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Does Board Cultural Diversity Contributed by Foreign Directors Improve Firm Performance? Evidence from Australia

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Abstract: Australian firms hire an increasing number of foreign directors who bring various cultural perspectives to their boards' conversations. We evaluate the effect of board cultural diversity contributed by foreign directors on firm performance for a sample of Australian companies, constituents of ASX200. We employ Hofstede's six cultural dimensions to estimate board cultural diversity. We document a positive relationship between board cultural diversity and firm performance as measured by Tobin's q and ROA after controlling for various board and firm characteristics. This suggests that more culturally diverse boards may bring benefits to their firms that outweigh the potential costs of conflict and miscommunication caused by cultural differences. Our finding holds after controlling for firm and time fixed effects, implementing an instrumental variable approach, controlling for a firm's foreign operations and presence, and using alternative cultural diversity measures. We find that not all aspects of cultural differences matter, and it is the diversity in masculinity, uncertainty avoidance, and long-term orientation dimensions that positively determine firm performance. This finding on the positive effect of board cultural diversity for Australian firms contrasts with the evidence from other countries, highlighting that the value of cultural diversity can differ across countries and over time.

Keywords: cultural diversity; nationality diversity; foreign directors; board of directors; firm performance

JEL Classification: G3

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1. Introduction

With the increased globalization and internationalization of firms, corporate boards of directors have become increasingly international. Board diversity in general and more recently board cultural diversity, have been a focus of companies, investors, and regulators globally and in Australia (Board Diversity Index 2021).[1] Having foreign directors on the board can bring many benefits to firms, including broader expertise, experiences from their home countries, and different cultural values and perspectives. Arguably, board cultural diversity contributed by foreign directors can enhance board decision-making by facilitating broader discussions and innovative solutions to problems the firm is facing, ultimately improving the firm's performance. However, cultural differences among directors from different countries can create communication frictions and conflicts as well. The overall effect of board cultural diversity on firm performance is an open question, with limited empirical evidence on the issue to date. In this study, we examine the net benefits of board cultural diversity based on directors' nationality as manifested by its impact on the firm performance of Australian firms.

We evaluate the effects of board cultural diversity for a sample of Australian firms, constituents of ASX200. Australia has a sizable economy[2] integrated into the global economy and a relatively high and rapidly increasing share of foreign directors on corporate boards compared to the US and UK (Masulis et al. 2012; Frijns et al. 2016; Board Diversity Index

2021). While several studies report that board composition significantly impacts corporate outcomes in Australia (e.g., Ali et al. 2014; Gray and Nowland 2017; Miglani et al. 2020), no study thus far has examined the impact of foreign directors or board cultural diversity in an Australian context. The impact on board cultural diversity may vary across different countries because of significant economic, legal, institutional, and cultural differences and social preferences that exist across countries.

The existing international evidence on the impact of a board of directors with foreign directors on firm performance is mixed. Masulis et al. (2012) found that US firms with foreign directors on their boards performed worse that those without foreign directors. Oxelheim and Randoy (2003) reported significantly higher valuations for Norwegian and Swedish firms with Anglo-American nationals on their board of directors. Choi et al. (2007) documented the positive impact of foreign directors on the financial performance of Korean firms. Estélyi and Nisar (2016) reported that board nationality diversity (measured with a presence of a foreign director on the board) was positively related to the operating performance of British firms. In contrast, Frijns et al. (2016) evaluated the impact of cultural diversity on boards contributed by foreign directors and found a negative relationship between board cultural diversity and firm performance for a sample of large British firms.

We follow Frijns et al. (2016) and focus on cultural diversity among directors, a largely overlooked type of board diversity compared to board gender, ethnicity, or age diversity. Cultural diversity had been largely ignored in existing studies explaining the impact of board diversity, or has been measured using proxies that do not fully capture the cultural differences among directors. A common practice in the literature to measure the effect of foreign directors on boards is to estimate the effect of the share of foreign directors on the board (Darmadi 2011; Rose 2007; García-Meca et al. 2015; Estélyi and Nisar 2016). This measure considers merely the presence of directors of different nationalities, ignoring the cultural differences among directors from different countries.[3] In contrast, we estimate a measure of board diversity that captures cultural differences among directors, using the methodology of Frijns et al. (2016).

A board of directors is a crucial governance body in a firm. According to the resource dependence theory, directors are a valuable resource and source of information, providing advice and counsel for organizational success (Pfeffer and Salancik 2003; Hillman et al. 2002). Numerous studies have examined what characteristics make boards more effective in performing their key functions and improving corporate outcomes. The consensus in the literature is that board composition is vital to effectiveness, which in turn directly or indirectly determines firm performance (Hermalin and Weisbach 1991; Kiel and Nicholson 2003; Vafeas and Vlittis 2019).[4] Board diversity has been reported to affect directors' collaboration, strategic decision-making, and corporate outcomes (Anderson et al. 2011; Giannetti and Zhao 2019). From a theoretical perspective, diversity in the boardroom brings different views and broadens conversations, leading to innovative resolutions that can improve firm performance. Academic research has focused on the effects of the demographic diversity of corporate directors, particularly gender and ethnic diversity, reflecting the corporate shift toward the inclusion of women and ethnic minorities, a critical trend in corporate boards over the past two decades (Hillman et al. 2002). Extensive literature provides empirical evidence on the effect of gender diversity on firm performance, which is inconclusive.[5]

Board cultural diversity, which is the focus of this study, has thus far been underexamined in empirical financial research. Based on the upper echelons theory of Hambrick and Mason (1984), directors' characteristics and traits have bearings on corporate outcomes. Relying on this theory, we argue that various cultural backgrounds of foreign directors affect a board's functioning, decision-making, and ultimately its firm's performance. Foreign directors bring various norms and values shaped by their different cultural backgrounds, stimulating broader discussion and enabling information elaboration in the boardroom (Nederveen Pieterse et al. 2013). Watson et al. (1993) document that more culturally diverse groups generate a wider range of solutions to problems. The above evidence supports the cognitive resource diversity theory, according to which diversity improves a group's

capability to perform because members of a diverse group contribute a wider range of perspectives and abilities to find solutions and solve problems (Harjoto et al. 2018). Therefore, culturally diverse boards can perform their functions more effectively, leading to improved corporate performance.

Cultural diversity in corporate boards can carry costs in the form of communication difficulties and potential conflicts (Anderson et al. 2011; Adams et al. 2015; Frijns et al. 2016). According to Milliken and Martins (1996), a relationship conflict is more likely to exist when directors have diverse cultural backgrounds. Studies have suggested that relationship conflict significantly impacts group commitment and decision quality due to increased tension and conflict within the board and less focus on resolving the cognitive problem (De Wit et al. 2012; Jehn and Mannix 2001). Furthermore, Giannetti and Zhao (2019) found that board cultural diversity can make the decision-making process more erratic, bringing both benefits and costs to the firm.[6] They found that firms with culturally diverse boards tend to have less persistent and conforming strategies, making them experiment more, innovate more, and have more patents. At the same time, these firms have more board meetings and experience higher director turnover unrelated to performance due to frictions in the erratic decision-making process. To summarize, board cultural diversity brings both benefits and costs to the firm. The net impact of board cultural diversity can be either positive or negative depending on the magnitude of the costs and benefits brought to the firm by culturally diverse directors. In this study, we contribute to the literature by examining the net benefits of board cultural diversity in Australia.

We estimate board cultural diversity following the methodology of Frijns et al. (2016). We quantify the cultural background of directors based on their nationality using Hofstede's six-dimensional cultural framework (Hofstede 2001).[7] First, we use Hofstede's scores to estimate cultural distances between each pair of directors on a board. We then average the cultural distances to obtain our measure of the cultural diversity of the board. We examine the relationship between cultural diversity in corporate boards and firm performance measured by Tobin's q, a market-based performance measure, and return on assets (ROA), an accounting-based performance measure. Our sample consists of large Australian companies, the constituents of ASX200, accounting for 84% of Australia's total stock market capitalization, and covers the period from 2004 to 2018. In our empirical analysis, we employ a panel regression model, using firm and year fixed effects to control for time-invariant firm-specific and time-specific factors.

In our Australian sample, we find that cultural diversity in corporate boards has a significant positive association with firm performance, in line with cognitive resource diversity theory and resource dependence theory of corporate boards. The finding suggests that culturally diverse boards in Australia may provide valuable resources to firms, and that the magnitude of the benefits outweighs the potential costs of relationship conflicts that can arise from cultural differences. Our finding remains robust when we control for various board and firm characteristics, employ an instrumental variable analysis to account for potential endogeneity, and use board cultural diversity measures estimated using the alternative cultural frameworks of Tang and Koveos (2008) and Schwartz (2006). The positive relationship between board cultural diversity and firm performance is economically significant. In our sample, firms in the 75th percentile of board cultural diversity (high board cultural diversity) have a Tobin's q of 2.05, which is 7% higher than the average Tobin's q and two times larger than the Tobin's q of 1.03 of firms in the 25th percentile of cultural diversity (low board cultural diversity).

To differentiate our study from studies that evaluate the impact of foreign directors on corporate boards, we control for the presence of foreign directors in the regression analysis. We show that board cultural diversity has a positive and significant relationship with firm performance after controlling for the percentage of directors and the number of nationalities on the board. This analysis shows that our board cultural diversity measure captures heterogeneity among directors beyond merely the presence of foreign nationals on boards that is a significant determinant of firm performance.

In addition, we examine how a firm's foreign operations and presence affect the value of board cultural diversity. It is likely that firms with a foreign presence hire more foreign directors, and a firm's foreign operations are likely to impact firm performance. To rule out the possibility that our finding is driven by a firm's foreign orientation, we control in the regression analysis for a firm's foreign sales and assets and listings on foreign stock exchanges (Masulis et al. 2012; Frijns et al. 2016). We find that board cultural diversity remains a significant and positive determinant of firm performance after controlling for these measures of a firm's foreign operations and presence.

Finally, we assess the importance of Hofstede's cultural dimensions separately, as not all aspects of cultural differences within a society have equal impacts in terms of synergy or disruption (Shenkar 2001). We find that the positive relationship of cultural diversity with firm performance is mainly driven by three cultural dimensions: masculinity–femininity, uncertainty avoidance, and long-term orientation.

Our study is related to the study of Frijns et al. (2016), which evaluated the impact of board cultural diversity on the performance of British firms. Frijns et al. (2016) estimated a measure of board cultural diversity using directors' cultural backgrounds based on their nationality, finding a negative relationship between board cultural diversity and firm performance. They suggested that, on average, the costs of board cultural diversity outweighed the benefits in their sample. We employ the methodology of Frijns et al. (2016); however, in contrast to their results, we document a positive relationship between board cultural diversity and firm performance for a sample of Australian firms. Overall, our findings support the argument of Frijns et al. (2016) that board cultural diversity has both pros and cons for firm performance. However, for our Australian sample, the benefits of cultural diversity potentially outweigh the costs, and firms with more culturally diverse boards tend to have better firm performance. Our findings highlight that the impact of board cultural diversity on corporate outcomes such as firm performance can vary across countries and times, calling for future research to investigate what can explain such variations in an international sample.

Our study makes several significant contributions. First, it contributes to the literature on the role of culture and cultural differences in corporate outcomes. In our study, we demonstrate the significant explanatory power of the measure of board cultural diversity of Frijns et al. (2016) for an Australian sample. The originality of this measure is that it captures cultural differences within groups of people (boards of directors, in our context). The difference between our finding for Australia and that of Frijns et al. (2016) for the UK highlights variations in the role of cultural diversity across countries and over time. More broadly, our evidence on the significance of cultural differences on boards adds to the literature evaluating how cross-country cultural differences affect corporate outcomes (e.g., Bryan et al. 2015; Burns et al. 2017; Urban 2019) and the literature on the importance of cultural background of top managers (e.g., Nguyen et al. 2018; Pan et al. 2017, 2020).

Second, our study contributes to the debate on the value of board diversity and its impact on corporate outcomes (Adams and Ferreira 2009; Anderson et al. 2011; Frijns et al. 2016; Giannetti and Zhao 2019). We add to the existing mixed evidence on the issue by reporting a positive relationship between board cultural diversity and firm performance in Australia.

Finally, we provide novel evidence on the importance of board composition for corporate outcomes in Australia. Existing Australian evidence shows that board gender diversity is positively related to firm performance (Bonn 2004), employee productivity (Ali et al. 2014) and stock liquidity (Ahmed and Ali 2017), corporate disclosure (Ahmed et al. 2017), and earnings quality (Strydom et al. 2017), and is negatively associated with the cost of debt (Pandey et al. 2020) and the probability of fraud (Capezio and Mavisakalyan 2016). Corporate performance of Australian firms has been related to board independence (Kiel and Nicholson 2003; Pham et al. 2011; Miglani et al. 2020) and the diversity of professional expertise of directors (Gray and Nowland 2017). However, to our knowledge, our study

is the first to examine the impact of foreigners on boards and the relationship between cultural diversity contributed by foreign directors and firm performance in Australia.

The rest of the paper is organized as follows. The next section provides details on the methodology used. Section 3 describes our sample and discusses director data and board and firm characteristics. Section 4 reports the estimation results. Finally, Section 5 discusses our findings and conclusions.

2. Methodology

2.1. Measuring Board Cultural Diversity

We measure board cultural diversity for each firm-year, using the metric of Frijns et al. (2016). Each director's cultural background is identified based on their nationality. Board cultural diversity is estimated by summing up the cultural distances between each pair of directors within the board and scaling by the number of directors on the board. Frijns et al. (2016) use four dimensions of Hofstede's framework, namely, individualism vs. collectivism, masculinity vs. femininity, power distance, and uncertainty avoidance, to calculate cultural distances between directors. We add to this approach by including in the calculation of board cultural diversity two more dimensions recently introduced by Hofstede (2001): long-term vs. short-term orientation and indulgence vs. restraint. Table A1 in Appendix A shows Hofstede's cultural scores by country. We employ the cultural scores to calculate the cultural distance between each pair of directors on the board using the formula of Frijns et al. (2016):

$$\text{Cultural\_distance}_{ij} = \sqrt{\sum_{k=1}^{6} \left\{ \frac{\left(I_{ki} - I_{kj}\right)^2}{V_k} \right\}}, \quad \text{given } i \neq j \tag{1}$$

where board cultural diversity$_{ij}$ is the cultural distance between directors (i, j), I_{ki} is the culture score on dimension k for director i, I_{kj} is the cultural score on dimension k for director j, and V_k is the in-sample variance of the score for the cultural dimension k.

Next, we use the estimated cultural distances for each pair of directors on the board to estimate the firm-level cultural diversity of the board using the formula of Frijns et al. (2016):

$$BCD_{ft} = \frac{\sum_{ij} \text{Cultural\_distance}_{ij,ft}}{n(n-1)/2} \tag{2}$$

where BCD_{ft} is the measure of the cultural diversity of the board of firm f in year t, and n is the number of board directors. The measure of board cultural diversity is scaled by the number board directors to normalize it for the board size.

2.2. Measuring Firm Performance

We use Tobin's q and return of assets (ROA) variables to measure firm performance, a common practice in the corporate finance literature (Bonn 2004; Rose 2007; Carter et al. 2010; Darmadi 2011). We calculate Tobin's q and ROA for each firm-year as follows:

$$Tobins\_q_{ft} = \frac{\left(BV\_TA_{ft} - BV\_TE_{ft} + MV\_TE_{ft}\right)}{BV\_TA_{ft}} \tag{3}$$

where BV_TA_{ft} is the book value of firm f's total asset in year t, BV_TE_{ft} is the book value of firm f's total equity in year t, and MV_TE_{ft} is the market value of firm f's total equity in year t.

$$ROA_{ft} = \frac{OI_{ft}}{BV\_TA_{ft}} \tag{4}$$

where OI_{ft} is the operating income of firm f in year t.

To mitigate the impact of outliers, we winsorize Tobin's q and ROA at the 1% at each end of the distribution.

2.3. Model

To estimate the relationship between board cultural diversity and firm performance, we employ panel regressions with fixed effects as follows:

$$\begin{aligned} Firm\ performance_{it} = {} & \alpha + \beta_1 Cultural\ Diversity_{it} + \beta_2 Gender\ Diversity_{it} + \beta_3 Age\ Diversiyy_{it} \\ & + \beta_4 Board\ indepeedence_{it} + \beta_5 Director\ age_{it} + \beta_6 Board\ size_{it} + \beta_7 Firm\ size_{it} + \beta_8 Sales\ growth_{it} \\ & + \beta_9 Leverage_{it} + \beta_{10} Firm\ age_{it} + \beta_{11} Firm\ complexity_{it} + \beta_{12} Return\ volatility_{it} + \eta_i + \eta_t + \varepsilon_{it}, \end{aligned} \quad (5)$$

where $Firm\ performance_{it}$ is the performance of firm i in year t, and is measured with Tobin's q or ROA defined in Section 2.2. $Cultural\ diversity_{it}$ is the measure of board cultural diversity defined in Section 2.1. In the model, we control for the effects of other board diversity types, board characteristics, and firm characteristics. Regarding board-level control variables, we control for board gender diversity ($Gender\ diversity_{it}$) and age diversity ($Age\ diversity_{it}$), board independence ($Board\ independence_{it}$), and board size ($Board\ size_{it}$), following studies on the effects of board composition on firm performance (Dalton et al. 1999; Bonn 2004; Frijns et al. 2016; Abdullah and Ismail 2013; Talavera et al. 2018). Regarding firm-level control variables, we control for firm size measured with market capitalization ($Firm\ size_{it}$), leverage ($Leverage_{it}$), firm age ($Firm\ age_{it}$), firm complexity as measured by the number of segments of the firm's operations ($Firm\ complexity_{it}$), firm risk as measured by stock return volatility ($Return\ volatility_{it}$) and sales growth ($Sales\ growth_{it}$) (Anderson et al. 2011; Frijns et al. 2016; Abdullah and Ismail 2013). Table A2 in Appendix A provides definitions of all control variables. We include firm fixed effects (η_t) to account for any time-invariant firm-specific factors related to the independent variable (Tobin's q and ROA) and board cultural diversity, which addresses potential endogenous concerns such as omitted variables bias. We include year fixed effects (η_t) to control for time-specific factors.

3. Data

3.1. Sample

To evaluate the net benefits of board cultural diversity in Australia, we obtained a sample of large Australian companies, constituents of the ASX200, accounting for 84% of Australia's total stock market capitalization from 2004 to 2018. To avoid a survivorship bias in our sample, we started with the lists of ASX 200 constituents from Thomson Reuters' Eikon at the end of each year from 2004 to 2018. As the ASX 200 composition changes over time, we evaluated a company's affiliation with the ASX200 at the end of each year. Our sample includes companies that have been part of the ASX200 index for at least five years, from 2004 to 2018. In total, 213 companies met this selection criterion. Next, using a common practice in corporate finance research, we excluded financial companies from our sample based on the Thomson Reuter Business Classification (25 companies).

We extracted the board composition data for the sample ASX200 companies from Thomson Reuters' Eikon and companies' annual reports. After dropping companies with unavailable board data (four companies), our final sample covered 184 companies for a total of 2267 firm-year observations.

3.2. Director-Level Data

From 2004 to 2018, the sample companies had 1864 unique directors from 46 countries, for 14,022 director-year observations. We collected the names, gender, age, nationality, and independence status of all directors. In addition to our main data source, Thomson Reuters' Eikon, we used company annual reports and online sources such as Bloomberg, Companies House, and LinkedIn to collect missing information manually.

Table A3 in Appendix A reports the distribution of the directors by country of nationality and by year. Australian directors constitute 67.6% of all directors and the second largest

group of directors is from the United Kingdom (10.6%), followed by directors from the United States (8.6%) and New Zealand (3.2%). The percentage of foreign (non-Australian) directors in the sample was around 30–32% from 2004 to 2013 and gradually increased to 39% in 2018.

3.3. Board Characteristics

We aggregated director characteristics at the firm level to examine the composition of corporate boards in Australia. First, we analyzed the presence of foreign directors on boards over time. Table 1 presents the total number of firms and the number and the percentage of firms with foreign directors by year. We observe that an increasing number of large Australian companies had at least one foreign director on their board, from 50.0% in 2004 to 90.7% in 2018. In 2018, only 13 out of 140 companies did not have foreign directors on their boards. Boards with one foreign director are most frequent during the sample period, and the largest number of foreign directors on a board is eight.

Table 1. Foreign directors on boards.

Year	Total N Firms	Firms with Foreign Directors		N Firms with X Foreign Directors								
		N	%	X = 0	X = 1	X = 2	X = 3	X = 4	X = 5	X = 6	X = 7	X = 8
2004	92	46	50.0%	46	37	8	1	0	0	0	0	0
2005	123	68	55.3%	55	49	16	3	0	0	0	0	0
2006	141	80	56.7%	61	49	26	4	1	0	0	0	0
2007	154	100	65.0%	54	65	24	9	2	0	0	0	0
2008	166	111	66.9%	55	59	35	15	0	2	0	0	0
2009	169	123	72.8%	46	56	40	19	6	2	0	0	0
2010	171	135	79.0%	36	56	46	20	7	6	0	0	0
2011	168	139	82.7%	29	46	41	25	12	12	2	1	0
2012	167	135	80.8%	32	48	38	24	13	9	3	0	0
2013	164	135	82.3%	29	43	41	29	13	8	1	0	0
2014	162	134	82.7%	28	37	44	27	16	8	1	1	0
2015	158	133	84.2%	25	40	31	34	9	14	4	1	0
2016	149	132	88.6%	17	43	41	23	12	10	2	1	0
2017	144	129	89.6%	15	46	33	23	20	6	0	0	1
2018	140	127	90.7%	13	39	44	15	18	9	1	0	1
Total	***2268***	***1727***	***76.1%***	***541***	***713***	***508***	***271***	***129***	***86***	***14***	***4***	***2***

The table reports the total number of firms, the number of firms with foreign directors on their boards, and the number of companies with a specific number of foreign directors on their boards.

Table 2 reports the mean, standard deviation, and correlations of the board and firm characteristics. Table 3 shows the changes in board diversity, including cultural, gender, and age diversity and board independence, over time.

Table 2. Summary statistics and correlations.

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Tobin's q	1.91	1.55	1.00												
(2) ROA	0.078	0.127	0.34 (0.00)	1.00											
(3) Cultural diversity	1.58	1.56	−0.06 (0.004)	−0.03 (0.21)	1.00										
(4) Gender diversity	0.092	0.147	0.02 (0.47)	0.04 (0.04)	0.04 (0.04)	1.00									
(5) Age diversity	14.60	10.42	−0.08 (0.00)	0.001 (0.95)	0.35 (0.00)	0.22 (0.00)	1.00								
(6) Board independence	0.685	0.237	0.10 (0.00)	0.06 (0.009)	−0.05 (0.02)	0.21 (0.00)	−0.01 (0.51)	1.00							
(7) Director age	58.47	5.13	−0.01 (0.63)	0.00 (0.99)	0.04 (0.07)	0.00 (0.98)	0.08 (0.00)	0.10 (0.00)	1.00						
(8) Board size	4.84	2.81	−0.15 (0.00)	−0.03 (0.18)	0.40 (0.00)	0.26 (0.00)	0.82 (0.00)	−0.04 (0.09)	0.16 (0.00)	1.00					
(9) Firm size ($ bln)	3.69	7.38	0.02 (0.45)	0.30 (0.00)	0.08 (0.00)	0.02 (0.29)	0.19 (0.00)	−0.05 (0.01)	0.03 (0.20)	0.24 (0.00)	1.00				
(10) Sales growth	0.015	0.022	−0.01 (0.73)	−0.02 (0.27)	−0.01 (0.50)	−0.03 (0.21)	−0.01 (0.77)	0.01 (0.77)	−0.03 (0.17)	−0.03 (0.10)	−0.03 (0.22)	1.00			
(11) Leverage	0.223	0.193	−0.17 (0.00)	−0.07 (0.002)	0.04 (0.08)	0.02 (0.44)	0.07 (0.001)	−0.06 (0.003)	0.09 (0.00)	0.11 (0.00)	0.18 (0.00)	0.03 (0.15)	1.00		
(12) Firm age	46.89	47.66	−0.13 (0.00)	0.06 (0.005)	0.09 (0.00)	0.06 (0.01)	0.09 (0.00)	−0.03 (0.13)	−0.04 (0.06)	0.17 (0.00)	0.26 (0.00)	−0.05 (0.03)	0.05 (0.04)	1.00	
(13) Firm complexity	2.75	1.89	−0.22 (0.00)	0.01 (0.49)	0.15 (0.00)	0.05 (0.02)	0.15 (0.00)	−0.02 (0.21)	0.09 (0.00)	0.22 (0.00)	0.29 (0.00)	−0.06 (0.009)	0.20 (0.00)	0.27 (0.00)	1.00
(14) Return volatility	0.330	0.932	0.02 (0.35)	0.02 (0.32)	−0.03 (0.21)	0.01 (0.76)	−0.06 (0.004)	0.02 (0.37)	−0.09 (0.00)	−0.06 (0.004)	0.03 (0.17)	−0.002 (0.94)	0.01 (0.74)	0.01 (0.81)	0.02 (0.42)

The table reports the mean and standard deviation (SD) of the board and firm characteristics variables and pairwise correlations, with *p*-values reported in parentheses. Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2). Table A2 in Appendix A defines the rest of the variables.

Table 3. Board diversity over time.

	N Foreign Directors	Cultural Diversity	Gender Diversity	Age Diversity	Board Independence
2004	0.61	0.56	0.028	5.38	0.501
2005	0.73	0.81	0.031	7.05	0.505
2006	0.83	0.97	0.036	8.54	0.510
2007	0.97	1.20	0.049	10.94	0.597
2008	1.11	1.30	0.046	14.94	0.62
2009	1.34	1.42	0.052	17.24	0.581
2010	1.56	1.67	0.066	19.57	0.602
2011	1.96	1.83	0.092	32.17	0.597
2012	1.86	1.74	0.109	20.46	0.618
2013	1.89	1.77	0.121	19.82	0.627
2014	1.99	1.85	0.121	19.92	0.641
2015	2.16	1.93	0.140	20.23	0.651
2016	2.09	1.97	0.171	19.96	0.661
2017	2.08	2.00	0.187	19.87	0.688
2018	2.16	2.05	0.219	18.85	0.687

The table shows the average number of foreign directors on a board and the mean values of board diversity by year. Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2). Table A2 in Appendix A defines the rest of the variables.

Consistent with Table 1, the average number of foreign directors on boards increased steadily over time, from 0.61 in 2004 to 2.16 in 2018 (Table 3). The primary explanatory variable, cultural diversity, has a mean of 1.58 (SD = 1.56) (Table 2). Consistent with the observed increase in the number of foreign directors, there is a significant and steady increase in board cultural diversity, from 0.56 in 2004 to its peak of 2.05 in 2018.

Board gender diversity in Australia is low (9.2% sample mean, SD = 0.147) compared to the documented average of 11.9% and 9.8% in the US and UK samples, respectively (Anderson et al. 2011; Frijns et al. 2016). However, with the increasing awareness of the gender gap on boards, the share of female directors on boards has climbed to 21.9% in 2018. The average age diversity, the range of directors' ages on a board, is 14.6 years (SD = 10.4).

It has increased substantially from 5.38 years in 2004 to 18.85 years in 2018, suggesting an increase in board age diversity. The average percentage of independent directors is 68.5% (SD = 0.237), increasing from 50.1% in 2004 to 68.7% in 2018. The average director age on a board is 58.47 years (SD = 5.13). Finally, on average, 4.84 directors sit on a board (SD = 2.81).

3.4. Firm Characteristics

The sample average Tobin's q is 1.91 (SD = 1.55) (Table 2). The sample average ROA is 7.8% (SD = 0.127). Tobin's q is negatively correlated with board cultural diversity ($\rho = -0.06$, $p < 0.01$), while the correlation of ROA with board cultural diversity is statistically insignificant.

Regarding the other firm characteristics, the average firm size is AUD 3.69 billion (SD = 7.38), average sales growth is 1.5% (SD = 0.022), average leverage is 22.3% (SD = 0.193), average firm age is 46.89 years (SD = 47.66), average firm complexity is 2.75 (SD = 1.89), and average return volatility is 33.0% (SD = 0.932).

4. Results

4.1. Board Cultural Diversity and Firm Performance: Main Results

To empirically examine the relationship between board cultural diversity and firm performance, we use panel regression analysis for two independent variables, both measures of firm performance: Tobin's q and ROA. We report the estimation results in Table 4, in columns 1 and 2 for Tobin's q and columns 3 and 4 for ROA. First, we estimate the model with board cultural diversity as the explanatory variable and firm characteristics as control variables (columns 1 and 3) (Adj.R-squared are 10.38% and 15.37%,[8] respectively), and then the full model specification that additionally includes board characteristics as control variables (columns 2 and 4) (Adj.R-squared are 10.28% and 15.38%, respectively). Based on the high values of F-statistics ($p < 0.001$), all models include at least one significant determinant of firm performance, excluding the constant and firm and year dummy variables.

In all four models, the coefficient of board cultural diversity is positive and statistically significant ($p < 0.05$). This implies that board cultural diversity has a significant positive relationship with firm performance, whether measured with Tobin's q or ROA, after controlling for other types of board diversity and other board characteristics. Therefore, we find evidence that the benefits of having culturally diverse boards potentially outweigh the costs of cultural diversity. This positive relationship is economically significant as well. In our sample, firms in the 75th and 25th percentile of the board cultural diversity board (high and low board cultural diversity, respectively) have Tobin's q ratings of 2.05 and 1.03, respectively. This analysis suggests that firms with higher board cultural diversity perform substantially better.

Regarding the other board characteristics, gender and age diversity, director age, and board size are insignificant determinants of firm performance. The evidence on board independence is inconclusive. The coefficient estimate of board independence is positive and insignificant in the Tobin's q regression (column 2) and negative and significant ($p < 0.10$) in the ROA regression (column 4).

Regarding firm characteristics, firm size is a positive and significant ($p < 0.01$) determinant of Tobin's q and ROA, meaning that companies with larger market capitalization tend to have a higher market valuation and a higher return on assets. Firm age has a negative with Tobin's q and a positive relationship with ROA in our sample. This finding implies that older firms have market valuations approaching their book value (possibly due to lower growth opportunities) and a higher return on their assets, possibly due to economies of scale. In addition, we find that leverage is a negative determinant of ROA but not Tobin's q, and that firm complexity is a negative determinant of Tobin's q but not ROA. Overall, we find evidence that board cultural diversity is a significant positive determinant of firm performance after controlling for the various board and firm characteristics. We estimate this relationship using regressions with firm and year fixed effects. Fixed effects

regressions account for firm and time factors that correlate with board cultural diversity and firm performance and help mitigate a potential omitted variable bias.

Table 4. Board cultural diversity and firm performance: Main results.

	Tobin's q		ROA		IV Regressions—Second Stage		
					Tobin's q	ROA	ROA (5%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cultural diversity	0.041 **	0.044 **	0.004 **	0.004 **			
	(2.11)	(2.10)	(2.00)	(2.06)			
Cultural$\hat{}$diversity					0.627 **	0.018	0.023 *
					(2.46)	(1.02)	(1.65)
Gender diversity		0.077		−0.015	−0.812 ***	−0.029	0.001
		(0.37)		(−0.78)	(−2.71)	(−1.37)	(0.04)
Age diversity		−0.003		−0.001	−0.170 *	−0.003	−0.006
		(−0.09)		(−0.18)	(−1.79)	(−0.45)	(−1.22)
Board independence		0.145		−0.015 *	0.595 ***	0.038 ***	0.038 ***
		(1.55)		(−1.78)	(4.21)	(3.77)	(4.94)
Director age		−0.047		0.005	0.280	0.031	0.0508 ***
		(−0.18)		(0.21)	(0.80)	(1.24)	(2.677)
Board size		0.002		−0.001	−0.158 ***	−0.008 ***	−0.007 ***
		(0.13)		(−0.89)	(−4.70)	(−3.42)	(−4.05)
Firm size	0.242 ***	0.241 ***	0.038 ***	0.038 ***	0.180 ***	0.029 ***	0.022 ***
	(9.36)	(9.27)	(16.02)	(15.94)	(7.44)	(17.01)	(17.06)
Sales growth	0.014	0.011	0.003	0.003	−0.001	−0.0001	−0.0001
	(0.15)	(0.12)	(0.37)	(0.38)	(−0.75)	(−1.12)	(−1.62)
Leverage	0.103	0.120	−0.045 ***	−0.047 ***	−1.078 ***	−0.084 ***	−0.057 ***
	(0.65)	(0.75)	(−3.12)	(−3.21)	(−5.59)	(−6.12)	(−5.45)
Firm age	−0.212 **	−0.210 **	0.024 ***	0.024 ***	−0.003 ***	0.00002	0.0001
	(−2.25)	(−2.23)	(2.84)	(2.84)	(−3.82)	(0.42)	(1.26)
Firm complexity	−0.095 *	−0.095 *	−0.003	−0.003	−0.557 ***	−0.013 ***	−0.013 ***
	(−1.81)	(−1.81)	(−0.67)	(−0.67)	(−7.81)	(−2.62)	(−3.34)
Return volatility	−0.005	−0.005	−0.001	−0.001	0.010	0.001	0.001
	(−0.68)	(−0.68)	(−0.62)	(−0.64)	(0.75)	(0.91)	(1.50)
Constant	−2.116 ***	−2.063 *	−0.747 ***	−0.741 ***	−1.623	−0.557	−0.557
	(−3.97)	(−1.78)	(−15.25)	(−6.97)	(−0.22)	(−0.22)	(−0.22)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N companies	184	184	184	184	184	184	184
N obs.	2258	2258	2256	2256	2258	2258	2258
R-squared	0.107	0.108	0.156	0.158	0.11	0.11	0.07
Adj. R-squared	0.104	0.103	0.154	0.154	0.105	0.104	0.065
F-statistic	20.47	12.43	50.62	29.84	19.87	16.13	30.12
Prob > F	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table reports (I) the fixed effects regression estimation results of firm performance measures on board and firm characteristics for Tobin's q in columns (1) and (2) and ROA in columns (3) and (4), and (II) the second stage estimation results of the instrumental variable (IV) regressions of Tobin's q in column (5) and ROA in columns (6) and (7). Tobin's q is calculated as in Equation (3), and ROA as in Equation (4). Tobin's q and ROA are winsorized at 1% in all models except for column (7), where ROA is winsorized at 5%. Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2). Cultural$\hat{}$divetsity is the instrumented cultural diversity variable from the first stage of the IV regressions. Table A2 in Appendix A defines the rest of the variables; t-statistics are reported in parentheses, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4.2. Addressing Endogeneity—Instrumental Variable Regressions

The relationship between board cultural diversity and firm performance may be endogenous. In addition to a potential omitted variable bias (discussed above and addressed with fixed effects regressions), there is a concern that the relationship between board cultural diversity and firm performance is affected by simultaneity; that is, board cultural diversity may be determined by specific firm characteristics that determine firm performance. To mitigate this concern, we use instrumental variable regressions that require identification of an instrumental variable that correlates with the independent variable (board cultural diversity) while having no impact on the dependent variables (firm performance measures).

Following Frijns et al. (2016), we construct an instrumental variable as a dummy variable that indicates whether the firm's head office is located in a large metropolitan area, defined as a city with a population greater than 0.5 million people.[9] Board composition is determined by the population composition of the location of the firm's head office (Knyazeva et al. 2013). Therefore, we expect firms with head offices in a large metropolitan area to have more culturally diverse boards because more foreigners live in metropolitan

areas. Furthermore, large metropolitan areas are easier for foreign directors to travel to. Therefore, firms located in large metropolitan areas with international airports should have more foreign directors on their boards (Masulis et al. 2012),[10] causing board cultural diversity in these companies to increase. We test the strength of the chosen instrumental variable using the Cragg-Donald Wald F-statistic. The F-statistic of the instrumental variable is 21.73, which is well over the Stock and Yogo's (2005) weak ID test critical value of 10% (16.38), suggesting that our instrumental variable is not weak.

We estimate instrumental regressions for Tobin's q and ROA using two-stage least squares and report the second-stage results in columns 5−7 of Table 4.[11] In Tobin's q regression (column 5), the coefficient estimate on board cultural diversity is 0.627 ($p < 0.05$), confirming the positive effect of board cultural diversity on firm performance. Columns 6 and 7 show the estimation results for ROA winsorized at the 1% (our main ROA variable) and 5% at each distribution tail, respectively. The coefficient estimates on board cultural diversity are positive for both ROA variables and significant ($p < 0.01$) for ROA winsorized at 5% (column 7). While the estimation results confirm the positive effect of board cultural diversity on ROA, they also show that outliers in the sample weaken the documented relationship.

Overall, the instrumental variable analysis addresses the endogeneity concerns and confirms the positive effect of board cultural diversity on firm performance.

4.3. Additional Analyses

4.3.1. Board Cultural Diversity vs. Foreign Directors on Boards

We have shown that board cultural diversity is positively associated with firm performance. However, board cultural diversity overlaps with foreign directors' presence on boards. One may argue that our finding is driven by foreign directors' presence rather than board cultural diversity. In this section, in order to show the robustness of our finding, we examine the relationship between board cultural diversity and firm performance, controlling for the presence of foreign directors on the board.

We use two variables to capture the presence of foreign directors on boards: the percentage of foreign directors on the board (Foreign directors %) and the number of foreign nationalities on the board as a percentage of board size (Foreign nationalities %).

First, we estimate a regression with a measure of the foreign director presence instead of board cultural diversity, and then a regression with board cultural diversity controlling for the foreign directors' presence. All regressions include board and firm characteristics as in Equation (5). We report the estimation results in Table 5. We observe an increase in Adjusted R-squared values in models with board cultural diversity. We find that the percentage of foreign directors and the ratio of foreign nationalities are insignificant determinants of firm performance. Importantly, board cultural diversity remains a positive and significant determinant of Tobin's q and ROA when controlling foreign directors' presence on boards.

We observe that the significance of board cultural diversity is reduced when we control for the number of foreign nationalities in Tobin's q regression, because this variable is highly correlated with board cultural diversity. Nevertheless, the coefficient of board cultural diversity remains positive in the Tobin's q regression ($p = 0.12$), and is positive and significant ($p < 0.05$) in the ROA regression when we control for foreign nationalities.This analysis shows that the impact of board cultural diversity is significant beyond the presence of foreign directors on boards. It is not the fact that the director has a foreign nationality that matters; it is also how distant the cultural background of the foreign director is from the cultural backgrounds of other directors on the board. We show that board cultural diversity matters more than the presence of foreign directors on boards.

Table 5. Board cultural diversity vs. foreign directors on boards.

	Tobin's q				ROA			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Cultural diversity		0.039 *		0.037		0.004 *		0.005 **
		(1.74)		(1.54)		(1.95)		(2.26)
Foreign directors %	0.144	0.062			0.005	−0.003		
	(1.26)	(0.50)			(0.51)	(−0.27)		
Foreign nationalities %			0.224	0.087			0.002	−0.017
			(1.51)	(0.51)			(0.12)	(−1.059)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N companies	184	184	184	184	184	184	184	184
N obs.	2267	2267	2267	2267	2265	2265	2265	2265
R-squared	0.104	0.105	0.104	0.105	0.153	0.154	0.153	0.155
Adj. R-squared	0.099	0.100	0.099	0.100	0.148	0.150	0.148	0.150
F-statistic	9.16	8.95	9.19	8.95	14.25	13.89	14.24	13.93
Prob > F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table reports the fixed effects regression estimation results of firm performance measures on board and firm characteristics for Tobin's q in columns (1)–(4) and ROA in columns (5)–(8). Tobin's q is calculated as in Equation (3) and ROA as in Equation (4). Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2). Foreign directors % is the proportion of foreign (non-Australian) directors on the board. Foreign nationalities % is the number of nationalities represented on the board divided by the total number of directors. All models include control variables as in Table 4; t-statistics are reported in parentheses, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4.3.2. Firm's Foreign Presence and Operations

It is possible that firms with substantial foreign presence and operations have a greater need for foreign expertise, and would therefore have more foreign directors on their boards, leading to greater board cultural diversity. In turn, the firm's foreign presence and operations may affect its performance. Therefore, our finding on the positive impact of board cultural diversity on firm performance might be driven by firms' foreign orientation. In this section, we examine how a firm's foreign presence affects the relationship between board cultural diversity and firm performance.

We employ several measures of a firm's foreign presence and operations. First, we consider the firm's sales in foreign markets and foreign direct investment as measured by foreign sales as a percentage of total sales (*Foreign sales*) and foreign assets as a percentage of total assets (*Foreign assets*), respectively. Second, we consider the firm's presence in international financial markets as captured by a firm's listing of its shares on foreign stock exchanges. We use two dummy variables that capture whether the firm is listed on the New York Stock Exchange (NYSE) (*NYSE listing*), the major equity market in the world, or listed on any foreign (outside Australia) stock exchange (*Foreign listing*).

On average, a firm's foreign sales constitute 28.3% of its total sales, whereas its foreign assets account for 21.6% of its total assets (not tabulated). A very small proportion (1.28%) of the sample firms are listed on the NYSE; however, a substantial proportion of the sample (78.8%) are listed on at least one stock exchange outside Australia.

Next, we estimate the main model (Equation (5)) with additional control variables that capture a firm's foreign presence and operations. Table 6 reports the estimation results for Tobin's q and ROA. It shows that firms with a higher proportion of foreign assets perform worse as measured by both Tobin's q and ROA. Importantly, controlling for foreign sales or assets does not affect board cultural diversity's relationship with Tobin's q or ROA; the coefficient on board cultural diversity remains positive and statistically significant ($p < 0.10$).

Table 6. Firm's foreign presence and operations.

	Tobin's q				ROA			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cultural diversity	0.044 **	0.041 *	0.040 **	0.040 *	0.004 **	0.004 *	0.003 *	0.003 *
	(2.10)	(1.96)	(1.96)	(1.95)	(2.00)	(1.94)	(1.87)	(1.85)
Foreign sales	−0.003 **				0.0002 **			
	(−2.49)				(2.28)			
Foreign assets		−0.004 ***				−0.0002 *		
		(−3.01)				(−1.71)		
NYSE listing			1.126				−0.004	
			(1.40)				(−0.07)	
Foreign listing				0.520 ***				0.012
				(2.61)				(0.76)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	No	No	Yes	Yes	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N companies	184	184	184	184	184	184	184	184
N obs.	2267	2266	2267	2265	2265	2264	2265	2263
R-squared	0.108	0.109	0.105	0.105	0.156	0.156	0.154	0.155
Adj. R-squared	0.103	0.104	0.099	0.099	0.151	0.150	0.149	0.149
F-statistic	9.19	9.28	9.29	9.28	14.11	14.02	14.42	14.46
Prob > F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table reports the fixed effects regression estimation results of firm performance measures on board and firm characteristics for Tobin's q in columns (1)–(4) and ROA in columns (5)–(8). Tobin's q is calculated as in Equation (3) and ROA as in Equation (4). Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2). Foreign sales is a firm's foreign sales as a percentage of total sales. Foreign assets is a firm's foreign assets as a percentage of total assets. NYSE listing is a dummy variable equal to one if a firm is listed on the New York Stock Exchange (NYSE) and zero otherwise. Foreign listing is a dummy variable equal to one if a firm is listed on a foreign (outside of Australia) stock exchange and zero otherwise. All models include control variables as in Table 4; t-statistics are reported in parentheses, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

When we evaluate the impact of foreign listings, we cannot include firm fixed effects because the *NYSE listing* and *Foreign listing* dummy variables are firm-specific and in many cases do not vary over the sample period. Therefore, the listing dummy variables would be absorbed by firm fixed effects. Therefore, we estimate OLS regressions without firm fixed effects to evaluate the effects of foreign listings. We observe that firms listed on foreign exchanges have a higher Tobin's q, whereas being listed on the NYSE does not significantly impact Tobin's q or ROA. After controlling for a foreign listing status, we find that board cultural diversity remains positive and significant ($p < 0.10$).

In summary, we find evidence that board cultural diversity is not a reflection of a firm's foreign presence or operations and that the relationship between board cultural diversity and firm performance is not driven by its high correlation with a firm's foreign orientation. Cultural diversity captures aspects of board functioning that cannot be explained by a firm's foreign sales or assets or a foreign exchange listing.

4.4. Alternative Cultural Frameworks

In this section, we perform a robustness test to show that our main finding is not driven by a particular measure of board cultural diversity. We employ two alternative cultural frameworks, those of Tang and Koveos (2008) and Schwartz (2006). The cultural scores of Tang and Koveos (2008) are modified from Hofstede's cultural dimensions adjusted for a non-cultural factor, GDP per capita. In contrast, Schwartz's cultural framework is conceptually different, and comprises seven cultural value orientations stemming from three cultural dimensions.[12]

We recalculate our board cultural diversity measure as in Equations (1) and (2) using the two alternative frameworks. Then, we re-estimate the main model (as in Table 4) with the alternative board cultural diversity measures for the total sample and a subsample that includes only firms with foreign directors (i.e., with board cultural diversity greater than zero). The number of observations is reduced because the cultural scores are only available for a subset of our sample countries.

Table 7 reports the regression output for Tobin's q in Panel A and ROA in Panel B. The coefficient estimates on board cultural diversity are positive in all regressions, in line with the main finding. The estimates are statistically significant ($p < 0.10$) for Tobin's q for the subsample of firms with foreign directors for the Tang and Koveos' board cultural diversity and both the total sample and the subsample for the Schwartz's board cultural diversity. Statistical significance is lower in these regressions, potentially due to fewer observations, as alternative cultural scores are unavailable for several countries. Generally, the results with board cultural diversity estimated using alternative cultural frameworks support our main finding.

Table 7. Alternative measures of board cultural diversity.

	Tang and Koveos		Schwartz	
	All Firms	**Firms with Foreign Directors**	**All Firms**	**Firms with Foreign Directors**
	(1)	**(2)**	**(3)**	**(4)**
Panel A. Tobin's q				
Cultural diversity	0.070	0.084 *	0.007 **	0.006 *
	(1.62)	(1.71)	(2.18)	(1.87)
Control variables	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N companies	182	177	164	159
N obs.	2237	1705	1810	1466
R-squared	0.108	0.109	0.108	0.107
Panel B. ROA				
Cultural diversity	0.004	0.001	0.0004	0.0002
	(1.08)	(0.24)	(1.32)	(0.79)
Control variables	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N companies	182	177	164	159
N obs.	2237	1705	1810	1466
R-squared	0.164	0.179	0.113	0.108

The Table 7 reports the fixed effects regression estimation results of firm performance measures on board and firm characteristics for Tobin's q in Panel A and ROA in Panel B. Tobin's q is calculated as in Equation (3) and ROA as in Equation (4). Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2) using the scores of Tang and Koveos (2008) in columns (1) and (2) and those of Schwartz (2006) in columns (3) and (4). Columns (1) and (3) report the results for the total sample and columns (2) and (4) the subsample of firms with foreign directors. All models include control variables as in Table 4; t-statistics are reported in parentheses, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4.5. Individual Cultural Dimensions

Finally, we evaluate the differences among board directors in individual cultural dimensions and their relevance to firm performance, as not all aspects of culture have equal impacts on the functioning of diverse groups (Shenkar 2001). We examine the six dimensions of Hofstede's cultural framework, individualism–collectivism, masculinity–femininity, power distance, uncertainty avoidance, long-term orientation, and indulgence–restraint, in order to discover whether differences in specific cultural traits matter for the functioning of boards of directors. We recalculate six different cultural diversity measures for each dimension using Equations (1) and (2) to estimate the explanatory power of board cultural diversity based on individual dimensions.

Table 8 reports the regression results for six models (one for each cultural dimension) in Panel A for Tobin's q and Panel B for ROA. We find that coefficient estimates on board cultural diversity for all individual dimensions are positive both for Tobin's q and ROA. Panel A of Table 8 shows that cultural diversity in masculinity, uncertainty avoidance, and long-term orientation has a statistically significant ($p < 0.05$) positive relationship with Tobin's q. Panel B of Table 8 shows that board cultural diversity in masculinity and uncertainty avoidance are significant and positive determinants of ROA. Overall, we find that the differences among board directors in three aspects of culture matter for the effective

functioning of a board of directors, and thus ultimately for firm performance: masculinity, uncertainty avoidance, and long-term orientation.

Table 8. Individual culture dimensions.

	Individualism	Masculinity	Power Distance	Uncertainty Avoidance	Long-Term Orientation	Indulgence
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Tobin's q						
Cultural diversity	0.028	0.188 **	0.036	0.176 ***	0.094 **	0.082
	(0.89)	(1.99)	(0.79)	(2.89)	(2.46)	(1.58)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N companies	184	184	184	184	184	184
N obs.	2267	2267	2267	2267	2267	2267
R-squared	0.104	0.105	0.104	0.107	0.106	0.104
Panel B. ROA						
Cultural diversity	0.002	0.028 ***	0.0004	0.015 ***	0.005	0.004
	(0.72)	(3.21)	(0.09)	(2.75)	(1.57)	(0.81)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N companies	184	184	184	184	184	184
N obs.	2265	2265	2265	2265	2265	2265
R-squared	0.153	0.157	0.153	0.156	0.154	0.153

The table reports the fixed effects regression estimation results of firm performance measures on board and firm characteristics for Tobin's q in Panel A and ROA in Panel B. Tobin's q is calculated as in Equation (3) and ROA as in Equation (4). Cultural diversity is the main explanatory variable calculated as in Equations (1) and (2) using six individual cultural dimensions separately: (1) individualism–collectivism, (2) masculinity–femininity, (3) power distance, (4) uncertainty avoidance, (5) long-term orientation, and (6) indulgence–restraint. All models include control variables as in Table 4; t-statistics are reported in parentheses, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The masculinity dimension is defined as "a preference in society for achievement, heroism, assertiveness and material rewards for success" (Geert and Jan 1991), with the counterpart of femininity representing "a preference for cooperation, modesty, caring for the weak and quality of life" (Geert and Jan 1991). The masculinity–femininity dimension is viewed as the performance vs. cooperation orientation index. We find that the differences among directors in masculinity–femininity cultural norms positively contribute to the effectiveness of corporate boards, possibly due to a balance between results-driven and cooperation approaches represented in boardrooms.

Uncertainty avoidance is defined as "a society's intolerance for ambiguity" (Geert and Jan 1991). It can be described as people's aversion to embracing or averting an event or something unexpected or that remains unknown. We find that boards with greater differences among directors in the uncertainty avoidance cultural aspect lead to better firm performance, possibly due to a balanced attitude towards uncertainty, and therefore a moderate risk appetite.[13] In contrast, firms with low cultural diversity in uncertainty avoidance might have to bear non-optimal levels of risk, as their boards' risk appetite might be either extremely risk-seeking or risk-averse in consensus.

The long-term orientation dimension is defined as "the connection of the past with the current and future actions/challenges" (Hofstede 2011). We find that boards with greater differences among directors in the long-term orientation are more effective. Boards with high cultural diversity scores in this dimension have a wide range of perspectives and consider both long-term implications and traditions in their decision-making, finding a balance between being sustainable, being adaptive to future challenges, and valuing

traditions. This balance might improve firm performance by building up shareholder confidence and developing a sustainable corporate image.

Overall, we find that having a higher level of diversity in masculinity, uncertainty avoidance, and long-term orientation brings more synergy than diversity in the other dimensions.

5. Discussion and Conclusions

In this study, we examine cultural diversity in corporate boards based on directors' nationality in Australia and its relationship with the firm's performance.[14] For a sample of ASX200 firms (excluding financials) in 2004–2018, we document that directors come from 47 countries, with an average of 32% of board directors having foreign (non-Australian) nationality, peaking at 38% in 2018. The percentage of foreign directors on Australian boards is higher than in other countries, for example, the United States (Masulis et al. 2012) or the United Kingdom (Frijns et al. 2016). The average number of firms with foreign directors on their boards has increased from 50.0% in 2004 to 90.7% in 2018, averaging 76.1% in 2004-2018. As the board's average number of foreign directors increases rapidly over time, so does the board's cultural diversity. We document a 3.7-times increase in board cultural diversity based on directors' nationality from 2004 to 2018. Over time, board diversity increases in other dimensions as well; Australian boards have an increasing number of women directors, directors of different ages, and more independent directors. These documented trends align with other studies and industry statistics (Board Diversity Index 2021).

We use panel regressions with firm and year fixed effects to evaluate the relationship between board cultural diversity and the firm's performance. In our Australian sample, we find that the cultural diversity among directors is positively associated with firm performance as measured with Tobin's q and ROA. This finding is statistically and economically significant; the Tobin's q of firms with high board cultural diversity is almost double that of firms with low cultural diversity. The positive and significant relationship holds when we control for the various board and firm characteristics, including a firm's foreign presence and operations, use an instrumental variable regression approach to account for endogeneity, and use alternative measures of board cultural diversity. We find no evidence that other board characteristics, including board gender and age diversity, impact firm performance, in contrast to the existing international evidence of Abdullah and Ismail (2013), Reguera-Alvarado et al. (2017), Talavera et al. (2018), or the Australian evidence of Bonn (2004).

Our main result on the impact of board cultural diversity is robust to controlling for foreign directors' presence on Australian corporate boards. This analysis highlights that our board cultural diversity measure captures important heterogeneity among directors beyond merely a presence of foreign nationals on boards. We document that the share of foreign directors and the ratio of different nationalities on boards are insignificant determinants of firm performance in Australia. These findings contrast with evidence from other countries, for example, the US (Masulis et al. 2012), the UK (Estélyi and Nisar 2016), Norway and Sweden (Oxelheim and Randoy 2003), South Korea (Choi et al. 2007), and Indonesia (Joenoes and Rokhim 2019).

Finally, we find that not all aspects of cultural differences (as captured by Hofstede's six cultural dimensions) have the same effect on firm performance. It is predominately board diversity in the masculinity, uncertainty avoidance, and long-term orientation dimensions that has a positive association with firm performance. These findings align with the findings of Frijns et al. (2016) and Lim et al. (2016), who document the importance of the masculinity dimension of culture for corporate outcomes.

Our finding on the positive effect of board cultural diversity adds to the debate on the role of boards of directors and the relevance of the personal characteristics of directors. Our finding supports the resource dependence theory, in which directors are a valuable resource and source of information for their firms and have significant influence on corporate outcomes (Hillman et al. 2002). Our finding supports the upper echelons

theory of Hambrick and Mason (1984) by showing that directors' cultural backgrounds matter for corporate outcomes. Our finding also contributes to the debate on the value of board diversity. The improvement in performance for firms with culturally diverse boards can be explained by the improved ability of their diverse boards to incorporate various perspectives in their decision-making and find innovative solutions to problems faced by their firms, as predicted by the cognitive resource diversity theory (Harjoto et al. 2018).

Theoretically, cultural diversity is a "double-edged sword," meaning that it brings both benefits and costs in terms of potential relationship conflicts (Milliken and Martins 1996). We document a positive net impact of board cultural diversity, implying that the benefits outweigh the costs arising from cultural differences in our Australian sample. Our finding contrasts with the finding of Frijns et al. (2016). They reported a negative relationship between board cultural diversity and firm performance in British firms, suggesting that in their UK sample the costs of board cultural diversity outweighed its benefits.

Our study highlights that the net impact of board cultural diversity on corporate outcomes such as firm performance can vary across countries and times. This notion is in line with Ruigrok et al. (2007), who suggested that findings on board diversity can vary across countries due to national differences in institutional characteristics. Differences in the effectiveness of governance mechanisms and the value of board diversity can arise due to economic, financial, regulatory, and cultural differences and to social preferences that exist across countries and can change over time. It is a task for future research to examine what factors can explain the variation in the value of cultural diversity across countries and over time.

Our results emphasize the positive effects of board cultural diversity on firm performance and show that foreign directors may bring unique qualities, making cultural diversity a valuable resource for their firms. However, unlocking the potential of cultural diversity involves dealing with its potentially disruptive and negative consequences as well. This may require initiatives that improve communication and promote group integration on boards; see, e.g., Nederveen Pieterse et al. 2013. Our study provides insight into the role of cultural diversity in corporate governance and highlights the positive impact of cultural diversity on corporate boards. Our findings have practical implications for companies, investors, and regulators, as we show that board cultural diversity is a critical factor in board composition and firm performance.

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Appendix A

Table A1. Hofstede cultural scores.

	Individualism vs. Collectivism	Masculinity vs. Femininity	Power Distance	Uncertainty Avoidance	Long Term vs. Short-Term Orientation	Indulgence vs. Restraint
Argentina	46	56	49	86	20	62
Australia	90	61	38	51	21	71
Austria	55	79	11	70	60	63
Belgium	75	54	65	94	82	57
Bermuda	30	65	65	45	13	54
Brazil	38	49	69	76	44	59
Canada	80	52	39	48	36	68
China	20	66	80	30	87	24
China (Taiwan)	17	45	58	69	93	49
Colombia	13	64	67	80	13	83
Czech Republic	58	57	57	74	70	29
Denmark	74	16	18	23	35	70
Dominican Republic	30	65	65	45	13	54
Finland	63	26	33	59	38	57
France	71	43	68	86	63	48
Germany	67	66	35	65	83	40
Hong Kong	25	57	68	29	61	17
India	48	56	77	40	51	26
Indonesia	14	46	78	48	62	38
Ireland	70	68	28	35	24	65
Italy	76	70	50	75	61	30
Jamaica	30	65	65	45	13	54
Japan	46	95	54	92	88	42
Korea	18	39	60	85	100	29
Malaysia	26	50	100	36	41	57
Mexico	30	69	81	82	24	97
New Zealand	79	58	22	49	33	75
Pakistani	14	50	55	70	50	0
Philippines	32	64	94	44	27	42
Poland	60	64	68	93	38	29
Romania	30	42	90	90	52	20
Russia	39	36	93	95	81	20
Singapore	20	48	74	8	72	46
South Africa	65	63	49	49	34	63
Spain	51	42	57	86	48	44
Sweden	71	5	31	29	53	78
Switzerland	68	70	34	58	74	66
Thailand	20	34	64	64	32	45
Trinidad and Tobago	16	58	47	55	13	80
Turkey	37	45	66	85	46	49
Ukraine	25	27	92	95	86	14
United Kingdom	89	66	35	35	51	69
United States	91	62	40	46	26	68
Zimbabwe	65	63	49	49	34	63

The table shows the Hofstede's scores for six cultural dimensions that we use in the calculations of cultural distances between directors in Equation (1). Hofstede cultural scores are not available for Bermuda, Jamaica and Zimbabwean. We use the scores for South Africa as a proxy for the scores for Zimbabwe, and the scores for the Dominican Republic as a proxy for the scores for Bermuda and Jamaica.

Table A2. Variables definitions.

Variable	Definition
Gender diversity	The percentage of female directors on the board
Age diversity	The natural log of the age difference (in years) between the oldest and youngest directors on the board
Board independence	The proportion of independent directors on the board
Director age	The natural log of the average age of directors on the board
Board size	The natural log of the number of directors on the board
Firm size	The natural log of the market capitalisation in AUD at the end of the year
Leverage	The total debt divided by the total assets at the end of the year
Firm age	The natural log of the number of years since the firm was established
Firm complexity	The number of the business segment the company operates in
Return volatility	The standard deviation of daily stock returns during the year
Sales growth	The annual growth rate of the firm's total sales
Foreign directors %	The proportion of foreign (non-Australian) directors on the board
Foreign nationalities %	The number of different nationalities represented on the board divided by the total number of directors
Foreign sales	Firm's foreign sales as a percentage of total sales
Foreign assets	Firm's foreign assets as a percentage of total assets
NYSE listing	A dummy variable equal one if a firm is listed on the New York Stock Exchange (NYSE) and zero otherwise
Foreign listing	A dummy variable equal one if a firm is listed on a foreign (outside of Australia) stock exchange and zero otherwise

Table A3. Number of directors from each country by year.

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total	*Total, %*
Argentina	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	**10**	*0.07*
Australia	180	246	318	406	528	625	746	906	862	850	820	820	775	717	685	**9484**	*67.64*
Austria	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	**23**	*0.16*
Belgium	1	1	1	1	1	1	1	1	1	1	2	2	3	3	2	**22**	*0.16*
Bermuda	1	2	4	4	4	4	7	8	5	2	2	1	1	0	0	**45**	*0.32*
Brazil	0	0	0	0	1	1	1	1	1	1	3	3	3	4	6	**25**	*0.18*
Canada	3	4	7	8	12	14	17	23	20	19	20	22	21	22	25	**237**	*1.69*
China	1	1	3	4	5	6	12	14	15	12	15	25	15	15	19	**163**	*1.17*
Colombia	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	**3**	*0.02*
Czech Rep	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	**6**	*0.04*
Demark	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	**6**	*0.04*
Dominican Rep	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	**2**	*0.01*
Finland	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	**3**	*0.02*
France	1	2	3	4	4	4	5	5	5	5	7	7	6	8	8	**74**	*0.53*
Germany	1	2	2	2	3	3	3	4	5	5	3	2	3	2	2	**42**	*0.30*
Hong Kong	0	0	0	0	1	1	1	1	2	2	2	2	2	2	2	**18**	*0.13*
India	0	1	1	1	1	1	1	1	1	1	2	2	2	3	5	**23**	*0.16*
Indonesia	0	0	0	1	1	1	1	1	1	0	0	0	0	0	3	**9**	*0.06*
Ireland	5	6	7	7	8	10	11	14	13	13	9	8	8	9	8	**136**	*0.97*
Italy	1	1	3	3	3	3	5	5	4	4	6	7	6	3	2	**56**	*0.40*
Jamaica	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**1**	*0.01*
Japan	0	0	0	0	0	3	4	4	5	2	3	1	1	3	6	**32**	*0.23*
Kenya	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	**2**	*0.01*
Korea	0	0	0	0	1	2	2	3	3	2	2	1	1	0	0	**17**	*0.12*
Malaysia	1	2	2	2	3	4	5	7	6	6	7	6	6	3	2	**62**	*0.44*
Mexico	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	**8**	*0.06*
New Zealand	10	12	14	18	23	29	33	41	45	43	39	37	35	37	34	**450**	*3.21*
Pakistani	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	**7**	*0.05*
Philippines	0	0	0	0	1	1	1	1	1	1	2	2	2	2	2	**16**	*0.11*
PNG	0	1	1	2	2	2	2	3	2	3	4	5	3	4	4	**38**	*0.27*
Poland	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	**6**	*0.04*
Romania	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	**8**	*0.06*
Russia	0	0	0	0	0	0	0	1	1	1	1	1	2	2	2	**11**	*0.08*
Singapore	1	2	4	5	6	8	8	9	8	9	12	13	9	10	6	**110**	*0.78*
Solomon Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	**2**	*0.01*
South Africa	0	0	3	3	3	5	7	7	6	8	8	9	9	8	5	**81**	*0.58*
Spain	0	0	0	0	0	0	0	0	0	0	4	4	3	5	3	**19**	*0.14*
Sweden	0	0	0	0	0	0	1	2	1	1	1	2	2	2	2	**14**	*0.10*
Switzerland	0	0	0	0	0	0	1	1	1	1	1	2	2	2	2	**13**	*0.09*
Thailand	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	**4**	*0.03*
Trinidad and Tobago	0	1	1	1	1	1	2	2	2	2	3	3	2	2	1	**24**	*0.17*
Turkey	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	**2**	*0.01*
Ukraine	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	**6**	*0.04*
United Kingdom	26	40	44	59	73	86	99	123	120	125	126	138	141	138	146	**1484**	*10.58*
United States	29	35	42	49	59	75	82	98	96	96	103	109	105	109	121	**1208**	*8.62*
Zimbabwe	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	**10**	*0.07*
Total	**264**	**362**	**464**	**584**	**749**	**896**	**1066**	**1,297**	**1239**	**1223**	**1214**	**1245**	**1177**	**1127**	**1115**	**14,022**	
Foreign directors, %	*32%*	*32%*	*31%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*32%*	*34%*	*34%*	*36%*	*39%*	**32%**	

The table shows the number of different nationalities that appear each year. The observed period is from 2004 to 2018, reporting the data at the end of each financial year. The row "% of foreign directors" reports the percentage of non-Australian directors in each financial year. The bottom two rows summarize each year's total number of directors and the percentage of foreign (non-Australian) directors. The last two columns present the total number and the percentage of director-years for each country for the sample period.

Notes

[1] For example, media reports "Australian boards are male and pale" https://www.afr.com/work-and-careers/leaders/australian-boards-are-male-and-pale-20200519-p54udk (accessed on 15 June 2022) and "Still stubbornly pale: Study finds ASX 300 boards are lagging on cultural diversity" https://www.minterellison.com/articles/summary-governance-institute-watermark-search-international-2021-board-diversity-index (accessed on 15 June 2022).

[2] Australia is a Top 15 largest economy in the world in 2019.

[3] For instance, the boards of similar size of two different Australian companies have one foreign director on the board, but one is from China and the other one is from New Zealand. Using the percentage of foreign directors on the board as a measure of nationality diversity will show that board nationality diversity of these two company as being at the same level, whereas a director from China is much more culturally distant from Australian directors than a director from New Zealand, making their board more culturally diverse.

[4] The British Department of Trade and Industry published the Higgs Report in 2003, which suggested that demographic diversity increases board effectiveness and encourages including more female directors on boards.

[5] For example, Bonn (2004), Kim and Starks (2016), Reguera-Alvarado et al. (2017) find a positive relationship between board gender diversity and corporate performance, and Rose (2007) and Carter et al. (2010) suggest that gender diversity has no effect on performance, while Darmadi (2011), Adams and Ferreira (2009), and Ahern and Dittmar (2012) find a negative relationship. Ararat et al. (2021) suggest that gender diversity has a contingent effect on firm performance.

[6] Giannetti and Zhao (2019) estimate board cultural diversity based on directors' ancestry.

[7] Hofstede's six dimensions include individualism–collectivism, masculinity–femininity, power distance, uncertainty avoidance, long-term orientation, and indulgence–restraint.

[8] Low R-squared and Adjusted R-squared values are in line with other studies examining the relationship between board composition and firm, for example, Masulis et al. (2012) and Frijns et al. (2016).

[9] The use of the metropolitan location as the instrument for board cultural diversity implies the assumption that the location of the firm's headquarters has no impact on the firm's performance in any way other than through board cultural diversity. This assumption is theoretically supported by the concept of spatial equilibrium, which states that firms are indifferent across geographic locations because higher productivity that may arise from various advantages of operating in dense urban areas would be offset by higher wages in urban areas and higher urban real estate costs (Glaeser and Gottlieb 2009; Jennen and Verwijmeren 2010).

[10] Masulis et al. (2012) argue that any difficulty reaching the head office's location will affect the number of foreign directors being employed. They refer to the geographic distance to a large US airport, arguing that locating within 100 km of a large US airport makes it easier to reach, and that it will therefore be more likely that the company will have more foreign directors.

[11] The first-stage estimation results (not reported for brevity) show that a firm's location in a metropolitan area is a significant determinant of its board's cultural diversity.

[12] Schwartz's culture dimensions are embeddedness vs. autonomy (affective autonomy and intellectual autonomy), hierarchy vs. egalitarianism, and mastery vs. harmony.

[13] In the finance literature, Hofstede's uncertainty avoidance cultural dimension is often linked to risk-taking behaviour (see, for example, Li et al. 2013; Pan et al. 2020).

[14] We use nationality as a proxy for cultural background of directors. We acknowledge that this proxy has limitations and that nationality does not always accurately capture the cultural background. We assume that nationality captures the cultural background of most directors in our sample. The inaccurate measurements of cultural background for foreign directors could bias the estimation results. However, the bias would take the estimation results away from statistical significance. The results could be stronger if we were able to identify directors' cultural backgrounds more accurately.

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