The Impact of Board Cultural Diversity on Company ESG Performance under Different Risk Backgrounds

Yulu Ouyang[3, c, †], Yurou Zhang[2, b, †] and Xuejia Xue[1, a, †]

[1]School of business, Monash University, Melbourne, Victoria 3145, Australia;

[2] School of science, Nanjing University of Science and Technology, Nanjing, Jiangsu 210094, China;

[3]School of economics, Jinan University, Guangzhou, Guangdong 511400, China.

[a]xxue0008@student.monash.edu, [b]zhangyr@njust.edu.cn, [c]oyyl1221@2019stu.jnu.edu.cn.

[†]These authors contributed equally

Keywords: Score; Cultural Diversity; COVID-19

Abstract: This study attempts to examine the impact of the company's board cultural diversity in different risk periods on the company's ESG performance. To test our objectives, we collected data on 4,070 listed companies in China from June 2019 to December 2020. According to the progress of COVID-19, we divided the period into high-risk, medium-risk, and low-risk periods. The final result shows that members of the board of directors with an overseas cultural background can improve its ESG performance. Besides, compared to high-risk and medium-risk periods, cultural diversity can improve its ESG performance in low-risk periods.

1. Introduction

In recent years, with society's progress, the concept of sustainable development and corporate social responsibility has received attention. ESG disclosure has become a part of corporate social responsibility, and it has become a key indicator of management capabilities, risk management, and non-financial performance. ESG is a comprehensive indicator of Environment, Social, and Corporate Governance. But it is different from other traditional indicators. ESG examines the company's quality from the perspectives of the environment, society, and corporate governance. It is an emerging corporate evaluation method. In particular, ESG covers various issues related to the environment (such as climate change, energy, and water use), social responsibility (such as human rights, gender equality), and corporate governance (such as corruption and bribery, shareholder protection) [1]. Previous studies have pointed out that the board of directors' composition will affect the effectiveness of control over senior management, thereby reducing the possibility of fraud and improving the quality of mandatory disclosure [2]. The research by Sinicropi and Cortese [3] also shows that the diversity of the company's board of directors positively impacts the company's corporate social responsibility. Today, ESG investment has aroused great interest among asset managers.

However, ESG investing in China remains at an early stage of maturity. In developed markets, institutional investors play an important role in the following aspects, influencing ESG investment practices, questioning the company's ESG performance, and promoting ESG performance within the company. However, in China, institutional investors are still relatively small, and most of the investment activities come from retail investors. Therefore, ESG products' demand is still weak, and investors have only recently included ESG in their investment plans. Besides, during the COVID-19 pandemic, the value of global stocks has fallen sharply. At the same time, ESG performance is positively correlated with the short-term cumulative return of CSI300 stocks around the COVID-19 crisis. There is moderate evidence that higher ESG companies are in COVID-19. During the period, it showed lower price fluctuations. The importance of ESG performance is weakened during normal times and strengthened during crisis times [4].

Afterward, since there have not been many studies on whether the board of directors' diversity under different risk backgrounds is different and its impact on the company's ESG performance. Considering the actual situation of institutional investors in China's financial market, this article discusses different risk backgrounds. The main issue is the impact of the board of directors' cultural diversity on the company's ESG performance. The follow-up structure is as follows: Section 2 is the literature review, section 3 is the sample selection and research design, the fourth section is the empirical analysis, and the last section is the research conclusion and enlightenment.

2. Literature Review

2.1 ESG performance

A study on the impact of ESG factors on the financial performance of Indian companies shows the benefits of ESG performance. It will help investors identify companies that have the potential for sustained financial performance in the future due to reduced ESG risks, thereby guiding their investment decisions. Incorporating ESG policies into the company's strategy will help the company formulate a strategy to obtain long-term benefits. Therefore, the company will be forced to improve its ESG/sustainability performance. The study also shows that from the perspective of the long-term value creation capabilities of ESG factors, decision-makers should force all companies to implement sustainability reports and standardize the report format for meaningful comparison. This will greatly improve the sustainability performance of Indian companies [5].

Another study examined the extent to which employees' appointment to the board's influence market perceptions of environmental, social, and governance (ESG) performance. The results show that investors have a positive Existence have a negative reaction. However, compared with the absence of employee representatives, in the case of employee representatives on the board, ESG performance is less relevant to market participants. Also, the high performance of the ESG pillar reflects higher CSR expenditures, which may bring greater benefits to employees but harm the interests of shareholders [6].

Research by Romano et al. [7] indicates that the presence of women on the board has a positive effect on ESG scores, while the CEO's duality has a distorting effect. Therefore, the presence of female directors has a positive impact on ESG performance. The positive impact of female directors on ESG performance: When one person holds the positions of CEO and chairman at the same time, the risk of conflicts of interest, abuse of power, and lack of participation by other directors in the decision-making process increases, thus reducing other stakeholders on the board. The representative of the company has a negative impact on the company's sustainability performance.

2.2 Cultural diversity of the board and ESG performance

There have been more studies on the diversity of the board of directors. Manita et al. [8] achieved diversity in ESG disclosure by examining whether and how female directors affect corporate social responsibility. The results show that when a company appoints two, three, or more women as board members when two or more women are involved in strategic decisions, they act as active minorities, influencing the rules of the game, the procedures, and practices and contrasting with the usages of the firm. Birindelli et al. [9] study investigate the relationship between board composition (gender diversity, independence, size, activity, and CSR committee) and sustainability performance in a large sample of 108 European and US-listed banks for the period 2011–2016. The results show that when the number of women on the board reaches a certain level, it will positively impact ESG performance. Besides, other board characteristics like board size and a CSR committee are also essential to increase a bank's ESG performance.

The research of Martínez-Ferrero et al. [10] examines the influence of the cultural diversity of the board of directors and the intermediary role of the existence of the corporate social responsibility (CSR) committee. Their purpose is to study how the board members are, their cultural background, and their location. The country's cultural background is different, manifested in sustainable development performance, and how this impact depends on the existence of the corporate social responsibility committee. Research results show that board culture diversity promotes the company's commitment to sustainable development issues and leads to higher social and environmental performance. And the positive impact of board cultural diversity appears to be justified by a CSR committee's existence.

2.3 ESG in the crisis period

At the beginning of 2020, there was a sudden onset of a market-wide financial crisis. COVID-19 had a strong and negative impact on the market. ESG investors pay more and more attention to ESG performance during the crisis, and during the global financial crisis, investors lower expectation of future earnings, yet they could have better (worse) confidence in higher (lower) ESG profile firms [4].

Another study indicated that sustainability has always been the focus of financial investors in the past ten years, with a large influx of funds into the high-asset environment, society, and governance (ESG). Since financial markets crashed in late February, 2020 investors have especially demanded low-ESG risk funds and discarded the high-risk ones. E, S, and G factors have not been valued the same, as a particular preference is shown for funds with low governance and environmental risks. And low ESG risks positively affected inflows into equity funds during the Covid-19 crisis, especially since markets crashed. Research also confirms that in times of crisis, sustainability is seen as a valuable hedge [11].

According to China's coronavirus's impact on the Chinese capital market at the time point, this study divides the time into high-risk, medium-risk, and low-risk periods. We categorize July to December 2020 as a high-risk period, January 2020 to June 2020 as a medium-risk period, and finally, consider July 2019 to December 2019 as a low-risk period.

3. Method

3.1 Data

We created a sample where ESG data comes from Syn Tao Green Finance, and data other than ESG comes from the CSMAR database.

In the first step, we restricted the sample to Chinese A-share listed companies. The sample of ST companies has abnormal financial status or other conditions. The CSRC will deal with them specially, so we eliminated ST companies and got 4,070 samples of listed companies. Due to some variables are counted annually, the annual data are duplicated to supplement the monthly data.

After deleting companies with missing data on main variables in the second step, the final sample involved 3,818 listed companies and 11,682 observations.

3.2 Variables

(1) Dependent variable

According to this article's research purpose and main issues, we select the ESG rating data of China's A-share listed companies from June 2019 to December 2020.

The explained variable in this article is ESG performance. The data is provided by Syn Tao Green Finance, a third-party data provider in China. Syn Tao Green Finance is a leading professional service organization for green finance and responsible investment in China, focusing on ESG data and green finance consulting. The source of ESG information is public information, and the green-financing ESG information evaluation system includes a three-level indicator system. The first-level indicators are the three dimensions of environment, society, and corporate governance. The second-level indicators are 13 classified topics under the environment, society, and corporate governance. The third-level indicators will cover specific ESG indicators, and there are a total of 127 third-level indicators. In the ESG assessment system, according to the importance and influence of different indicators on the enterprise, each ESG assessment indicator will be given different weights according to different industries. After evaluating and scoring ESG information, the evaluation system will weigh a company's overall ESG performance rating, and it is marked as ESGScore. This article converts the ESG score into 0,1 variables and then enters the regression model.

(2) Independent variables

As an independent variable, board cultural diversity is defined by Frijins et al. [12] as the average of cultural distances between board members. In this article, CulturalDiversity represents the board of directors' cultural diversity, that is, the percentage of board members who have different cultural backgrounds from the area where the company's headquarters is located.

(3) Control variables

We performed a conventional variables' control at both firm and board level because firms' characteristics and board configuration might influence ESG performance.

At the firm level, we select the following indicators, the natural logarithm of total assets to measure the size of the company (Size), the return on total assets (ROA) to measure the company's profitability, the asset-liability ratio (Leverage) to measure the company's financial leverage variables, and we use the proportion of transactional financial assets to measure the company's investment. At the board level, size, independence, and the times of meeting are employed. Some other related definitions are also shown in Table 1.

Table 1. Variable definition

Variable	Variable definitions	Source
ESGScore	The company's ESG score from Syntao, where a company's level equals to or higher than B+, is defined as 1, the other is defined as 0.	Wind
Cultural Diversity	The percentage of board members who have different cultural backgrounds from the area where the company's headquarters is located	CSMAR
Size	The natural logarithm of the company's total assets	CSMAR
ROA	Company's return on assets	CSMAR
Leverage	The ratio of total debt to total equity	CSMAR
Free Float	Transactional financial assets/total assets	CSMAR
Board Size	The total number of directors in the company's board of directors	CSMAR
Board Indep	The proportion of independent directors to the total directors of the board of directors	CSMAR
Board Meetings	The total number of board meetings held by the company each year	CSMAR

3.3 Models

This article aims to study the impact of board members with different cultural backgrounds from the country where it is located on ESG performance in different risk contexts. We draw on the practices of Martínez-Ferrero et al. [10] and change the dependent variable (ESG performance) Regression on the independent variable (cultural diversity of the board). The regression model is as follows:

$$\begin{aligned} \mathrm{ESGScore}_{it} &= \alpha_1 \mathrm{CulturalDiversity}_{it} + \alpha_2 \mathrm{Size}_{it} + \alpha_3 \mathrm{Leverage}_{it} + \alpha_4 \mathrm{ROA}_{it} + \alpha_5 \mathrm{FreeFloat}_{it} + \alpha_6 \mathrm{BoardSize}_{it} \\ &+ \alpha_7 \mathrm{BoardIndep}_{it} + \alpha_8 \mathrm{BoardMeetings}_{it} + \sum_{t=9}^{10} \alpha_t Year_t + \eta_i + \mu_{it}. \end{aligned} \quad (1)$$

where ESGScore, CulturalDiversity, Size, Leverage, ROA, FreeFloat, BoardSize, BoardIndep, and BoardMeetings are shown in Table 1; Year is the dummy variable representing the 2 years analyzed. α represents the estimating parameter, η_i represents the unobservable heterogeneity, and μ_{it} represents the classical error term. In our model, where the dependent variable is a dummy variable, the technique of analysis must be adequate for variables taking 0 and 1. Thus, we propose a Logit regression.

Additionally, according to the actual situation of the Covid-19 epidemic, we divide the time interval into three periods. We define the first 6 months of coronavirus (2019.07-2019.12) as a low-risk period and the 6 months of a coronavirus outbreak (2020.01-2020.06) as a high-risk period. After the coronavirus is basically under control, it still remains in some parts of China. So, we define 2020.07-2020.12 as the medium-risk period. The detailed partitions are shown as follows:

Table 2. The judgment of risk periods

Time	Risk Period
2019.07-2019.12	Low-risk period
2020.07-2020.12	Medium-risk period
2020.01-2020.06	High-risk period

4. Empirical Results and analysis

4.1 Descriptive statistics

This table reports the summary statistics of the main variables used in the analysis. For each variable, we present its mean, median, maximum, and standard deviation, as well as the number of non-missing observations for this variable. All variables are defined in Table 1.

Table 3. Descriptive statistics

variable	**N**	**mean**	**sd**	**min**	**medium**	**max**
ESGScore	11682	0.138	0.345	0	0	1
CulturalDiversity	11682	0.119	0.138	0	0.0910	0.667
Size	11682	24.14	1.629	20.83	23.83	31.14
Leverage	11682	0.499	0.216	0.0110	0.501	2.080
ROA	11682	0.0510	0.341	-25.05	0.0420	0.657
FreeFloat	11682	0.0650	0.101	0	0.0210	0.691
BoardSize	11682	10.78	3.097	5	10	24
BoardIndep	11682	0.379	0.0680	0.231	0.364	0.667
BoardMeetings	11682	10.59	4.808	3	10	44

Table 3 reports the descriptive statistical results of explanatory variables, explained variables, and main control variables. The average value of CulturalDiversity is 0.119, the standard deviation is 0.138, the minimum is 0, and the maximum is 0.667, which means that 11.9% of board members come from different cultural backgrounds than the region where the company's headquarters is located. The explanatory variables that measure ESG responsibility's performance are all worthy of low scores, indicating that the performance of Chinese listed companies in fulfilling their social responsibilities is not high. That listed companies still lack the importance of corporate ESG responsibilities. The average board size comprised nearly 11 directors, while 37.9% of these boards had independent indicators concerning the control variables.

4.2 Multivariate analysis: static panel overall regression

We use all-sector companies listed in China as our sample to do the overall regression. The sample period is selected from June 2019 to December 2020, and we get 3,818 listed companies and 11,682 observations. We use the Logit panel regression, and the specific regression results are shown in Table 5.

Table 4. ESG-to-CulturalDiversity sensitivities: baseline results.

	Overall
	(1)
VARIABLES	ESGScore
CulturalDiversity	3.3666***
	(18.060)
Size	0.6305***
	(24.982)
Leverage	-1.6501***
	(-8.506)
ROA	0.4767
	(1.328)
FreeFloat	0.5656**
	(2.052)
BoardSize	0.0257***
	(2.671)
BoardIndep	0.6174
	(1.508)
BoardMeetings	0.0378***
	(6.434)
Constant	-18.0978***
	(-30.915)
Observations	11,682
Pseudo R2	0.1783
Year FE	YES

Note: This table presents the results from estimations of our model. The dependent variable is ESGscore, defined as the company's ESG score from Syntao, where a company's level equals to or higher than B+ is defined as 1, the other is defined as 0. The standard errors used to compute the t-statistics (in squared brackets) are adjusted for heteroskedasticity and within-firm clustering. All specifications include firm fixed effects. Symbols ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Based on our model's setting, we use a multiple logit regression model to examine the specific impact of board cultural diversity on ESG performance. Table 5 shows the analysis results of the impact of board cultural diversity on ESGScore. The regression results show that board cultural diversity has a significant positive impact on ESGScore. Specifically, from the model (1), it can be seen that CulturalDiversity has a significant positive impact on ESGScore at the level of 1%, with a coefficient of 3.3666, which is consistent with our expected results: Members of the board of directors with overseas cultural backgrounds can give the company more international recommendations, thereby improving the company's ESG performance; among the seven control variables, Size, Leverage, FreeFloat, BoardSize, and BoardMeetings have significant effects on ESGScore. Specifically, the regression coefficient of Size on ESGScore is 0.6305, and it has passed the statistical significance test under the 1% confidence level. It has a significant positive promotion effect, indicating that the larger the company, the more advanced the ESG concept, thus the better ESG performance. Leverage has a significant negative effect on ESGScore at the level of 1%, with a coefficient of -1.6501, because high leverage means that the company is operating with high debt, indicating that high debt is not conducive to the improvement of the company's ESG performance. FreeFloat has a significant positive impact on ESGScore at the 5% level, indicating that the higher the proportion of transactional financial assets in total assets, the higher the company's ESG score. BoardSize has a significant positive impact on ESGScore at the level of 1%, which shows that the larger the board size, the better the company's team, the more advanced the ESG concept, and the higher the ESG score. BoardMeetings has a significant positive impact on ESGScore at the level of 1%, indicating that the more board meetings, the more conducive the board of directors to perform their duties and further improve the company's ESG performance.

4.3 Period analysis

This section will conduct a regression analysis of listed companies' ESG scores under different cultural diversity backgrounds under the different periods of the new crown epidemic's impact on the Chinese economy. The results are shown in Table 6 below.

Table 5. ESG-to-CulturalDiversity sensitivities: low-risk period, medium-risk period, and high-risk period.

	Low risk	Medium risk	High risk
	(1)	(2)	(3)
VARIABLES	ESGScore	ESGScore	ESGScore
CulturalDiversity	3.8750***	2.6941***	3.6534***
	(11.940)	(8.507)	(11.268)
Size	0.6553***	0.6063***	0.6384***
	(14.467)	(14.498)	(14.344)
Leverage	-1.8361***	-1.4230***	-1.7130***
	(-5.400)	(-4.291)	(-5.077)
ROA	0.1483	1.1293	0.2897
	(0.476)	(1.527)	(0.576)
FreeFloat	0.3179	0.7920*	0.4933
	(0.601)	(1.864)	(0.976)
BoardSize	0.0063	0.0504***	0.0148
	(0.352)	(3.317)	(0.851)
BoardIndep	0.4521	0.7773	0.5379
	(0.636)	(1.123)	(0.757)
BoardMeetings	0.0441***	0.0301***	0.0410***
	(4.161)	(3.189)	(3.928)
Constant	-18.4564***	-17.4378***	-18.1773***
	(-17.892)	(-18.283)	(-17.959)
Observations	3,894	3,894	3894
Pseudo R2	0.1902	0.1607	0.1846
Year FE	YES	YES	YES

Note: This table presents the results from estimations of our model. The dependent variable is ESGscore, defined as the company's ESG score from Syntao, where a company's level equals to or higher than B+ is defined as 1, the other is defined as 0. The definition periods of the level of risks are defined in table 2. The standard errors used to compute the t-statistics (in squared brackets) are adjusted for heteroskedasticity and within-firm clustering. All specifications include firm fixed effects. Symbols ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

According to the situation of the covid-19 in China, we divided the time before and after the outbreak into three risk periods. Table 6 shows the significance test of the model regression for the low-risk period, the medium-risk period, and the high-risk period. The regression results show that, first of all, whether it is a low-risk period, a medium-risk period, or a high-risk period, CulturalDiversity has a significant positive impact on ESGScore. Specifically, from the model (1), model (2), and model (3), when in a low-risk period, CulturalDiversity has a significant positive impact on ESGScore at the level of 1%, with a coefficient of 3.8750; In the medium-risk period, the influence coefficient of CulturalDiversity on ESGScore was 2.6941, with a significance level of 1%; when in the high-risk period, CulturalDiversity had a positive influence on ESGScore with a significance level of 1%, and the influence coefficient was 3.6534. From the results, we can see that the effect of the low-risk period is the best. This further verifies the impact of board cultural diversity on ESG performance. Companies with high board cultural diversity can better manage and manage, and also improve the company's ESG performance well; although the impact effect during high-risk periods is second, overall the impact effect is also very outstanding, indicating that in the face of major risk events, the cultural diversity of the board of directors can provide more diverse recommendations for the management of the board of directors, they will introduce more advanced foreign concepts, so it can better help the company to adopt better suggestions when responding to global risk events, thereby improving the company's ESG performance. Comparing the results of these three models, it is found that the influence coefficient of the medium-risk period is smaller than the coefficients of the high-risk period and the low-risk period, indicating that the company is in a medium-risk period. Although cultural diversity will positively impact ESG performance, the impact is less than the situation where the company is in a high-risk background and a low-risk background. The reason may be that after experiencing some major global events, most companies already can deal with uncertainty and maintain stable operations. Therefore, the board of directors' cultural diversity has a relatively weak impact on the company's ESG performance during medium periods.

5. Conclusion

In this paper, we discuss the impact of board members' diversity on the company's ESG performance according to different risk periods. From our research, we find that the diversity of board culture positively impacts the company's ESG performance no matter what period. Besides, in the medium-risk period, the impact of board cultural diversity on ESG performance is relatively low. In contrast, in the low-risk period, the impact is greatest, followed by the high-risk period. Therefore, in most periods, when a company's board of directors has a higher different cultural members ratio, the company's better ESG performance will be. When some special circumstances increase or decrease the risk factors, members of different cultural backgrounds on the board of directors can bring greater ESG performance to its positive impact. Based on the above research, this article recommends that listed companies increase the diversity of the proportion of board members based on their own operating conditions and attract professional senior management personnel with overseas backgrounds to cope with the unpredictable global risk environment.

References

[1] Cucari, N., Esposito de Falco, S., & Orlando, B. (2018). Diversity of board of directors and environmental social governance: Evidence from Italian listed companies. *Corporate Social Responsibility and Environmental Management*, *25*(3), 250-266.

[2] Michelon, G., & Parbonetti, A. (2012). The effect of corporate governance on sustainability disclosure. *Journal of management & governance*, *16*(3), 477-509.

[3] Sinicropi, S., & Cortese, D. (2021). (Re) Thinking diversity within sustainable development: A systematic mapping study. *Corporate Social Responsibility and Environmental Management*, *28*(1), 299-309.

[4] Broadstock, D. C., Chan, K., Cheng, L. T., & Wang, X. (2021). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance research letters*, *38*, 101716.

[5] Chelawat, H., & Trivedi, I. V. (2016). The business value of ESG performance: the Indian context. *Asian journal of business ethics*, *5*(1), 195-210.

[6] Nekhili, M., Boukadhaba, A., Nagati, H., & Chtioui, T. (2019). ESG performance and market value: the moderating role of employee board representation. *The International Journal of Human Resource Management*, 1-27.

[7] Romano, M., Cirillo, A., Favino, C., & Netti, A. (2020). ESG (Environmental, Social and Governance) Performance and Board Gender Diversity: The Moderating Role of CEO Duality. *Sustainability*, *12*(21), 9298.

[8] Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018). Board gender diversity and ESG disclosure: evidence from the USA. *Journal of Applied Accounting Research*.

[9] Birindelli, G., Dell'Atti, S., Iannuzzi, A. P., & Savioli, M. (2018). Composition and activity of the board of directors: Impact on ESG performance in the banking system. *Sustainability*, *10*(12), 4699.

[10] Martínez-Ferrero, J., Lozano, M. B., & Vivas, M. (2020). The impact of board cultural diversity on a firm's commitment toward the sustainability issues of emerging countries: The mediating effect of a CSR committee. *Corporate Social Responsibility and Environmental Management*.

[11] Ferriani, F., & Natoli, F. (2020). ESG risks in times of COVID-19. *Applied Economics Letters*, 1-5.

[12] Frijins, B., Dodd, O., & Cimerova, H. (2016). The impact of cultural diversityin corporate boards on firm performance. Journal of Corporate Finance,41, 521–541.