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Board diversity and firm performance: impact of ESG activities in China

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ABSTRACT

The investigation of association between board diversity and the firm performance is the subject of many studies. However, the empirical results presented in the extant literature are inconclusive at best. The inconclusive empirical results could be due to several factors and one of them could be that the relationship is contingent on some key factors. Given the rising trend of Environmental, Social and Governance (ESG) activities, in this paper the relationship between board diversity and the firm performance is tested in the context of ESG activities. The subject of examination in this study is the listed Chinese firms. The sample period spans for 6 years and is collected from 2014 to 2019. This work uses a dynamic approach to modelling relationships. The generalised method of moments (GMM) is used in a two-step system. An endogeneity-free estimate may be achieved by using this strategy. We can learn a great deal from these hypotheses. There is a positive and substantial correlation between board diversity and the firm's success, which suggests that diverse boards are beneficial to businesses. Both ESG activities and a positive coefficient on company performance are significant. This shows investors appreciate companies that are involved in ESG activities because they see this as an investment that pays off. Last but not least, the report shows that board diversity has a negative and considerable impact on ESG efforts. According to the results, board diversity and ESG efforts are not necessary for a company's success. According to the data, board diversity is not particularly beneficial in the context of significant ESG initiatives. Board diversity really hurts a company's success when it engages in high ESG activities. The study also discusses the work's policy ramifications. Finally, the work lays out a clear path for further study.

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1. Introduction

The board room of a firm is considered to be the highest body responsible for supervision, monitoring and the decision making. There are at least two major strands on

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the functionality of the boards. First view, the agency view, argues that the board is responsible for the strict monitoring and is supposed to closely watch the activities of the managers who are more often than not driven by self-interest Fama and Jensen (1983), Hart (1995) and Jensen and Meckling (1976). As the agency theory argues that the managers engage in activities that benefit them even if they are detrimental to the long term benefits of the firm. In this sense, a diverse board is necessary to closely monitor managers' activities and give them enough space as well to pursue growth opportunities that are beneficial to firms. In other words, diverse boards are expected to optimally monitor the activities of managers. The second view, resource dependence view, argues that the main function of the board is to provide effective feedback and efficient advisory Hillman and Dalziel (2003). The demographically diverse board is expected to be more prudent in their decision making due to the availability of superior peers and colleagues. In other words, as per resource dependence view, a diverse board is likely to make better decisions due to better boards in terms of their qualification and the experience Anderson et al. (2011), Ben-Amar et al. (2013), Bernile et al. (2018), Yang et al. (2019, 2018). In a sense, it could be a good argument that a board which is diverse not just structurally but also demographically is expected to be superior in terms of decision-making, supervision, advisory and monitoring (Winkler et al., 2020).

Although the theoretical expectation of resource dependence and the agency view is that the diverse boards are expected to contribute to firm performance through their superior decision-making skills and the advisory capabilities, yet the relationship between board diversity and the firm performance is not very straightforward. For instance, some of the studies indicate positive association whereas others find no association or even negative association between the two Beji et al. (2021), Dobija et al. (2022), Jiang et al. (2021), Kinateder et al. (2021), Miller and del Carmen Triana (2009) and Tasheva and Hillman (2019). The departure of the empirical results presented in the extant literature suggests that the results may be contingent on other factors Raj Aggarwal et al. (2019), Atif et al. (2021), and Endrikat et al. (2021). In other words, the conflict between the theoretical expectations and the empirical results suggest that the examination should be carried out by exploring the intricacies that are likely to interact with the board diversity and the firm performance association Saunila (2020).

According to this research, omitting ESG activities in a board diversity and firm performance connection may lead to inaccurate findings. In light of the growing popularity of environmental, social, and governance (ESG) initiatives throughout the world, it is critical that the relationship between diversity and company performance be investigated. Thus, the primary goal of this article is to investigate the impact of board diversity and ESG actions on company performance in conjunction. ESG efforts and board diversity may also provide insights into the firm's success. For the purpose or to achieve the objective, this paper makes use of Chinese data Peternel and Grešš (2021). The data period is from 2014 to 2019 and hence spans for 6 years. The methodological approach used in this paper is the Two-step System Generalized method of Moments (GMM). The approach of GMM ensures that the paper is free from endogeneity issues inherent in the governance literature Al-Qeed et al. (2018)

and Kuk et al. (2021). Moreover, the method also overcomes the issue of finding a suitable instruments associate with instrumental variable approach or two Stage Least Squares (2SLS) Saeidi et al. (2021).

There are several insights from the econometric analysis. First, board diversity is significantly associated with the firm performance indicating greater board diversity leads to better performance. Second, ESG activities are significantly related to firm performance suggesting that engaging in ESG activities could be strategic initiative and provide the firms a competitive edge Alsayegh et al. (2020) and Sączewska-Piotrowska and Piotrowski (2021). Third and more importantly, the association between board diversity and the firm performance is contingent on the ESG activities. In other words, interaction effect of ESG and the board diversity is negative suggesting the higher ESG activity lowers the positive effect of board diversity on the firm performance (Sammut, 2021). More precisely, the findings indicate that the board diversity and the ESG activities are substitutes in driving the firm performance. In other words, the involvement in ESG activities can compensate for less diverse boards Khan et al. (2021).

The rest of the paper is organized as follows. The following section provides a review of the extant literature on the association between board diversity and the firm performance. In Section 3, the paper elaborates on the data and the methodology used in the paper. Section 4 presents the empirical results and the discussions. Finally, the paper concludes with conclusion and the limitations in Section 5 (Alqasa & Afaneh, 2022; Fadilah et al., 2022; Keshavarzian & Silvius, 2022).

2. Literature review

The extant literature on the effect of board diversity has been the topic of many researches, especially in the past decade. The existing literature on the board diversity makes a distinction between the structural and the demographic diversity (Aggarwal et al., 2019; Ali et al., 2019). The structural diversity is usually referred to the board independence and the demographic diversity refers to gender, experience, age, culture, nationality etc. Ararat et al. (2015), Russen et al. (2021) and Terjesen et al. (2016). As the board independence is put into effect either through regulatory requirements or made part of the best practices, the structural diversity is also often labelled as something which is highly desirable Ben-Amar et al. (2017), Bennouri et al. (2018), Chen et al. (2019) and Leasa et al. (2021).

Board diversity's impact isn't always clear-cut, and it comes with its own set of advantages and disadvantages. In other words, there are benefits and drawbacks to having a diverse board. Having a more diverse board has several advantages. When it comes to information analysis and processing, a more diverse board is anticipated to have more depth and breadth of knowledge and expertise. In the end, this results in a board that is anticipated to make better judgments than a board that is less diverse Cao et al. (2020). An additional benefit of a more diverse board is that it is likely to spur innovation by fostering a more open environment for new ideas to flourish Carter et al. (2003), Leung et al. (2020) and Liu et al. (2014). The capacity of the board of directors to allow multiple points of view inside the company and to be more receptive of fresh ideas and debate is directly tied to innovation. Third, as the

diverse board is expected to be more tolerant towards the new or different though process and hence it can lead to better monitoring than a less diverse board which does not give way to new ideas or thought processes Brahma et al. (2021), Gul et al. (2011) and Sierra et al. (2021). Fourth and equally important, diverse boards are expected to be better in terms of their understanding of the market in which the firm operates (Kowsar & Mukherjee, 2021). This invariably implies that the diverse board understands the stakeholders of the firms such as suppliers, clients, customers etc., and hence can guide the firm better in expanding their reach and acquiring more market share. In other words, a more diverse board can help realize a firm its real potential through better market reach and enhanced penetration. Last but not the least, a more diverse board is expected to be better equipped in promoting the firm through its global network, especially through diversity and inclusion (Dalziel et al., 2011; Goodstein et al., 1994; Robinson & Dechant, 1997).

As mentioned above, the board diversity has some disadvantages and certain costs attached with it. For instance, during financial turmoil, the diverse boards could not come to consensus on leading strategic initiatives. As a result, the ultimate goal of a company might be jeopardised by a diverse board's inability to rapidly come to consensus (Dalton et al., 1998, 1999). Disparities and variances in board composition may be an impediment and cause severe frictions if they aren't addressed, which might turn out to be bad news for a company instead of good news (Bruna et al., 2021; Daiser et al., 2017; Veltrop et al., 2015). The variety of the board's membership might jeopardise the company's operations, which could be harmful to the company over the long term if not immediately R Aggarwal and Dow (2012), Kim et al. (2009), Machold et al. (2011) and Yu and Van Luu (2021).

Although the literature on board diversity is vast but no clear outcome from the literature has emerged. For instance, some points to negative association whereas others point to positive or no association between the board diversity and the firm performance (see among others, (Ahmed & Ali, 2017; Alazzani et al., 2017; Arun et al., 2015; Beji et al., 2021; Campbell & Mínguez-Vera, 2008; Harjoto et al., 2015; Haslam et al., 2010; Jebran et al., 2020; Joecks et al., 2013; Lai et al., 2017; Liao et al., 2019; Nekhili et al., 2020; Nguyen et al., 2020; Sila et al., 2016; Srinidhi et al., 2011; Torchia et al., 2011; Yasser et al., 2017; Zaid et al., 2020).

These findings indicate a need to find if the effectiveness of board independence is contingent on other factors Parmar et al. (2010). More precisely, it is crucial to investigate whether the relationship between board independence and firm performance is interlinked with the macro or micro economic factors. Hence, once these factors are taken into the account in the empirical pursuit then the findings would be more consistent and meaningful Achim et al. (2021).

More importantly, bulk of the extant literature has relied on the data from developed nation and that to mostly from Europe and North America. Nevertheless, more recently the focus has shifted to developing region, especially the significant ones like India, China, and Turkey etc. Saeed and Sameer (2017). Nonetheless, the evidences presented in the literature so far, be it from developed or developing nation, has ignored the importance of engagement of firms in the ESG activities (Claveria Gonzalez et al., 2021).

There is also a lack of research on how successful diverse boards are when it comes to monitoring. It has been shown that diverse boards have advisory competences that are much better to those of less diverse boards, according to empirical evidence Ali et al. (2019). Only a few studies have linked empirical results to the monitoring and advising skills of diverse boards, which is an essential point to remember. In this paper, we hypothesize that the effect of board diversity on firm performance may be contingent on the level of ESG activities. The increasing trend of ESG activities to signal superior corporate governance is gaining attention across the globe Azmi et al. (2021). This is because the general awareness amongst the public about the issues such as global warming, board independence, employee satisfaction, and work place safety is increasing and various stakeholders are making these criteria as a benchmark to reward or punish the firms Gadeikiene and Svarcaite (2021). As board diversity is also presumed to be an aspect of governance, it is important to investigate as to how it interacts with the ESG activities and leave its impact on the firm performance. In other words, it is interesting to examine whether the level of diversity in the boardroom and involvement in ESG activities are substitute or complement in influencing the firm performance (Gasparėnienė et al., 2021).

Therefore, in this paper, the interaction of board diversity and the ESG activities is examined. In other words, the paper delves into exploring the effect of board diversity and the ESG activities on affecting the firm performance. The objective of this paper adds to the literature in following ways. First, it extends the board diversity literature by exploring its nexus with ESG activities. Second, the paper extends the ESG literature by examining whether it is complimentary or substitute in influencing the firm performance. Third, the paper adds to the diversity and the ESG literature in the developing economies, which is so far confined to the developed nations (Almasaeed et al., 2021; Alsoud et al., 2021; Hernawati et al., 2021; Mattayaphutrong & Mahamat, 2021).

3. Data and methodological approach

The governance literature has often been criticized for not addressing the endogeneity issues in the corporate governance literature Abdallah et al. (2015). More importantly, most of the extant literature has ignored the persistence issue and has generally relied on static modelling. This paper uses a dynamic modeling approach to assess the relationship between board diversity, ESG activities and the firm performance. The detail of econometric modelling specification and the methodological approach is provided in more detail later (Alshahrani, 2021; Diep & Hieu, 2021; Hasker, 2021).

Several data suppliers do not have information on the environmental, social, and governance (ESG) actions of listed companies in China. It's only accessible with the likes of China Corporate Responsibility Institute (CCRI), SynTao Finance, and MSCI, according to the authors' knowledge SynTao is the leading service provider for ESG-related data points among all data suppliers. To put it another way, SynTao's SG coverage of Chinese listed corporations is far and by the most extensive of any other data or service provider. The study decided to use SynTao instead of CCRI or MSCI datasets because of this.

The data used in this paper is sourced from Wind database. The study period of this paper is 2014 to 2019 and hence covers the period of 6 years. The other firm level variables are collected from China Stock Market and Accounting Research Database (CSMAR) database. The total sample size is of 248 listed firms. These firm level variables are based on the extant literature. These variables are financial leverage, revenue growth and total sales. As the firm performance is driven by the macroeconomic conditions as well, the paper also controlled for the macroeconomic conditions. In order to control the degree of freedom issues, the paper only controls for important macroeconomic variables such as economic growth and the level of financial development. These macroeconomic variables are also based on the firm performance literature. The macroeconomic variables are collected from World Development Indicators (WDI). More importantly, following the extant literature, the paper excludes the non-financial firms and the utility firms. These firms have different capital structure as compared to other firms. Moreover, these firms are regulated differently as compared to other firms (Gaba et al., 2021; Hamsal et al., 2021; Lima et al., 2021; Lipińska, 2021; Zhao, 2021).

As mentioned above, the methodological approach used in this paper is that of Generalized Method of Moments (GMM). For the estimation, following dynamic econometric estimation is performed.

$$Performane_{i,t} = \alpha_0 + \beta_1 Performance_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

Equation 1 is the base model. In the above Equation 1, Tobin's Q denotes the profitability of a firm. As it is a dynamic modelling, the lagged values of Tobin's Q are also used. BD is the board diversity. It is measured as the number of female directors to total number of directors. ESG is the composite score on the firms' environmental, social and the governance activities

Among the methods used in this study are Arellano and Bond (1991) First Difference technique, as well as Arellano and Bover (1995) and Blundell and Bond (1998) System GMM approaches. As the study employs a two-step GMM, it employs Windmeijer (2005)'s technique to rectify any downward bias it may have.

When it comes to dynamic panel models, GMM is better to conventional panel approaches. It also solves the problem of finding appropriate instruments to measure endogenous variables. GMM, for example, employs the lagged values of endogenous variables as instruments in its method.

The underlying assumption of GMM is that the data generating process of Y_t follows the stationarity and stochastic process. The application of GMM requires to have known moment conditions. More importantly, vector valued function $g(Y, \theta)$ must be identified in advance:

$$m(\theta_0) = E[g(Y_t, \theta_0)] = 0, \quad (2)$$

In the above equation (Equation 2), E indicates the expectation. The Y is the generic term in the equation. Along the similar lines, the $m(\theta)$ function is required to be different from the numerical value of zero.

The basic idea behind GMM is to replace the theoretical expected value $E[\cdot]$ with its empirical analog—sample average:

The underlying logic behind the methodological approach of GMM is to substitute the expectation (theoretical) of $E[\cdot]$ with the empirics of mean of sample:

$$\hat{m}(\theta_0) = \frac{1}{T} \sum_{t=1}^T g(Y_t, \theta) \quad (3)$$

Furthermore, the expression needs to minimize with regards to θ . The minimizing value of θ is our estimate for θ_0 . The minimized value of θ is $\hat{\theta}_0$.

4. Findings and discussion

The descriptive statistics are provided in the [Table 1](#).

The estimation results are provided in the [Table 2](#). There are three columns in the Table. In the first column, the baseline results are provided. The lagged term of Tobin's Q is significant and positive indicating the persistence of financial performance. In other words, it indicates the past financial performance is a strong determinant of a present financial performance. It also justifies the choice of dynamic modelling (Akpan et al., 2021).

Column 1 of [Table 2](#) shows a correlation between business success and the diversity of the board of directors. The positive and substantial coefficient of board diversity shows that a company's financial success is strongly influenced by the degree of diversity on the board. The Adams et al. (2015) findings are consistent with these findings (2018). More diverse boards, it is said, are better for promoting innovation and hence better for long-term financial success, therefore the findings are not unexpected. Additionally, a more diverse board contributes to improved decision-making in the boardroom by increasing the quality of the discussions. Financial success is also strongly and positively linked to the coefficient of ESG. Both the agency- and resource-dependence viewpoints are supported by these findings. These individuals are certain that ESG has a favourable impact on financial success.

In the column 2 of the [Table 2](#), the baseline equation is extended to include interaction term of board diversity and the ESG activities. The following model is estimated:

Table 1. Descriptive statistics.

Variable	Mean	Min	Max
TOBINS Q	1.62	0.56	107.8
ROA	1.76	-11.89	56.88
ESG	18.17	1.67	94.28
Firm Size	5.91	9.65	88.92
Firm Size	11.06	8.66	56.76
Financial Leverage (%)	31.76	2.60	94.11
GDP Growth (%)	5.65	1.53	9.55
Financial Development	92.66	24.77	121.57

Source: own research.

Table 2. Board Diversity and Performance (System GMM).

	(1)	(2)	(3)
Tobin's Q_{t-1}	0.001*** (0.011)	0.084*** (0.000)	0.005*** (0.000)
Board diversity	0.043* (0.062)	0.051*** (0.000)	0.012* (0.010)
ESG	0.055*** (0.001)	0.029*** (0.000)	0.043* (0.068)
Board Diversity*ESG		-0.033*** (0.000)	-0.059* (0.051)
Firm Size			0.092* (0.088)
Sales growth			0.032* (0.093)
Financial Leverage			0.001*** (0.001)
Economic activity			0.083** (0.019)
Financial development			0.001*** (0.000)
Constant	0.055*** (0.000)	0.006*** (0.000)	0.000*** (0.000)
AR (1/2)	0.67/0.32	0.21/0.32	0.44/0.31
Sargan/Hansen Test (p-Val)	0.39/0.42	0.73/0.58	0.05/0.99

Source: own research.

$$\begin{aligned}
 Performance_{i,t} = & \alpha_0 + \beta_1 Performance_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} \\
 & + \beta_4 (BD*ESG)_{i,t-1} \varepsilon_{i,t}
 \end{aligned} \tag{4}$$

The above equation (Equation 4) is the extension of baseline equation (Equation 1). In the equation, the interaction term of board diversity and the ESG is included. The sign (positive or negative) and the significance of β_4 determine whether the board diversity and the ESG activities are substitutes or compliments in affecting the firm performance.

In the second column of the Table 2, the results include the interaction term of ESG and the board diversity. The negative and the significant interaction term suggest that the board diversity and the ESG activities are substitutes in its effect on the financial performance. These findings are very interesting as it suggest that the firm with a diverse board may not gain from the ESG activities. In fact, as the board diversity increases, the increased ESG activities leads to poor performance.

According to the existing literature, the results of control variables are likewise consistent with the findings. For example, all of the variables at the company level are important. To put it another way, the research shows that increasing the size of the business and increasing sales have a beneficial impact on the firm's success. Financial leverage seems to be linked to worse performance, according to the research. Extant research has shown that increasing financial leverage may lead to a decrease in performance owing to higher debt repayments. Bankruptcy is a possibility in the worst-case scenario. Positive and substantial macroeconomic coefficients may be found. The findings imply that a more prosperous business climate, aided by high-quality financial institutions, is a key factor in the success of enterprises. There is a lot of evidence that excellent macroeconomic circumstances are necessary for businesses to be profitable.

The model is further extended to include macro and the micro variables. The following model is estimated:

$$\begin{aligned} Performance_{i,t} = & \alpha_0 + \beta_1 Performance_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} \\ & + \beta_4 (BD*ESG)_{i,t-1} + \beta_5 A_{i,t-1} + \beta_6 B_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (5)$$

The above equation (Equation 5) is the extension of Equation 4. In the modelling, micro and the macroeconomic variables are included. In the above equation (Equation 5), A are the series of micro or firm level variables used in the paper whereas B is the set of macroeconomic variables. The set of firm level variables are size, leverage and the growth of sales. The size variable is measured by the log of total assets whereas sales growth is measured by the percentage change in profit. Finally, the leverage is measured by the total debt to equity. The macroeconomic variables used in the paper are economic activity and the level of financial development. The economic development is measured by the level of GDP per capita whereas the financial development is measured by the private credit to domestic sector as a percentage of GDP. The data of both the macroeconomic controls are collected from World Development indicators.

The results are presented in the third column of Table 2.

In order to ensure that the results are not driven by the approach of System GMM, the equations 1, 4 and 5 is reestimated using First differenced GMM. The results are presented in Table 3. The findings are almost identical to the results reported in Table 2. These findings suggest that the results are not driven by the adopted methodological approach.

In order to provide additional robustness to the paper. The alternative proxy of performance is used. More specifically, the paper uses Return on Assets (ROA) as an

Table 3. Board Diversity and Performance (First Differenced GMM).

	(1)	(2)	(3)
Tobin's Q_{t-1}	0.099** (0.018)	0.084*** (0.000)	0.000*** (0.000)
Board diversity	0.012*** (0.000)	0.051*** (0.000)	0.072*** (0.000)
ESG	0.043*** (0.000)	0.029*** (0.000)	0.000 (0.545)
Board Diversity*ESG		-0.033*** (0.000)	-0.077* (0.059)
Firm Size			0.000 (0.774)
Sales growth			0.077*** (0.000)
Financial Leverage			0.055*** (0.000)
Economic activity			0.083*** (0.000)
Financial development			0.008*** (0.000)
Constant	0.082*** (0.000)	0.055*** (0.000)	0.045*** (0.000)
AR (1/2)	0.54/0.36	0.23/0.44	0.15/0.55
Sargan/Hansen Test (p-Val)	0.00/0.43	0.43/0.66	0.00/0.38

Source: own research.

Table 4. Robustness – Board Diversity and Performance.

	(1)	(2)	(3)
ROA _{t-1}	0.088*** (0.000)	0.085*** (0.000)	0.089*** (0.000)
Board diversity	0.023* (0.092)	0.051*** (0.000)	0.009*** (0.000)
ESG	0.077*** (0.009)	0.029*** (0.000)	0.078*** (0.000)
Board Diversity*ESG		-0.022*** (0.000)	-0.023*** (0.000)
Control variables (firm level)			Yes
Control variables (country level)			Yes
Constant	0.000** (0.000)	0.000*** (0.000)	0.000*** (0.000)
AR (1/2)	0.44/0.36	0.11/0.33	0.90/0.00
Sargan/Hansen Test (p-Val)	0.66/0.63	0.74/0.55	0.07/0.00

Source: own research.

alternative measure of performance. The equations 6,7 and 8 are similar to equations 1,4 and 5 except that it uses ROA as a measure of performance as opposed to Tobin's Q.

$$ROA_{i,t} = \alpha_0 + \beta_1 ROA_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} + \varepsilon_{i,t} \quad (6)$$

$$ROA_{i,t} = \alpha_0 + \beta_1 ROA_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} + \beta_4 (BD*ESG)_{i,t-1} + \varepsilon_{i,t} \quad (7)$$

$$ROA_{i,t} = \alpha_0 + \beta_1 ROA_{i,t-1} + \beta_2 BD_{i,t-1} + \beta_3 ESG_{i,t-1} + \beta_4 (BD*ESG)_{i,t-1} + \beta_5 A_{i,t-1} + \beta_6 B_{i,t} + \varepsilon_{i,t} \quad (8)$$

The results are presented in Table 4. The reported results (column 1,2 and 3) are almost identical to the findings reported in Tables 2 and 3. The findings, in a way, indicate that irrespective of whether the performance measure is book based or market based, the overall findings remain the same (Al Thuwaini et al., 2022; Castro-Bedriñana et al., 2022; Chuong et al., 2022; Dinh et al., 2022).

Because the macroenvironment is a significant driver of business success, the article also examines the impact of inflation and interest rates in making its conclusions more reliable. Table 5 shows the results of System GMM estimates. Columns 1, 2, and 3 all have findings that are almost identical to those of the other columns. ESG efforts have less of an impact on financial performance when the board is more diverse, and our studies support that conclusion even further.

5. Conclusion and limitations

The effect of board diversity on financial performance is a subject of debate for a long time. There are three important strands on financial performance and board diversity literature suggesting positive effect, negative effect and no effect. More recent literature has stressed on the importance of evaluating the relationship in a contextual way. In a way, it is now suggested that the performance-diversity

Table 5. Robustness – Board Diversity and Performance.

	(1)	(2)	(3)
Tobin's Q_{t-1}	0.032*** (0.000)	0.009*** (0.000)	0.005*** (0.000)
Board diversity	0.043** (0.041)	0.091*** (0.000)	0.785*** (0.000)
ESG	0.059*** (0.000)	0.087*** (0.000)	0.066* (0.091)
Board Diversity*ESG		-0.067*** (0.000)	0.058 (0.933)
Control variables (firm level)			Yes
Control variables (country level)			Yes
Additional control			Yes
Constant	0.047*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
AR (1/2)	0.51/0.00	0.89/0.77	0.72/0.11
Sargan/Hansen Test (p-Val)	0.65/0.00	0.16/0.53	0.02/0.82

Source: own research.

relationship may be contingent on other factors. In this paper, we evaluate the role of ESG activities in influencing the relationship. To test the objective, the data of Chinese listed firms from is employed. The collected data cover the period of 6 years from 2014 to 2019. The findings using the methodological approach of System and the First differenced GMM indicate following. First, board diversity and the financial performance is positively related indicating the importance of having a diverse board which encourages innovation and also leads to improved decision-making. This eventually leads to better performance. Second, the coefficient of ESG activities is positive and significant indicating ESG activities can be used by the firm to improve its performance. This is not surprising as ESG activities are argued to be a source of competitive edge for the firms and hence adds to the long-term performance. Finally, and perhaps most crucially, the word 'interaction' refers to the unfavourable and substantial nature of the relationship between board diversity and ESG initiatives. In other words, the negative and significant coefficient of interaction term suggests that board diversity and ESG are substitutes in predicting financial success. Research shows little benefit to a company with a diverse board of directors, according to the results. Because of this, companies who lack the means to participate in ESG initiatives might acquire a competitive advantage in their markets just by diversifying their board of directors. Alternative measures of financial success had no effect on our findings. In other words, the conclusions reported are equal to both Tobin's Q (a market measure) and ROA (a financial measure) (book measure). Moreover, the findings remain robust to the inclusion of additional control variables such as institutional quality, inflation and the interest rates (Almalki et al., 2022; Griffioen, 2022; Hidayat et al., 2022; Lekhawichit, 2022).

There are several limitations of this paper but two are noteworthy. First, the measure of board diversity in this paper is only viewed from the gender angle and hence other type of diversity such as age, qualification, nationality, religion and culture has been completely ignored. This is one of the drawbacks of this paper and future research can tackle this by including several other dimensions of diversity. Second and somehow related to the first drawback is the use of simple percentage of female directors as a measure of gender diversity. The future research can make use of the

proposed diversity measure such as Shannon Index or even the Blau Index to better capture the diversity essence of the board (Harrison & Klein, 2007).

Disclosure statement

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