orbis, annual reports	The number of directors sitting on the board; log-transformed
CEO/Chairman duality	Orbis, annual reports	An indicator variable that equals one if the CEO is also the Chairman of the board of directors, and zero otherwise
Board independence	Orbis, annual reports	The proportion of independent directors (in %); independence encompasses formally independent directors as declared in company documents, and directors in a non-executive role, with no ties to the company's management
<i>Measures of "foreignness"</i>		
Foreign directors' share	Orbis, annual reports	The proportion of directors that have a foreign nationality, i.e. the proportion of non-UK directors on the board
Nationalities ratio	Orbis, annual reports	The number of different nationalities represented on the board divided by the total number of board members
FID dummy	Orbis, annual reports	An indicator variable that equals one if the firm has at least one foreign independent director on the board, and zero otherwise
FID share	Orbis, annual reports	The proportion of foreign (non-UK) independent directors on the board

Foreign sales	Datastream	A firm's annual foreign sales as a percentage of total sales
Foreign assets	Datastream	A firm's annual foreign assets as a percentage of total assets
NYSE listing	Datastream	An indicator variable that equals one if a firm is listed on the New York Stock Exchange (NYSE), and zero otherwise
Foreign listing	Datastream	An indicator variable that equals one if a firm is listed on a stock exchange outside of the UK, and zero otherwise

Note: The table contains definitions for all variables employed in our empirical analysis and principal sources of data used to compute their values.