EFFECTS OF BOARD CHARACTERISTICS, CORPORATE GOVERNANCE REFORM AND SOE ON ESG PERFORMANCE OF CHINESE MARKET

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ABSTRACT

Corporate governance issues, which have garnered significant attention from Chinese regulators, may affect the implementation of corporate environmental, social, and governance (ESG) strategies. As a crucial component of corporate governance, the board plays a vital monitoring role. The relationship between board characteristics and ESG performance in China is worth exploring due to the country's unique institutional context. To investigate whether board characteristics, including board diversity, board independence, and the presence of busy independent directors, affect ESG performance, this study utilises a sample of Chinese A-shares from 2012 to 2022. Using the fixed effects model, this study demonstrates the positive relationship between board diversity and ESG performance. The resources (e.g., knowledge, experience, and social networks) that come with board diversity increase the effectiveness of the board in enhancing ESG practices. Moreover, increasing the percentage of busy independent directors has a negative impact on ESG performance. Thus, the findings support the busyness hypothesis regarding the ineffectiveness of busy independent directors in monitoring ESG strategy implementation. Corporate governance reform is effective in strengthening the positive relationship between board diversity and ESG performance. This demonstrates the effectiveness of corporate governance reform in promoting board diversity, and ESG strategies are enhanced by having diverse boards. Further, the positive impact of board diversity on ESG performance is more pronounced in non-state-owned enterprises (non-SOEs) than in state-owned enterprises (SOEs). Therefore, this study shows that non-SOEs are more reliant on the board's oversight role. The Heckman two-step selection model proves the robustness of the findings. Lastly, this study contributes new insights for regulators, investors, companies, and rating agencies.

Keywords: ESG performance, board characteristics, corporate governance reform, state-owned enterprise, China

ABSTRAK

Isu tadbir urus korporat, yang menarik perhatian pihak pengawal selia di China, boleh mempengaruhi strategi pelaksanaan alam sekitar, sosial dan tadbir urus (ESG). Dengan itu, lembaga pengarah memainkan peranan penting dari segi pemantauan untuk memastikan keberkesanan. Hubungan antara ciri-ciri lembaga pengarah dan prestasi ESG di China penting dikaji memandangkan keunikan institusi negara ini. Bagi mengkaji sama ada ciri-ciri lembaga pengarah, termasuk kepelbagaian lembaga pengarah, tahap kebebasan lembaga, serta kesibukan pengarah bebas, dalam mempengaruhi prestasi ESG, kajian ini menggunakan sampel syarikat A-saham China bagi tempoh 2012 hingga 2022. Dengan menggunakan model regresi kesan tetap, kajian ini mendapati hubungan positif antara kepelbagaian lembaga dan prestasi ESG. Sumber-sumber seperti pengetahuan, pengalaman dan rangkaian sosial yang diiringi oleh kepelbagaian lembaga pengarah meningkatkan keberkesanan lembaga pengarah dalam menambah baik prestasi ESG. Sebaliknya, peningkatan dalam peratusan pengarah bebas yang sibuk menunjukkan kesan negatif terhadap prestasi ESG. Dengan itu, dapatan ini menyokong hipotesis 'kesibukan' yang menyatakan bahawa pengarah bebas yang sibuk tidak berkesan dalam peranan pemantauan pelaksanaan strategi ESG. Reformasi tadbir urus korporat berkesan demi mengukuhkan hubungan positif antara kepelbagaian lembaga pengarah dan prestasi ESG. Ini menunjukkan keberkesanan reformasi tadbir urus korporat dalam mempelbagaikan lembaga pengarah, dan strategi ESG turut dipertingkatkan dengan kepelbagaian lembaga pengarah. Tambahan pula, kesan positif kepelbagaian lembaga pengarah terhadap prestasi ESG kurang ketara bagi syarikat milik kerajaan (SOE) berbanding syarikat bukan milik kerajaan (bukan SOE). Dengan itu, kajian ini menunjukkan bahawa syarikat bukan SOE lebih bergantung kepada peranan pemantauan lembaga pengarah. Model penganggaran dua langkah Heckman mengesahkan dapatan kajian ini. Akhirnya, kajian ini menyumbangkan pandangan baharu kepada pengawal selia, pelabur, syarikat dan agensi penarafan.

Kata kunci: Prestasi ESG, ciri-ciri lembaga pengarah, reformasi tadbir urus korporat, syarikat milik kerajaan, China

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AR (1)	The First-Order Serial Correlation
AR (2)	The Second-Order Serial Correlation
BD	Board Diversity
BI	Board Independence
BUSYID	Busy Independent Directors
CBAM	The Carbon Border Adjustment Mechanism
CEOD	CEO Duality
CGR	Corporate Governance Reform
CSDDD	The European Commission Adopted the Corporate Sustainability Due Diligence Directive
CSMAR	China Stock Market & Accounting Research Database
CSR	Corporate Social Responsibility
CSRC	The China Securities Regulatory Commission
ESG	Environment, Social, and Governance
ESGP	ESG Performance
CS	Company Size
FTSE	Financial Times Stock Exchange
GHG	Greenhouse Gas
GMM	The Generalised Method of Moments
LEV	Leverage
Non-SOEs	Non-State-Owned Enterprises

NPG	Net Profit Growth
NPM	Net Profit Margin
R&D	Research and Development
ROE	Return on Total Equity
S&P 500	The Standard and Poor's 500
SC	Shareholding Concentration
SOE	State-Owned Enterprises
SSE	Shanghai Stock Exchange
SZSE	Shenzhen Stock Exchange
The 2002 Code	The Code of Governance for Listed Companies in 2002
The Guidance 2015	The State Council Issued the Guidance on Deepening the Reform of SOEs
The Guidance 2017	The Guidance on Further Improving the Corporate Governance Structure of SOEs
The revised 2018 Code	The Revised Code of Corporate Governance gor Listed Companies in 2018
The 2018 CG reform	Corporate Governance Reform in 2018
UK	United Kingdom
US	United States
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

ESG stands for environment, social, and governance. The environmental pillar refers to climate change, pollution, and over-exploitation of land, among others (Billio et al., 2021). The social pillar entails listed companies voluntarily contributing to the promotion of social mechanisms in several areas, such as product responsibility, gender policy, labour law, human rights, and society (Billio et al., 2021; Li et al., 2023). The governance pillar relates to shareholders' rights, managerial salary, control process, anti-competitive measures, and respect for the law (Billio et al., 2021).

The ESG concept started gaining attention in early 2004, with the United Nations highlighting that the inclusion of ESG in investment decision-making can facilitate the development of more stable and predictable markets (United Nations, 2004). The United Nations Principles for Responsible Investment (UN-PRI), which were developed in 2006 (Atan et al., 2018), proposed that institutional investors consider ESG issues when evaluating corporate performance (Hoepner et al., 2021). Thereafter, stakeholders have been paying increasing attention to corporate ESG issues. ESG has also attracted growing attention among scholars. However, most of the studies are based on developed markets (Atan et al., 2018; Li et al., 2021a), resulting in earlier and faster improvements of developed markets than emerging markets in terms of obtaining comprehensive understanding of ESG and constructing the ESG

mechanisms.

In addition to overseeing the ESG behaviour of domestic companies, some developed markets emphasise ESG practices in supply chains, including overseas supply chains. For example, in 2022, the European Commission adopted the Corporate Sustainability Due Diligence Directive (CSDDD), which incorporates environmental protection and human rights pertaining overseas supply chains into the corporate operations and governance of European companies (European Parliament, 2023). In 2023, the European Union officially launched the Carbon Border Adjustment Mechanism (CBAM) Regulations, which require the greenhouse gas (GHG) emissions contained in imports, including direct and indirect GHG emissions, to be reported (European Union, 2023). CBAM is significant for many emerging markets because developed markets are their main consumers. Hence, they need to improve their manufacturing facilities to reduce the GHG emissions in their manufacturing processes.

China is a leading emerging market in the world, and the country-level ESG initiation should be taken as a major reference. In the environmental aspects, Chinese listed companies are required to improve energy consumption efficiencies and reducing pollutant and GHG emissions (China Central Depository & Clearing, 2022). In the social aspects, Chinese listed companies have increased their socially responsible investments in residential communities while becoming more active in labour union activities, surveying customer satisfaction, and assessing the social responsibility of

suppliers (China Central Depository & Clearing, 2022). In the aspects of governance, the quality of personnel in general meeting of shareholders, board of directors, and board of supervisors has been improving. Further, more companies have set up independent audit committees and compensation committees (China Central Depository & Clearing, 2022). In particular, the Chinese corporate governance code plays an important role in guiding companies' governance settings, thus promoting the improvement of overall corporate governance.

Moreover, the Chinese government is committed to achieving the goals of "common prosperity"[1] and "carbon peaking and carbon neutrality"[2]. In this context, corporate social responsibility (CSR) and environmental protection initiatives enhance companies' visibility among the public and foster stronger relationships with governmental entities. This, in turn, may facilitate the development of favourable policies. Engagement in public welfare initiatives, such as ESG activities, contributes to the enhancement of both corporate value and stakeholder well-being (Feng et al., 2022; Qureshi et al., 2020).

Numerous researchers have studied the impact of board characteristics on ESG performance (Harjoto et al., 2015; Amorelli & García-Sánchez, 2021; Ma & Chen,

[1] "Common prosperity" aims to significantly reduce China's economic inequality, raise the income level of the public, and foster a large and prosperous middle class (Zhang, 2022).

[2] Carbon peak refers to the historical peak of total carbon dioxide emissions within a certain period of time, after which emissions gradually decrease (Wang et al., 2021). Carbon neutrality refers to the offsetting of total carbon dioxide emissions within a certain period of time through environmental protection and other measures (Wang et al., 2021). The Chinese government is committed to reaching peak carbon dioxide emissions by 2030 and striving to achieve carbon neutrality by 2060.

2023; Gerged et al., 2023). However, regulators cannot simply copy the experiences of other countries in order to promote corporate governance in China due to several main reasons. First, China has unique institutional settings and corporate governance systems, such as higher concentrated shareholdings (Azar et al., 2018; Lu & Zhu, 2020) and agency costs between controlling and minority shareholders (Rajagopalan & Zhang, 2008). Second, China's unbalanced economic development has led to differences in internal governance systems and law between developed and developing regions; for example, the oversight system is sounder and more mature in developed regions than in developing regions (Fung et al., 2012; Liu et al., 2022a). Therefore, when formulating and implementing corporate governance policies, Chinese regulators need to consider the unique institutional settings to ensure the effectiveness and continuity of these policy.

ESG engagement is a long-term investment that needs to be strategized in order to generate long-term growth. And one of the jobs of the board is to develop and oversee the company's long-term strategy (Cho & Rui, 2009.; Hass et al., 2016). The board of directors plays a pivotal role in this respect. Literature has consistently revealed the significance of board characteristics in corporate strategy formulations (Pfeffer, 1972, 1973). For example, male-dominated boards are more inclined to favour risky projects (Khaw et al., 2016). Also, long-tenured directors have a better understanding of company operations and a wealth of resources, thus facilitating better decision-making (Liew et al., 2017; Hosny & Elgharbawy, 2022; Paolone et al., 2023). As a result,

differences in board members' experience, skills, knowledge, and social connections can also affect the implementation of ESG strategy.

China has developed its own corporate governance code to guide board composition. Corporate governance has gradually evolved to provide effective protection for stakeholders' interests rather than merely maximising shareholders' value (Ooi et al., 2021). As shown in the Appendix A, Article 25 of the revised Code of Corporate Governance for Listed Companies in 2018 (the revised 2018 Code) introduces the concept of board diversity. Further, Article 35 of the revised 2018 Code emphasises the independence of the board of directors. For example, independent directors must not be associated with shareholders who can influence the independent directors' objective judgement. Moreover, Article 37 of the revised 2018 Code mentions that independent directors should report annually to the general meeting of shareholders. The same article specifies that independent directors should be responsible for the conflicts between shareholders and board members, as well as for matters seriously affecting the operation of the enterprise. This scenario may increase the workload of independent directors.

Furthermore, one of the major corporate governance issues in China is pertaining state ownership. Literature has provided vast empirical evidence regarding the impacts of state-owned enterprises (SOEs) on company outcomes. The notion of state ownership is related to the degree of government control and ownership of enterprises or assets

within a nation's economy, encompassing entities at both state and national levels (Szamosszegi, 2011). State ownership can manifest in several ways, encompassing complete government ownership of companies (referred to as SOEs), partial ownership through shares, or other mechanisms through which the government exerts influence on private-sector activities (Szamosszegi, 2011).

SOEs play important roles in the Chinese markets as government representatives in solving social problems, serving public interests, engaging in environmental protection, and improving employee benefits (Gao, 2011; Xiong & Luo, 2021; Ervits, 2023). The government can appoint managers to SOEs directly, which is a different practice from the promotion mechanisms for the managers of private corporations (Yang & Xue, 2023). Moreover, the oversight role of board members in SOEs is weaker than in non-SOEs (Lin et al., 2020). Therefore, it is important to provide more evidence regarding whether SOE can influence the effects of board characteristics on ESG performance.

1.1.1 The Development of Guidelines on Corporate Governance in China

China's listed companies originated in the early 1990s when most of them were transformed from traditional SOEs (Xing, 2003). However, these companies suffered from corporate governance problems. To enhance the quality of corporate governance in China, the China Securities Regulatory Commission (CSRC), drawing on Western experience, first introduced the concept of independent directors in August 2001 and issued the Guiding Opinions on the Establishment of an Independent Director System

in Listed Companies (Donald, 2006). This Guiding Opinions was the most comprehensive initiative at that time to regulate the internal governance of companies through an independent director system. Since then, as in many other countries, policymakers in China have acknowledged the role of independent directors as an important component of corporate governance law and policy reform.

To further improve the corporate governance framework in China, the securities regulators issued the Code of Governance for Listed Companies in 2002 (the 2002 Code) (Xing, 2003). In addition to focusing on the quality of financial reporting, the 2002 Code also introduced audit committees and accounting/finance specialists for audit committees, emphasising the roles of independent directors and audit committee members in strengthening the oversight role of the board (Chen & Zhang, 2014). The 2002 Code also specified the requirement of social responsibility for listed companies, making it clear that companies had to respect and safeguard stakeholders' interests. However, the 2002 Code did not mandatorily request listed companies to conduct CSR disclosures.

In addition, as representatives of the Chinese government, SOEs are also important market participants. Therefore, the corporate governance reform of SOEs is an important step towards improving China's governance framework. To strengthen the government's leadership role in SOEs, the State Council issued the Guidance on Deepening the Reform of SOEs (the Guidance 2015) and the Guidance on Further

Improving the Corporate Governance Structure of SOEs (the Guidance 2017) (Lu & Zhu, 2020). Specifically, the Guidance 2015 states that adherence to the Party's leadership is the political direction and the principle of deepening the reform of SOEs fully the Party's political core role. Further, the Guidance 2017 states that SOEs should actively explore ways and means to organically combine the principle of the Party's management with the board of directors' selection and appointment of managerial staff. Qualified members of the party group (party committee) of SOEs can serve as members of the board of directors, members of the supervisory board, and members of the managerial level through statutory procedures.

In 2018, the CSRC introduced the revised 2018 Code. As shown in the Appendix A, compared with the 2002 Code, the revised 2018 Code focus on the corporate governance reform on board and sustainable development of listed companies. For example, the revised 2018 Code proposed board diversity for the first time, highlighted board independence and proposed higher requirement to the duty of independent directors, as well as put forward the concept of green development and social responsibility and highlights poverty alleviation. The revised 2018 Code improves the level of ESG disclosure and transparency of listed companies, thus helping to build China's ESG evaluation system. In other words, the revised 2018 Code builds a framework for ESG disclosure for listed companies in China (Ruan & Liu, 2021). The timeline of the development of China's corporate governance guidance is shown in Table 1.1.

Table 1.1

Timeline of the Development of China's Corporate Governance Guidance

Year	Guidance on corporate governance issued
2001	The Guiding Opinions on the Establishment of an Independent Director System in Listed Companies
2002	The Code of Governance for Listed Companies in 2002
2015	The Guidance on Deepening the Reform of SOEs (issued by State Council)
2017	The Guidance on Further Improving the Corporate Governance Structure of SOEs
2018	The Revised Code of Corporate Governance for Listed Companies in 2018

Source: The information was collected by the authors

1.2 Problem Statement

As shown in Figure 1.1, compared to the Standard and Poor's 500 (S&P 500) companies, the percentage of A-share[3] companies that reported ESG from 2011 to 2023 remained low without showing significant improvement. Moreover, among the top 100 ESG reports by the A-share and H-share[4] companies in 2021, the average numbers of pages in the reports were 34 and 67 pages for A-share and H-share companies, respectively (ShenwanHongyuan, 2022). The ESG reports by H-share companies contained more useful information. Meanwhile, the ESG reports by some listed A-share companies had only 10 pages, thus offering limited information (ShenwanHongyuan, 2022). The quality of ESG reporting among Chinese listed companies is also diverse, and most of the ESG reports are descriptive and rarely use quantitative sustainability indicators (Ju et al., 2022; Wang & Zhang, 2022). Accordingly, low quality of ESG reports and low involvement in ESG reporting among

[3] A-share refers to Chinese companies that are listed on Shanghai Stock Exchange or Shenzhen Stock Exchange.

[4] H-share refers to Chinese companies that are listed on Hong Kong Stock Exchange.

Chinese listed companies have been highlighted by various stakeholders (X. Zhou & Nian, 2024).

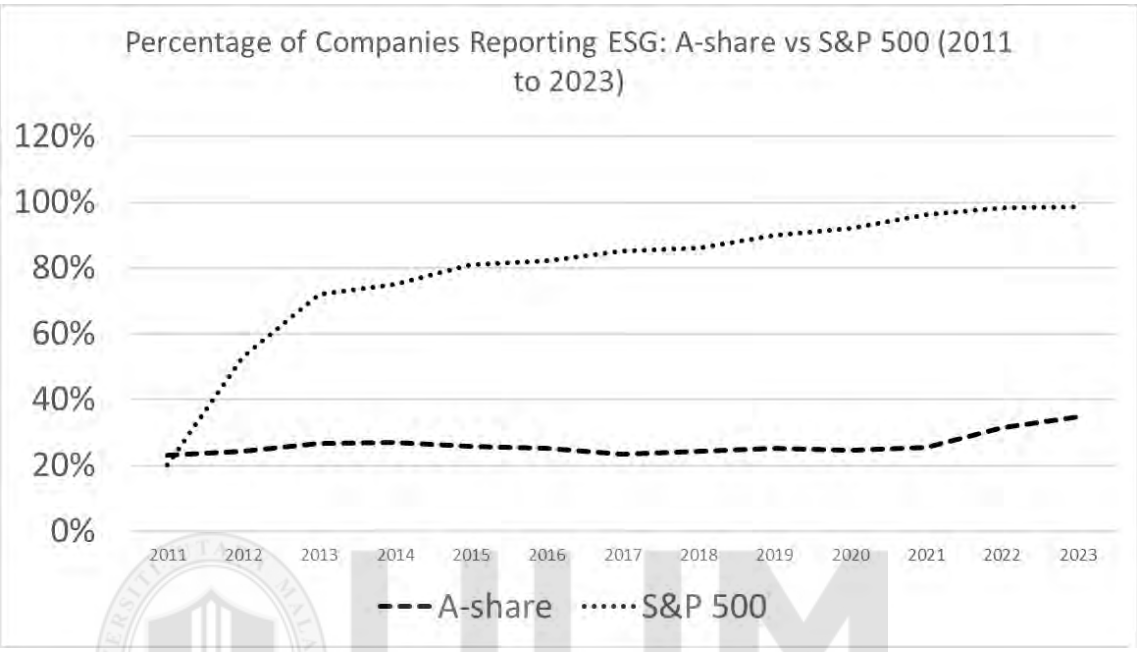

Figure 1.1

Percentage of Companies Reporting ESG: A-share vs S&P 500 (2011 to 2023)

Sources: Rising Tide: An Overview of China A-Share ESG Performance (SynTao Green Finance, 2023); 2024 Sustainability Reporting In Focus (Governance & Accountability Institute, 2024).

Second, non-transparent ESG evaluation systems and inconsistencies among ESG ratings in China make it difficult to directly adopt the evaluation systems of developed markets that can accurately evaluate the sustainability activities of Chinese listed companies (Ju et al., 2022; Liu et al., 2023). The different data sources, assessed indicators, and weighting mechanisms of assessed criteria used have caused disagreements among rating agencies regarding the definition and method for assessing ESG ratings (Billio et al., 2021; Li et al., 2022b). For example, Zijin Mining received a different ESG performance rating from several rating agencies (Li et al.,

2022b). Due to such inconsistencies, market and public have given low recognition to numerous rating agencies (Wang & Zhang, 2022). Unmature and inconsistent ESG evaluation system is not available to provide correct guidance to company's participance in ESG activities, which may limit the improvement of ESG performance.

Third, ESG is a globally irreversible trend. Figure 1.2 shows the long-term trend of ESG scores for developed markets (United States [US], Japan, and United Kingdom) and emerging markets (China, India, and Malaysia). The developed market group has consistently outperformed the emerging market group despite the dedicated efforts by the emerging markets to improve their ESG scores. Developed markets' efforts in sustainability practices commenced many decades ago in response to the oversight pressures from regulators and public, but at that time, most of the emerging markets including China were still focusing on economic growth (Tansan et al., 2023). Industrialisation contributes immensely to China's transition from a low-income to a middle-income nation. Nonetheless, since corporations are important participants in economic development in China, they should be more responsible in improving their ESG performance.

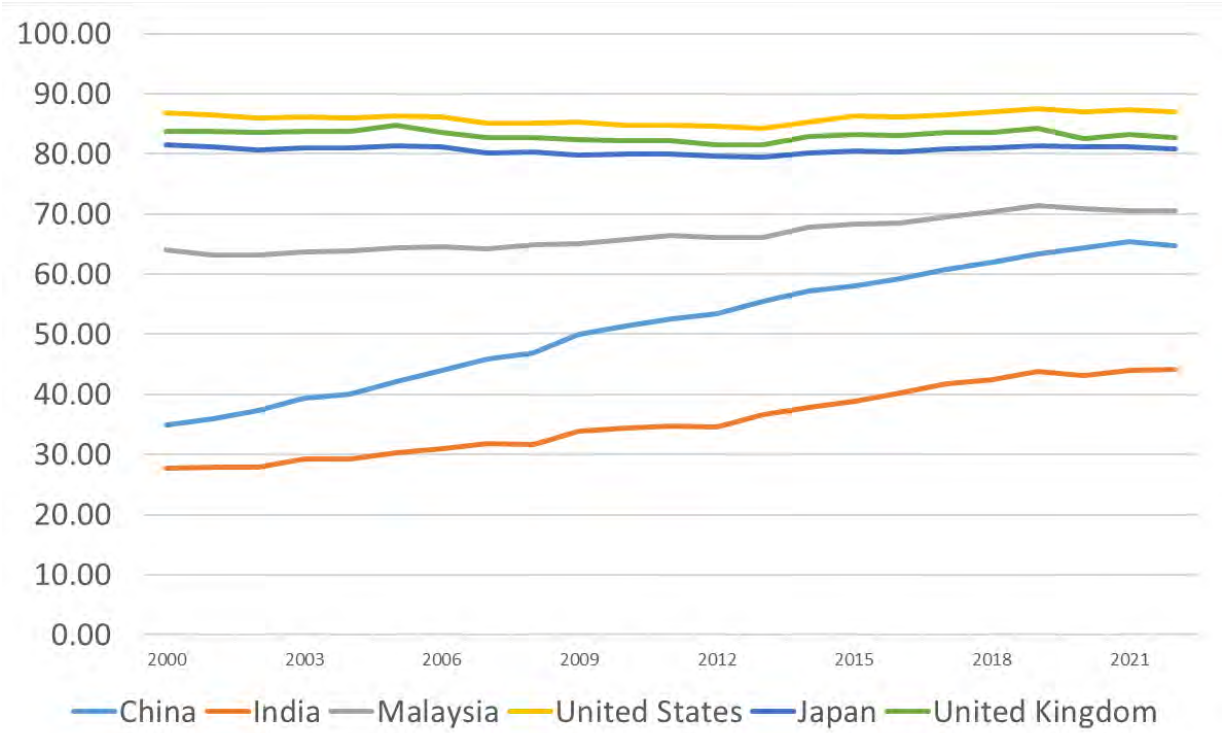

Figure 1.2
Comparison of ESG Global Scores at the Country Level (2000 to 2022)
Source: Refinitiv Eikon DataStream

As one of the largest emerging countries, China is placing stronger emphasis on ESG strategy implementations. Among the three pillars of ESG, governance attracts significant attention from the Chinese regulators due to the incapability of some Chinese companies to effectively implement internal controls (Li, 2020). Poor corporate governance may weaken companies' ability to engage in ESG activities. As one of the important components of corporate governance, the board is in charge of supervising and monitoring the company's behaviour (Cho & Rui, 2009; Hass et al., 2016). Thus, it is necessary to enhance the board's oversight in order to strengthen the corporate governance quality. However, China's informal system (*guanxi* culture) may influence the judgement of board members, as the development of *guanxi* is often

accompanied by an exchange of benefits, encouraging individuals to avoid actions that others may disagree with (Li et al., 2021b). Therefore, it remains questionable whether boards of directors can curb the opportunistic behaviour of executives, and whether they can effectively monitor and guide executives' ESG strategies in China.

In the context of China's commitment to improving corporate governance quality, a well-developed board structure is particularly important for enhancing corporate governance. As a result, CSRC revised the corporate governance code in 2018. The revised 2018 Code not only highlight green development, social responsibility, and poverty alleviation works, but also the revised 2018 Code also makes additional recommendations to the board structure, including encouraging board diversity for the first time, as well as highlighting the independence and increased accountability of independent directors. However, similar to their counterparts in other countries, Chinese regulators encounter challenges in implementing reforms and enhancing the monitoring role of the board (Byung-Seong Min, 2022). Against this backdrop, can the 2018 revised code effectively promote ESG engagement as well as optimise corporate governance structures?

In addition, SOE is another main governance issue in China. Because of their close relationship with the government, SOEs need to not only participate in economic development but also serve the public interest and ensure environmental protection (Gao, 2011; Xiong & Luo, 2021; Ervits, 2023). Thus, SOEs are more inclined to react

to the goals of common prosperity and carbon peaking and carbon neutrality. However, SOEs also face investment inefficiencies (Ho et al., 2022). Does this affect the effective engagement of SOEs in ESG activities? Moreover, SOEs face a more serious agency problem (Ben-Nasr, 2015). To be specific, Unlike non-SOEs, the authority also directly appoints, appraises, and promotes the executives in SOEs (Yang & Xue, 2023), which may reduce reliance on the oversight role of the board. Consequently, whether the close ties between SOE managers and the government influence the effectiveness of the board of directors in preventing opportunistic behaviour by managers is also a matter of concern.

To summarise, this study attempts to assess the impacts of the internal factors of corporate governance, namely board characteristics (board diversity, board independence, and busy independent directors) on ESG performance among Chinese listed companies. At the same time, this study examines the direct impacts of external factors (corporate governance reform and SOE) on ESG performance. Further, this study proves how external factors (corporate governance reform and SOE) affect the relationships between board characteristics (board diversity, board independence, and busy independent directors) and ESG performance.

1.3 Research Questions

This study explores the effects of board characteristics (board diversity, board independence, and busy independent directors), corporate governance reform, and

SOE on ESG performance. Simultaneously, the moderating roles of corporate governance reform and SOEs are also verified. Hence, the following research questions have been developed:

1. How does board characteristics (board diversity, board independence and busy independent directors) affect ESG performance?
2. How does Chinese corporate governance reform in 2018 affect ESG performance?
3. How does SOE have an impact on ESG performance?
4. How does Chinese corporate governance reform in 2018 moderate the relationship between board characteristics and ESG performance?
5. How does SOE moderate the relationship between board characteristics and ESG performance?

1.4 Research Objectives

This study aims to determine whether board characteristics and corporate governance reform help Chinese listed companies improve their ESG performance, and whether SOEs outperform non-SOEs in ESG performance. Moreover, this study seeks to determine the moderating roles of corporate governance reform and SOE in the relationships between board characteristics and ESG performance. Consequently, the research objectives of this study are as follows:

1. To examine whether board characteristics (board diversity, board independence and busy independent directors) affect ESG performance.

2. To examine whether Chinese corporate governance reform in 2018 affects ESG performance.
3. To examine whether SOE has an impact on ESG performance.
4. To demonstrate the moderating effect of Chinese corporate governance reform in 2018 on the relationship between board characteristics and ESG performance.
5. To examine the moderating effect of SOEs on the relationships between board characteristic and ESG performance.

1.5 Scope of the Study

This study aims to examine the influences of board characteristics (board diversity, board independence, and busy independent directors), corporate governance reform, and SOE on ESG performance. This study used the sample of listed A-share companies in China from January 2012 to December 2022. Moreover, the study evaluated whether corporate governance reform and SOE moderate the effects of board diversity, board independence, and busy independent directors on ESG performance. This is because corporate governance reform and SOE may affect the monitoring and supervising role of board members. Finally, the links between control variables (return on total equity [ROE], CEO duality, leverage, net profit margin, net profit growth, research and development (R&D) ratio, company size, shareholding concentration) and ESG performance are also discussed.

1.6 Significance of the Study

This study contributes to theory and practice in several ways, as discussed below.

1.6.1 Theoretical Significance

This study improves the understanding of the factors driving ESG performance among Chinese listed companies. Many researchers have studied the effects of board diversity (Amorelli & García-Sánchez, 2021; Khan et al., 2019; Cahyono; He & Jiang, 2019), board independence (Velte, 2022; Fahad & Rahman, 2020; Agarwala et al., 2022), and busy independent directors (Cooper & Uzun, 2022) on ESG performance in developed and developing markets. However, the institutional environment cannot be neglected (Latif et al., 2020). For example, reform in the UK's governance system is market-driven, whereas China's governance code is government-driven (Komal et al., 2022). Moreover, while the agency problem between shareholders and executives is the main type of the agency conflicts in Anglo-American countries, China experiences both the common agency conflict between shareholders and management and the unique agency conflict between controlling and minority shareholders (Rajagopalan & Zhang, 2008; Wen, 2022). This phenomenon can be attributed to the concentrated shareholdings in China (Lu & Zhu, 2020). Therefore, due to the uniqueness of the Chinese governance context, this study extends the evidence on the relationships between board characteristics and ESG performance.

Second, Chinese scholars have provided evidence regarding the effects of board

gender diversity and board independence on ESG scores in technology sectors (Wang & Sun, 2022; Ma & Chen, 2023). However, companies from different industries react differently in terms of ESG participation (Bai et al., 2022). For example, environmental regulators exert more pressure on polluted industries than non-polluted industries. Hence, the practice in a single industry cannot explain the relationships between board characteristics and ESG performance in most industries. Thus, the present study used samples from non-financial sectors to extend the study by Ma and Chen (2023), thus portraying a bigger picture of the relationships between board characteristics and ESG performance.

Third, previous studies in China have explored the impact of a single board characteristic on corporate ESG activities (Fan et al., 2024; Ma & Chen, 2023; Naveed et al., 2021). While a single dimension of board diversity has a favourable impact on corporate decision-making, board decisions are grounded in the collective wisdom of all members. Thus, a single dimension of board diversity is not adequate to explain the complexity of board operations. Hence, this study provides a more comprehensive insight into board diversity consisting of diversity in gender, expertise, and tenure.

Fourth, this study makes a great contribution to existing theory. Based on stakeholder theory, this study demonstrates that ESG activities are in alignment with stakeholder interests (Feng et al., 2022; Qureshi et al., 2020; Aguilera et al., 2021; Deegan & Blomquist, 2006). This study also expands the use of stakeholder theory to explain

how the board monitors corporate ESG engagement and better serves stakeholder interests. Agency theory can be used to explain the impact of board independence on ESG performance and to extend the evidence on agency conflicts in SOEs and non-SOEs. This study also extends the knowledge of how resource dependency theory supports the role of board diversity in influencing corporate sustainability activities among Chinese listed companies (Gurol & Lagasio, 2023; Hillman et al., 2002; Adeneye et al., 2023; Fayyaz et al., 2023; Salancik, 1978).

Interestingly, research evidence on the effectiveness of busy independent directors is mixed. The reputation hypothesis originating from resource dependence theory and the busyness hypothesis originating from agency theory hold opposing views on the effectiveness of busy independent directors. Therefore, this study extends the applications of resource dependence theory and agency theory in interpreting the roles of busy independent directors in China.

Lastly, this study further extends the evidence of institutional theory regarding the effectiveness of corporate governance reform. Under the pressure of legitimacy, listed companies will adhere to the guidance provided in corporate governance reform. Specifically, companies may optimise board composition, promote the accountability of the board, and involve in more ESG activities after the announcement of the revised 2018 Code.

1.6.2 Practical Significance

This study makes significant practical contributions to regulators, investors, corporations, and rating agencies. First, the results have significant implications for Chinese regulators regarding the relationships between board characteristics and ESG performance. Specifically, regulators can formulate a more detailed corporate governance code. For example, regulators can recommend that corporations implement compulsory gender quotas like in developed markets. Regulators can also suggest that some board members should have specialised knowledge, skills, and experiences. Further, regulators can suggest improvements to the percentages of board members with some specific expertise. Thus, corporations can optimise their board compositions by adhering to the corporate governance code.

In addition, this study observes the effectiveness of Chinese corporate governance reform in 2018, and this may benefit policymakers in identifying and devising a suitable corporate governance mechanism to promote the overall ESG performance. Likewise, regulators can consider developing differentiated policies based on the uniqueness of SOEs and non-SOEs since these two types of organisations have different social attributes.

Second, investors will better understand the determinants of ESG performance pertaining to board characteristics and identify the potential ESG risks based on the relationships between board characteristics and ESG performance. For example, male-

dominant boards tend to make risky decisions on business strategy (Khaw et al., 2016). Male directors who prioritise profit are more likely to support unethical business practices and undermine ESG performance, thereby increasing scrutiny from regulators. Thus, investors with an interest in the corporate board structure might impose pressure on the board of directors through social media and public opinion, which might force companies to improve their board structures.

Third, companies play major roles in ESG, and this study is expected to have significant implications on those companies. The results can help improve corporate understanding of board composition, increase the board's monitoring and supervisory capacity, and expand the effective resources brought in by directors, which will enhance the company's ESG performance. For example, a diverse board can bring in different perspectives, networks, experiences, and skills. The study may also encourage companies to pay more attention to the corporate governance reforms initiated by regulators. In addition, the study further validates the difference between SOEs and non-SOEs in terms of the impact of board characteristics on ESG performance. The findings could provide insights to improve the existing corporate governance code on SOE's governance structure.

Fourth, the findings are valuable to ESG rating agencies in China. Currently, there is no consensus on the ESG rating system at either the international or the domestic level. Therefore, it is imperative for rating agencies to study the factors influencing a

company's ESG performance. In addition, this study may increase rating agencies' focus on corporate governance reforms and compel rating agencies to consider the difference between SOEs and non-SOEs in conducting ratings.

1.7 Structure of the Thesis

This study has five chapters to discuss the effects of board characteristics, corporate governance reform, and SOE on ESG performance, as well as the moderating roles of corporate governance reform and SOE in affecting these relationships. Chapter One presents the research background pertaining to ESG in China, problem statement, research questions, objectives, scope, and contributions of this study.

Chapter Two discusses the definition, assessment mechanism, and importance of ESG in China. It concurrently reviews the relevant theories related to this topic. In addition, the chapter presents the development and relevant research pertaining corporate governance reform in developed and developing markets, including China. Previous studies on the influences of board diversity, board independence, and busy independent directors are analysed, and the moderating roles of corporate governance reform and SOE are also discussed. Importantly, the hypotheses developed for the present study are also discussed in Chapter Two. Concurrently, the chapter provides a review of the literature related to the control variables (ROE, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, shareholding concentration).

Chapter Three explains the data sources, variables' measurements, framework, and regression model of the study. Chapter Four presents and explains the study's empirical results and findings. In the final chapter, the conclusion, findings, significance, limitations of the study and recommendations for future research are discussed.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature related to ESG. The first part discusses the definition of ESG and the formation mechanisms. The second part focuses on the relevant theoretical studies in the key variables (ESG performance, board diversity, board independence, busy independent directors, corporate governance reform and SOE). In addition, the third part also reviews the literature related to the relationship between board characteristics (board diversity, board independence, busy independent directors) and ESG performance. The fourth part focuses on the literature of corporate governance reform and also discuss the influence of corporate governance reform on ESG performance, as well as how corporate governance reform moderates the relationship between board characteristics (board diversity, board independence, busy independent directors) and ESG performance. The fifth part further explores the differences between SOEs and non-SOEs. Finally, the effects of the control variables on ESG performance based on previous empirical findings are discussed. The last section concludes the chapter.

2.2 Overview of ESG

ESG originates from corporate social responsibility. It is a non-financial index used to evaluate corporations' ESG performance and sustainability development strategy (Richardson, 2009; Li et al., 2021a). Currently, there is still no specific definition for

ESG because rating agencies use different dimensions in measuring the ESG scores (Li et al., 2021a). Before the concept of ESG was developed, people preferred to call it “responsible investment” or “corporate social responsibility”. ESG and corporate social responsibility are closely related but differ in concept. While corporate social responsibility aims to make enterprises responsible in society, environment, and economy, ESG expresses the efforts of enterprises in managing environment, social, and governance activities quantitatively (Chen et al., 2022a).

Currently, Chinese regulators are working on completing the ESG regulatory regime, as Chinese listed companies are facing serious environmental, social, and corporate governance issues. For the environmental pillar, as the largest emitter of carbon dioxide in the world, China plays a vital role in controlling GHG emissions (Liu et al., 2022b). China, the “world factory”, has been transformed from a low-income nation to a middle-income nation via industrialisation and urbanisation, which impose high costs on energy consumption and the environment (Jiang & Lin, 2012; Tang et al., 2015). The study by Liu and Bae (2018) has shown that an increase in energy intensity by 1 per cent leads to an increase in carbon dioxide emission by 1.1 per cent. Industrialisation and urbanisation have caused not only environmental issues but also health issues in China. The health issues have worsened because increases in GHG emissions have caused temperatures to rise in the cities that have experienced immense industrialisation and urbanisation. It has been shown than every 1 per cent increase in carbon emissions leads to an increase in outpatients and inpatients by 0.298 per cent

and 0.1662 per cent, respectively (Dong et al., 2021; Liu & Bae, 2018). To achieve the sustainable development goals, policymakers should strike a balance between GDP growth and environmental protection via optimal industrial structures, improvements in energy efficiency, increased consumption of green energy, and policies on technological innovation (Liu & Bae, 2018). Thus, the construction of the environmental score helps to monitor corporate efforts in improving their environmental performance.

For the social pillar, as the most important part of social responsibility, product responsibility aims at protecting the health and safety of customers while also satisfying them (Li et al., 2023). Food products are highly relevant for consumers' health and social security, and the high frequency of food product recall has caused high concerns among the government, media organisations, and consumers (Kong et al., 2019). Corporations that make product recalls also face the risk of losing their reputation, sales, and earning power (Kong et al., 2019). In contrast, corporations that actively engage in CSR activities earn a good reputation and profit (Ngai et al., 2018). For example, during the Wenchuan earthquake, the donation of $14.01 million[5] made by Wong Lo Kat helped to promote the sale of its beverage products, enabling the company to make the top sales in the beverage industry in China (Xu, 2014). In the aspect of gender policy, China has the largest women labour force worldwide. Economic problems and the traditional prejudice towards women workforce have

[5] $14.01 million=RMB100 million (exchange rate at 3 February 2024: $1=RMB 7.12)

caused women to be discriminated in employment and career advancement (Cooke & Zhao, 2021). Moreover, despite Chinese regulators' expectation to introduce a labour law in order to prevent overexploitation by employers, it is difficult to measure the level of corporate compliance with the labour law (Chen & Sun, 2022).

For the governance pillar, the agency problems between controlling and minority shareholders are severe in emerging markets due to weak internal and external governance mechanisms in these countries (Zhao et al., 2023). For example, major shareholders exploit the interests of minority shareholders by using immoral practices, such as insider trading, disclosure of false information, and misappropriation of corporate funds (Zhao et al., 2023). Although the Chinese regulators have strengthened the protection of minority shareholders, the problem of violations by major shareholder has remained serious (Zhao et al., 2023). Thus, corporations need to protect the interests of minority shareholders and reduce the agency problems.

Moreover, internal control is effective in mitigating agency problems (Li & Ren, 2017). The internal control mechanism within the corporate governance system serves to regulate the behaviour of managers, thereby mitigating the occurrence of earnings manipulation and providing effective incentives for executives (Li & Ren, 2017). In addition, women's participation on Chinese boards is relatively low (Liu et al., 2014; Khidmat et al., 2022). This phenomenon may not be conducive to enhancing the board's oversight of the company's risky operations, since female directors are more

risk averse and more ethical than male directors (Khaw et al., 2016; Wang et al., 2022b). Thus, it is important to use quantitative techniques for the governance score in order to describe Chinese listed companies' corporate governance qualities.

Based on the discussion above, this study concludes that the government, investors, and the public pay attention to corporate performance in environmental, social, and governance aspects. Corporations are the mainstay of economic development, and their production and business activities are closely linked to environmental, social, and governance activities. While CSR encourages corporations to be more involved in social, environmental, and economic activities, ESG can provide a quantitative perspective for the assessment of corporate efforts in those activities (Chen et al., 2022a). As a result, ESG has been gradually attracting the government's attention due to its effectiveness in evaluating and monitoring corporate sustainability activities.

2.2.1 The Development of ESG-Related Regulations and Guidance in China

At the regulatory level, the Chinese government has been gradually improving the framework on ESG laws and guidance. In 2006, Shenzhen Stock Exchange (SZSE) issued the Guidelines on Social Responsibility of Listed Companies. These guidelines require listed companies to actively fulfil their social responsibility, regularly assess the fulfilment of their social responsibility, and voluntarily disclose CSR reports. However, the guidelines only encourage listed companies to establish a system for the voluntary disclosure of CSR and environmental information (Zhang et al., 2022).

Therefore, due to the profit maximisation motive, few listed companies executed environmental governance and disclosed environmental information (Zhang et al., 2022). Overall, the issuance of these guidelines has prompted some listed companies to participate in environmental governance and disclose environmental information.

In 2008, Shanghai Stock Exchange (SSE) issued the Guidelines on Environmental Information Disclosure for Listed Companies. These guidelines require listed companies to strengthen their CSR efforts and disclose detailed environmental information, including information on the total annual consumption of resources, pollutant emissions, the operation of environmental protection facilities, and the disposal and recycling of waste (Ren et al., 2020). The guidelines apply to highly polluting industries such as thermal power generation, iron and steel, cement, aluminium electrolysis, and mineral extraction. Despite the government's encouragement for listed companies to implement green energy policies, most companies in China viewed such implementation as a cost (Ren et al., 2020).

In 2014, the Standing Committee of the National People's Congress formally adopted a new Environmental Protection Law. This law, which is considered the strictest environmental protection law in China, increases the responsibility of enterprises and imposes greater penalties for violations in all areas. For example, before 2013, the maximum penalty imposed to non-compliant heavy polluters was only RMB200,000 (Liu et al., 2018). However, after the enactment of this law in 2014, if heavy polluters

fail to deal with their pollution problems within the required 100 days, they would face fines up to RMB20 million (Liu et al., 2018). Therefore, this new law has a significant impact on heavy polluters.

SZSE revised the Measures for the Examination of Information Disclosure Work of Listed Companies on 4 September 2020, introducing an explicit proposal for the assessment of ESG disclosure quality. Proactive disclosure of ESG information is awarded with one point in the Listed Company Disclosure Assessment Scorecard (SZSE, 2020). Likewise, on 7 January 2022, SSE issued Self-Regulatory Guidelines for Listed Companies No. 9, Evaluation of Information Disclosure Work, where one point is added in the Listed Company Disclosure Assessment Scorecard for fulfilling ESG disclosure (SSE, 2022).

On 16 April 2022, China Enterprise Reform and Development Society (CERDS) published the Guidance for Enterprise ESG Disclosure. This is the first ESG disclosure standard in China (CERDS, 2022). The guidance covers a number of ESG issues faced by corporations and provides guidance for Chinese enterprises in implementing ESG strategies. It is an important standard with pioneering and milestone significance.

2.3 Underpinning Theories

On the basic understanding of ESG presented in the previous section, this section will explain the theoretical relationships involved in the main variables from a theoretical

perspective. Specifically, this part will discuss the underpinning theories (agency theory, resource dependency theory, stakeholder theory and institutional theory) and theoretical structure of the dependent variable (ESG performance), the independent variables (board diversity, board independence and busy independent directors, corporate governance reform, SOE) and the moderating variables corporate governance reform, SOE) involved in this study.

2.3.1 Agency Theory

The existence of agency problems was initially proposed by Ross (1973). Agency theory focuses on the nature of the relationship between shareholders and managers, with the former assigning tasks to the latter and the latter being responsible for completing them (Eisenhardt, 1989). Agency conflicts exist because shareholders and managers have different interests. For example, shareholders might aim to achieve the goal of long-term development, but managers might desire more compensation in the short term. Such conflicts of interest between shareholders and managers increase the agency costs and reduce the corporate value (Melé, 2008). Hence, mitigating agency problems should be on the minds of corporate stakeholders. Some scholars propose using disclosure to reduce the agency conflicts. Disclosure can be effective in reducing the information asymmetry between shareholders and managers. As an effective mechanism for a comprehensive understanding of corporate information, compulsory and voluntary information disclosure, such as ESG disclosure, can mitigate agency conflicts (Cerbioni & Parbonetti, 2007).

However, ESG may also cause agency conflicts between managers and shareholders. When corporations have excess disposable resources, they are more willing to increase ESG-related expenditures (Singh et al., 2023a). Using excess resources for sustainable investment increases the costs incurred by the company, thereby increasing the agency costs (Singh et al., 2023a). The agency problems that arise from social responsibility activities are related to the motivation of management (Hussaini et al., 2021). If the management uses social responsibility activities to build reputation and gain private benefits, the agency problem will not be mitigated (Cornell & Shapiro, 2021; Hussaini et al., 2021). Moreover, managers might create the illusion of superior ESG performance in their pursuit of personal gain (Feng et al., 2022). Conversely, if CSR engagement is aimed at increasing shareholder value and resolving conflicts between stakeholders, the agency problem can be mitigated (Cornell & Shapiro, 2021; Hussaini et al., 2021). Thus, manager monitoring, and incentives is key to deriving the benefit of ESG engagement in terms of mitigating agency problems.

According to agency theory, the board is an effective tool for monitoring executives (Fama & Jensen, 1983). It also explains how shareholders use incentives and oversight to influence managers' behaviour and to mitigate agency conflicts in ensuring that the managers' behaviour is in line with corporate interests (Jensen & Meckling, 1976; Mitchell et al., 1997). The board of directors is committed to building a well-structured and reliable internal control mechanism to achieve reliable and clear flows of information and businesses (Jensen, 1993a). Moreover, at the corporate level,

corporate strategy is influenced by board characteristics (Pfeffer, 1972, 1973).

Some scholars suggest that board characteristics may help reduce the agency problems. Board characteristics can influence managers' behaviour and encourage them to engage in more disclosure practices, thereby reducing agency and transaction costs (Chouaibi et al., 2022). For example, independent directors serve as an important tool for reducing agency problems (Kapoor & Goel, 2019). Independent directors can reduce agency problems and improve the quality of corporate governance through a separation of ownership and control (Disli et al., 2022). Thus, companies with higher independence are faced with lower agency costs. However, independent directors with multiple board appointments tend to be busier, and their monitoring ability tend to be weaker, resulting in higher agency problems for companies (Ferris et al., 2003). In addition, SOEs tend to face higher agency costs than non-SOEs (Ben-Nasr, 2015). In China, executives are directly appointed and evaluated by the government (Yang & Xue, 2023). This phenomenon may reduce the role of the board in monitoring executives in SOEs.

In conclusion, board characteristics (board independence and busy independent directors) may influence the intensity by which the board monitors managerial participation in ESG activities. However, the different governance structures of SOEs and non-SOEs are also of concern.

2.3.2 Resource Dependency Theory

Resource dependency theory provides the theoretical foundation for the board's role of offering key resources in which the resources can be identified as the strengths or weaknesses of a corporation (Wernerfelt, 1984). The board offers valuable resources to the corporation, including skills, insights, connections with other companies, and legitimacy (Gurol & Lagasio, 2023; Hillman et al., 2002). The resources provided by the board facilitate participation in corporate sustainability activities in order to achieve stakeholders' goals (Adeneye et al., 2023). In other words, board members with rich experience and knowledge may be better at allocating resources, thereby enhancing the corporation's sustainability involvement (Fayyaz et al., 2023; Salancik, 1978).

Resource dependency theory also supports heterogeneous boards rather than homogeneous boards (Gurol & Lagasio, 2023). This is because diverse board members can bring various insights, social networks, and political connections to the corporation. For example, board gender diversity improves the quality of decision-making, helping the organisation to be consistent with its external environment and resources (Agyemang-Mintah & Schadewitz, 2019). Women directors may suggest to the company to hire more women and incorporate social commitment into the corporate strategy because of the characteristic of social orientation, which is in line with resource dependency theory (Agyemang-Mintah & Schadewitz, 2019; Arayakarnkul et al., 2022).

In addition, corporations may benefit from board experts who can provide them with useful suggestions and information related to social influences, good corporate governance, and new green technology (Homroy & Slechten, 2019). Resource dependency theory also suggests the effects of outside resources on corporate activities (Pfeffer & Salancik, 2003). Particularly, independent directors holding multiple directorships are considered to be of high quality with the ability to provide valuable networks, knowledge, and experiences (Sarkar & Sarkar, 2009; Lei & Deng, 2014; Chatterjee, 2020). This evidence suggests that board diversity and busy independent directors may contribute various resources to help corporations increase their participation in ESG activities. However, resource dependence theory and agency theory offer opposing views regarding the advantages and disadvantages of appointing busy independent directors. Thus, this study provides further validation of the effectiveness of busy independent directors in China.

2.3.3 Stakeholder Theory

Stakeholder theory challenges the long-standing notion of shareholder wealth maximisation, which is thought to be associated with problems related to moral hazard, externalities and monopoly power (Freeman, 1984). Stakeholder theory suggests that a variety of stakeholders, both internal and external, are directly or indirectly affected by an organisation's behaviour (Goyal, 2022). A stakeholder of an organisation is the individual or group influencing or be influenced in the realisation of organisational

goals (Freeman, 2010). According to stakeholder theory, corporations have a responsibility to stakeholders (e.g., consumers and employees, the public, suppliers, governments) (Manita et al., 2018). The goal of shareholder wealth maximisation is gradually shifted to the goal of stakeholder interest maximisation (Ooi et al., 2021).

Stakeholder theory involves corporate management in morality, ethic, and social value, such as environmental and social behaviour (Shakil, 2021). It also emphasises the importance of ESG participation in managing the relationship between a corporation and its stakeholders. Corporations with good corporate governance and lower GHG emissions tend to provide better ESG disclosure to stakeholders (Kraus et al., 2020). Stakeholder involvement helps to balance the objectives of maximising profits and maximising ESG values (Martirosyan & Vashakmadze, 2013). For example, social donations and environmental improvement can help the corporation build a good image to the public and government. In turn, good corporate reputation increases consumers' loyalty and attracts more new clients. Further, the corporation will obtain more political benefits or face lower regulatory pressures from the authority. These positive factors are favourable to the development and growth of corporations. Thus, corporations should participate in non-profit-oriented projects, such as ESG activities, to create value for the corporations and stakeholders (Feng et al., 2022; Qureshi et al., 2020).

Some researchers have argued that managers regard ESG disclosure as an effective

tool for sharing corporate information with stakeholders, including employees, stockholders, and investors (Manita et al., 2018). Increased information disclosure can reduce the level of information asymmetry between managers and stakeholders. According to stakeholder theory, the managers of corporations with excellent ESG performance are more inclined to emphasise the goal of long-term development, and strict monitoring and assessment by various stakeholders motivate executives to participate more in projects with positive net present values (Cook et al., 2019). In addition, it has been proven that the board directors play a significant role in serving stakeholders' interests by intensively overseeing managers. The board not only enforces rules and regulations related to environmentally friendly strategies but also protects the interests of various stakeholders, further improving the sustainability disclosure (Aguilera et al., 2021; Deegan & Blomquist, 2006).

Based on the discussion above, stakeholder theory encourages corporations to participate in ESG activities. However, a board with specific characteristics are needed to oversee the procedures of ESG involvement in order to serve stakeholders' interests.

2.3.4 Institutional Theory

Institutional theory explains how society and cultural environment affect an organisation (Dimaggio & Powell, 1983). Unlike the theories of stakeholder and legitimacy that are linked with corporate legitimacy, institutional theory is concerned with the legitimacy of the entire system (Gray et al., 1995). Specifically, according to

Scott and Meyer (1994), the assumptions, beliefs, and anticipations by society affect organisational behaviour. For example, at the corporate level, managerial accountability requirements can have a clear impact on corporate control and accounting behaviour (Rana et al., 2022).

Organisations need to be in line with institutionalised anticipations and institutional environment in order to gain legitimacy (Scott & Meyer, 1994). Institutional theory explains that organisations cannot merely focus on their own profitability levels, as following the rules of society can help organisations survive and maintain stability, as well as gaining legitimacy and resources (Meyer & Rowan, 1977; Vadasi et al., 2020). Thus, organisations are encouraged to increase their participation in non-profitable activities such as ESG practices in order to achieve legitimacy. ESG activities are jointly promoted by macro or institutional factors, consisting of external economic powers, national economic level, government policy, and cultural and political frameworks (Ahmed & Uddin, 2018; El Khoury et al., 2023).

In China, the revised 2018 Code determines the basic framework of ESG reporting. Institutional theory may explain the effects of the revised 2018 Code on corporations' attitudes towards ESG practices. Legislation enacted at the national level may increase the legitimacy of a country's corporate governance system (Zattoni & Cuomo, 2008). The revised 2018 Code increases the institutional pressures on listed companies and further promotes corporate ESG activities, as listed companies need to gain

institutional legitimacy and recognition from the public, investors, and regulators in order to build a good reputation. Due to the progressiveness and continuity of corporate governance reform (Aguilera & Jackson, 2010), companies will also be encouraged to commit to ESG activities in the long term.

2.4 Board Characteristics

Board characteristics that are the focus of this study, including board diversity, board independence, and busy independent directors. First, this section discusses the literature works related to board diversity and ESG, followed by the hypothesis development. Then, this section discusses board independence and busy independent directors pertaining to their respective link to ESG.

2.4.1 Board Diversity

Board diversity is defined as variety in the composition of a corporate board (Kang et al., 2007a). According to agency theory, the board is a vital tool for managing and monitoring executives (Fama & Jensen, 1983). However, agency theory ignores the fact that the board requires different skills to perform their duty better (Volonté & Gantenbein, 2016). Thus, board diversity can help the board enhance their monitoring and mitigate agency problems (Amin et al., 2022; Khan et al., 2022). Resource dependency theory also supports heterogeneous boards as board members with different backgrounds offer diverse resources to corporations (Gurol & Lagasio, 2023; Hillman et al., 2002). Board diversity can be evaluated from demographic and

cognitive perspectives (Ozdemir, 2020). Board demographic diversity refers to gender, age, and tenure (Ben Selma et al., 2020). Cognitive diversity mainly includes educational background, expertise, and tenure (Li & He, 2023).

Many studies have discussed board diversity in terms of gender, tenure, and skills. First, regarding board gender diversity, women tend to be more prosocial, empathic, and willing to help or comfort the individuals who face troubles (Christov-Moore et al., 2014). Gender diversity significantly improves financial performance and environmental disclosure, as well as mitigates agency costs, as board gender diversity enhances the board's supervising role (Nguyen et al., 2015; Brahma et al., 2021; Chijoke-Mgbame et al., 2020; Gerged et al., 2023). Women directors are more inclined to make ethical decisions (Mangala, 2019) because women tend to be more risk adverse. Meanwhile, male-dominant boards prefer to conduct risky businesses (Khaw et al., 2016; Wang et al., 2022b). Further, the presence of women in the boardroom can strengthen the information transparency pertaining CSR and contribute to shareholders' interests (Amorelli & García-Sánchez, 2021).

However, some scholars have argued that board gender diversity has limitations. For example, female representation can only have a positive influence on financial performance in corporations with weak governance, and mandatory gender quotas in the boardroom can hurt shareholders' value because a higher level of gender diversity might cause over monitoring (Adams & Ferreira, 2009). In addition, the introduction

of the Malaysian Code on Corporate Governance (MCCG 2012), which requires companies to increase board gender diversity, has resulted in lower quality of sustainability disclosure (Zahid et al., 2020). This is because some companies attempt to avoid the pressures from the public, social media, and regulators by merely following the minimum requirements of the mandatory regulations, leading to increased compliance cost or decreased profitability (Zahid et al., 2020). Thus, it is unreasonable to appoint women on the board only as a response to supervisory institutions and social pressure (Adams & Ferreira, 2009).

Chinese scholars have demonstrated the effectiveness of board gender diversity in improving corporate performance. Women's presence in the board room not only enhances monitoring (Marquardt & Wiedman, 2016a) but also positively affects corporate environmental innovations (He & Jiang, 2019). The sociological and physiological characteristics of women board members make them more concerned about environmental problems and technology development than men (He & Jiang, 2019; Singh et al., 2023b). It was found that increasing the number of women in the boardroom helped to increase the sales of electric vehicles (Singh et al., 2023b). Moreover, board gender diversity positively affected corporate ESG score in technology sectors of Chinese markets (Ma & Chen, 2023). However, the findings from one sector cannot explain the relationship between gender diversity and ESG performance in other sectors. Corporations in different sectors perform differently in ESG aspects (Bai et al., 2022). Women directors tend to make ethical decisions, which

can enhance the monitoring role of the board and reduce agency costs (Nguyen et al., 2015; Mangala, 2019; Brahma et al., 2021).

Second, pertaining the board's tenure, board tenure diversity is defined as diversity in long- and short-tenure directors (Ji et al., 2021). Tenure diversity may be beneficial for the continuity and independence of knowledge, thereby improving the quality of decision-making (Ji et al., 2021). In the academic field, the advantages and disadvantages of long tenure have been assessed for a long time. Board members with a long tenure have the advantage of understanding the corporation's business and operation; hence, they bring in more valuable resources to the company and make better strategic decisions (Liew et al., 2017; Hosny & Elgharbawy, 2022; Paolone et al., 2023). However, long-tenure board members probably have closer ties with the management team (Hafsi & Turgut, 2013a). Such close relationships may hurt the independence and monitoring role of the board members. In contrast, short-tenure board members face less governance issues than long-tenure board members (Hosny & Elgharbawy, 2022). Further, new directors tend to be more energetic, risk-taking, and ambitious, and they may offer more new ideas (Hosny & Elgharbawy, 2022). Therefore, as an intangible asset, board tenure diversity can combine the strengths of short tenures in terms of less governance issues and risk-taking with the strengths of long tenures pertaining experience and knowledge.

The evidence gathered from 45 countries indicates that board tenure diversity increases

investment efficiency and mitigates overinvestment and underinvestment, and such relationship is more pronounced in countries with higher-quality institutional quality and social trust (Tran Phuong et al., 2022). Tenure-diverse boards are more independent than non-tenure-diverse boards, thus enhancing the board's monitoring role (Li & Wahid, 2018). Some scholars also support the positive effect of board tenure diversity on improving monitoring, thereby helping to reduce the GHG emission and improve the CSR disclosure performance in emerging markets (Katmon et al., 2017; Khan et al., 2019; Cahyono et al., 2023). Moreover, tenure diversity of board members was found to be negatively linked with corporate risks by enhancing the board's effectiveness in monitoring risky activities (Ji et al., 2021). However, the influence of board tenure diversity weakened in countries with high individualism and power distance (Ji et al., 2021). For example, banks were more likely to conduct risky strategies in countries with high individualism (Ashraf et al., 2016). Additionally, the positive effect of tenure diversity on financial performance was mitigated in family-owned corporations because of the value difference between family- and non-family-owned corporations (Tao-Schuchardt & Chamberland, 2023). This also indicates that the effectiveness of board tenure diversity is affected by country-level and corporate-level characteristics.

After investigating the non-financial companies in China, a study found that a high level of board tenure diversity improved the quality of investment decisions by helping the board members to use their knowledge, expertise, and monitoring power to oversee

investment decisions, thus enhancing corporate decision-making on investments (Ali et al., 2022). Moreover, board tenure diversity was found to reduce the likelihood of financial distress (Ali et al., 2022). A study found that in samples comprising multinational corporations from China, Japan, the UK, and the US, tenure diversity positively affected CSR disclosures. This was because short-tenure directors provided more new ideas, which might better meet the needs of stakeholders and achieve the goals of sustainable development (Peng et al., 2021). Hence, corporations can use the advantages of long-tenure and short-tenure board members to improve the quality of decision-making pertaining to ESG performance.

Third, a board with a diversity of expertise reflects the fact that board members can complement each other's experience to generate insights that are beneficial to company-level strategy (Jung et al., 2023). According to resource dependency theory, a heterogeneous board is more reliable than a homogeneous board (Gurol & Lagasio, 2023). This is because board expertise diversity can bring in a variety of resources, such as knowledge, skills, experiences, and social network (Fayyaz et al., 2023; Salancik, 1978; Adeneye et al., 2023). Specifically, directors with different expertise fulfil their respective roles. Business experts have the advantages of vast experience and knowledge in dealing with commercial problems (García-Meca & Palacio, 2018). More board members with financial and managerial skills enhance the quality of financial reporting, promote resource consumption efficiency, and reduce the likelihood of financial destress and earnings management (Ali et al., 2022; Iqbal et al.,

2022; Pucheta-Martínez et al., 2021; Hasan et al., 2022; Naheed et al., 2021). Directors with industry expertise and science background may invest more in green technology and bring in higher-quality innovation (Cumming et al., 2021; Almaqtari et al., 2023).

However, a well-developed knowledge structure in a particular field may impede the efficiency of handling information from another field (Carpenter & Westphal, 2001). A diverse board with specific experience and functional expertise can oversee corporate investment activities more effectively than a less diverse board (Harjoto et al., 2018). The boardroom should consist of directors with appropriate but different expertise in order to improve the effectiveness of the monitoring and advisory function of board members and increase shareholders' value (Gray et al., 2017). Moreover, board expertise diversity may result in rigorous supervision of managers' participation in ESG activities (Harjoto et al., 2015) by strengthening the intensity of sustainability policy implementation (Fayyaz et al., 2023; Salancik, 1978; Adeneye et al., 2023).

Evidence from China has also proven the effectiveness of board expertise diversity in improving corporate activities and internal governance. A board with more diverse expertise is more capable of monitoring and making better decisions (Harjoto et al., 2018; Ali et al., 2023). In addition, corporations with more board expertise diversity have an open atmosphere allowing them to absorb new viewpoints, which may attract more high-tech talents and thus increase corporate innovations (Cao et al., 2016; Li & He, 2023). Further, board expertise diversity also improves the quality of decision-

making (Agyemang-Mintah & Schadewitz, 2019). This will improve the monitoring and supervising quality and prevent opportunistic behaviour by executives, thus helping to reduce the agency problems. Hence, board expertise diversity is able to bring in various tangible and intangible resources to improve the board's monitoring role in ESG activities.

From the discussion above, some attributes of board characteristics have similar functions. For example, board diversity in gender, tenure, and expertise helps amplify the board's monitoring role (Marquardt & Wiedman, 2016b; Gray et al., 2017; Li & Wahid, 2018). To be specific, board diversity in gender, tenure, and expertise enhances the oversight role of the board in different ways. Board decisions are based on the collective wisdom of all board members (Yeung & Lento, 2018). Hence, a board diversity index can be built using attributes of gender, race, age, experience, tenure, and expertise to measure the overall board diversity (Ozdemir, 2020).

Many scholars have studied the benefits of board diversity. For example, board members from other countries are likely to guide executives to consider the international criteria for participating in corporate disclosure behaviours (Fuente et al., 2017). Heterogeneity of the boardroom is likely to enhance the board's function in corporate governance, thereby improving the effectiveness in monitoring corporations' responsibility performance (Harjoto et al., 2015; Katmon et al., 2017). Further, diversity brings in distinct viewpoints, makes the board more creative and flexible

(Miller & Triana, 2009), and helps to improve the efficiency of the advisory and monitoring role of board members, thus reducing the corporate risks further (Bhat et al., 2020). However, some scholars opine that there should be a balance between heterogeneity and homogeneity in the boardroom because heterogeneity helps companies access diverse resources and homogeneity results in efficient actions (Kim & Kim, 2015). Therefore, corporations should avoid excessive diversity in the boardroom.

In China, board diversity in age, gender, tenure, and education prevented over- and under-investment, thus improving corporate efficiency (Ali et al., 2020; Ullah et al., 2020). Also, board diversity reduced the risk-taking by family companies in China by affecting corporate strategic decisions (Zhang & Luo, 2021). Overall, board diversity can help to enhance the information environment, improve companies' reporting quality, increase information transparency, and enhance the governance system, thus avoiding agency conflicts (Ullah et al., 2022).

The previous studies on the relationship between board diversity in single characteristics (gender, tenure and expertise) and ESG performance, while this study more emphasize the benefits of overall board diversity in implementing ESG practises. Overall board diversity makes the best of the knowledge, resources, experiences, and skills of board members to enhance the monitoring role pertaining corporate strategy implementation in many aspects, such as ESG activities. Further, overall board

diversity strengthens the information disclosure quality and reduces the information asymmetry and agency conflicts. Since shareholders focus more on corporate long-term development, the higher level of information disclosure increases shareholders' understanding and oversight of managers' behaviour. Hence, this study seeks to demonstrate the effectiveness of increased overall board diversity in influencing ESG performance. This study proposes that board members with various experiences can lead to more thorough decision-making and a stronger emphasis on sustainability and social responsibility. Thus, the aim of this research is to provide empirical evidence that supports resource dependence theory by examining the link between board diversity and ESG performance.

H1: There is a positive relationship between board diversity and ESG performance.

2.4.2 Board Independence

A board is independent if it is composed of insiders and outside independent directors (Muller-Kahle et al., 2014). Outsiders have no previous or current employment relationship with the company and no close ties with the management team (Muller-Kahle et al., 2014). Agency theory suggests the importance of independent directors in monitoring executives' behaviours and reducing agency problems (Kapoor & Goel, 2019). Independent directors need to prove that they have no ties with insider directors, and they need to safeguard their reputation and goodwill by improving information transparency and integrated reporting quality (Forker, 2012; Chouaibi et al., 2022;

Nicolo et al., 2023). As a governance mechanism, independent directors are more likely to balance corporate financial and non-financial goals in order to solve the conflicts among different stakeholders (Haque, 2017). Board independence improves corporate governance through a separation of ownership and control (Disli et al., 2022).

Vast international evidence has shown a positive relationship between board independence and CSR performance (Velte, 2022; Fahad & Rahman, 2020; Agarwala et al., 2022) . As a governance mechanism, independent directors are responsible for overseeing corporate environmental actions in order to safeguard stakeholders' interests, promote board effectiveness, mitigate agency problems and information asymmetries, and enhance their own reputation (Li et al., 2008; De Villiers et al., 2011). Under the higher intensity of independent directors' monitoring, corporations might increase the expenditures on environmental protection. Hence, board independence significantly reduces carbon emissions (Haque, 2017). High participation by outside directors also weakens the links between insider directors and executives, resulting in monitoring efficiency and social disclosure legitimacy (Al-Dah et al., 2018; Arayssi et al., 2020). Furthermore, an increase in the number of independent directors stimulates the board's concern towards social issues and enhances the ESG disclosure quality (Nicolo et al., 2023). Independent directors are also more concerned about stakeholders' interest, and they guide managers to participate more in ESG activities (Miranda et al., 2023).

However, some researchers have also noted free-riding behaviour among independent directors. A study found that board independence weakened carbon emissions performance, and the relationship was curvilinear (Oyewo, 2023). Independent directors lacking in professional and specific knowledge did not promote stronger environmental performance (De Villiers et al., 2011). In addition, an excessive number of independent directors resulted in weak monitoring due to a lack of effective communication and coordination, as well as the existence of loafing tendencies among board members (Wang & Hussainey, 2013; Oyewo, 2023). Therefore, an excessive number of independent directors can also be a double-edged sword.

The concept of independent director is imported to China from the Anglo-American model (Wu et al., 2015). There are varying insights regarding the effectiveness of independent directors in Chinese listed companies. Some independent directors lacked independence, with higher cash compensations compelling them to pay less attention to monitoring corporate behaviours and to be more willing to engage in earnings management (Ye, 2014). They attempted to maintain their reputation by keeping silence or voluntarily resigning from the companies they served before the negative events were exposed (Lin et al., 2012). A study used in-depth interviews in 2009 and found that independent directors seemed to play a symbolic role because they hardly enhanced the financial disclosures in China (Wu et al., 2015). The presence of independent directors in most Chinese listed companies was merely as a response to the pressure from regulators and to build a good image of corporate governance (Wu

et al., 2015). Consequently, China's independent directors seemed to play the role of an "ornamental vase" with no ability to fulfil their monitoring and advising roles effectively, and some even exacerbated the agency problems in listed companies (Wu & Dong, 2021).

On a positive note, high compensation demonstrates the market value of reputable outside directors, and reputational motives motivate outside directors to maintain independence and challenge executives at board meetings (Luo et al., 2023b). Independent directors with strong monitoring power significantly contribute to company performance and sustainable growth among Chinese companies (Luo et al., 2023b). Some studies found a positive link between board independence and sustainability reporting in China, with outsider directors being more responsible and accountable for stakeholders' interests (Kılıç et al., 2021; Pasko et al., 2021). Likewise, Ma and Chen (2023) proved the existence of a positive relationship between board independence and ESG score in China's technology sector. However, their study focused on only the technology sector. Corporations in different sectors perform differently in ESG aspects (Bai et al., 2022).

For example, technological companies face less pressure from environmental regulators, and they have more technology-related knowledge and skills to develop or absorb green technology compared to the companies in other industries. Meanwhile, some manufacturing industries characterised by high levels of pollution face more

challenges pertaining to environmental protection and need to spend more to purchase environmental protection facilities. The regulatory pressures faced by independent directors from stakeholders can vary across industries. Subsequently, research that covers more industries can offer comprehensive and integrated insights into the relationship between board independence and ESG performance. As a good watchdog, an independent director is accountable to serve the interests of various stakeholders (Cooper & Uzun, 2022) and mitigate agency problems (Kapoor & Goel, 2019). Thus, this study expects board independence to have a positive effect on ESG performance.

H2: There is a positive relationship between board independence and ESG performance.

2.4.3 Busy Independent Directors

An independent director holding three or more positions in different companies can be regarded as busy (Ferris et al., 2020). The effectiveness of busy independent directors remains controversial in academia, with one of the most popular arguments being the busyness hypothesis and the reputation hypothesis.

The theoretical basis of the reputation hypothesis is the resource dependence theory (Latif et al., 2020). The reputation hypothesis supports the notion that multiple directorship positions indicate directors' outstanding abilities (Fama, 1980; Fama & Jensen, 1983). Busy independent directors are more talented and reputable, and hence,

they are more likely to be employed by more companies (Falato et al., 2014). Independent directors holding multiple directorship positions can be regarded as high-quality directors, which means that they can offer valuable networks (Lei & Deng, 2014). Moreover, independent directors with multiple directorships are more able to collect information related to market situations, competitors, consumers, and suppliers, enabling them to provide more valuable and high-quality recommendations (Field et al., 2013). Accordingly, despite their limited time, busy independent directors can contribute more towards increasing corporate value and mitigating earnings manipulation due to their knowledge, experiences, and resources (Sarkar & Sarkar, 2009; Chatterjee, 2020).

The theoretical basis of the busyness hypothesis comes from agency theory (Latif et al., 2020). The busyness hypothesis was developed by Ferris et al. (2003) who argued that directors with multiple board appointments are unable to effectively monitor management's behaviour because they are too busy. Multiple director positions increase the workload and constrain their attention to specific companies (Ferris & Liao, 2019). Busy independent directors are also more inclined to be absent in corporate board meetings and are unable to fully focus on serving corporate matters (Jiraporn et al., 2009; Lin et al., 2014; Ferris & Liao, 2019). Moreover, busier independent directors have insufficient time to understand and appraise the procedure for information security implementation, thus increasing the possibility of information security incidents (Hsu & Wang, 2021). Consequently, the multiple directorships held

by independent directors generate a busyness cost because they are unable to use their outstanding skills and knowledges to play the oversight role in limited time, thereby leading to worse agency problems (Ferris et al., 2003; Falato et al., 2014; Cooper & Uzun, 2022; Fernández Méndez et al., 2015).

Many scholars also discussed the effectiveness of busy independent directors in China . Independent directors holding multiple directorship positions can be regarded as high-quality directors, and they can offer valuable networks that enhance corporate value (Lei & Deng, 2014). However, the positive effects of busy directors on corporate value and board effectiveness decrease as their busyness increases (Lu et al., 2013; Lei & Deng, 2014). Thus, busy directors should be limited to a specific percentage of the board size. Wang et al. (2023) studied the moderating role of reputation incentive (company size) between busy directors and CSR in China, and they found that with strong incentives (large companies), busier directors contributed to CSR performance, whereas with weak incentives (small companies), busier directors negatively affected CSR performance. Thus, the reputation incentive can affect the effectiveness of busy directors (Wang et al., 2023). In other words, busy directors may adjust the time and energy they spend serving CSR activities in scenarios with different reputation incentives.

In A-share companies, the supervision by interlocking directors will decrease if they hold more director positions in other companies, and this situation may also reduce the

financing efficiency (Qiu & Sun, 2021). Such independent directors spend more time on matters outside the company in order to achieve their own interest in human capital, director compensation, or other intangible interests, thus reducing the corporate governance quality (Qiu & Sun, 2021). Moreover, after the Covid-19 outbreak, the busyness of independent directors is not conducive to corporate recovery (Chen et al., 2021b). Crises distract busy independent directors, and their busyness reduces their monitoring ability, subsequently destroying corporate value. This is because independent directors with multiple director positions are unavailable to immediately offer effective supervision and recommendations during emergencies.

Some scholars have studied the effect of busy directors on ESG practises. Directors with multiple directorships can contribute to CSR scores and those directors understand the CSR strategies of different companies, thus they are more competent to evaluate CSR strategies and meet the stakeholders' expectation, further improving company's reputation and performance (Beji et al., 2021). Using the samples in US, Cooper & Uzun (2022)'s find that busy outside directors have a positive impact on ESG performance, supporting the reputation hypothesis that busy outside directors who hold multiple board seats are full of experiences and outstanding talents. This is because busy directors, with their rich knowledge, experience, and new insights pertaining to emerging trends and commercial strategies, are more capable of making wise decisions for stakeholders' interest, further influencing ESG strategy.

However, there are questions as to whether the experience of developed countries can be generalised to developing countries. The gaps between developed countries and developing countries also shape different corporate behaviour and impede the generalisability of developed countries' experiences in developing countries (Ghosh, 2006; Fan et al., 2011). Developed countries have more mature institutional mechanisms and more efficient market monitoring systems. Although the corporate governance systems in developing countries are mostly set based on the practical experiences of western countries, developing countries confront challenges due to weak institutional quality, insufficient corporate governance consciousness, agency problems, and others. In specific, the common agency conflict between shareholders and management and the unique agency conflicts between controlling and minority shareholders simultaneously exist in China because of the presence of high concentrated shareholdings (Rajagopalan & Zhang, 2008; Wen, 2022). For example, the shareholding of the largest shareholder in US listed companies is usually less than 10 per cent (Azar et al., 2018) while in China, the average shareholding of the largest shareholder of listed companies exceeds 30 per cent (Lu & Zhu, 2020). In emerging markets, the phenomenon that major shareholders exploit the wealth of minority shareholders is more pronounced (Young et al., 2008; Jiang & Kim, 2015).

Moreover, governance approach of board directors differs from culture to culture (Del Brio et al., 2018). For example, Law (2017) studied the difference of national culture from China and the US in affecting auditor independence and found that *guanxi* culture

negatively affect auditor independence in China while this relationship does not hold in US. Since US is an individualistic country while China is a collectivist country with low individualism. The tie among individuals is closer in low individualism country (Ferris et al., 2020). High individualism increases the possibility of accepting board directorships (Ferris et al., 2020). Moreover, the success of people in individualistic societies is judged on an individual (Grossmann & Santos, 2016). Individualism encourages individuals to be responsible for their own behaviour (Hofstede et al., 2005). Thus, individualism culture further enhancing the accountability of independent directors (Cui et al., 2020). Busy independent directors are still effective in individualistic society.

By contrast, Chinese society are affected by Confucian and *guanxi* culture, and the former highlight harmonious relationships and avoid conflicts while the latter refer to the norm of mutual benefit between individuals (Barbalet, 2021; Chen et al., 2022b). As one of the core cultures in China, *Guanxi* means the development of interpersonal relationships (Li et al., 2021b). Good *Guanxi* are often accompanied by an exchange of interests, which encourage individuals to avoid actions that others may disagree with (Li et al., 2021b). In such kind of context, independent directors are not willing to vote against executives since they are implicitly constrained by the need to maintain interpersonal *guanxi* (Li et al., 2021b). Consequently, the busy independent directors who have developed extensive and deep social networks across different companies are more willing to compromise and avoid conflict with executives in China, which

also protect their interests in such kind of personal interrelationship. In other words, independent directors with multiple directorships are more inclined to serve their own interest (Qiu & Sun, 2021), such as frequent socialising.

All in all, the presence of *guanxi* culture may increase agency costs and decrease monitoring role of independent directors. Thus, such kind of compromise with executives may make busy independent directors pay even less attention to company affairs, further weakens their supervision on ESG strategy. This study, therefore, proposes the following hypothesis:

H3: There is a negative relationship between busy independent directors and ESG performance.

2.5 Corporate Governance Reform

Corporate governance reform refers to the deliberate intervention on corporate governance by the government, securities and exchange commission, or stock exchange (Kim & Lu, 2013). Usually, corporate governance reform focuses on publishing a set of codified corporate governance norms, amending the role or structure of boardrooms and committees, appointing external auditors, and distributing the rights and powers between stakeholders and managers (Aguilera & Cuervo-Cazurra, 2004). Corporate governance reform is also intended to promote the transparency of information disclosure (Ahmed, 2013). Regulatory reforms may have

an impact on governance variables (Matolcsy et al., 2011).

As important part of corporate governance reform, the corporate governance code is a soft law to guide companies' corporate governance setting (Zattoni & Cuomo, 2008). Although the corporate governance code merely offers guidelines, the code may compel corporations to reform their internal mechanisms due to legitimacy pressure (Fauver et al., 2017; Zattoni & Cuomo, 2008). Thus, as one of the important determinants of corporate governance (Dahya et al., 2008), the board of directors will also be affected by corporate governance reform. For example, the board needs to take more responsibility on monitoring non-financial activities, including ESG activities. Concurrently, the value of corporate governance gradually shifts to protecting stakeholders' interests from maximising shareholders' interest (Ooi et al., 2021).

Corporate governance has been developed for a long time in developed markets. In 1992, the UK enacted the first corporate governance code, defining it as the system that directs and controls companies (Cadbury, 1992). Since the establishment of its version in 1992, the code has been revised many times to improve the overall corporate governance quality in the UK. For example, the UK Corporate Governance Code 2011 encourages the appointment of women board members (Farooq et al., 2023). Policymakers from other countries have also improved the content of the UK Corporate Governance Code to suit the specific contexts of their countries by making additional requirements and recommendations in these revised codes. For example, the

Corporate Governance Action Plan of 2012 issued by EU policymakers has additional requirements on corporate transparency, protection of shareholders' right, board effectiveness, and the promotion of shareholder long-term engagement (European Commission , 2012).

Gradually, developed markets have become increasingly concerned about sustainability development. In 2018, EU policymakers mentioned the link between corporate governance and sustainability (European Commission, 2018). The Australian Securities Exchange and the New Zealand Stock Exchange started encouraging or requiring listed companies to perform sustainability reporting in 2014 and 2017, respectively (Zaman et al., 2021). Japanese listed companies have also made progress on sustainability performance, balancing the interests of stakeholders and shareholders by revising the corporate governance code (Ooi et al. 2021).

Developed countries have more mature institutional mechanisms and more efficient market monitoring systems. Although the corporate governance systems in developing countries are mostly set based on the practical experiences of western countries, developing countries confront challenges due to weak institutional quality, insufficient corporate governance consciousness, agency problems, and others. The gaps between developed countries and developing countries also shape different corporate behaviour and impede the generalisability of developed countries' experiences in developing countries (Ghosh, 2006; Fan et al., 2011).

Emerging markets need strong and strict regulations to promote corporate governance mechanisms (Abraham et al., 2015). Effective implementation of corporate governance is dominant in the governance code revisions (Alkebsee et al., 2022). Strong external governance is likely to strengthen the effectiveness of internal governance mechanisms in safeguarding shareholders from being controlled by managers (Khan & Rehman, 2020). Abraham et al. (2015) proposed a stricter penalty measure whereby regulators can increase the penalties imposed on non-complying companies, and this measure can significantly increase disclosure. The stricter penalty measure can also promote corporate compliance with the corporate governance codes. Besides improving the information disclosure quality, reforms also affect corporate investment. A stricter corporate governance reform can lead to more positive investment results in developing markets with continuously changing regulatory environments (Koirala et al., 2020). In particular, in the context of weak institutional governance, corporate governance reform has become an important policy tool and has replaced the market system with weak monitoring in improving corporate risk-taking and corporate investing activities (Koirala et al., 2020).

As one of largest economies, China has achieved high-growth and high-quality economic development. However, the increasing number of listed companies has also revealed more problems and shortcomings in corporate governance. Thus, China has been working at the macro level to perfect the legal framework and promote the

monitoring role of regulators. At the micro level, corporations have also enhanced their internal monitoring and control in order to comply with the regulations and monitoring requirements. China has also introduced the corporate governance mechanisms adopted from developed countries. For example, the 2002 Code was implemented to improve the quality of financial reporting, establish the corporate governance system, and reduce information asymmetries (Chen & Zhang, 2014; Liu, 2015; Ji et al., 2015).

Before the introduction of the 2002 Code, China's financial markets suffered from weak law mechanisms, ineffective corporate governance, low credibility and transparency of financial information, and directors' related party transactions, among others (Ji et al., 2015). Compared to other regulations in China, the 2002 Code provides clear guidance on corporate governance in practice (Chen & Zhang, 2014). For example, the 2002 Code highlights the importance of independent directors and audit committees in monitoring corporate behaviour. Many studies have proven the practical significance of the 2002 Code in improving the quality of corporate governance mechanism. The introduction of the 2002 Code has significantly mitigated the scale of earnings management and improved earnings quality by introducing independent directors and audit committees (Chen & Zhang, 2014; Ji et al., 2015). However, the effects on SOEs are insignificant because SOEs have higher tendencies to engage in earnings management in order to artificially boost their performance (Chen & Zhang, 2014). Private companies exhibit higher-quality corporate governance mechanism than SOEs (Chen & Zhang, 2014).

Furthermore, China still suffers from severe challenges on improving corporate governance because the institutional settings and corporate governance system in China are considerably different from other countries. Firstly, China has higher concentrated shareholdings than other developed countries. For example, the shareholding of the largest shareholder in US public companies is usually less than 10 per cent (Azar et al., 2018). In China, the average shareholding of the largest shareholder of listed companies exceeds 30 per cent, and the shareholding of the largest shareholder in SOEs is greater than that of non-SOEs (Lu & Zhu, 2020). Moreover, unlike the markets in western countries, the Chinese government holds a certain percentage of shareholdings in listed companies (Liu, 2015). The concentrated state shareholdings may increase the information asymmetry, which can induce conflicts between the state and minority shareholders (Su et al., 2008). The concentrated government shareholdings in SOEs reduce the need for external auditors because the government can monitor managers' behaviour directly (Piotroski & Wong, 2012). A high level of shareholding concentration increases the likelihood of managerial self-dealing for private interest, thus impeding information disclosure to the public (Wang & Wu, 2011).

Secondly, the common agency conflicts between stakeholders and management and the unique agency conflicts between dominant shareholders and minority shareholders simultaneously exist in China (Rajagopalan & Zhang, 2008). The agency conflict

between shareholders and management mainly exists in Anglo-American countries, whereas the agency conflict between controlling and minority shareholders exists in emerging markets due to concentrated shareholdings (Wen, 2022). Principal–principal conflict means interest dispute between controlling shareholders and minority shareholders, and major shareholders are more capable of exploiting the wealth of minority shareholders. This kind of expropriation mainly exists in emerging markets (Young et al., 2008; Jiang & Kim, 2015).

Thirdly, China has a unique structure and driving factors of corporate governance. On one hand, Chinese companies have both a director board and a supervisory board, which combine the uniqueness of a US-style single board and a German-style two-tier board (Hass et al., 2016). The director board is mainly charged with defining and supervising long-term strategies, similar to the responsibility of the board of directors in the US (Cho & Rui, 2009; Hass et al., 2016). Meanwhile, the supervisory board mainly oversees executives, the board of directors, and corporate financial affairs (Hass et al., 2016). However, unlike the German-style two-tier board, the supervisory board in China only plays a monitoring role and does not have the power to appoint and appraise managers (Jia et al., 2009). On the other hand, the corporate governance guidelines in the UK are affected by markets, but in China the regulator dominates the guidelines (Komal et al., 2022). Chinese regulators require most of the audit committee members of Chinese listed companies to be independent. Meanwhile, UK regulators require all the audit committee members to be independent (Komal et al., 2022).

Although the governance code in China emphasises the importance of board independence, the country lacks capable independent directors (Rajagopalan & Zhang, 2008).

Fourthly, due to China's imbalanced economic development, developed and developing regions have different internal governance structures and legal frameworks. For instance, China's eastern coastline regions are typically thought to be more developed than its central and western regions (Liu et al., 2022a). Therefore, compared to developing regions, developed regions have a more stable and developed oversight structure (Fung et al., 2012). Thus, the regulators cannot merely copy the experiences of developed countries in promoting the corporate governance quality in China.

Internationalisation also drives the enhancement and reform of the corporate governance system in China because corporate governance improvements can attract more international capital (Farooque & Reddy Yarram, 2010). This scenario causes listed A-share companies to face external legitimacy pressure from other countries, compelling them to comply with the international standards of corporate governance (Lau et al., 2016). As one of the strategic resources, legitimacy aims to achieve the support and recognition of the home country, the public, and the stakeholders (Lau et al., 2016).

In addition, in order to achieve long-term economic development, strengthen the

corporate governance framework, and mitigate financial risks, the regulators in many developing and developed markets have revised their respective corporate governance codes (Fauver et al., 2017). Thus, in China, the revised 2018 Code was announced on 30 September 2018. Compared to the 2002 Code, the revised 2018 Code proposes more requirements for the board of directors. Like in other countries, the Chinese regulators also face challenges on how to implement the reform, increase board independence, and enhance the board's monitoring role effectively (Byung-Seong Min, 2022). The revised 2018 Code emphasises the reform of board diversity and independent directors, among others.

The revised 2018 Code also emphasises sustainability development for listed companies. For example, the revised 2018 Code proposes the concept of green development and social responsibility, as well as highlighting poverty alleviation. The revised 2018 Code improves the ESG information disclosure and transparency of listed companies and helps construct the ESG evaluation system in China. According to institutional theory, organisations that comply with social rules are more capable of achieving legitimacy and obtaining resources (Meyer & Rowan, 1977; Vadasi et al., 2020). Further, involvement in non-profit practices, like ESG activities, can enhance value for corporations and stakeholders (Feng et al., 2022; Qureshi et al., 2020). Accordingly, to gain institutional legitimacy and serve stakeholders' interests, the corporate governance reform is expected to drive the quality of ESG disclosure and enhance the ESG performance of listed A-share companies.

H4: The 2018 CG reform positively affects ESG performance.

2.5.1 The Moderating Role of Corporate Governance Reform

Compared to the 2002 Code, the revised 2018 Code encourages board diversity in Article 25. According to resource dependency theory, a diverse board is more capable than a non-diverse board at bringing in tangible and intangible resources to the company (Gurol & Lagasio, 2023; Hillman et al., 2002). Further, institutional theory supports the notion that companies complying with social rules may gain legitimacy and resources (Meyer & Rowan, 1977; Vadasi et al., 2020). Subsequently, Article 25 of the revised 2018 Code may increase corporate attention to board diversity and help optimise the board composition of listed companies. The diverse experiences and insights provided by a diverse board facilitate the development of more forward-looking and comprehensive ESG strategy. Thus, the revised 2018 Code can strengthen the focus of public companies on board diversity, thereby enhancing the oversight and advisory role of the boards. Therefore, the following hypothesis is developed:

H5: The 2018 CG reform positively moderates the relationship between board diversity and ESG performance.

Further, Article 35 of the revised 2018 Code highlights the importance of board independence. For example, compared to the 2002 Code, the revised 2018 Code has a

new rule stating that independent directors shall not associate with the shareholders who can influence the independent directors' objective judgement. Thus, the role of independent directors can be revisited so that they become more objective and effective in decision-making and oversight after the introduction of the revised 2018 Code rather than being an "ornamental vase". The revised 2018 Code can enhance the role of independent directors in serving the interests of various stakeholders, thereby promoting the ESG engagement procedure and improving the ESG performance. Accordingly, this study anticipates independent directors to play a more effective role in influencing corporate ESG performance after the introduction of the revised 2018 Code.

H6: The 2018 CG reform positively moderates the relationship between board independence and ESG performance.

Furthermore, Article 37 of the revised 2018 Code additionally states that independent directors shall report their work to the general meeting of shareholders on an annual basis, and that independent directors should be responsible for the conflicts among shareholders and board members, as well as matters severely affecting business operations. The revised 2018 Code has more requirements regarding the duties of independent directors, thus increasing the workloads of independent directors and making busy independent directors busier. Moreover, when a crisis occurs, busy independent directors do not facilitate corporate recovery (Chen et al., 2021b) because

of their limited time and energy. Accordingly, the new requirements on independent directors' duties will increase the intensity of their work and can distract them further, thereby increasing the agency costs. Thus, this study proposes the following hypothesis:

H7: The 2018 CG reform negatively moderates the relationship between busy independent directors and ESG performance.

2.6 State-Owned Enterprise

State-owned enterprises are companies that are controlled by the Chinese government. SOEs are the government's tool to intervene in the economy, maintain social stability, and control the essential elements of society (Lin et al., 2020). Although private companies are the main participants in the market, SOEs still play a crucial role, especially in strategic industries such as telecommunication, infrastructure, and shipping (Wang et al., 2014). With a dual identity, SOEs are not only economic participants but also representatives of the government in serving public interests (Ervits, 2023). SOEs are more sensitive to the policies introduced by the government, such as the policy pertaining social issues. Therefore, SOEs are more inclined to solve social issues than non-SOEs (Gao, 2011). For example, SOEs might have more social responsibility than private companies in relation to smog pollution because as smog problems become more serious, the government requires SOEs to increase their engagement in environmental protection and improve their employee benefits (Xiong

& Luo, 2021). In contrast, private companies are more concerned than SOEs regarding stakeholders' interest (Gao, 2011).

Their connections with the government bring more benefits to SOEs. Some incentives or policies, such as subsidies, tax deductions, and penalties, favour the environmental accountability of SOEs but hurt that of non-SOEs (Zhang & Zhao, 2022). With the government support, commercial banks are also more willing to provide loans to SOEs than non-SOEs and build stable links with SOEs (Lu et al., 2012). Thus, non-SOEs reduce their commitment to protect the environment because it is more difficult for them to receive subsidies compared to SOEs (Wen & Zhao, 2021). Subsidies are an important way to influence corporate strategic decisions in China. For example, subsidies can be used as a tool to guide or influence Chinese listed companies to perform voluntary CSR disclosures (E. Lee et al., 2014).

Moreover, SOE managers are appointed and appraised by the government, and their political promotion is affected by their performance (Li et al., 2013). For example, the authorities may assess the effectiveness of managers in policy implementation. Due to the political incentives, SOE managers are more reactive to the compulsory disclosure of social responsibility and implement it effectively. For the SOE managers, CSR is a mechanism to construct social capital with the government (Kao et al., 2014). Furthermore, the soft budget constraints in SOEs motivate the managers to overinvest in CSR in order to meet government objectives and to serve their political career

interests (Kao et al., 2018). As a result, SOEs have better social performance but lower investment efficiency than non-SOEs (Ho et al., 2022).

The discussion above indicates that SOEs pay more attention to ESG than non-SOEs (Zahid et al., 2023). This is because SOEs, with sufficient tangible and intangible resources, have stronger political incentives to engage in ESG activities. With a mission to serve social and economy policy, SOEs are unique in Chinese ESG practices (Ervits, 2023). Thus, this study proposes that SOEs have better ESG performance than non-SOEs:

H8: SOEs have a positive relationship with ESG performance.

2.6.1 Board Diversity

As a vital stakeholder, the government holds a controlling ownership in some listed companies in emerging countries such as China, and this practice differs from the western countries (Saeed & Sameer, 2017). The agency conflicts in SOEs are more severe than in private companies (Ben-Nasr, 2015). Unlike private companies, which seek to maximise shareholders' value, SOEs are responsible for economic development and social welfare improvement. The agency conflicts between minority and major shareholders and between managers and shareholders exist concurrently in SOEs (Lin et al., 2020). Thus, differences in the attributes of SOEs and non-SOEs may affect the monitoring role of board members in SOEs and non-SOEs.

Many scholars have found differences in board effectiveness between SOEs and non-SOEs. For example, regarding board gender diversity, Wang et al. (2022b) showed that women leaders, including women directors, were ineffective in monitoring and supervision in SOEs. Board diversity in education, expertise, and tenure was found to significantly reduce the likelihood of financial distress, and such a relationship was more obvious in non-SOEs than in SOEs (Ali et al., 2022). Furthermore, SOEs overemphasised the importance of seniority for promotion to a higher position (Talavera et al., 2021). Confucianism regards senior people as representatives of knowledge, power, and authority, and this belief influences the Chinese society (Talavera et al., 2021). It may cause short-tenured directors to easily compromise to long-tenured directors during board meetings, which can reduce the effectiveness of board tenure diversity. Concurrently, compared to SOEs, diverse boards in non-SOEs strengthen the monitoring of fund utilisation by managers (Yang & Xue, 2023).

Unlike non-SOE managers, SOE managers are appointed by the government instead of going through layers of the selection process (Yang & Xue, 2023). SOE managers also lack strong financial incentives, and SOEs are likely to suffer the risks of political intervention. Hence, the corporate governance in SOEs may be weaker than in private companies (Ullah et al., 2023). The oversight role of the board of directors over SOE managers may be hindered (Lin et al., 2020). This scenario can reduce the role of board diversity in improving the monitoring quality. This study proposes that due to the

politics-driven mode, Chinese SOEs are more prone to be intervened by the government, which can reduce the supervision role of the board of directors and further increase agency costs. Board members in non-SOES are more efficient at performing the oversight and supervision role than SOEs. As a result, this study suggests that the advantages that board diversity brings to a company's ESG practices are more pronounced in non-SOEs than in SOEs. The following hypothesis is thus proposed:

H9: SOE negatively moderates the effect of board diversity on ESG performance.

2.6.2 Board Independence

Some studies have proven that the monitoring and supervising role of independent directors might be hindered by external factors. On one hand, SOEs have close ties with the government, and hence, the resignation of independent directors with political connections has a limited negative effect on company value (Chen et al., 2020). Furthermore, the controlling shareholders of SOEs are usually the government, and the government has little incentives to extract funds from SOEs because SOEs are established to maximise social benefits (Liu et al., 2016). Thus, SOEs have the advantages of preferential commercial treatment and wider channels to gain rare resources. This scenario weakens independent directors' ability to promote corporate innovation investment intensity (Li et al., 2022a; Shailer & Wang, 2015). On the other hand, unlike non-SOEs, executives of SOEs are not required to go through layers of selection, but have direct appointment and assessment by the government (Li et al.,

2013). Therefore, the supervision of independent directors over the executives of SOEs is relatively weak. Moreover, since the government has a lot of resources and is the controlling shareholder of SOEs, sufficient resources can reduce the likelihood of risky corporate events. Therefore, independent directors lack incentives to monitor managers (Lu & Zhu, 2020).

In conclusion, independent directors who have external resources are more likely to receive attention from non-SOEs because non-SOEs lack sufficient resources to serve the goals of maximising shareholders' value and enhancing ESG engagement. Meanwhile, the close ties between SOEs and the government have weakened reliance on independent directors and reduced the role of independent directors in monitoring executives. Hence, Independent directors may be less able to weaken agency problems in SOEs than independent directors in non-SOEs. Further, this study proposes that independent directors play a more effective role in monitoring ESG behaviour in non-SOEs, leading to the following hypothesis:

H10: SOE negatively moderates the effect of board independence on ESG performance.

2.6.3 Busy Independent Directors

Due to the concentration of shareholdings, Chinese SOEs need to address serious dual-agent problems in corporate governance, i.e., conflicts of interest between controlling

and minority shareholders, and shareholders and management (Lin et al., 2020). SOEs have to face more complex agency costs than non-SOEs. Therefore, it is also meaningful to compare the role of busy independent directors in SOEs and non-SOEs. Unlike the non-busy independent director, the existence of the busy independent director is more controversial as it has clear advantages and disadvantages.

In China, SOEs have stronger reputational incentives for busy directors than non-SOEs (Wang et al., 2023). Reputational incentives will encourage busy directors to put more efforts in the SOE, while the monitoring role of busy independent directors can be ineffective in non-SOEs that lack reputational incentives (Wang et al., 2023). Similarly, reputational incentives may motivate busy independent boards to devote more time to monitoring the ESG strategies of SOEs. In addition, due to the close relationship between the government and SOEs, the government imposes stricter monitoring and scrutiny on the behaviour of SOE executives, which inhibits opportunistic behaviour of executives. In contrast, busy independent directors may increase agency costs for non-SOEs. The lack of effective reputational incentives may cause busy independent directors to be reluctant to devote too much effort to monitoring the environmental, social and corporate governance activities of the company. Therefore, this study constructs the following hypothesis:

H11: SOE positively moderates the effect of busy independent directors on ESG performance.

2.7 Control Variables

2.7.1 Return on Total Equity (ROE)

ROE shows how companies use their total equity to generate net income. Better financial performance increases the availability of financial and non-financial assets, thereby enhancing the possibility of CSR investment (Waddock et al., 1997). Unlike the shareholders in developed markets which have mature CSR systems, many Chinese shareholders have not recognised the importance of CSR because they care more about making profits, and this scenario affects companies' strategic decision-making on CSR (Voinea et al., 2022). CSR receives more shareholder attention only when the goal of earning profit is achieved (Voinea et al., 2022). Voinea et al. (2022) also proved the positive effect of financial performance on CSR disclosure. This is because high earning power allows companies to meet the demand made by social shareholders by investing in sustainable activities. In contrast, lower profitability forces companies to meet stakeholders' interest at the cost of curtailing sustainable investment (Artiach et al., 2010).

The Chinese regulators have gradually proposed higher ESG involvement standards for listed companies. However, some companies with limited resources merely meet the minimum regulatory requirements. Only listed companies with better financial performance have more resources to increase their ESG investments.

2.7.2 CEO Duality

CEO duality is defined as the CEO's simultaneous responsibility as the chairman (Baliga et al., 1996). Agency theory suggests that CEO duality exacerbates the agency costs between shareholders and executives. CEO duality leads to the centralisation of power in the CEO and produces autocratic leadership, which is not conducive to improving the efficiency and performance of the company (Lew et al., 2018). Further, CEO duality reduces the level of corporate governance in the company (Firth et al., 2014). A CEO who is also chairman of the board may reduce the level of disclosure and deprive stakeholders of more useful information (Sun et al., 2022a). The reason is that too much centralised power may cause the CEO to ignore stakeholders' interests (Cooray et al., 2020). In addition, a CEO with dual responsibilities may also abandon social activities that are not in their own interest (Ma & Chen, 2024). In conclusion, CEO duality may exacerbate agency problems and compromise stakeholder interests, thus reducing corporate engagement in ESG activities.

2.7.3 Leverage

Leverage describes a company's debt level. Companies will adapt their leverage strategies to their business objectives. The financial decisions of a company need to not only achieve financial objectives (e.g., profit maximisation) but also satisfy non-financial objectives, such as fulfilling the needs of stakeholders by participating in ESG activities (Al Amosh et al., 2022). Companies with limited resources need to increase the efficiency of the use of such resources, such as investing in innovations

or projects with positive net present values (NPVs) instead of in ESG practices (Pu, 2023). Sufficient resources are a prerequisite for investing in ESG activities (Wan et al., 2024). Highly leveraged companies are also more willing to cut costs and increase the level of available cash to reduce the risk of bankruptcy (Bae et al., 2019). Hence, highly leveraged companies are less willing to improve their ESG performance (Kalaitzoglou et al., 2021). Thus, in the long run, increased corporate leverage tends to increase the financial pressure on the company, compelling the company to invest capital in projects with positive NPVs and reduce spending on ESG, thereby weakening the ESG performance.

2.7.4 Net Profit Margin

Net profit margin describes the profitability of a business (Kusmayadi et al., 2018). Maximising shareholder value is an important goal for Chinese companies (Long et al., 2020). The company should consider the interests of its financial stakeholders first and foremost (Artiach et al., 2010). Increased profitability is more in line with the expectations of financial stakeholders. In addition, higher profitability increases the likelihood that management will disclose more CSR information to shareholders (Purbawangsa et al., 2020). Evidence from China also suggests that profitability can positively influence companies' CSR performance (Xu & Zeng, 2016). Specifically, improved corporate profitability increases companies' self-financing capacity and available cash. Further, companies can use these idle funds to invest in social activities that can boost their corporate image and satisfy the interests of non-financial

stakeholders.

2.7.5 Net Profit Growth

In this study, net profit growth is used to describe the growth potential of companies. Growing companies need to strengthen the trust external stakeholders (e.g., employees, regulators, and investors) have in them (Lee & Choi, 2018). In this context, companies can increase their social impact through organisational growth (Hussain et al., 2023). Growing companies tend to employ more people, helping to reduce unemployment and enhance well-being in society. The greater the potential for business growth, the greater the scale of investment (Chiang et al., 2019). CSR can be used as a long-term strategy to help companies build competitive advantage over the long term (Chiang et al., 2019). However, in the face of a recession, companies will be more concerned about survival (Lee & Choi, 2018). Therefore, this study argues that companies' growth potential influences their willingness to engage in ESG. When companies have good growth prospects, they will increase their ESG spending to enhance their visibility, which in turn will enhance their performance. However, when companies face the risk of recession, they will reduce their ESG expenditures and spend more on business operations.

2.7.6 Research and Development Ratio

R&D intensity is calculated by dividing the total R&D expenditure by total sales (Padgett & Galan, 2010). Increasing the R&D intensity would positively affect a

company's CSR performance, as R&D investment enhances the company's competitive advantage, which benefits society (Padgett & Galan, 2010). Some Chinese studies have also demonstrated that when R&D investment is below a certain level, increasing the R&D investment can lead to an increase in CSR performance in small and medium-sized manufacturing companies (Yu et al., 2020). Investment in R&D can improve a company's product quality and productivity. However, Yu et al. (2020) also emphasised that excessive R&D investment can inhibit a company's CSR performance. This phenomenon may be due to the reduction in the company's budget for CSR activities as a result of excessive R&D investment. Nonetheless, increasing the R&D investment would promote green innovation, such as green inventions (Xu et al., 2021a). Newly developed environmental technologies support environmental protection by reducing greenhouse gas emissions and reducing energy consumption. Therefore, this study argues that R&D investment intensity has a positive impact on companies' ESG performance.

2.7.7 Company Size

Total assets or the market value of a company can be used as a proxy for company size. Large companies have the advantages of sufficient intellectual and physical resources, stronger refusal power, higher political positions, and greater economies of scale (Schiffer & Weder, 2001; Chollet & Sandwidi, 2018; Nguyen, 2020; Shakil, 2022). Sufficient financial and non-financial resources allow corporations to improve their ESG performance. Further, large corporations have clear goals and sound processes

and systems to conduct effective CSR activities (Johnson & Greening, 1999; Peloza, 2006).

CSR investment is more costly for smaller companies than larger companies (Shou et al., 2020). If the management of a small company invests more in environmental improvement, this practice will lead to negative investment return (Abdi et al., 2022). Small and young enterprises have limited financial resources and less media exposure than larger enterprises; hence, they are more inclined to improve their competitiveness in the market instead of engaging in social responsibility (D'Amato & Falivena, 2020). Accordingly, compared with smaller companies, larger companies have more access and good systems to implement ESG strategies effectively.

2.7.8 Shareholding Concentration

Ownership concentration indicates the proportion of shareholding held by the largest shareholder in the corporation (Akben-Selcuk, 2019). In China, ownership concentration negatively affects corporate environmental responsibility (Chen et al., 2021a). Shareholding concentration can increase the conflict of interest between controlling shareholders and minority shareholders because the controlling shareholders might use their controlling power to meet their own private interests at the expense of the minority shareholders (Chen et al., 2021a). Furthermore, their strong controlling power enables the controlling shareholders to be predatory (Shleifer & Vishny, 1997). Besides, investing in environmental protection means less funds are

available for investment in core resources (Chen et al., 2021a). Accordingly, the controlling shareholders are able to serve their own interest and reduce their attention on ESG activities. Thus, a higher level of concentrated ownership may be detrimental to ESG performance.

2.8 Chapter Summary

This chapter has described the study's literature review on the overview of ESG, underpinning theory (agency theory, resource dependency theory, stakeholder theory and institutional theory), board characteristics (board diversity, board independence, and busy independent directors), corporate governance reform, state-owned enterprise and control variables. Further, this study has also discussed the impacts of board diversity, board independence, and busy independent directors on ESG performance, as well as the moderating role of corporate governance reform in these relationships. The moderating role of SOEs have also be elucidated. Concurrently, the eleven hypotheses are developed. Table 2.1 summarize the research objectives, hypotheses and the relevant underpinning theories. The next chapter will expound on the research methodology adopted in this study.

Table 2.1
Summary of Research Objectives, Hypotheses and Underpinning Theories

Research Objectives	Hypotheses	Underpinning Theories
1. To examine whether board characteristics (board diversity, board independence and busy independent directors) affect ESG performance.		

(a) To determine the effect of board diversity on ESG performance.	H1: There is a positive relationship between board diversity and ESG performance.	Resource dependency theory, stakeholder theory
(b) To determine the effect of board independence on ESG performance.	H2: There is a positive relationship between board independence and ESG performance.	Agency theory, stakeholder theory
(c) To determine the effect of busy independent directors on ESG performance.	H3: There is a negative relationship between busy independent directors and ESG performance.	Agency theory, stakeholder theory
2. To examine whether corporate governance reform affects ESG performance.	H4: The 2018 CG reform positively affects ESG performance.	Institutional theory
3. To examine whether SOE has an impact on ESG performance.	H8: SOEs have a positive relationship with ESG performance.	-
4. To demonstrate the moderating effect of corporate governance reform in 2018 on the relationships between board characteristics and ESG performance.		
	H5: The 2018 CG reform positively moderates the relationship between board diversity and ESG performance.	Institutional theory
	H6: The 2018 CG reform positively moderates the relationship between board independence and ESG performance.	Institutional theory
	H7: The 2018 CG reform positively moderates the relationship between busy independent directors and ESG performance.	Institutional theory
5. To examine the moderating effect of SOEs on the relationships between board characteristics and ESG performance.		
	H9: SOE negatively moderates the effect of board diversity on ESG performance.	Agency theory

	H10: SOE negatively moderates the effect of board independence on ESG performance.	Agency theory
	H11: SOE positively moderates the effect of busy independent directors on ESG performance.	Agency theory

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter begins with a description of the data collection process, data sources, and the study period. Next, the composition and distribution of the sample companies are discussed. This is followed with a detailed discussion of the variables' measurements. Then, the chapter elaborates on the conceptual framework development based on the research objectives. The following section describes the fixed effects model used in this study to test the roles of board characteristics (board diversity, board independence, busy independent directors), corporate governance reform, and SOE in influencing ESG performance. Finally, the specific data analysis methods are explained, including the descriptive statistics, correlation coefficients, regression analysis, and diagnostic test (Hausman test, multicollinearity, heteroscedasticity, serial correlation, endogeneity problems and sample selection bias).

3.2 Data Collection

The samples were selected from Shenzhen Composite Index and Shanghai Composite Index in China from January 2012 to December 2022. Data on ESG was obtained from Refinitiv Eikon. Refinitiv ESG company scores, built in 2002, refer to over 630 different criteria used to measure ESG scores, covering more than 85 per cent of worldwide market capitalisation (Refinitiv, 2022). Refinitiv Eikon provides not only the overall ESG scores but also the individual scores for the three ESG dimensions,

and the data is presented quantitatively rather than qualitatively (Agnese et al., 2022).

As one of the biggest databases offering macroeconomic and microeconomic data to researchers in China (Zhang et al., 2021), China Stock Market & Accounting Research (CSMAR) provides information related to board characteristics and SOEs. Specifically, the overall board diversity, board independence, and busy independent directors were adjusted and computed based on the information collected from CSMAR. ROE, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, shareholding concentration were obtained from CSMAR.

Moreover, as shown in Table 3.1, this study also screened samples to ensure the quality and availability of the observations. First, the observations of the raw data obtained were 9067. Then, the observations which were labelled as Special treatment (ST) were also excluded from this study. Special treatment is the category used for companies reporting serious financial problems in the previous year, and those companies have many outliers in company-level data, which may affect results (Yang & Xue, 2023). Next, the companies that disclosed ESG or CSR information but lacked available ESG data were also excluded. Last, financial companies were excluded from this study. Financial companies have to comply with accounting standards that are unique to them, resulting in incomparability against non-financial companies for some relevant indicators (Yang & Xue, 2023). For example, financial companies were also excluded because of their different leverage levels compared to the companies in other sectors

(Limkriangkrai et al., 2017).

Table 3.1
Sample screening procedure

Sample screening	**N**
Initial sample observations	9067
-Exclude the companies labelled with Special treatment (ST)	67
-Exclude the sample observations with missing ESG data	4797
-Exclude the companies in financial sector	575
Final sample observations	3628

3.3 Data Description

After excluding the financial sector listed companies, this study's sample consisted of 879 listed companies and 3628 observations from 10 sectors covering the period from 2012 to 2022, as shown in Table 3.2. The 10 sectors are communication services, consumer discretionary, consumer staples, energy, healthcare, industrials, information technology, materials, real estate, and utilities. The study period begins in 2012, when Chinese companies participated for the first time in the Principles for Responsible Investment, signifying Chinese investors' first recognition of the importance of ESG investment (The Principles for Responsible Investment, 2023).

As China becomes increasingly concerned about environmental issues, its government has attempted to reduce the polluted activities caused by enterprises by introducing new policy on environmental protection, and more listed companies have been encouraged to voluntarily disclose ESG information, as shown in Panel A of Table 3.2. Therefore, the number of listed companies disclosing ESG reports has gradually

increased over time. Concurrently, the percentage of SOEs disclosing ESG information is also decreasing each year in the sample companies, which indicates that non-SOEs are also paying more attention to ESG information disclosure. Panel B of Table 3.2 has a total of 3628 observations from 10 sectors. In particular, 38.92 per cent of the samples are from industrial and material sectors, revealing that these industries generate high levels of greenhouse gas and are closely monitored by environmental protection regulators. Thus, companies in these industries have more responsibility to disclose ESG information.

Table 3.2
Sample Distribution

Panel A: By year			
Year	**No. of companies**	**No. of SOEs**	**SOEs Percentage**
2012	57	45	78.95%
2013	58	45	77.59%
2014	61	46	75.41%
2015	62	45	72.58%
2016	63	45	71.43%
2017	210	125	59.52%
2018	246	132	53.66%
2019	493	227	46.04%
2020	677	295	43.57%
2021	822	361	43.92%
2022	879	376	42.78%
Total	3628	1742	48.02%
Panel B: By sector			
Sector	**No. of companies**	**Percentage**	
Communication Services	170	4.69%	
Consumer Discretionary	308	8.49%	
Consumer Staples	270	7.44%	
Energy	165	4.55%	
Health Care	396	10.92%	
Industrials	784	21.61%	
Information Technology	577	15.90%	
Materials	628	17.31%	

Real Estate	167	4.60%
Utilities	163	4.49%
Total	3628	100.00%

Sources: Refinitiv Eikon, China Stock Market & Accounting Research Database (CSMAR).

3.4 Variables' Measurements

This study aims to determine whether board characteristics (board diversity, board independence, and busy independent directors), corporate governance reform, and SOE affect the ESG performance of listed companies in China. The summary of variables' measurements is exhibited in Table 3.3.

3.4.1 Dependent Variable

ESG is a non-financial performance index used to evaluate corporations' potential financial performance and sustainable development strategy (Li et al., 2021a). ESG and CSR are closely related but differ in concept. CSR aims to make enterprises responsible in society, environment, and economy. ESG expresses quantitatively the efforts of companies in managing environmental, social, and governance activities (Chen et al., 2022a). ESG focuses on corporations' ethical impacts to sustainable development. Refinitiv Eikon has created a comprehensive, transparent, accurate, and comparable ESG database involving a five-step bottom-up process and over 630 different indicators and analytical methods (Refinitiv Eikon, 2022), as shown in Figure 3.1. The ESG scores provided in Refinitiv Eikon are used in this study.

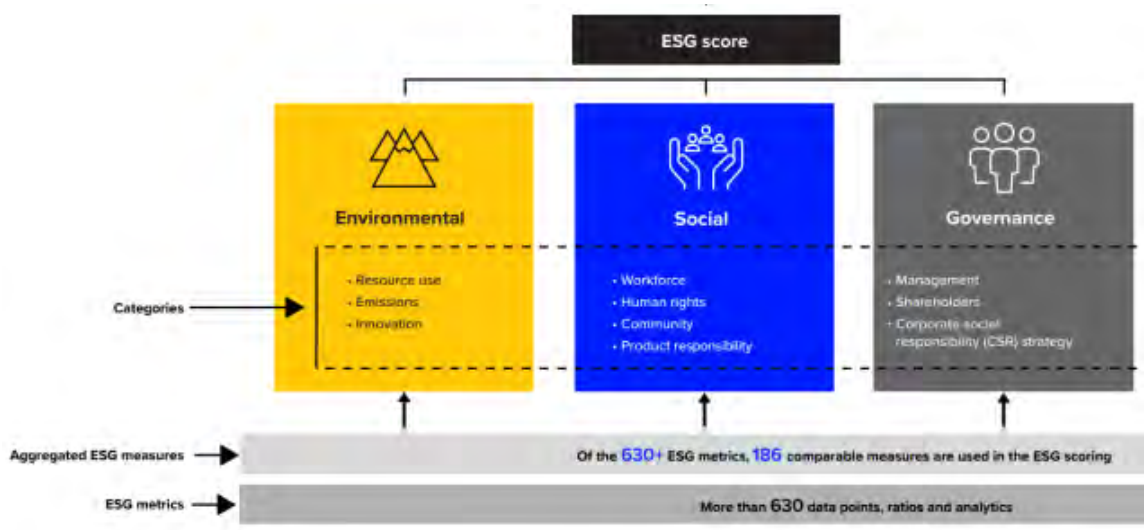

Figure 3.1
Refinitiv ESG Scoring Methodology
(Source: Refinitiv Eikon, 2022)

3.4.2 Independent Variable

3.4.2.1 Board Diversity

This study constructs overall board diversity index summing up each board diversity index in gender, tenure, and expertise. Board gender diversity can be computed using the number of women directors divided by the total number of board members (Nuber & Velte, 2021). Board gender diversity can also be represented by the Blau index (Nuber & Velte, 2021), as shown in the following equation. A higher Blau index means higher heterogeneity of the board (Aksoy et al., 2023; Ozdemir, 2020). Like the studies of Nadeem (2020) in China, gender categories include male and female.

$$Blau\ index\ of\ gender\ diversity = 1 - \sum_{i=1}^{n} P_i^2$$

where:

n refers to the number of categories of board gender,

P refers to the percentages of women directors,

1−*P* refers to the percentages of male directors, and

i means the number of categories.

Board tenure diversity refers to the heterogeneity of the tenure length of board members (Tran Phuong et al., 2022). The average tenure of the board directors in the samples is approximately 4 years, similar to the study by Ozdemir (2020). The present study created the Blau index of tenure diversity based on four categories: term 1 (less than or equal to 4 years), term 2 (more than 4 years and less than or equal to 8 years), term 3 (more than 8 years and less than or equal to 12 years), and term 4 (more than 12 years). A board with diverse tenure is more independent, which increases the quality of decision-making (Li & Wahid, 2018).

$$Blau\ index\ of\ tenure\ diversity = 1 - \sum_{i=1}^{n} P_i^2$$

where:

n refers to the number of categories of board tenure,

P refers to the percentages of categories, and

i means the number of categories.

Every director has unique advantages in different fields. Board expertise diversity means that corporate board members should have proper and diverse experience, skills, and knowledge to improve the effectiveness of the board in a specific field of expertise (Gray et al., 2017). The board expertise diversity index was built using six expertise

categories: academic, management, finance, accounting, law, and others (e.g., research & development, marketing, human resources). Considering that some boards have more than one skill sets, this study has grouped directors with multiple skills into different categories, putting those who have mastered both academics and management into one category, those who have mastered both academics and finance into another category, and so on.

$$Blau\ index\ of\ expertise\ diversity = 1 - \sum_{i=1}^{n} P_i^2$$

where:

n refers to the number of categories of board expertise,

P refers to the percentages of categories, and

i means the number of categories.

The range of each diversity index is different as the number of categories of each individual diversity index significantly vary (Harjoto et al., 2015; Ozdemir, 2020). For example, the maximum value of board diversity index and tenure diversity index are 0.5 and 0.75 , respectively. Thus, like the studies of Harjoto et al. (2015) and Ozdemir (2020), the present study standardizes each board diversity index to the same value between zero and one by using the calculated diversity index score divided by the maximum diversity index score within each industry for each year. Each standardized board diversity index ranges from 0 (complete homogeneity) to 1 (complete heterogeneity). Subsequently, the present study built the overall board diversity index

by summing the standardized board diversity indexes for gender, tenure, and expertise. Accordingly, the overall board diversity index is between 0 and 3, with a higher score indicating a more diverse board (Ozdemir, 2020).

3.4.2.2 Board Independence

Board independence is represented by the number of independent directors divided by the total number of directors, expressed in percentage (Ozdemir, 2020). A higher percentage of independent directors exhibits a higher level of board independence. The percentage must be less than 100 per cent because usually insiders are the main members of the director board. According to agency theory, independent directors play an important role in monitoring and supervising managerial behaviour and mitigating agency problems (Kapoor & Goel, 2019). This is because independent directors have the incentive to safeguard their reputation and goodwill. The information on independent directors is available in CSMAR.

3.4.2.3 Busy Independent Directors

Independent directors with three or more positions in other companies are considered busy (Ferris et al., 2020). The number of directorships held by independent directors can be obtained from CSMAR. Accordingly, this study computed the proportion of busy independent directors over the total number of independent directors, which represents the busyness level of independent directors in a specific company (Ferris et al., 2018). This study also verifies that busy independent directors might bring valuable

resources to corporations, but their monitoring role in ESG activities might be weakened.

3.4.2.4 Corporate Governance Reform

In this study, corporate governance reform refers to the revised Code of Corporate Governance for Listed Companies in 2018 (the 2018 revised Code). This is a dummy variable, with 0 denoting the period before the 2018 revised Code and 1 denoting the period after the 2018 revised Code from 2018 to 2022. This study not only evaluated the effect of corporate governance reform on ESG performance but also formalised the role of corporate governance reform in moderating the relationship between the independent and dependent variables.

3.4.2.5 State-Owned Enterprise

A company controlled by government entity (e.g., central government, a local government) or government agency (e.g., the State-Owned Assets Supervision and Administration Commission (SASAC)) can be classified as a SOE (Cao et al., 2020). In other words, the controlling shareholder of a state-owned enterprise may be the central or local government of China, or its subsidiaries (Liu et al., 2019). According to CSMAR, SOE is a dummy variable, with 1 indicating an SOE and 0 indicating a non-SOE (Xu et al., 2021b). Data of SOE can be obtained from CSMAR. In this study, the effect of SOE on ESG performance will be investigated. In addition, the study will determine whether SOE moderates the relationship between the independent and

dependent variables.

3.4.3 Control variables

3.4.3.1 Return on Total Equity (ROE)

As a ratio to measure financial performance, ROE measures a corporation's ability to use total assets to create net income. The CSMAR database offered the ROE data from 2012 to 2022. Good earnings performance can provide an economic basis for the development of ESG (Scholtens, 2008). However, poor financial performance can undermine the willingness of companies to invest in ESG activities, as companies need to satisfy their shareholders' interests first and foremost. Accordingly, the Chinese listed companies with higher financial performance are more inclined to enhance ESG-related efforts.

3.4.3.2 CEO Duality

CEO duality refers to the scenario where the CEO also holds the position of chairman of the board of directors. In this study, CEO duality is a dummy variable, where "1" means that CEO duality exists in the company, and "0" otherwise. CEO duality is believed to increase the agency costs of the company. A CEO who also holds the position of board chairman has more centralised power and may serve their own interests, thus paying less attention to the interests of other stakeholders and reducing the company's participation in social activities (Cooray et al., 2020; Ma & Chen, 2024).

Thus, the presence of CEO duality may weaken a company's ESG performance.

3.4.3.3 Leverage

This study used total debt divided by total assets to calculate a company's leverage level. Companies' leverage level tends to influence their willingness to invest in ESG. For example, companies with high leverage are less willing to engage in ESG activities due to the need to cut costs and reduce the risk of bankruptcy (Bae et al., 2019; Kalaitzoglou et al., 2021). In contrast, companies with low leverage have more flexible financial budgets. Therefore, higher leverage may weaken companies' ESG performance.

3.4.3.4 Net Profit Margin

Net profit margin is used to assess the profitability of a company. It is calculated as the company's net profit divided by its total revenue. There is evidence that increased profitability can boost the performance of a company's social activities (Xu & Zeng, 2016). High profitability satisfies the interests of stakeholders (e.g., investors, employees, society). In the long run, high profitability enhances the company's ability to finance itself and increases its available cash. This available cash can be used to pay dividends to shareholders, increase employees' salaries, or donate to social welfare organisations. Therefore, high profitability may boost companies' ESG performance.

3.4.3.5 Net Profit Growth

Net profit growth can be used to describe the growth potential of companies. This study argues that a company's growth potential affects its ESG performance. Growing companies will gradually focus on the interests of their stakeholders in order to increase their social impact (Lee & Choi, 2018; Hussain et al., 2023). Increased visibility increases companies' future revenues. However, when companies face the risk of recession, they may reduce their ESG-related expenditures (Lee & Choi, 2018).

3.4.3.6 Research and Development Ratio

R&D intensity measures the percentage of revenue in a company is willing to invest in R&D. It indicates that the company realises the importance of R&D and innovation. Several studies have demonstrated the potential to boost companies' CSR performance via R&D investment (Padgett & Galan, 2010; Yu et al., 2020). For example, R&D investment can improve the quality of products and increase customer satisfaction. In addition, R&D innovation promotes companies' green innovation (Xu et al., 2021a). The development of more environmentally friendly equipment and processes will help to reduce pollutant emissions, thus improving the environmental performance of companies. As a result, R&D-focused companies are likely to have better ESG performance.

3.4.3.7 Company Size

The logarithm book value of total assets, with total assets expressed in billions of yuan,

can be used to describe the economic scale of a company. Data related to company size was downloaded from CSMAR. Large companies have the advantage of access to tangible and intangible resources (Schiffer & Weder, 2001; Chollet & Sandwidi, 2018; Nguyen, 2020; Shakil, 2022). Hence, they have higher abilities to improve their ESG performance. Small companies with limited resources consider CSR expenditure costly and may even lead to negative investment return (Shou et al., 2020; Abdi et al., 2022). Thus, as their company size increases, companies tend to improve their ESG performance.

3.4.3.8 Shareholding Concentration

Ownership concentration is the proportion of shares held by a company's largest shareholders (Akben-Selcuk, 2019). This study collected the relevant data from CSMAR. There are diverse findings regarding the relationship between ownership concentration and corporate social performance (Younas et al., 2017; Dam & Scholtens, 2013; Younas et al., 2017). Chen et al. (2021a) found that ownership concentration hurt corporate environmental responsibility in China because controlling shareholders were more concerned about their own interests. Stronger controlling power tends to make shareholders greedier (Shleifer & Vishny, 1997). Thus, ownership concertation may hurt ESG performance because selfish controlling shareholders might prioritise their own personal interests over ESG investment.

Table 3.3
Variables' Description

Variable	Description	Source
Dependent variables		
ESG performance (ESGP)	ESG score, ranging from 0 to 100, mainly measures corporate ESG performance based on public data (Refinitiv, 2022).	Refinitiv Eikon
Independent variables		
Board diversity (BD)	Sum of gender diversity, tenure diversity, and expertise diversity.	CSMAR
Board independence (BI)	A ratio of the number of independent directors divided by the total number of board members.	CSMAR
Busy independent directors (BUSYID)	A ratio of the number of busy independent directors divided by the total number of independent directors.	CSMAR
Corporate governance reform (CGR)	A dummy variable with 1 denoting the period of 2018 to 2022, 0 otherwise.	
State-owned enterprise (SOE)	A dummy variable with 1 denoting SOE, 0 otherwise.	CSMAR
Moderators		
Corporate governance reform (CGR)	A dummy variable with 1 denoting the period of 2018 to 2022, 0 otherwise.	
State-owned enterprise (SOE)	A dummy variable with 1 denoting SOE, 0 otherwise.	CSMAR
Control variables		
Return on total equity (ROE)	A ratio of net income divided by total equity.	CSMAR
CEO duality (CEOD)	A dummy variable with 1 denoting that CEO also serve as the chairperson of board, 0 otherwise.	CSMAR
Leverage (LEV)	A ratio of total debt divided by total asset.	CSMAR
Net profit margin (NPM)	A ratio of net income divided by revenue.	CSMAR
Net profit growth (NPG)	A ratio indicating how much net profit grown in current year compared to the prior period. Net profit growth = (Net profit in year n minus net profit in year n-1)/ net profit in year n-1.	CSMAR
R&D ratio (RD)	A ratio of R&D expenditure divided by revenue.	CSMAR
Company size (CS)	Logarithm value of total assets, with total assets expressed in billions of yuan.	CSMAR
Shareholding concentration (SC)	A ratio of the shares held by the largest shareholder divided by total shares outstanding.	CSMAR

3.5 Conceptual Framework

This study's objective is to determine the effects of internal factors (board diversity, board independence, and busy independent directors) and external factors (corporate governance reform and SOE) on ESG performance. In addition, the moderating roles of external factors (corporate governance reform and SOE) in the relationships between internal factors (board diversity, board independence, and busy independent directors) and ESG performance is verified. ROE, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, shareholding concentration are the control variables in this study. Accordingly, the following conceptual framework in Figure 3.2 was built:

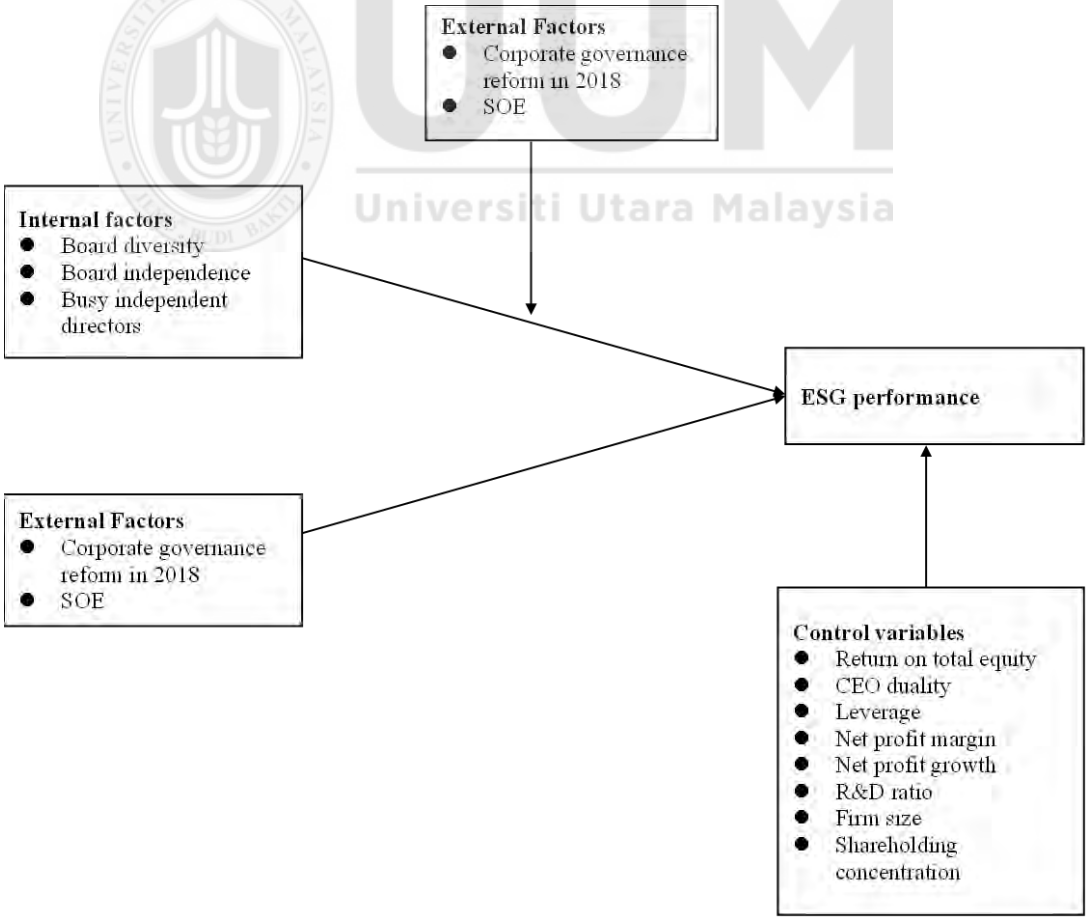

Figure 3.2
Conceptual Framework

3.6 Model Specification

This study employed panel data model. The present study uses fixed effect model to test the relationship between independent variables (board diversity, board independence, busy independent directors, corporate governance reform and SOE) and ESG performance. The results of the Hausman test support that the fixed-effect model is the more appropriate model for this study. Fixed-effect model can eliminate the issues of unobserved variables (Padgett & Galan, 2010) while OLS models fail to observe heterogeneity (Añón Higón et al., 2017a). Moreover, sector and year effects were included. To test hypothesis 1 (H1) to hypothesis 4 (H4), as well as hypothesis 8 (H8), this study developed the regression model stated below. Equation (1), (2), (3), (4) and (5) were developed to measure the effects of board diversity, board independence, busy independent directors, corporate governance reform, and SOE on ESG performance, respectively.

$$\mathrm{ESGP}_{i,t} = \alpha + \beta_0 \mathrm{BD}_{i,t} + \beta_1 \mathrm{Control}_{i,t} + \text{Year effects}_i + \text{Sector effects}_t + \varepsilon_{i,t} \quad (1)$$

$$\mathrm{ESGP}_{i,t} = \alpha + \beta_0 \mathrm{BI}_{i,t} + \beta_1 \mathrm{Control}_{i,t} + \text{Year effects}_i + \text{Sector effects}_t + \varepsilon_{i,t} \quad (2)$$

$$\mathrm{ESGP}_{i,t} = \alpha + \beta_0 \mathrm{BUSYID}_{i,t} + \beta_1 \mathrm{Control}_{i,t} + \text{Year effects}_i + \text{Sector effects}_t + \varepsilon_{i,t} \quad (3)$$

$$\mathrm{ESGP}_{i,t} = \alpha + \beta_0 \mathrm{CGR}_t + \beta_1 \mathrm{Control}_{i,t} + \text{Year effects}_i + \text{Sector effects}_t + \varepsilon_{i,t} \quad (4)$$

$$\mathrm{ESGP}_{i,t} = \alpha + \beta_0 \mathrm{SOE}_i + \beta_1 \mathrm{Control}_{i,t} + \text{Year effects}_i + \text{Sector effects}_t + \varepsilon_{i,t} \quad (5)$$

This study also measured the moderating role of corporate governance reform on the

effects of board diversity, board independence and busy independent directors on ESG performance. Hence, equation (6), (7) and (8) was used to test hypothesis 5 (H5) to hypothesis 7 (H7).

$$ESGP_{i,t} = \alpha + \beta_0 BD_{i,t} + \beta_1 CGR_t + \beta_2 CGR_t * BD_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (6)$$

$$ESGP_{i,t} = \alpha + \beta_0 BI_{i,t} + \beta_1 CGR_t + \beta_2 CGR_t * BI_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (7)$$

$$ESGP_{i,t} = \alpha + \beta_{02} BUSYID_{i,t} + \beta_1 CGR_t + \beta_2 CGR_t * BUSYID_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (8)$$

To test hypothesis 9 (H9) to hypothesis 11 (H11) regarding the moderating effect of SOE on the relationships between the independent and dependent variables, this study developed equation (9), (10) and (11).

$$ESGP_{i,t} = \alpha + \beta_0 BD_{i,t} + \beta_1 SOE_{i,t} + \beta_2 SOE_{i,t} * BD_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (9)$$

$$ESGP_{i,t} = \alpha + \beta_0 BI_{i,t} + \beta_1 SOE_{i,t} + \beta_2 SOE_{i,t} * BI_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (10)$$

$$ESGP_{i,t} = \alpha + \beta_0 BUSYID_{i,t} + \beta_1 SOE_{i,t} + \beta_2 SOE_{i,t} * BUSYID_{i,t} + \beta_3 Control_{i,t} + Year\ effects_i + Sector\ effects_t + \varepsilon_{i,t} \quad (11)$$

3.7 Statistical Data Analysis

3.7.1 Descriptive Statistics

Descriptive statistics are used to discuss the characteristics of experimental samples by using numerical processes or graphic skills, such as central tendency and dispersion or variance (Fisher & Marshall, 2009). Specifically, mean and standard deviation exhibit the central tendency and dispersion, respectively. The minimum and maximum values show the highest and lowest values of the samples, respectively. While descriptive statistics can offer more details regarding the statistical features of the samples, it cannot verify the relationships between the independent and dependent variables.

3.7.2 Correlation Coefficients

Correlation coefficient is a statistical technique used to test the linear co-movement between two variables (Kim et al., 2015). Even though the correlation coefficient is unlikely to precisely explain the causal relationship between variables, it is still essential in academic research (Kim et al., 2015). This study tested how the variables affect each other. A correlation coefficient exceeding .8 indicates the presence of multicollinearity, which is a concern in regression analysis (Chouaibi & Affes, 2021; Fernández-de-las-Peñas et al., 2022).

3.7.3 Regression Analysis

This study used fixed effects to test the hypotheses. Many academic researchers have

used linear fixed effects estimators to estimate the causal effects in panel data, adjusting for unobserved unit-specific and time-specific confounders (Imai & Kim, 2021). This study used the fixed effects model to regress the effects of board characteristics (board diversity, board independence, busy independent directors) on ESG performance, as well as to verify the moderating roles of corporate governance reform and SOE.

3.7.4 Diagnostic Testing

As a tool for testing model hypotheses, choosing the error specification, checking outliers, and assessing computational issues, diagnostic testing is useful for ascertaining the reliability and validity of empirical results (Baloch et al., 2019; Dou & Yin, 2024; Su et al., 2012). Thus, the diagnostic test was applied to improve the accuracy of the present study. Specifically, Hausman test, multicollinearity, heteroscedasticity, and serial correlation were examined in the fixed effects model.

3.7.4.1 Hausman Test

In econometrics, the choice of error specification affects the value of the estimated coefficient (Amini et al., 2012). For example, fixed and random effects may produce inconsistent parameter estimates. Specifically, fixed-effects models treat individual characteristics as constants, and fixed-effects models that control for individual characteristics and time trends can capture changes and relationships more effectively (Dou & Yin, 2024). Random effects, however, treat regressions as exogenous,

assuming that individual error components are randomly drawn from a single population (Amini et al., 2012). The Hausman test can be used to determine which of the tests is more appropriate, either the random effects model or the fixed effects model (Erol et al., 2023). When the null hypothesis of the Hausman test is rejected, it means that the fixed effects model is a better choice (Erol et al., 2023).

3.7.4.2 Multicollinearity

Multicollinearity exists when variables are highly correlated, causing the standard errors of coefficients to increase (McClendon, 2002). In other words, standard errors are overstated (Daoud, 2018). Such phenomena severely distort the empirical results, for example, by causing some significant variables to appear insignificant (Daoud, 2018). Variance inflation factor (VIF) can be used to detect multicollinearity (Thompson et al., 2017). A VIF value exceeding 10 indicates the existence of multicollinearity (Chatterjee & Price, 1991; Midi & Bagheri, 2010). Thus, the present study used VIF to test multicollinearity issues.

3.7.4.3 Heteroscedasticity

Heteroscedasticity exists when the variance of the error changes between observations (Long & Ervin, 2000). In addition, heteroscedasticity may be caused by missing variables, outliers in the data, or improperly specified model equations, such as missing product terms (Gerhard-Lehn & Diestel, 2016). Wald test can be used to assess the issue of heteroscedasticity (Gerhard-Lehn & Diestel, 2016). Modified Wald test is

recommended by other researchers because it can enhance the size of the Wald test without reducing much power (Ghilagaber, 2004). The *xttest3* command performs the modified Wald test (Baum, 2001). The null hypothesis is homoscedasticity. If the Chi-squared value is statistically significant, the null hypothesis will be not supported. In other words, heteroscedasticity does exist.

3.7.4.4 Serial Correlation

The serial correlation coefficient measures the relationship between consecutive values of variables ordered in time or space (Drukker, 2003). Serial correlation can lead to inconsistent estimates in dynamic panels, and ignoring or including time trends can greatly alter the parameter estimates (Wursten, 2018) and further cause the results to be less efficient (Drukker, 2003). In particular, a strong serial correlation indicates that important variables are ignored (Green et al., 2015). Hence, researchers should identify serial correlation problems. Drukker (2003) suggests conducting the Wooldridge test to identify serial correlation in the particular error term of a panel-data model because the Wooldridge test requires few assumptions and can be performed easily. The Wooldridge test can be applied using the command of *xtserial* (Wursten, 2018). The null hypothesis is no serial correlation. If the *p*-value of the Wooldridge test is significant, the null hypothesis is not supported, proving the existence of serial correlation.

3.7.4.5 Endogeneity Problems

This study may face endogeneity problems involving inverse causality between board characteristics and ESG performance. In the context of board structure, the relationship between corporate governance and company performance is dynamic (Wintoki et al., 2012). Specifically, a company's performance affects the company's governance strategy in the future. In turn, the company's governance strategy affects its future performance. Moreover, busy independent directors may affect the company's ESG strategy decision. However, companies with lower ESG performance may tend to hire busy independent directors who are regarded as talented and reputable (Falato et al., 2014). These indicate the possible presence of endogeneity problems in this study. Endogeneity can lead to severely biased and inconsistent results that affect the reliability of experimental conclusions (Semadeni et al., 2014). To address the possible endogeneity problems arising from reverse linkages between independent variables, this study employed a two-step system GMM model (Arellano & Bover, 1995; Blundell & Bond, 1998; Agnese et al., 2022).

The GMM estimator needs significant first-order serial correlation (AR (1)) and insignificant second-order serial correlation (AR (2)) in the residuals (Oseni, 2016). Moreover, the Hansen test (Hansen, 1982) or the Sargan test (Sargan, 1958) can be used to test the validity of these instruments. Insignificant results of the Sargan/Hansen test mean that the lagged values are valid instruments in the models, which means the models are correctly specified (Alhazaimeh et al., 2014; Azmi et al., 2021). In general,

the Sargan test is significant when the Hansen test is not (Buch & Lipponer, 2010). Buch and Lipponer (2010) suggest conducting the Hansen test because the Sargan test requires stricter assumptions that the residuals are independent and identically distributed, which might not hold and are not required for consistency.

3.7.4.6 Sample Selection Bias

This study has another potential problem related to sample selection bias. Sample selection bias is a problem where the dependent variable can only be observed in a limited non-random sample (Jo & Harjoto, 2012). For example, the relationship between independent and dependent variables is insignificant in all industries but significant in some industries (Gompers et al., 2010). In a linear regression model, selection bias arises when data on the dependent variable is missing from the non-random condition on the independent variable (Winship & Mare, 1992). Selection bias causes bias and inconsistency in the coefficients of the independent variables. To address the potential problems of a company's self-selection, this study employed the Heckman (1979) two-stage selection test, as done by Tong (2011) and Yang and Xue (2023).

3.8 Summary

This chapter has discussed the methodology applied in this study. It covers the study's conceptual framework based on the research objectives and the traits of panel data, as well as the statistical regression models developed, namely fixed effects models. Then,

the diagnostic tests (Hausman test, multicollinearity, heteroscedasticity, serial correlation, endogeneity problems, and sample selection bias) to improve the effectiveness of the empirical results were discussed. These statistical techniques are expected to provide more accurate empirical results, which can better explore whether board characteristics (board diversity, board independence, busy independent directors), corporate governance reform, and SOE affect ESG performance.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter discusses the results related to the effects of the independent variables (board characteristics, corporate governance reform, SOE) on ESG performance and also shows the moderating role of corporate governance reform and SOE. It starts with the descriptive statistics of the variables. The results of the correlations between variables are also presented in this chapter. Then, the results of the fixed effects model applied to test the relationships between the independent and dependent variables are discussed, followed by the results of the regression model. The Hausman test and multicollinearity, heteroscedasticity, and serial correlation tests were also conducted to determine whether the regression results could pass the diagnostic test. To further enhance the reliability of the experimental results, finally, this study used the generalised least squares (GLS) model, GMM, and the Heckman two-step selection model. The following are the main hypotheses tested in this study:

H1: There is a positive relationship between board diversity and ESG performance.

H2: There is a positive relationship between board independence and ESG performance.

H3: There is a negative relationship between busy independent directors and ESG performance.

H4: The 2018 CG reform positively affects ESG performance.

H5: The 2018 CG reform positively moderates the relationship between board diversity and ESG performance.

H6: The 2018 CG reform positively moderates the relationship between board independence and ESG performance.

H7: The 2018 CG reform negatively moderates the relationship between busy independent directors and ESG performance.

H8: SOEs have a positive relationship with ESG performance.

H9: SOE negatively moderates the effect of board diversity on ESG performance.

H10: SOE negatively moderates the effect of board independence on ESG performance.

H11: SOE positively moderates the effect of busy independent directors on ESG performance.

4.2 Descriptive Statistics

This study analysed the descriptive statistics before verifying the main hypotheses. Discussions on the descriptive statistics include items such as mean value, standard deviation, minimum value, 25th percentile, 75th percentile, and maximum value. The mean and standard deviation indicate the central trend of variables. The minimum and maximum values provide information on the data range by showing the smallest and largest values in the dataset. The 25th percentile (the 75th percentile) indicates the value where 25 per cent (75 per cent) of all values are under it. The 25th percentile and the 75th percentile help increase the understanding of the distribution of intermediate

data.

The descriptive statistics results of the dependent variable (ESG performance), independent variables (board diversity, board independence, busy independent directors, corporate governance reform, and SOE) and control variables (ROE, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, and shareholding concentration) are discussed in this section and summarised in Table 4.1.

This study used the ESG score to measure ESG performance (ESGP). The ESG score ranges in value from 0 to 100, with higher ESG scores indicating better ESG performance. The sample of 879 listed companies from 2012 to 2022 has a mean ESG performance of 34.118. The sample's mean ESG score is lower than the mean ESG score of the STOXX Europe 600 Index from 2014 to 2020 of 63.8 (Bifulco et al., 2023) and the mean ESG score of the 334 companies in the S&P 1500 Index from 2010 to 2021 of 55.96 (Mohy-ud-Din, 2024). This result implies that the Chinese market engages in less ESG practices than some developed markets. This phenomenon may be due to the earlier engagement in ESG practices by developed markets as a result of pressure from regulators and the public; during the same period, emerging markets were focused on growing their economies (Tansan et al., 2023). Moreover, this study's sample includes companies with diverse ESG performance, with half of the sample recording ESG scores of 21.303–45.627. The minimum value of 0.608 and the maximum value of 92.739 demonstrated the wide difference between companies with

the lowest and the highest ESG scores. Companies with the lowest ESG scores might have placed low emphasis on ESG engagement. Overall, the ESG performance of Chinese listed companies varies widely and is weaker than the ESG performance of companies in developed countries.

Board diversity indicates the heterogeneity of the board of directors. It is the sum of diversity levels for gender, tenure, and expertise. A higher board diversity index means a more diverse board. In this study, the mean value of board diversity is 2.001. It is slightly higher than the value of the board diversity index of 1.85 constructed from gender, tenure, and expert diversity in the study in China by Li and He (2023). This difference may be attributed to the large difference in sample size between the present study and their study, with 3,628 observations and 10,322 observations, respectively. The board diversity index of the present study is similar to the sum of gender, tenure, and expert diversity of 2.003 derived in Harjoto et al.'s (2015) study in the U.S. market. This finding indicates that the extent of board diversity of listed companies in China is converging to that in developed market. On average, Chinese listed companies avoid the pitfalls associated with homogenous boards, as board members with similar backgrounds lack variety in expertise, resources, and innovative ideas. The standard deviation of 0.419 obtained in this study indicates some differences across the sample. Further, the minimum, 25th percentile, 75th percentile, and maximum values show that the sample companies are diverse, suggesting that the companies have different board structures.

Board independence is a ratio that measures the percentage of independent directors on the board, where a higher percentage indicates higher board independence. The CSRC's requirements specify that at least 30 per cent of the boards of all listed companies should comprise independent directors (Tang et al., 2013). In this study, on average, independent directors constitute 38.4 per cent of the board of directors of the sample companies. The minimum value of 16.7 per cent suggests that some companies do not meet the regulatory requirements on the percentage of independent directors on the board. Sudden resignations of independent directors from the boards of some companies in certain years can result in the companies not meeting the regulatory requirements. For example, on 16 December 2016, the resignation of an independent director from the board of China Yangtze Power Co. caused the number of independent directors in the company to fall below one-third of the board size (Sohu News, 2016). Overall, the majority of the sample meet the regulatory requirements on the minimum percentage of independent directors.

An independent director who holds three or more board seats in other companies is regarded as a busy director. On average, 25.7 per cent of the independent directors of the sample companies are considered busy. This finding is similar to the findings in Pakistan of 27.73 per cent (Latif et al., 2020) and India of 23.10 per cent (Chakravarty & Hegde, 2022). However, it is much higher than the percentages of busy directors in the US of 10.04 per cent (James et al., 2018) and Europe of 2.43 per cent (Defrancq et

al., 2021). Unlike developed markets, there is a lack of qualified independent directors in emerging markets (Firth et al., 2016; Singh & Delios, 2017). Chinese regulators require the composition of independent directors on the boards of listed companies to be not be less than one-third. However, there is only a small number of qualified independent directors in China (Firth et al., 2016). Thus, qualified independent directors are highly sought after by listed companies, enabling them to occupy more board seats in different companies and resulting in a high percentage of busy independent directors in China.

Corporate governance reform is a dummy variable carrying the value of "1" for the period from 2018 to 2022 and 0 for the period from 2012 to 2018. The mean value of 85.9 per cent for corporate governance reform shows that 85.9 per cent of the observations originated from the year 2018 to 2022. The explanation is as follows. The CSRC developed the basic ESG framework via the revised 2018 Code (Ruan & Liu, 2021), providing guidance to more Chinese listed companies to disclose ESG information and thus making it easier for rating agencies to evaluate companies' ESG performance.

SOE is a dummy variable carrying the value of "1" when the company is a SOE and "0" otherwise. Overall, 49 per cent of the sample companies are controlled by the Chinese government. This figure is higher than the percentages of government-controlled companies of 21 per cent in Brazil (de Pilla et al., 2024), 4 per cent in

Indonesia (Harymawan et al., 2020), 6 per cent in Malaysia (Loang et al., 2022), and 3 per cent in Poland (Kabaciński et al., 2020). Like non-SOEs, SOEs are important economic players in China. Unlike their counterparts in Western countries, the Chinese government maintains certain shareholdings in listed companies (Liu, 2015). This phenomenon can be explained by China's unique historical and institutional background. On one hand, China's economic development model was dominated by centralisation until 1978 (Lin et al., 2020). After 2003, the Chinese government promoted the privatisation of SOEs, and the privatised SOEs were mainly small and medium-sized SOEs (Pan et al., 2022). On the other hand, the collectivist culture is more supportive of the development of politically connected SOEs in China (Li et al., 2018). Relatively, the mainstream Western economic view supports the market economy, promoting minimal government intervention in the market (Zhou, 2023). Therefore, China's unique historical and institutional background provides SOEs with an important role in the country's economic development.

ROE is a ratio that measures a company's performance. The mean value of ROE of 7.4 per cent shows that on average, the companies have positive performance and are able to generate net profit using total equity. This finding supports the results of the study by Zhao (2021) in China, which obtained a ROE of 7 per cent. However, a study in the US obtained a higher ROE of 18.816 per cent (Alareeni & Hamdan, 2020). The mature market and strong corporate competitiveness in the US provide a supportive environment for US listed companies to generate high returns for shareholders.

Meanwhile, the standard deviation of 89.8 per cent in the present study indicates high ROE variations in the sample. Specifically, the minimum (−46.606), 25th percentile (0.05), 75th percentile (0.156), and maximum (1.117) values reveal heterogeneity in ROE performance among the sample companies. Overall, ROE fluctuates widely across different listed companies in China, and Chinese listed companies have weaker abilities than US listed companies to generate return for shareholders.

CEO duality is a dummy variable with a value of "1" when the CEO holds the position of chairman of the board of directors and "0" otherwise. On average, CEO duality exists in 24.5 per cent of the sample companies. This percentage is lower than in the US of 61.1 per cent (Chang et al., 2019). The huge difference can be explained by the different national culture between both countries. The US culture tends to be individualistic. In an individualistic culture, people are more inclined to make decisions independently and find their own goals and accomplishments (Gallego-Álvarez & Pucheta-Martínez, 2021). Individualistic cultures also encourage individuals to take on more responsibility (Hofstede et al., 2005). Therefore, CEO duality is more acceptable in countries with a predominantly individualistic culture (Humphries & Whelan, 2017). On the contrary, China is a collectivist country. Collectivist cultures emphasise collective decision-making, calling on members to dedicate themselves to collective goals and to value the opinions of others (Sinha, 2014; Yates & de Oliveira, 2016). Further, in teams where collectivism is emphasised, team members are willing to share tasks and responsibilities (Eby & Dobbins, 1997).

Interestingly, most CEOs in China have collectivist tendencies (Zhu et al., 2020). However, CEO duality implies greater power and greater responsibility. Therefore, in a collectivist culture that emphasises shared responsibility, CEOs may tend to avoid taking on excessive responsibility, resulting in lower acceptance of CEO duality than in countries with individualistic cultures.

The ratio of debt to total assets or leverage is used in this study to measure companies' leverage. The mean value of leverage of 0.467 shows that on average, the debt financing of the sample companies is equivalent to 46.7 per cent of the companies' total assets. The minimum leverage value is 0.000, implying that the company is fully equity financed. The maximum leverage value of 2.290 means that the size of the company's debt is 2.290 times greater than its total assets, indicating that the company may be facing high risks related to its financial situation. A total debt value that is greater than the total asset value results in negative equity. The statistical description of equity multiplier shows that this study' sample companies have diverse financial leverage.

This study used the net profit margin ratio to measure the profitability of companies. On average, companies in the sample can earn 0.103 unit of net profit for every one unit of revenue. This ratio is higher than the 7 per cent obtained in a study on a sample of companies in 2015 by Ali et al. (2018). This difference may be explained by the different sample sizes used. Due to a lack of ESG data, the sample companies of the

present study include only 879 Chinese listed companies. The net profit margin of this study is also slightly higher than the average of 7.69 per cent in some comparable countries (Australia, China, France, Germany, India, Japan, Netherlands, South Korea, the United Kingdom, and the US) in the study by Balli et al. (2021). This finding indicates that the profitability of Chinese listed companies is not weaker than the profitability of companies in some comparable countries. The 25th percentile shows that at least 25 per cent of the companies can make a positive profit. The minimum and maximum values of −15.935 and 4.175, respectively, indicate that this study's sample contains companies with poor and excellent profitability, further demonstrating the variation of the companies in the sample. Overall, while China's listed companies have good profitability, the level of profitability varies widely from company to company.

Net profit growth is a ratio that measures the growth potential of a company. It has a mean of −0.108 in this study. On average, the net profit of the sample companies is less than 0. The standard deviation of 2.856 indicates high volatility in the net profit growth rate of the sample companies. For example, the 25th percentile value of −0.528 indicates that about 25 per cent of the sample's net profit growth rate is below −0.528 per cent, whereas the result of 75th percentile indicates that about 25 per cent of the sample has a growth rate above 29.8 per cent. This finding may also be explained by the different development cycles among industries. Since the last few decades, internet and new energy industries have been developing at high speeds (Lin & Xie, 2023; Wang et al., 2022a). At the same time, the electricity industry has matured, developing

at a slower pace (Ma, 2011). Meanwhile, cyclical industries such as coal and energy are characterised by cyclical changes in supply and demand leading to substantial fluctuations in the net profit of the companies in the industry, with some even experiencing losses (He & Lin, 2018; Yang et al., 2018). Thus, industry variations lead to diverse growth rates among the sample companies.

R&D ratio was used in this study to measure R&D intensity. R&D ratio has a mean of 4.3 per cent. On average, the sample companies use 4.3 per cent of their revenues to invest in R&D. While the R&D intensity in China is higher than the average of 1.252 per cent in emerging markets (Alam et al., 2020), it is similar to the R&D intensities in Europe of 4.88 per cent (Coluccia et al., 2020) and in the US of 5.2 per cent (Alderman et al., 2022). This scenario can be explained by the ongoing effort by the Chinese government to transition from a labour-intensive country to a technology-intensive country by encouraging companies to innovate through the offering of financial subsidies to them (S. Zhao et al., 2018). The standard deviation of 29.6 per cent exceeds the mean of 4.3 per cent, indicating that the sample companies are widely heterogeneous in terms of their priorities on R&D. The minimum value and the 25th percentile value are 0.0 per cent and 0.1 per cent, respectively, indicating that a small number of the companies place little emphasis on investing in R&D. In conclusion, while the intensity of R&D investment among Chinese listed companies is close to the level of Western countries, the listed companies in China place different levels of emphasis on corporate R&D.

Company size is represented by the logarithm of total assets, where the total assets are expressed in billions of yuan. The average value and standard deviation are 1.529 and 0.590, respectively. Following the study of D'Amato and Falivena (2020), a company can be regarded as large if its company size is higher than the sum of the mean value of company size and one standard deviation. Similarly, a company with a logarithmic value of the total assets exceeding 2.119[6] is considered large. The value of the 75th percentile is 1.892, which is less than 2.119, indicating that less than 25 per cent of the sample companies can be considered as large companies. This finding is in line with the distribution of company sizes in China. Small and medium-sized enterprises (SMEs) in China account for 90 per cent of the total number of business organisations in the country and contribute 60 per cent of China's GDP (Sun et al., 2022b). In conclusion, the sample of this study includes companies of different sizes, reflecting the diversity of the sample.

The ratio of shareholding concentration was measured based on the percentage of shares held by the largest shareholder. The sample of the present study has an average shareholding concentration of 37.4 per cent. This finding supports the study by Lu and Zhu (2020), which found that the mean shareholding held by the largest shareholder of Chinese listed companies was above 30 per cent. In comparison, developed

[6] Cut-off value for the size of large companies = mean value of company size + one standard deviation = 1.529 + 0.590 = 2.119.

countries have lower shareholding concentrations than China. For example, the shareholding held by the largest shareholder in the US was lower than 10 per cent (Azar et al., 2018). The 75th percentile value shows that around 25 per cent of the largest shareholders in the sample hold above 50 per cent of shareholdings. In particular, the largest shareholding concentration is 90 per cent. Higher shareholding concentrations may compromise companies' information transparency (Wang & Wu, 2011).

Table 4.1
Statistical Description of Variables

Variable	N	Mean	SD	Min	p25	p75	Max
ESGP	3,628	34.118	16.706	0.608	21.303	45.627	92.739
BD	3,555	2.001	0.419	0.431	1.694	2.301	3.000
BI	3,558	0.384	0.063	0.167	0.333	0.429	0.800
BUSYID	3,628	0.257	0.283	0.000	0.000	0.400	1.000
CGR	3,628	0.859	0.348	0.000	1.000	1.000	1.000
SOE	3,557	0.490	0.500	0.000	0.000	1.000	1.000
ROE	3,628	0.074	0.898	-46.660	0.050	0.156	1.117
CEOD	3,475	0.245	0.430	0.000	0.000	0.000	1.000
LEV	3,628	0.467	0.207	0.000	0.321	0.619	2.290
NPM	3,628	0.103	0.354	-15.935	0.034	0.171	4.175
NPG	3,552	-0.108	2.856	-17.961	-0.528	0.298	12.001
RD	3,628	0.043	0.296	0.000	0.001	0.046	17.215
FS	3,552	1.529	0.590	0.051	1.093	1.892	3.437
SC	3,552	0.374	0.168	0.036	0.242	0.503	0.900

Note: ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration; p25 = value of the 25th percentile; p75 = value of the 75th percentile.

4.3 Correlation Coefficients

Correlation analysis uses quantitative methods to measure whether variables are related or not (Filzmoser & Hron, 2009). Correlation coefficient values range from −1 to +1. A higher correlation coefficient indicates that two variables are correlated at a higher level. A positive (negative) sign means that the two variables move in the same (opposite) direction. In addition, correlation coefficient can be used to check potential multicollinearity problems. A coefficient above .8 means that multicollinearity exists in the dataset (Chouaibi & Affes, 2021; Fernández-de-las-Peñas et al., 2022). Hence, the Pearson correlation analysis was conducted to check the correlation between the dependent, independent, and control variables.

The correlation coefficient values and significance are reported in Table 4.2. Regarding the correlation between the dependent and independent variables, board diversity negatively correlates with ESG performance, but the busy independent directors variable positively correlates with ESG performance. While the correlation results contradict the main hypotheses, the values are insignificant. Omitted variable bias and sample section bias may lead to the insignificant correlation coefficients, and these problems can be solved using multivariate analysis (Mishra et al., 2024). Meanwhile, board independence, corporate governance reform, and SOE positively correlate with ESG performance based on the initial hypothesis testing. These relationships need to be verified further using multivariate analysis.

Regarding the correlation between the dependent and control variables, leverage and company size positively correlate with ESG performance at the significance level of 1 per cent. Meanwhile, CEO duality ($\beta = -0.046$, $p < .01$) and net profit margin ($\beta = -0.047$, $p < .01$) are negatively associated with ESG performance. ROE, net profit growth, R&D ratio, and shareholding concentration are positively related with ESG performance, but the correlation coefficients are insignificant. The relationship between the control variables and the dependent variable needs to be verified further using multivariate analysis.

Table 4.2

Correlation Matrix Table

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ESG	1.000													
(2) BD	-0.009	1.000												
(3) BI	0.117***	-0.084***	1.000											
(4) BUSYID	0.026	-0.047***	0.013	1.000										
(5) CGR	0.121***	-0.046***	-0.055***	0.053***	1.000									
(6) SOE	0.059***	-0.190***	0.060***	-0.117***	-0.205***	1.000								
(7) ROE	0.019	0.017	0.001	0.033**	0.008	-0.007	1.000							
(8) CEOD	-0.046***	0.058***	0.080***	0.063***	0.081***	-0.338***	0.014	1.000						
(9) LEV	0.076***	-0.069***	0.049***	-0.010	-0.089***	0.238***	-0.097***	-0.110***	1.000					
(10) NPM	-0.047***	0.041**	-0.001	0.024	0.010	-0.020	0.136***	-0.005	-0.177***	1.000				
(11) NPG	0.001	-0.022	0.005	0.037**	-0.047***	0.050***	0.053***	0.011	0.027	0.106***	1.000			
(12) RD	0.016	-0.005	-0.007	0.028*	0.059***	-0.076***	-0.004	0.061***	-0.089***	-0.755***	0.000	1.000		
(13) FS	0.356***	-0.114***	0.125***	-0.041**	-0.249***	0.401***	-0.018	-0.177***	0.585***	-0.061***	0.023	-0.094***	1.000	
(14) SC	0.019	-0.197***	0.091***	-0.024	-0.139***	0.357***	0.032*	-0.148***	0.087***	0.032*	0.053***	-0.050***	0.266***	1.000

Note: *, **, and *** correspond to the significant levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration.

4.3.1 Multicollinearity

Multicollinearity refers to the presence of a high correlation between independent variables that influence the dependent variable simultaneously (Katrutsa & Strijov, 2017). The multicollinearity check is conducted to determine the correlation between independent variables in regression equations (Berry & Stanley Feldman, 1985). Multicollinearity poses a problem that threatens the correct specification and the valid estimation of regression techniques, potentially resulting in erroneous experimental estimates(Farrar & Glauber, 1967). It causes the standard errors of the coefficient estimates to increase, leading to larger confidence intervals for the coefficients and smaller *t*-statistics (Berry & Stanley Feldman, 1985). This study used VIF indicator to test potential multicollinearity problems. Table 4.3 shows that the VIF indicators for all variables are less than 10, ranging from 1.02 to 3.12. Moreover, all the coefficients in the correlational analysis are less than .8. Hence, the results of VIF indicators and correlation coefficients prove that this study has no multicollinearity problems.

Table 4.3
Multicollinearity Test Results

Variable	VIF	1/VIF
NPM	3.12	0.320365
RD	2.95	0.339136
LEV	1.86	0.538581
FS	1.83	0.544999
SOE	1.46	0.684940
SC	1.21	0.825538
CEOD	1.15	0.870258
CGR	1.11	0.902349

BD	1.08	0.924637
NPG	1.05	0.953230
ROE	1.05	0.955311
BI	1.04	0.965594
BUSYID	1.02	0.976471
Mean VIF	1.53	

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration.

4.4 Regression Analysis

This section presents and discusses the multivariate regression results for the hypotheses tested in this study. Firstly, the effects of the independent and control variables on the dependent variable are discussed. This is followed by a discussion on the moderating effect of corporate governance reform on the relationship between board characteristics and ESG performance. Finally, the moderation effect of SOEs on the relationship between board characteristics and ESG performance is discussed.

4.4.1 The Effect of Board Diversity on ESG Performance

The first hypothesis states that there is a positive relationship between board diversity and ESG performance. To test this hypothesis, this study regressed board diversity with ESG performance in Model 1 (Table 4.4). The result shows that board diversity positively affects ESG performance ($\beta = 1.291$, $p < .05$), thus supporting the first hypothesis (H1). This result suggests that by increasing board diversity, companies can improve their ESG performance. Heterogeneous boards with different backgrounds

offer diverse resources to corporations (Gurol & Lagasio, 2023; Hillman et al., 2002), including knowledge and experiences, social networks, and creative ideas, which are in alignment with resource dependence theory. These resources may improve the effectiveness of the board in overseeing and supervising the company's ESG activities. Moreover, a diverse board may be effective in preventing management's opportunistic behaviour, compelling management to serve stakeholders' interests better and increase the company's participation in ESG activities. Thus, board diversity can enhance the role of the board in overseeing and mitigating agency costs (Amin et al., 2022; A. Khan et al., 2022).

Table 4.4
Effects of Board Characteristics, Corporate Governance Reform and SOE on ESG Performance

DV: ESG	Model 1	Model 2	Model 3	Model 4	Model 5
BD	1.291**				
	(0.039)				
BI		4.310			
		(0.315)			
BUSYID			-1.348*		
			(0.066)		
CGR				28.495***	
				(0.000)	
SOE					4.566**
					(0.028)
ROE	0.362**	0.361**	0.360**	0.358**	0.305*
	(0.030)	(0.031)	(0.031)	(0.033)	(0.071)
CEOD	-1.181*	-1.240*	-1.193*	-1.188*	-1.213*
	(0.077)	(0.063)	(0.073)	(0.074)	(0.068)
LEV	-7.158***	-7.103***	-7.014***	-7.204***	-6.854***
	(0.005)	(0.006)	(0.006)	(0.005)	(0.008)
NPM	0.628	0.580	0.659	0.560	0.767
	(0.614)	(0.641)	(0.597)	(0.653)	(0.539)
NPG	0.005	0.006	0.007	0.005	0.001
	(0.934)	(0.924)	(0.910)	(0.937)	(0.985)

RD	0.210	0.150	0.212	0.129	0.330
	(0.873)	(0.909)	(0.871)	(0.922)	(0.801)
CS	19.869***	20.109***	20.322***	20.083***	20.053***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SC	-9.936**	-10.357**	-10.083**	-10.307**	-10.034**
	(0.023)	(0.018)	(0.021)	(0.019)	(0.022)
Intercept	-12.711***	-11.601***	-10.236***	-9.976***	-12.655***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
N	3472	3475	3475	3475	3475
Year effect	Yes	Yes	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.416	0.416	0.417	0.416	0.417

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

4.4.2 The Effect of Board Independence on ESG Performance

The results in Table 4.4 show that the relationship between board independence and ESG performance is positive but insignificant ($\beta = 4.310$, $p > .01$). Thus, the second hypothesis of a positive relationship between board independence and ESG performance is not supported. This finding means that board independence has no major influence on ESG performance in China.

Literature evidence on the effectiveness of board independence is mixed. Independent directors serve as a good governance mechanism for monitoring environmental activities, protecting stakeholder interests, and mitigating agency costs (Li et al., 2008; De Villiers et al., 2011). Reputation incentives can compel independent directors to increase their effectiveness in monitoring companies' activities. Further, independent directors are more able to motivate executives' participance in ESG practices (Miranda

et al., 2023). Moreover, the external resources, knowledge, and experiences offered by independent directors may increase the quality of decision-making in the boardroom. In China, outside directors take more care of stakeholders' interests (Pasko et al., 2021). To maintain their reputation, independent directors fulfil their obligations to serve stakeholders. Thus, reputational incentives encourage independent directors to reasonably challenge executives in order to maintain independence (Luo et al., 2023b).

However, more independent directors in the boardroom does not mean higher boardroom efficiency. Specifically, the presence of many independent directors may cause some independent directors to become lazier, thereby reducing the efficiency of the board and weakening the board's monitoring role (Wang & Hussainey, 2013; Oyewo, 2023). In addition, recruiting independent directors who lack specific skills will not improve a company's environmental performance (De Villiers et al., 2011). In China, independent directors are likely to play a token role and appointed for the purpose of meeting the regulatory requirements, thereby reducing their oversight role and leading to more serious agency problems for companies (Wu et al., 2015; Wu & Dong, 2021).

In summary, there are several reasons for the insignificant result. First, independent directors who lack ESG-related knowledge may not be able to improve the quality of decision-making on ESG involvement despite their effort to promote ESG performance (De Villiers et al., 2011). Second, reputational incentives can motivate

independent directors to maintain their independence. However, when a company has too many independent directors, this situation can lead to a free-riding issue where some independent directors become lazy in overseeing company affairs (Wang & Hussainey, 2013; Oyewo, 2023). These factors may explain the insignificant relationship between board independence and ESG performance.

4.4.3 The Effect of Busy Independent Directors on ESG Performance

The results in Table 4.4 show that busy independent directors negatively affect ESG performance ($\beta = -1.348$, $p < .1$), thus suggesting that the third hypothesis can be accepted. The findings support the busyness hypothesis that busy independent directors distract themselves from overseeing executives, thus exacerbating the agency conflicts between shareholders and executives.

The results indicate that higher percentages of busy independent directors harm ESG performance in China. Like the studies of Qiu and Sun (2021) and Chen et al. (2021b), the present study shows that busy independent directors are weaker in governance. Although busier independent directors are considered talented and knowledgeable, they are unable to provide effective oversight and guidance in multiple companies at the same time due to limited time and energy. Thus, the quality of their decision-making on ESG strategies may be reduced. Appointing busier independent directors may lead to higher agency costs since they also tend to work for their own interests (Ferris et al., 2003; Qiu & Sun, 2021; Almulhim, 2022). Consequently, increasing the

percentage of busy independent directors means weaker board ability to monitor executives. Hence, busy independent directors may encourage opportunistic behaviour among executives to serve their own interests, causing the executives to be less attentive to stakeholder interests and less engaged in ESG activities.

The findings contradict the study in the US by Cooper and Uzun (2022), which found that busy outside directors positively affected ESG performance in the US. The contradictory findings illustrate that the US experience cannot simply be applied to the Chinese market. Thus, the effectiveness of busy independent directors deserves further research in different governance backgrounds. Compared to developed markets, emerging markets have weak institutional quality and many agency problems, such as high shareholding concentrations, weak legal protection, and potential corruption (Latif et al., 2020). In this context, holding multiple directorships reduces the quality of independent directors' oversight (Latif et al., 2020).

Further, cultural differences may affect the board's governance approach (Del Brio et al., 2018). While the US is a nation with an individualistic culture, China follows Confucianism and the *guanxi* culture. In an individualistic culture, independent directors have a greater sense of responsibility (Cui et al., 2020). They dare to provide dissenting opinions against executives. Consequently, busy independent directors in the US are more likely use their talents and social networks to solve problems. In China, the Confucianism culture emphasises harmonious relationships (Li et al., 2021b; Chen

et al., 2022b). Thus, independent directors in China may tend to compromise with executives, and they may be less inclined to offer opposing views. Hence, their monitoring abilities may be compromised. Moreover, busy independent directors prefer to serve their own interests (Qiu & Sun, 2021). With the increase in the number of independent directors holding multiple directorships, independent directors have more opportunities to expand their networks and attend social gatherings. Thus, they may miss company meetings and may be distracted from the company's environmental, social, and corporate governance strategies, resulting in lower quality of governance provided by them.

4.4.4 The Effect of Corporate Governance Reform on ESG Performance

As shown in Table 4.4, the corporate governance reform introduced in 2018 positively affects ESG performance ($\beta = 28.495$, $p < .01$). Hence, the fourth hypothesis is supported. This finding indicates that after the introduction of the revised 2018 Code by the CSRC, the ESG performance of listed companies has increased significantly. The revised 2018 Code emphasises sustainability development by listed companies, introduces the definitions of the concepts of green development and social responsibility, and highlights poverty alleviation. The revised 2018 Code thus establishes an ESG reporting framework for Chinese listed companies (Ruan & Liu, 2021).

The revised 2018 Code does not make participation in ESG activities mandatory.

However, to gain legitimacy, organisations need to adapt to their institutional environment (Scott & Meyer, 1994). This study's finding supports the notion of institutional theory that companies which follow the social rule can gain greater legitimacy and resources (Meyer & Rowan, 1977; Vadasi et al., 2020). Hence, the revised 2018 Code may motivate Chinese listed companies to increase their participation in ESG activities. In the context of the Chinese government's pursuit of common prosperity, carbon peak, and carbon neutrality, companies' involvements in ESG activities may increase their opportunities to gain political and financial resources in terms of political support, financial subsidies, and green loans. Active involvement in sustainability development can also reduce the pressure that companies face from Chinese regulators.

4.4.5 The Effect of SOE on ESG Performance

The eighth hypothesis states that SOE positively affects ESG performance. The coefficient of SOE is 4.566 at the significance level of 5 per cent. Hence, this hypothesis can be accepted. This finding means that SOEs outperform non-SOEs in ESG performance. There are two reasons explaining this positive relationship.

The first explanation is related to the function of SOEs in China. Unlike non-SOEs whose aim is to maximise profit, SOEs are representatives of the Chinese government in participating in economic activities and serving public interests. SOEs bear more responsibilities in solving social problems (Gao, 2011). For example, the central

government may request SOEs to solve the issue of smog pollution (Xiong & Luo, 2021).

Second, due to their close ties with the government, SOEs are at a more advantageous position to gain political and financial support. SOEs are generally the first organisations to implement the policies issued by the central government. Especially for environmental protection, SOEs tend to receive special financial subsidies or tax exemptions from the central government. Further, financial institutions tend to offer loans to SOEs and keep a stable relationship with SOEs (Lu et al., 2012). This is due to the government support received by SOEs, which means SOEs face lower default risks than non-SOEs. Hence, SOEs have more budgets than non-SOEs to participate in ESG activities.

However, some scholars have highlighted that while SOEs have better ESG performance than non-SOEs (Zhang & Biryukova, 2025) , SOEs may also overinvest in ESG, resulting in a waste of resources (Ho et al., 2022). This is due to the political pressures faced by SOEs, and lower financial pressures allow them to be able to focus more on engaging in ESG activities (Zhang & Biryukova, 2025). Moreover, the government directly appoints and evaluates the executives in SOEs (Li et al., 2013). Effective policy implementation is one of the evaluation items which may be appraised by the government. Hence, political pressure may compel executives to achieve political goals at the expense of sacrificing investment efficiency.

4.4.6 The Effects of Control Variables on ESG Performance

4.4.6.1 ROE and ESG performance

This study predicted ROE to have a positive effect on ESG performance. Table 4.4 shows that the coefficients of ROE have a positive sign at a significant level. Thus, companies with high financial performance tend to have better ESG performance. Some shareholders of Chinese listed companies are profit-maximising oriented, and only after reaching a certain level of profit, the companies may participate more in social activities (Voinea et al., 2022). Solid financial performance can provide a sound economic foundation for companies, which means the companies will not be financially burdened in committing to ESG practices. The study by Scholtens (2008) found a positive correlation between financial performance and CSR. Some scholars have also proven that ESG performance positively associates with company value and financial performance (Aydoğmuş et al., 2022; Naeem et al., 2022). ESG participation may bring good reputation, political benefits, and increased consumer loyalty, resulting in improved financial performance.

4.4.6.2 CEO Duality and ESG Performance

In this study, CEO duality has a negative relationship with ESG performance at the significance level of 10 per cent. The result shows that when the board chairman also holds the position of CEO, the ESG performance of the company may decrease. CEO duality increases agency costs and weakens the monitoring role of the board (de

Villiers et al., 2011; Haque, 2017). This is because a CEO with a dual role has greater influence and stronger power in decision-making pertaining to corporate strategy. Moreover, when CEOs become more powerful, maximising the interest of stakeholders may not be their top priority (Harper & Sun, 2019), and they may even promote managerial opportunism (Syriopoulos & Tsatsaronis, 2012). In this case, the CEO who also chairs the board will be more willing to serve their own interests (Cooray et al., 2020; Ma & Chen, 2024). Hence, CEO duality may reduce the likelihood of the company participating in ESG activities.

4.4.6.3 Leverage and ESG Performance

Table 4.4 shows that leverage has a negative relationship with ESG performance ($p < .01$). Thus, the finding indicates that companies with higher financial leverage to reduce their investment in ESG activities. High leverage increases a company's risk of insolvency (Huang & Ye, 2021). Survival is the top priority of highly leveraged companies, and the increased debt pressure may force them to utilise cash for business operations rather than spending on ESG activities. The result supports the notion that higher leverage levels reduce companies' willingness to participate more in ESG activities.

4.4.6.4 Net Profit Margin and ESG Performance

Net profit margin measures a company's profitability. Table 4.4 shows a positive relationship between net profit margin and ESG performance at an insignificant level

(p > .1). This finding does not support the expectation that higher profitability promotes companies' ESG involvement. Good earnings performance can provide an economic basis for the development of ESG (Muttakin et al., 2015; Scholtens, 2008). High earning power allow companies to meet social shareholders' demand by investing in sustainable activities, whereas low profitability forces companies to fulfil stakeholder interest even if doing so would be detrimental to sustainability investment (Artiach et al., 2010). However, increased profitability does not mean that companies will increase their investment in ESG activities. This is because a company's action depends on its strategic priorities.

4.4.6.5 Net Profit Growth and ESG Performance

The results in model 1 shows that the coefficient of net profit growth is 0.005 at an insignificant level (p > .1). It means that ESG performance will increase by 0.005 as net profit growth increases by 1. Growth-seeking companies tend to invest less cash in CSR activities, whereas mature organisations will care more about CSR practices (Withisuphakorn & Jiraporn, 2016). Specifically, growth companies prefer to maintain their competitiveness and to increase their investment in business activities since they have limited resources and also face the pressure to survive in the competitive market. Growth companies may regard ESG investment as unprofitable in the short term. Relatively, stakeholders (the public, governments, employees) expect mature companies to take more social responsibility since they have stable operating businesses, stable cash flows, and sufficient resources. Thus, differences in the stage

of development between growing and mature companies lead to the insignificant relationship between net profit growth and ESG performance.

4.4.6.6 R&D Ratio and ESG Performance

This study expected companies with more emphasis on R&D expenditures to have better ESG performance. Table 4.4 shows an insignificant positive relationship between research intensity and ESG performance. R&D investment can improve the welfare of the community and promote companies' involvement in social activities, which is in line with stakeholders' expectations (Padgett & Galan, 2010). However, the effects of R&D intensity on ESG performance may depend on whether the R&D expenditure is related to ESG projects or not. For example, while innovation on environmentally friendly facility may reduce the emission of greenhouse gases, some companies may prefer investing in R&D activities to improve productivity in areas not related to ESG.

4.4.6.7 Company Size and ESG Performance

Table 4.4 shows that company size positively affects ESG performance ($p < .01$). Company size plays a key role in enabling or impeding corporate activities, such as in group procedures and decision-making (Li & Chen, 2018). Increasing its size may also bring more tangible and intangible resources to the company, which may help to improve the company's ESG performance. For example, sufficient cash will enable the company to purchase green facilities, hire experienced experts, or improve

employee benefits. Relatively, small companies are more willing to utilise resources for business operations than ESG activities (D'Amato & Falivena, 2020). This is because small companies tend to face constraints in terms of insufficient resources. ESG investment was found to be relatively more costly for small companies (Shou et al., 2020). Excessive investment in purchasing green facilities may cause negative return for small companies (Abdi et al., 2022). Hence, larger companies have better abilities than smaller companies to engage in ESG practices.

4.4.6.8 Shareholding Concentration and ESG Performance

Table 4.4 shows that shareholding concentration negatively affects ESG performance ($p < 0.05$), indicating that a higher level of shareholding concentration leads to lower ESG performance. This finding supports the studies by Dam and Scholtens (2013), Younas et al. (2017), and Chen et al. (2021a), which found a higher level of ownership concentration decreased CSR performance and environmental responsibility. Higher shareholding concentration can cause serious agency problems between controlling and minority shareholders, as the large shareholders tend to serve their own interests and exploit the interest of minority shareholders (Dam & Scholtens, 2013; Chen et al., 2021a). Companies with high shareholder concentration are less likely to contribute to social activities (Dam & Scholtens, 2013). This is because the benefits from socially responsible behaviours do not exceed the cost incurred by the main shareholders (Dam & Scholtens, 2013). Hence, high shareholding concentrations may reduce companies' willingness to engage in ESG practices.

4.4.7 Moderating Effect of Corporate Governance Reform on the Relationship between Board Diversity and ESG Performance

The fifth hypothesis suggests that the 2018 CG reform positively moderates the relationship between board diversity and ESG performance. To test this hypothesis, this study introduced the interaction item (BD*CGR) in Model 1. The coefficient of the interaction item (BD*CGR) is positive and significant ($\beta = 2.467$, $p < .05$). Hence, H5 is supported. Figure 4.1 shows the predictive margins across corporate governance reform and board diversity. It exhibits the negative influence of board diversity on ESG performance before the corporate governance reform, but the negative coefficient of board diversity in Model 1 in Table 4.5 is insignificant. This finding suggests that the study cannot prove whether a negative effect of board diversity on ESG performance existed before the corporate governance reform. This may be due to a lack of understanding of the benefits of board diversity among public companies prior to the corporate governance reform in 2018. The relationship between board diversity and ESG performance turned positive after the implementation of the revised 2018 Code, and this relationship is significant in Model 1. Thus, the positive relationship between board diversity and ESG performance has been strengthened following the implementation of the revised 2018 Code.

This finding reflects the effectiveness of the 2018 revised Code. Listed companies comply with Article 25 of the 2018 revised Code, which encourages board diversity.

Institutional theory argues that organisations need to adapt to their institutional environment (Scott & Meyer, 1994). Listed companies in China promote the board structure after the 2018 revised Code was implemented and have gained more benefits from board diversity. The boardroom may have access to more intangible resources (ideas, knowledge, and social network) as a result of board diversity (Gurol & Lagasio, 2023; Hillman et al., 2002). Thus, the qualities of their decisions related to ESG practices may improve.

Table 4.5
Moderating Role of Corporate Governance Reform in the Relationship Between Board Characteristics and ESG Performance

DV: ESG	Model 1	Model 2	Model 3
BD	-0.493		
	(0.619)		
BI		7.720	
		(0.231)	
BUSYID			0.263
			(0.880)
CGR	23.793***	30.277***	28.752***
	(0.000)	(0.000)	(0.000)
BD*CGR	2.467**		
	(0.020)		
BI*CGR		-4.717	
		(0.478)	
BUSYID*CGR			-1.832
			(0.308)
ROE	0.360**	0.360**	0.359**
	(0.031)	(0.031)	(0.032)
CEOD	-1.165*	-1.225*	-1.191*
	(0.080)	(0.066)	(0.073)
LEV	-7.430***	-7.063***	-7.155***
	(0.004)	(0.006)	(0.005)
NPM	0.592	0.590	0.634
	(0.635)	(0.636)	(0.611)
NPG	0.009	0.007	0.007
	(0.883)	(0.907)	(0.905)
RD	0.176	0.160	0.186
	(0.893)	(0.903)	(0.887)
CS	19.652***	20.097***	20.400***
	(0.000)	(0.000)	(0.000)
SC	-10.779**	-10.618**	-10.026**
	(0.014)	(0.016)	(0.022)
Intercept	-8.314**	-12.888***	-10.586***
	(0.030)	(0.001)	(0.001)
N	3472	3475	3475
Year effect	Yes	Yes	Yes

Sector effect	Yes	Yes	Yes
Adjusted R^2	0.417	0.416	0.417

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively. ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

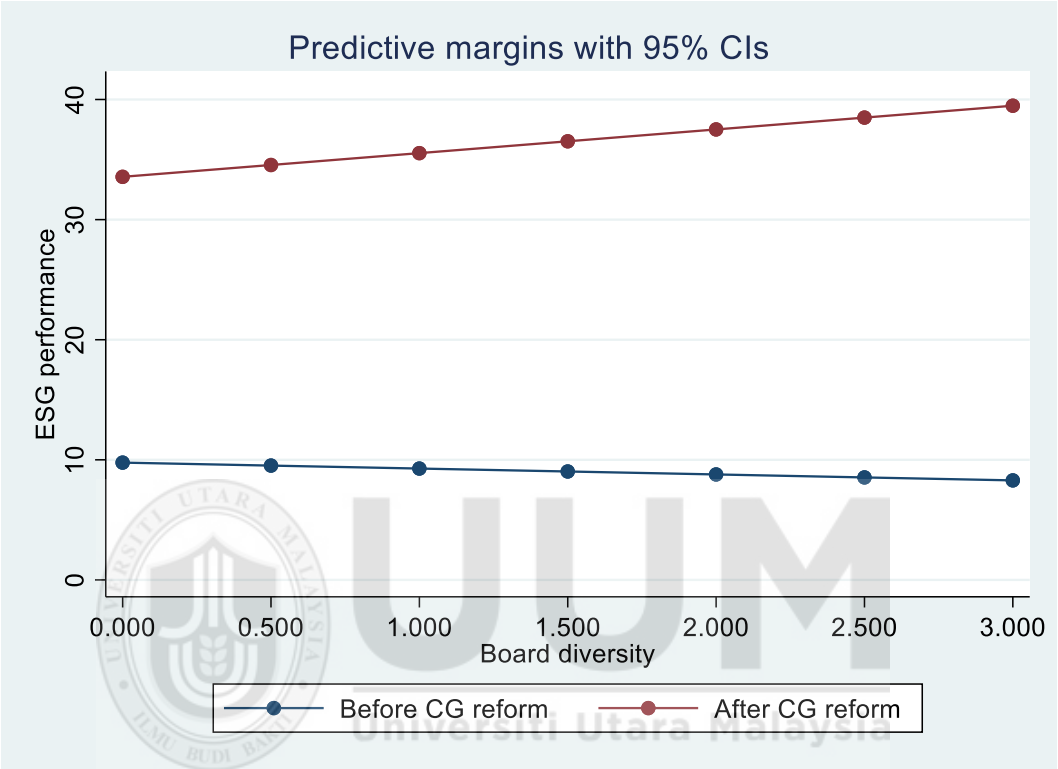

Figure 4.1
Predictive Margins: Moderating Role of Corporate Governance Reform in the Relationship between Board Diversity and ESG Performance

4.4.8 Moderating Effect of Corporate Governance Reform on the Relationship between Board Independence and ESG Performance

For the sixth hypothesis, this study predicted the 2018 CG reform to positively moderate the relationship between board independence and ESG performance. Figure 4.2 shows that the lines representing the relationship between ESG performance and board independent move upward both before and after the 2018 reform. Besides, the

slopes reveal that the effect of board independence on ESG performance is more pronounced before the corporate governance reform than after the reform. This scenario indicates that the 2018 reform negatively moderates the relationship between board independence and ESG performance. The finding contradicts the sixth hypothesis. However, the coefficient of BI*CGR is insignificant ($\beta = -4.717$, $p > .1$). Hence, the sixth hypothesis is not supported. Thus, the corporate governance reform in 2018 does not play an important moderating role in the relationship between board independence and ESG performance.

In this study, the corporate governance reform does not significantly influence the relationship between board independence and ESG performance. Corporate governance reforms are not always effective. Thus, in addition to corporate governance reforms, the impact of culture on corporate behaviour deserves the attention of policymakers (Boateng et al., 2021). In China, the independence of the board of directors is influenced by the *guanxi* culture (Li et al., 2021b). The *guanxi* culture is an informal system that emphasises harmonious relationships and norms of mutual benefit (Barbalet, 2021; Chen et al., 2022b). Independent directors compromise their oversight role due to the *guanxi* culture (Li et al., 2021b). Therefore, the revised 2018 Code does not seem to have improved the effectiveness of independent directors in overseeing and monitoring corporate activities.

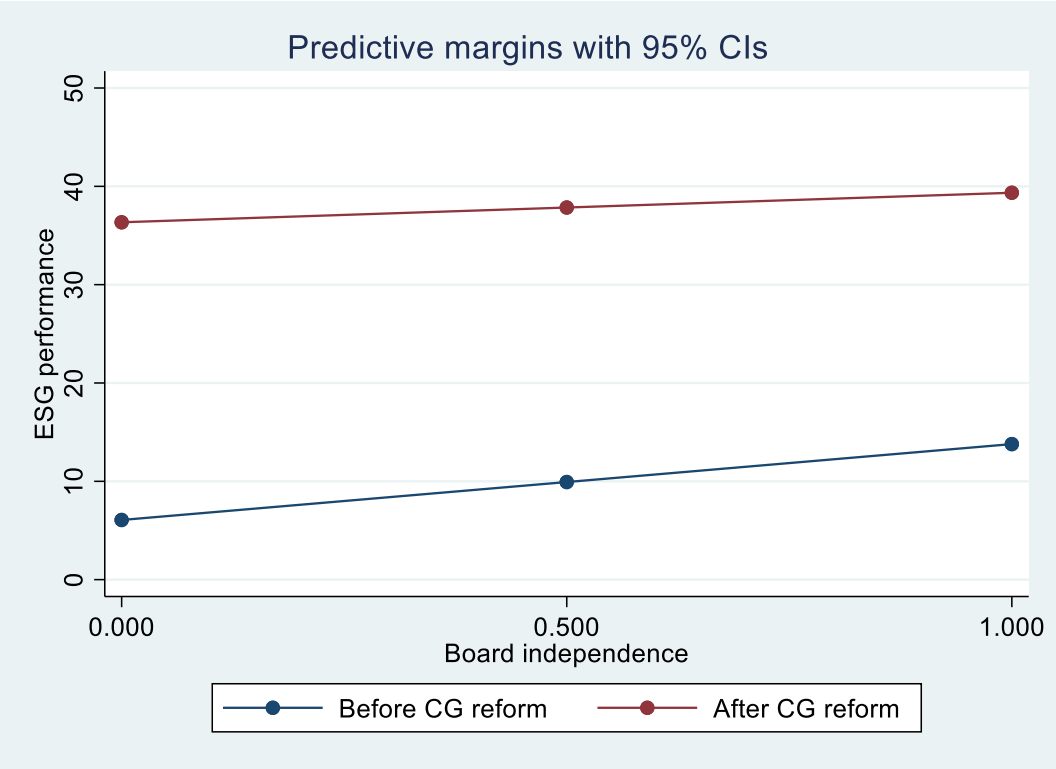

Figure 4.2
Predictive Margins: Moderating Role of Corporate Governance Reform in the Relationship between Board Independence and ESG Performance

4.4.9 Moderating Effect of Corporate Governance Reform on the Relationship between Busy Independent Directors and ESG Performance

Figure 4.3 shows that increasing the percentage of busy independent directors hurts ESG performance after the corporate governance reform in 2018 but had little impact before the reform. The sign of the interaction item (BUSYID*CGR) is insignificant ($\beta = -1.832$, $p > 0.1$). Thus, the seventh hypothesis that the revised 2018 Code moderates the negative relationship between busy independent directors and ESG performance is not supported. Although the revised 2018 Code specifies more requirements on independent directors' duties and increases their workload, the revised 2018 Code does not affect the relationship between busy independent directors and ESG performance.

Even though independent directors will still be perfunctory in their work, they will still choose minimum compliance (Shao, 2019).

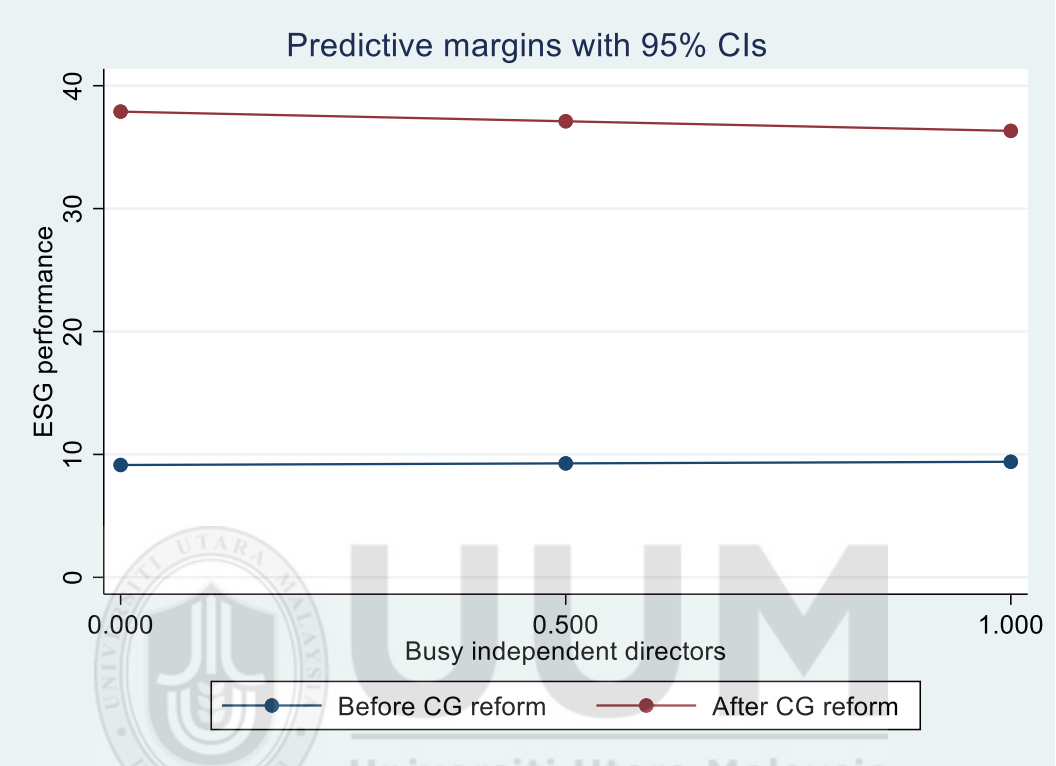

Figure 4.3
Predictive Margins: Moderating Role of Corporate Governance Reform in the Relationship between Busy Independent Directors and ESG Performance

4.4.10 Moderating Effect of SOE on the Relationship between Board Diversity and ESG Performance

The ninth hypothesis states that SOE negatively moderates the effect of board diversity on ESG performance. To test this hypothesis, the study introduced the interaction item (BD*SOE) in Model 1 (Table 4.6). The estimated results ($\beta = -2.979$, $p < 0.05$) of Model 1 support the ninth hypothesis (H9). In Figure 4.4, the SOE line has a flatter slope than the non-SOE line. As board diversity increases, non-SOEs' ESG

performance increases but SOEs' ESG performance is almost unchanged, implying that the positive effect of board diversity on ESG performance is more pronounced in non-SOEs than in SOEs.

This study's findings indicate that the effect of board diversity on ESG performance is more pronounced in non-SOEs. The board oversight over executives in SOEs is weakened (Ullah et al., 2023) since SOEs are much less dependent on the oversight role of the board of directors. In particular, executives in SOEs are appointed and assessed by the government instead of undergoing a series of selections (H. Yang & Xue, 2023). Thus, the extent of board emphasis on ESG activities in SOEs tends be influenced by the political goals of the government. Relatively, non-SOEs' boards need to ensure that executives serve stakeholders' interest. Participation in non-profit-oriented projects, such as ESG activities, is favoured by stakeholders (Feng et al., 2022; Qureshi et al., 2020). Further, SOEs play the dual role of economic players and public interest service providers (Ervits, 2023). As government representativeness, SOEs gain more support from policies and from commercial banks in the forms of subsidies, tax deductions, and bank loans (Lu et al., 2012; Zhang & Zhao, 2022). SOEs have advantages in the soft budget constraints, motivating the SOEs' executives to overinvest in CSR practices since they have strong political incentives (Kao et al., 2018). Hence, the resources generated by board diversity do not seem to have a significant influence on SOEs' ESG performance compared to non-SOEs.

Table 4.6

Moderating Role of SOE in the Relationship Between Board Characteristics and ESG Performance

	Model 1	Model 2	Model 3
BD	2.944***		
	(0.001)		
BI		7.347	
		(0.375)	
BUSYID			-0.111
			(0.908)
SOE	10.870***	6.035	5.288**
	(0.001)	(0.145)	(0.012)
BD*SOE	-2.979**		
	(0.014)		
BI*SOE		-3.798	
		(0.693)	
BUSYID*SOE			-2.755*
			(0.053)
ROE	0.287*	0.307*	0.300*
	(0.090)	(0.070)	(0.075)
CEOD	-1.167*	-1.271*	-1.256*
	(0.080)	(0.056)	(0.059)
LEV	-6.695***	-6.749***	-6.577**
	(0.009)	(0.009)	(0.010)
NPM	0.913	0.796	0.844
	(0.465)	(0.524)	(0.499)
NPG	-0.000	0.001	0.007
	(1.000)	(0.982)	(0.913)
RD	0.516	0.359	0.406
	(0.694)	(0.784)	(0.757)
CS	19.683***	20.051***	20.297***
	(0.000)	(0.000)	(0.000)
SC	-9.777**	-10.095**	-10.020**
	(0.025)	(0.021)	(0.022)
Intercept	-18.573***	-15.410***	-13.335***
	(0.000)	(0.001)	(0.000)
N	3472	3475	3475
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes
Adjusted R^2	0.418	0.417	0.418

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD

= R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

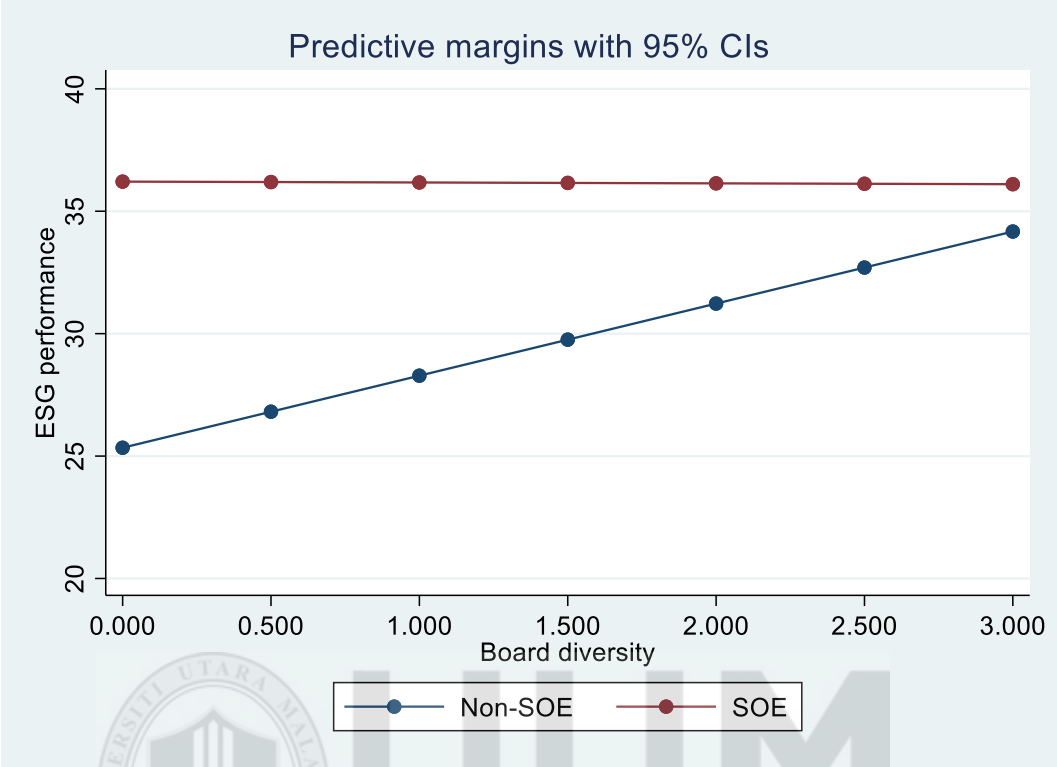

Figure 4.4
Predictive Margins: Moderating Role of SOE in the Relationship between Board Diversity and ESG Performance

4.4.11 Moderating Effect of SOE on the Relationship between Board Independence and ESG Performance

The tenth hypothesis predicts that SOE negatively moderates the effect of board independence on ESG performance. In Figure 4.5, both SOE and non-SOE lines have a positive trend. Interestingly, as board independence increases, the gap between the lines becomes narrower. The positive effect of board independence on ESG performance is more pronounced in non-SOEs than in SOEs. Independent directors in China's SOEs have relatively weak monitoring incentives, which limit their governance effectiveness (Lu & Zhu, 2020). However, the insignificant result (β =

−3.798, $p > .1$) in Table 4.6 indicates that the tenth hypothesis is not supported. There is no significant difference between non-SOEs and SOEs in terms of the impact of board independence on ESG performance. The reason for the non-significant results could be that although SOEs may be intervened by the government on some important corporate decisions, their participation in ESG is consistent with their role of serving public interest. Hence, the government may not intervene in the oversight function of independent directors pertaining to companies' ESG activities.

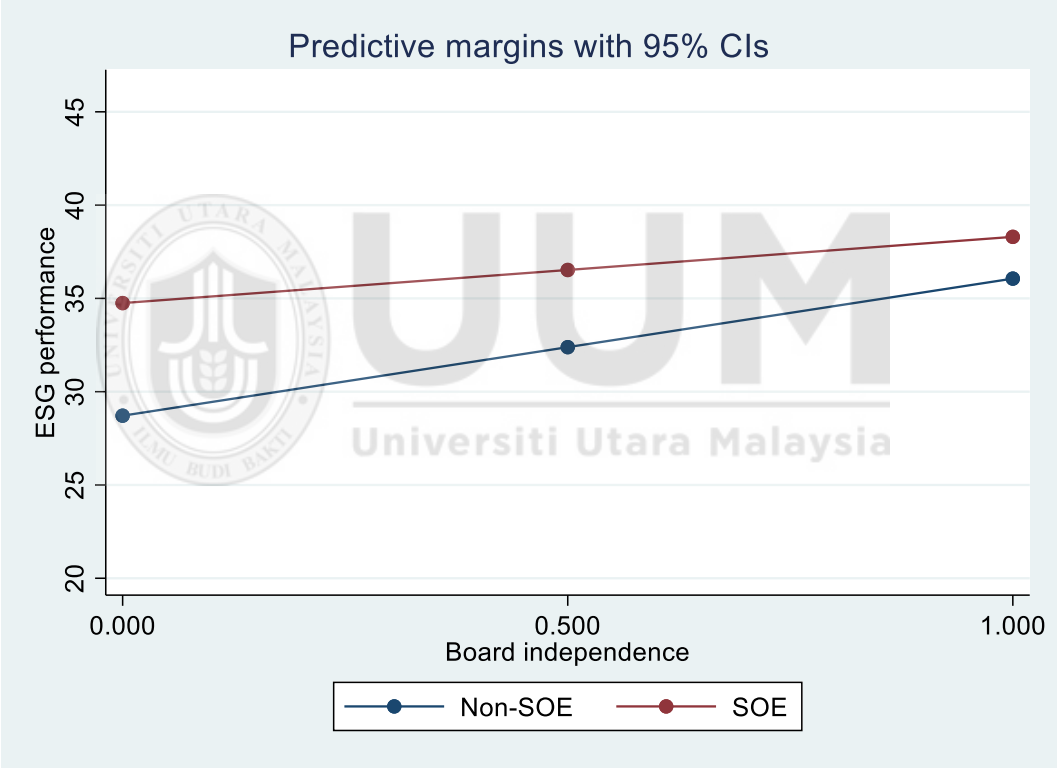

Figure 4.5
Predictive Margins: Moderating Role of SOE in the Relationship between Board Diversity and ESG Performance

4.4.12 Moderating Effect of SOE on the Relationship between Busy Independent Directors and ESG Performance

Model 3 in Table 4.6 tested the eleventh hypothesis, which states that SOE positively

moderates the effect of busy independent directors on ESG performance. The coefficient of interaction (BUSYID*SOE) is −2.755 at the significance level of 10 per cent. The result indicates that SOEs negatively moderate the relationship between busy independent directors and ESG performance. Hence, the eleventh hypothesis is not supported. In Figure 4.6, the SOE line is sloping downward and the non-SOE line is flat, indicating that the negative relationship between busy independent directors and ESG performance is stronger in SOEs than in non-SOEs.

This study anticipated SOEs to be less dependent on the supervisory role of independent directors because SOEs are directly regulated by the government. In contrast, busy independent directors are more likely to reduce the quality of board decisions in non-SOEs due to non-SOEs' dependence on the supervision by independent directors. However, although the coefficient of interaction (BUSYID*SOE) is significant, it is in the opposite direction of the hypothesis. This finding suggests that the effect of busy directors is stronger in SOEs than in non-SOEs, where non-SOEs experience a negligible effect from busy independent directors.

This finding contradicts the result of Wang et al. (2023). Wang et al. (2023) argue that SOEs can provide busy directors with stronger reputational incentives; hence, increasing the percentage of busy directors in SOEs can positively contribute to CSR performance. However, ESG is a much broader concept than CSR. The major difference between CSR and ESG is that while CSR is confined to social responsibility

and environmental governance, ESG additionally encompasses corporate governance (Gillan et al., 2021). Therefore, the present study could not directly use the findings of Wang et al. (2023) to explain the relationship between busy independent directors and ESG performance.

Some scholars also support the notion that SOEs provide independent directors with strong reputational incentives. Luo and Liu (2023) used the number of directorships held by an independent director to measure the reputation of independent directors. They found that reputable independent directors were more inclined to serve companies with more visibility and reputation, such as SOEs. The more positions an independent director held on the boards of other companies, which meant they were more competent and reputable, the busier they became.

Furthermore, Luo and Liu (2023) highlighted that some constraints may impede the quality of governance by reputable directors, such as limited time and energy. Hiring busy directors requires balancing the benefits and costs of busy directors. Therefore, this study demonstrates that the negative impact of busy directors on ESG is more pronounced in SOEs than in non-SOEs. While reputational incentives may attract more busy directors to SOEs, limited time and energy do not allow busy directors to play an effective role in monitoring SOEs' ESG strategies.

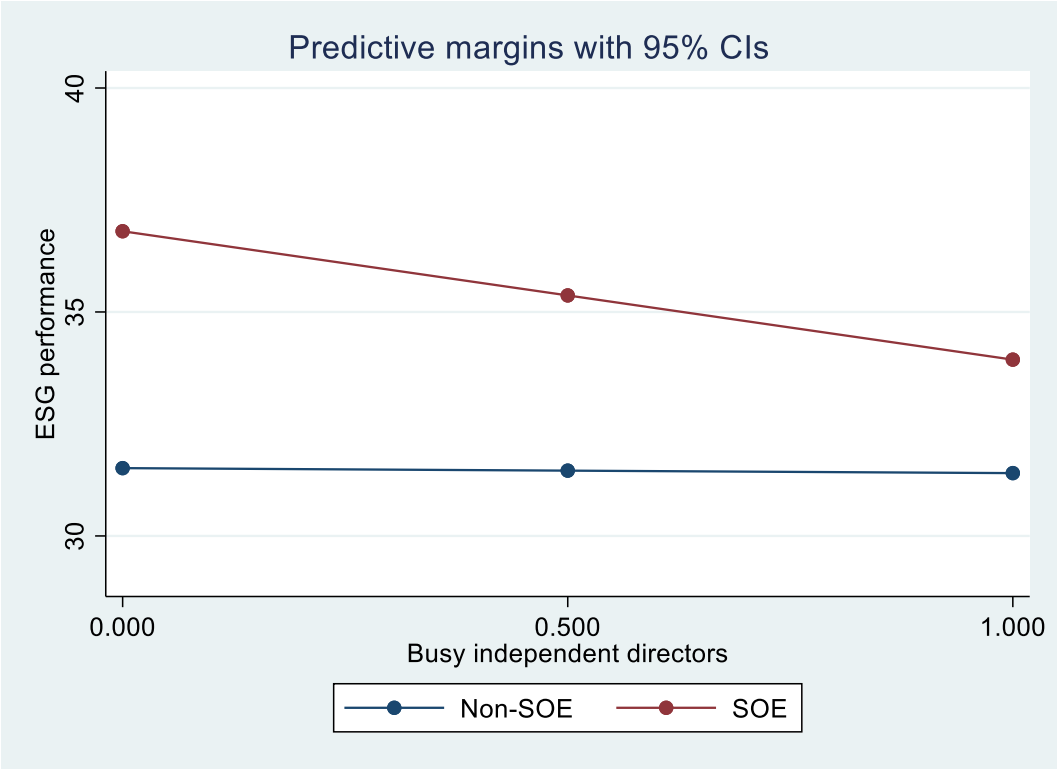

Figure 4.6
Predictive Margins: Moderating Role of SOE in the Relationship between Busy Independent Directors and ESG Performance

4.5 Diagnostic Testing

In this section, the diagnostic tests conducted to assess whether the results of the study are reliable or not is discussed. First, this study conducted the Hausman test to select the proper specification model. Second, multicollinearity was used to assess the level of correlation between the variables. Third, this study conducted a test to determine the existence of heteroscedasticity and serial correlation in this study.

4.5.1 Hausman Test

The Hausman test was used to determine whether the random effects model or the fixed effects model is more appropriate for this study. The null hypothesis of the

Hausman test is that random effects specification is correct (Guggenberger, 2010). When the *p*-value of the Hausman test is less than .01, the null hypothesis is not supported, suggesting that random effects specification is not an appropriate model and the fixed effects model is a superior choice. Table 4.7 exhibits that the *p*-values of all models are less than .01, implying that the fixed effects models in this study are all appropriate.

Table 4.7
Hausman Test Results

Model	Prob > Chi2	Null (H0)
Model 1 in Table 4.4	0.000	Not supported
Model 2 in Table 4.4	0.000	Not supported
Model 3 in Table 4.4	0.000	Not supported
Model 4 in Table 4.4	0.000	Not supported
Model 5 in Table 4.4	0.000	Not supported
Model 1 in Table 4.5	0.000	Not supported
Model 2 in Table 4.5	0.000	Not supported
Model 3 in Table 4.5	0.000	Not supported
Model 1 in Table 4.6	0.000	Not supported
Model 2 in Table 4.6	0.000	Not supported
Model 3 in Table 4.6	0.000	Not supported

4.5.2 Heteroscedasticity

Heteroscedasticity refers to inequal or heterogeneous variations of samples (Dutilleul & Legendre, 1993). The presence of heteroscedasticity may cause a bias resulting in invalid coefficient estimates (Baltagi, 2008). In this study, the modified Wald test was used to examine the possible risks of heteroscedasticity. The modified Wald test is a powerful tool for checking the presence of heteroscedasticity problems (Ghilagaber, 2004). In Table 4.8, the *p*-values of all models are significant at the level of .01,

indicating that the null hypothesis of homoskedasticity of the error term is not supported. In other words, this study faces the heteroscedasticity problem in fixed effect estimations. Hence, the variance of the errors should be corrected in this study.

Table 4.8
Heteroscedasticity Test Results

Model	Prob > Chi2	Null (H0)
Model 1 in Table 4.4	0.000	Not supported
Model 2 in Table 4.4	0.000	Not supported
Model 3 in Table 4.4	0.000	Not supported
Model 4 in Table 4.4	0.000	Not supported
Model 5 in Table 4.4	0.000	Not supported
Model 1 in Table 4.5	0.000	Not supported
Model 2 in Table 4.5	0.000	Not supported
Model 3 in Table 4.5	0.000	Not supported
Model 1 in Table 4.6	0.000	Not supported
Model 2 in Table 4.6	0.000	Not supported
Model 3 in Table 4.6	0.000	Not supported

4.5.3 Serial Correlation

Serial correlation refers to the correlation of consecutive time-series observations (King, 2003). In econometrics, the presence of serial correlation may lead to invalid parameter estimates and misleading inferences (King, 2003). Thus, the problem of serial correlation should be identified. This study used the Wooldridge test to identify serial correlation. In Table 4.9, the *p*-values of the Wooldridge test for all models are statistically significant ($p < .01$). Thus, the null hypothesis of no issue of serial correlation cannot be accepted. Hence, the issue of serial correlation in fixed effect estimations should be corrected in this study.

Table 4.9
Serial Correlation Test Results

Model	Prob > F	Null (H0)
Model 1 in Table 4.4	0.000	Not supported
Model 2 in Table 4.4	0.000	Not supported
Model 3 in Table 4.4	0.000	Not supported
Model 4 in Table 4.4	0.000	Not supported
Model 5 in Table 4.4	0.000	Not supported
Model 1 in Table 4.5	0.000	Not supported
Model 2 in Table 4.5	0.000	Not supported
Model 3 in Table 4.5	0.000	Not supported
Model 1 in Table 4.6	0.000	Not supported
Model 2 in Table 4.6	0.000	Not supported
Model 3 in Table 4.6	0.000	Not supported

4.6 Robustness Test

The GLS model was used to solve the problems of heteroscedasticity and serial correlation. Further, the system GMM model was used to solve the problem of reverse causality. Moreover, this study was concerned about the existence of sample selection bias and self-selection bias. To solve the potential concerns, this study used the Heckman selection model.

4.5.1 GLS Model

Heteroskedasticity and serial correlation are major issues in the errors of panel data (Bai et al., 2019). The GLS panel estimator takes these two problems into account in the residuals (Kuntluru et al., 2008). Thus, the GLS model is recommended for correcting the problems of heteroscedasticity and serial correlation (Bai et al., 2019). GLS can enhance the robustness of coefficient estimators in the dataset of panel data (Pillai & Al-Malkawi, 2018). For example, in the case of heterogeneous variation, GLS

obtains unbiased optimal estimates (Muthama Musau, 2015). The following Table 4.10 display the GLS estimator results for correcting the problems of heteroscedasticity and serial correlation.

Panel A of Table 4.10 shows the relationships between the independent variables (board diversity, board independence, busy independent directors, corporate governance reform, and SOE) and ESG performance. In Model 1, board diversity has a positive relationship with ESG performance ($\beta = 0.969$, $p < .01$). Thus, the fixed effect model results are still supported. In Model 2, board independence positively affects ESG performance ($\beta = 3.931$, $p < .1$). Interestingly, the fixed effect estimation indicates an insignificant effect of board independence on ESG performance. However, after correcting the problems of heteroscedasticity and serial correlation by using the GLS model, this relationship turns significantly positive. Board independence is crucial for promoting ESG outcomes. Next, the results of Model 3 are inconsistent with the results of the fixed effect model, where the relationship between busy independent directors and ESG performance changes to positive but insignificant. Subsequently, the coefficient of corporate governance reform is 14.213 at the significance level of 1 per cent, still supporting hypothesis 4 that the 2018 reform positively affects ESG performance. Finally, compared to the findings of the fixed effect model, the coefficient's sign for SOE is still positive but insignificant in the GLS model.

Panel B of Table 4.10 shows the moderating role of corporate governance reform in influencing the relationships between the independent variables (board diversity, board independence, and ESG performance) and ESG performance. In Model 6, the coefficient of BD*CGR is positive but insignificant (β = 0.823, $p > .1$). Unlike the findings of the fixed effect model, the GLS result does not support hypothesis 5 that the corporate governance reform in 2018 positively moderates the relationship between board diversity and ESG performance. Next, the coefficient of the interaction item (BI*CGR) becomes positive and significant at the level of 5 per cent, supporting hypothesis 6 that the 2018 reform positively moderates the relationship between board independence and ESG performance. Similar to the result of the fixed effect model, the GLS result in Model 8 shows that corporate governance reform does not significantly moderate the effect of busy independent directors on ESG performance.

The GLS estimation result on the moderating role of SOE is displayed in panel C of Table 4.10. The result of Model 9 in panel C (β = −1.974, $p < .01$) supports hypothesis 9, which states that the positive effect of board diversity on ESG performance is more pronounced in non-SOEs than in SOEs. This is consistent with the finding of the fixed effect model. The moderating role of SOEs in influencing the positive effect of board independence on ESG performance becomes significantly negative at the level of 10 per cent. The result of the GLS model supports the hypothesis. Moreover, the interaction item (BUSYID*SOE) has the coefficient of −1.701 at the significance level of 5 per cent in Model 11. Compared to the results of the fixed effect model, GLS

estimations increase the significance level of the interaction item (BUSYID*SOE).

In conclusion, after addressing the risks of heteroscedasticity and serial correlation, the significance level and the direction of the coefficient of some independent variables change. Specifically, board independence and the interaction item (BI*CGR) become significant, whereas busy independent directors and the interaction item (BD*CGR) change to insignificant. These findings indicate that the presence of heteroscedasticity and serial correlation may influence the estimators' results in the regression models.

Table 4.10
GLS Model Estimation Results

Panel A: Effects of Board Characteristics, Corporate Governance Reform and SOE on ESG performance					
DV: ESG	Model 1	Model 2	Model 3	Model 4	Model 5
BD	0.969***				
	(0.009)				
BI		3.931*			
		(0.100)			
BUSYID			0.052		
			(0.898)		
CGR				14.213***	
				(0.000)	
SOE					0.324
					(0.557)
ROE	0.222*	0.282**	0.274**	0.247**	0.228*
	(0.058)	(0.027)	(0.031)	(0.041)	(0.052)
CEOD	-0.306	-0.445	-0.368	-0.349	-0.322
	(0.389)	(0.201)	(0.291)	(0.322)	(0.367)
LEV	-1.567	-1.840	-1.848	-1.798	-1.867
	(0.223)	(0.118)	(0.117)	(0.143)	(0.145)
NPM	0.685	1.121*	1.034	0.825	0.655
	(0.276)	(0.075)	(0.103)	(0.196)	(0.299)
NPG	0.0260	0.0367	0.0304	0.0287	0.0268
	(0.355)	(0.268)	(0.352)	(0.351)	(0.357)
RD	0.593	1.458*	1.345*	0.956	0.645

	(0.409)	(0.071)	(0.094)	(0.216)	(0.382)
CS	15.53***	16.00***	15.99***	15.83***	15.58***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SC	-3.774**	-4.147***	-4.098***	-4.159***	-4.336***
	(0.020)	(0.001)	(0.001)	(0.003)	(0.006)
Intercept	8.150***	8.071***	9.524***	-4.400**	10.15***
	(0.000)	(0.000)	(0.000)	(0.015)	(0.000)
N	3406	3409	3409	3409	3409
Year effect	Yes	Yes	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes	Yes	Yes

Panel B: Corporate Governance Reform as a Moderator of the Effects of Board Characteristics on ESG Performance

DV: ESG	Model 6	Model 7	Model 8
BD	0.418		
	(0.588)		
BI		-3.258	
		(0.496)	
BUSYID			-0.522
			(0.687)
CGR	12.52***	10.06***	14.14***
	(0.000)	(0.000)	(0.000)
BD*CGR	0.823		
	(0.294)		
BI*CGR		10.82**	
		(0.034)	
BUSYID*CGR			0.496
			(0.706)
ROE	0.238**	0.306**	0.268**
	(0.048)	(0.019)	(0.032)
CEOD	-0.287	-0.512	-0.355
	(0.418)	(0.135)	(0.311)
LEV	-1.674	-1.893*	-1.809
	(0.183)	(0.098)	(0.130)
NPM	0.804	1.275**	0.998
	(0.210)	(0.039)	(0.118)
NPG	0.0285	0.0378	0.0299
	(0.338)	(0.267)	(0.354)
RD	0.828	1.730**	1.276
	(0.273)	(0.035)	(0.110)
CS	15.76***	16.05***	15.95***
	(0.000)	(0.000)	(0.000)
SC	-3.707**	-4.132***	-4.097***
	(0.013)	(0.001)	(0.002)
Intercept	-5.307**	-3.444	-4.565***

	(0.031)	(0.133)	(0.007)
N	3406	3409	3409
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes

Panel C: SOE as a Moderator of the Effects of Board Characteristics on ESG Performance

DV: ESG	Model 9	Model 10	Model 11
BD	3.027***		
	(0.000)		
BI		21.00***	
		(0.000)	
BUSYID			0.501
			(0.308)
SOE	3.608***	0.803	0.445
	(0.000)	(0.626)	(0.418)
BD*SOE	-1.974***		
	(0.000)		
BI*SOE		-3.785	
		(0.378)	
BUSYID*SOE			-1.701**
			(0.029)
ROE	0.872***	0.662*	0.242**
	(0.000)	(0.071)	(0.045)
CEOD	-0.916***	-1.347***	-0.364
	(0.000)	(0.000)	(0.313)
LEV	0.367	-0.373	-2.049
	(0.575)	(0.657)	(0.105)
NPM	2.501***	1.653***	0.758
	(0.000)	(0.003)	(0.240)
NPG	0.0129	-0.0259	0.0304
	(0.794)	(0.545)	(0.321)
RD			
	4.315***	2.780***	0.859
CS	(0.000)	(0.003)	(0.266)
	15.25***	14.84***	15.89***
SC	(0.000)	(0.000)	(0.000)
	-3.221***	-4.716***	-4.235***
Intercept	-7.528	-343.1	9.623***
	(0.390)	(0.576)	(0.000)
N	3406	3409	3409
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent

directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

4.6.2 System GMM Model

Board characteristics affect ESG performance, and companies with good ESG performance tend to recruit board members with certain attributes. For example, those companies tend to recruit directors who bring a wealth of resources. Hence, the interaction between board characteristics and ESG performance can lead to endogeneity problems. Thus, this study used the system GMM model to minimise the endogeneity problems.

The result of Model 1 in Table 4.11 shows that board diversity has a significant positive relationship with ESG performance at the significance level of 1 per cent. The coefficient of board diversity (1.911) indicates that ESG performance increases by 1.911 points as the board diversity level increases by one point. This result is still consistent with hypothesis 1. Board diversity improves the quality of strategic ESG decision-making. Model 2 in Table 4.11 displays an insignificant coefficient of board independence ($\beta = -1.914$, $p > .1$). After solving the endogeneity problems, the GMM model does not improve the result regarding the effect of board independence on ESG performance. This proves that a higher level of board independence is not important for improving ESG performance. Model 3 in Table 4.11 shows a negative relationship between busy independent directors and ESG performance ($\beta = -1.331$, $p < .1$). Hence, the finding of the fixed effect model is still supported. Increasing the number of busy

independent directors in the boardroom may hurt their monitoring role over the company's ESG participation.

Table 4.11
GMM Estimation Results: Effects of Board Characteristics on ESG Performance

	Model 1	Model 2	Model 3
L.ESGP	0.902***	0.911***	0.866***
	(0.000)	(0.000)	(0.000)
BD	1.911**		
	(0.010)		
BI		-1.914	
		(0.646)	
BUSYID			-1.331*
			(0.094)
ROE	0.275***	0.280***	0.307***
	(0.000)	(0.000)	(0.000)
CEOD	0.023	-0.486	0.155
	(0.973)	(0.498)	(0.818)
LEV	-0.168	-2.244	0.598
	(0.956)	(0.462)	(0.846)
NPM	5.121***	4.247***	5.518***
	(0.000)	(0.000)	(0.000)
NPG	0.123***	0.102***	0.093***
	(0.000)	(0.001)	(0.002)
RD	4.018***	3.096***	4.327***
	(0.000)	(0.000)	(0.000)
CS	1.760	1.631*	3.107***
	(0.101)	(0.097)	(0.000)
SC	-28.336***	-35.464***	-32.897***
	(0.000)	(0.000)	(0.000)
Intercept	14.088***	23.132***	17.984***
	(0.000)	(0.000)	(0.000)
N	2616	2619	2619
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes
AR1 p-value	0.000	0.000	0.000
AR 2 p-value	0.392	0.420	0.412
Hansen p-value	0.484	0.355	0.273
Sargan p-value	0.593	0.437	0.407

Note: *, **, and *** correspond to the significance levels of 10 per cent, 5 per cent, and 1 per cent, respectively; ESGP = ESG performance; L.ESGP = one year-lagged ESG performance; BD = board

diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

In Model 4 in Table 4.12, the coefficient of corporate governance reform is positive at the significance level of 1 per cent, revealing the stronger positive effect of board diversity on ESG performance after the implementation of the revised 2018 Code. Like the fixed effect model, the GMM model verifies that hypothesis 6 can be accepted. However, the significant coefficient of BI*CGR ($\beta = -33.691$, $p < .05$) shows that corporate governance reform negatively moderates the positive relationship between board independence and ESG performance, which in inconsistent with hypothesis 7. It seems that the corporate governance reform has weakened the effectiveness of independent directors in overseeing companies' ESG practices. Interestingly, Model 6 of the GMM model shows that corporate governance reform positively moderates the negative effect of busy independent directors on ESG performance. It means that the corporate governance reform has increased the effectiveness of busy independent directors in overseeing companies' ESG performance, contrary to hypothesis 8.

Table 4.12
GMM Estimation Results: Corporate Governance Reform as a Moderator of the Effects of Board Characteristics on ESG Performance

	Model 4	Model 5	Model 6
L.ESG	0.906***	0.900***	0.885***
	(0.000)	(0.000)	(0.000)
BD	-4.843***		
	(0.000)		
BI		29.291**	
		(0.029)	

BUSYID			-21.794***
			(0.000)
CGR	-13.547***	12.509**	-6.542***
	(0.000)	(0.042)	(0.000)
BD*CGR	7.852***		
	(0.000)		
BI*CGR		-33.691**	
		(0.026)	
BUSYID*CGR			21.514***
			(0.000)
ROE	0.248***	0.279***	0.315***
	(0.000)	(0.000)	(0.000)
CEOD	-0.335	-0.445	-0.262
	(0.608)	(0.545)	(0.688)
LEV	-0.075	-2.171	1.139
	(0.980)	(0.474)	(0.701)
NPM	5.366***	4.396***	5.700***
	(0.000)	(0.000)	(0.000)
NPG	0.132***	0.099***	0.085***
	(0.000)	(0.001)	(0.003)
RD	4.286***	3.279***	4.493***
	(0.000)	(0.000)	(0.000)
CS	1.810*	2.469***	2.544***
	(0.069)	(0.006)	(0.002)
SC	-23.592***	-30.603***	-35.545***
	(0.000)	(0.000)	(0.000)
Intercept	23.185***	7.866	25.361***
	(0.000)	(0.277)	(0.000)
N	2616	2619	2619
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes
AR1 p-value	0.000	0.000	0.000
AR2 p-value	0.340	0.386	0.597
Hansen p-value	0.493	0.312	0.404
Sargan p-value	0.663	0.468	0.572

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; L.ESGP = one year-lagged ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

In Model 7 in Table 4.13, SOE positively moderates the positive relationship between

board diversity and ESG performance (β = 4.973, $p < .05$). This result contradicts the result of the fixed effects model. Thus, hypothesis 9 is not supported after addressing the endogeneity problems. The interaction item BI*SOE has a negative and significant coefficient (β = −26.724, p < .01). Thus, hypothesis 10, which states that SOE negatively moderates the positive effect of board independence on ESG performance, is strongly supported. This result shows that independent directors have a less effective role in SOEs than in non-SOEs, as SOEs are directly assessed and overseen by the government, making them less dependent on independent directors. The coefficient of BUSYID*SOE in Model 9 is insignificant (β = −3.031, $p > .1$), unlike the results of the fixed effects model. The impact of busy independent directors on ESG does not seem to differ too significantly between SOEs and non-SOEs.

Table 4.13
GMM Estimation Results: SOE as a Moderator of the Effects of Board Characteristics on ESG Performance

	Model 7	Model 8	Model 9
L.ESG	0.858***	0.849***	0.822***
	(0.000)	(0.000)	(0.000)
BD	-2.000		
	(0.338)		
BI		44.828***	
		(0.000)	
BUSYID			0.696
			(0.667)
SOE	-17.527***	18.640***	-8.217***
	(0.001)	(0.002)	(0.000)
BD*SOE	4.973**		
	(0.032)		
BI*SOE		-69.724***	
		(0.000)	
BUSYID*SOE			-3.031
			(0.238)

ROE	0.411***	0.345***	0.396***
	(0.000)	(0.000)	(0.000)
CEOD	-1.391**	-0.548	-0.988
	(0.044)	(0.416)	(0.140)
LEV	-2.812	-3.362	-1.632
	(0.362)	(0.302)	(0.614)
NPM	3.311***	3.169***	3.966***
	(0.000)	(0.000)	(0.000)
NPG	0.096***	0.055**	0.064**
	(0.001)	(0.044)	(0.010)
RD	2.238***	1.949**	2.961***
	(0.009)	(0.022)	(0.001)
CS	5.277***	5.130***	6.563***
	(0.000)	(0.000)	(0.000)
SC	3.226	8.326	11.165**
	(0.509)	(0.122)	(0.050)
Intercept	10.689**	-12.302**	0.550
	(0.034)	(0.040)	(0.867)
N	2616	2619	2619
Year effect	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes
AR1 p-value	0.000	0.000	0.000
AR2 p-value	0.368	0.476	0.370
Hansen p-value	0.399	0.579	0.563
Sargan p-value	0.608	0.525	0.507

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; ESGP = ESG performance; L.ESGP = one year-lagged ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration. p-values are in parentheses.

4.6.3 Heckman Two-Stage Selection Model

There may also be a problem of selectivity bias in this study. For example, companies seeking to enhance ESG performance may actively choose a governance structure with high board diversity, high board independence, or a low percentage of busy independent directors. Hence, the Heckman two-stage selection model was used to minimise the problems associated with sample selection bias in order to make the

results more robust.

4.6.3.1 Board diversity

In the first stage, the samples were divided into four groups based on the quartile of board diversity. The highest quartile is the treatment group (Dummy_BD_quan), and the other three quartiles are the control group. This study estimated the probability of the treatment group (the highest quartile of board diversity in the full sample) by employing a logistic regression model that included all the control variables (return on equity, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, shareholding concentration). The average level of board diversity in one sector each year (Mean_BD) was introduced as an instrument variable of the logistic regression. Herd mentality compels companies to imitate the recruitment strategies adopted by their industry competitors when recruiting talent (Yang & Xue, 2023). Hence, in the second stage, this study used the inverse Mills ratio (IMR) as a control variable to re-estimate the original fixed effects model. The IMR was predicted based on the probit regression model. The insignificant IMR result indicates that the original models have no self-selection bias (Brown, 2016).

Table 4.14 shows the results of the Heckman selection model for the link between board diversity and ESG performance. Model 1 shows that board diversity has a positive effect on ESG performance ($\beta = 1.204$, $p < .1$). Hence, hypothesis 1 is still supported. Board diversity brings a variety of tangible and intangible resources to the

company, helping to enhance the board's oversight of the company's ESG activities and further contributing to ESG performance. In Model 2, the coefficient of BD*CGR is 2.751, which is significant at the 5 per cent level of significance. This finding again validates the effective of corporate governance reform in creating corporate awareness regarding the importance of board diversity, compelling listed companies to optimise their board composition and increase their board diversity. The increased board diversity heightens the board's monitoring of corporate ESG practices. In addition, the coefficient of BD*SOE is −3.025 ($p < .05$) . This result supports the result of the fixed effects model, which is, SOE negatively moderates the positive effect of board diversity on ESG performance. Hypothesis 9 is thus accepted. The insignificant IMR result suggests that there is no problem of selection bias in Models 1–3.

Table 4.14
Heckman Two-Stage Selection: Board Diversity

	Step one	Step two		
	Dummy_BD_quan	Model 1	Model 2	Model 3
BD		1.204*	-0.869	2.850***
		(0.062)	(0.405)	(0.002)
Mean_BD	2.704***			
	(0.000)			
CGR			23.514***	
			(0.000)	
SOE				11.006***
				(0.001)
BD*CGR			2.751**	
			(0.012)	
BD*SOE				-3.025**
				(0.013)
ROE	-0.007	0.366**	0.368**	0.291*
	(0.798)	(0.029)	(0.028)	(0.085)
CEOD	0.159***	-1.256*	-1.308*	-1.265*
	(0.004)	(0.064)	(0.054)	(0.062)

LEV	-0.437**	-6.911***	-6.981***	-6.350**
	(0.013)	(0.008)	(0.007)	(0.015)
NPM	0.014	0.586	0.512	0.872
	(0.904)	(0.639)	(0.682)	(0.486)
NPG	-0.012	0.012	0.023	0.010
	(0.146)	(0.844)	(0.710)	(0.878)
RD	-2.480***	0.622	1.380	1.985
	(0.000)	(0.924)	(0.832)	(0.760)
CS	-0.123**	19.959***	19.803***	19.809***
	(0.036)	(0.000)	(0.000)	(0.000)
SC	-0.989***	-9.240**	-9.534**	-8.844*
	(0.000)	(0.042)	(0.036)	(0.051)
IMR		-0.829	-1.590	-1.089
		(0.545)	(0.257)	(0.427)
Intercept	-5.186***	-12.132***	-6.710*	-17.925***
	(0.000)	(0.000)	(0.099)	(0.000)
N	3472	3471	3471	3471
Year effect	Yes	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes	Yes
Adjusted R^2		0.415	0.416	0.417
Pseudo R^2	0.060			

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; Dummy_BD_quan is a dummy variable with a value of "1" for the highest quartile of board diversity in the full sample and "0" otherwise; Mean_BD represents the average level of board diversity in one sector each year; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration; IMR = inverse Mills ratio. p-values are in parentheses.

4.6.3.2 Board independence

This study also conducted a selection bias test for board independence using the Heckman two-stage selection model. In the first step, the study identified the highest quartile of board independence as the treatment group (Dummy_BI_quan). The rest is the control group. In addition to all the control variables, the average level of board independence in one sector each year (Mean_BI) was introduced into the logistic regression. The IMR ratio was introduced into the fixed effects model for another

regression.

In Model 4 in Table 4.15, while board independence positively affects ESG performance, the relationship is insignificant (β = 6.067). After considering the selection bias, this study still could not prove the positive effect of board independence on ESG performance. Moreover, in Model 5, the coefficient of BI*CGR is −9.219 but statistically insignificant at the level of 10 per cent. The 2018 corporate governance reform has not significantly enhanced the effect of board independence on ESG performance. The BI*SOE of Model 6 is also insignificant (β = −5.026, $p > .1$). This finding suggests that the effect of board independence on ESG is not too significantly different between SOEs and non-SOEs.

Table 4.15
Heckman Two-Stage Selection: Board Independence

	Step one	Step Two		
	Dummy_BI_quan	Model 4	Model 5	Model 6
BI		6.067	12.887*	10.001
		(0.160)	(0.051)	(0.229)
Mean_BI	14.180***			
	(0.000)			
CGR			30.155***	
			(0.000)	
SOE				6.406
				(0.121)
BI*CGR			-9.219	
			(0.173)	
BI*SOE				-5.026
				(0.601)
ROE	0.031	0.502***	0.513***	0.447**
	(0.708)	(0.004)	(0.003)	(0.010)
CEOD	0.081	-0.907	-0.848	-0.940
	(0.227)	(0.178)	(0.209)	(0.163)

LEV	-0.618***	-10.073***	-10.256***	-9.721***
	(0.004)	(0.000)	(0.000)	(0.000)
NPM	0.124	1.013	1.069	1.225
	(0.422)	(0.418)	(0.393)	(0.329)
NPG	-0.007	-0.028	-0.029	-0.033
	(0.488)	(0.649)	(0.644)	(0.597)
RD	0.116	0.515	0.565	0.720
	(0.525)	(0.695)	(0.667)	(0.584)
CS	0.489***	22.157***	22.314***	22.085***
	(0.000)	(0.000)	(0.000)	(0.000)
SC	0.340*	-8.348*	-8.682**	-8.099*
	(0.059)	(0.059)	(0.050)	(0.066)
IMR_BI		5.325***	5.792***	5.312***
		(0.002)	(0.001)	(0.002)
Intercept	-7.296***	-22.231***	-25.677***	-26.288***
	(0.000)	(0.000)	(0.000)	(0.000)
N	3475	3475	3475	3475
Year effect	Yes	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes	Yes
Adjusted R^2		0.418	0.418	0.419
Pseudo R^2	0.065			

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; Dummy_BI_quan is a dummy variable with a value of "1" for the highest quartile of board independence in the full sample and "0" otherwise; Mean_BI represents the average level of board independence in one sector each year; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration; IMR = inverse Mills ratio. p-values are in parentheses.

4.6.3.3 Busy independent directors

This study also examined the potential selection bias issues pertaining busy independent directors. The treatment group is the quartile with the highest percentage of busy independent directors (Dummy_BUSYID_quan). The other three quartiles are the control group. The average percentage of busy independent directors per year (Mean_BUSYID) and the full set of control variables were introduced into the logistic regression.

Model 7 in Table 4.16 shows that increasing the percentage of busy independent directors hurts ESG performance (β = −1.628, $p < .05$). Hypothesis 3 can thus be accepted, which is consistent with the results of the fixed effects model. In Model 8, the interaction item BUSYID*CGR is insignificant (β = −1.323, $p < .01$). This finding suggests that corporate governance reform may amplify the negative effect of busy independent directors on ESG performance. Finally, the coefficient of BUSYID*SOE is −2.848, and it is significant at the 5 per cent level. This finding indicates that SOE strengthens the negative impact of busy independent directors on ESG performance. In other words, busy independent directors are busier in SOEs than in non-SOEs, thus reducing their monitoring effectiveness. However, this result is contrary to hypothesis 11. Nonetheless, the IMR ratios of Models 7–9 are significant, suggesting the presence of selection bias related to the link between busy independent directors and ESG performance. This study also corrected the estimation bias due to sample selection bias using the Heckman model, making the results more reliable.

Table 4.16
Heckman Two-Stage Selection: Busy Independent Directors

	Step one	Step Two		
	Dummy_BUSYID_quan	Model 7	Model 8	Model 9
BUSYID		-1.628**	-0.454	-0.355
		(0.028)	(0.797)	(0.714)
Mean_BUSYID	4.785***			
	(0.000)			
CGR			28.602***	
			(0.000)	
SOE				5.524***
				(0.009)

BUSYID*CGR			-1.323	
			(0.465)	
BUSYID*SOE				-2.848**
				(0.045)
ROE	0.294	0.175	0.195	0.145
	(0.130)	(0.699)	(0.667)	(0.747)
CEOD	0.070	-1.287*	-1.282*	-1.354**
	(0.208)	(0.053)	(0.054)	(0.042)
LEV	0.208	-7.287***	-7.385***	-6.853***
	(0.235)	(0.005)	(0.004)	(0.008)
NPM	0.102	0.054	0.045	0.199
	(0.441)	(0.966)	(0.972)	(0.876)
NPG	0.004	-0.006	-0.005	-0.007
	(0.692)	(0.920)	(0.929)	(0.912)
RD	0.210	-0.482	-0.489	-0.327
	(0.186)	(0.719)	(0.716)	(0.808)
CS	0.014	20.299***	20.360***	20.283***
	(0.797)	(0.000)	(0.000)	(0.000)
SC	0.195	-11.586***	-11.504***	-11.585***
	(0.200)	(0.009)	(0.009)	(0.008)
IMR		-2.482**	-2.390**	-2.529**
		(0.022)	(0.028)	(0.019)
Intercept	-2.068***	-5.651	-6.070*	-8.790**
	(0.000)	(0.118)	(0.097)	(0.021)
N	3475	3474	3474	3474
Year effect	Yes	Yes	Yes	Yes
Sector effect	Yes	Yes	Yes	Yes
Adjusted R^2		0.418	0.418	0.420
Pseudo R^2	0.048			

Note: *, **, and *** correspond to the significance levels of 10%, 5%, and 1%, respectively; Dummy_BUSYID_quan is a dummy variable with a value of "1" for the highest quartile of the percentage of busy independent directors in the full sample, or "0" otherwise; Mean_BUSYID represents the average level of board diversity in one sector each year; ESGP = ESG performance; BD = board diversity; BI = board independence; BUSYID = busy independent directors; CGR = corporate governance reform; SOE = state-owned enterprise; ROE = return on total equity; CEOD = CEO duality; LEV = leverage; NPM = net profit margin; NPG = net profit growth; RD = R&D ratio; CS = company size; SC = shareholding concentration; IMR = inverse Mills ratio. p-values are in parentheses.

4.7 Summary of Chapter

First, descriptive statistics were used in this study to determine the statistical characteristics of the variables. Second, correlation analysis was used to identify the

possible relationships between variables. Third, this study conducted multiple regression analysis to test 11 hypotheses. Diagnostic tests and robustness tests were conducted to verify the reliability of the empirical results. Table 4.17 presents a summary of the 11 hypotheses and the results. For the robustness test, the results are consistent between Heckman two-stage selection and the fixed effects model. Hence, selection bias is not a concern in this study.

Table 4.17
Summary of Hypotheses and Empirical Results.

No.	Hypotheses	Fixed effects	GLS	GMM	Heckman-two stage selection
H1	There is a positive relationship between board diversity and ESG performance.	Supported	Supported	Supported	Supported
H2	There is a positive relationship between board independence and ESG performance.	Not supported	Supported	Not supported	Not supported
H3	There is a negative relationship between busy independent directors and ESG performance.	Supported	Not supported	Supported	Supported
H4	The 2018 CG reform positively affects ESG performance.	Supported	Supported	-	-
H5	The 2018 CG reform positively moderates the relationship between board diversity and ESG performance.	Supported	Not supported	Supported	Supported
H6	The 2018 CG reform positively moderates the relationship between board independence and ESG performance.	Not supported	Not supported	Supported	Not supported
H7	The 2018 CG reform negatively moderates the negative relationship between busy independent directors and ESG performance.	Not supported	Supported	Not supported	Not supported
H8	SOEs have a positive relationship with ESG performance.	Supported	Not supported	-	-

H9	SOE negatively moderates the effect of board diversity on ESG performance.	Supported	Supported	Not supported	Supported
H10	SOE negatively moderates the effect of board independence on ESG performance.	Not supported	Supported	Supported	Not supported
H11	SOE positively moderates the effect of busy independent directors on ESG performance.	Not supported	Not supported	Not supported	Not supported

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Introduction

The research sample in this study consisted of listed companies on SSE and SZSE. This study focused on the impacts of board characteristics (board diversity, board independence, and busy independent directors), corporate governance reform, and SOE on ESG performance. Also, the roles of corporate governance reform and SOE as moderators in the relationships between board characteristics (board diversity, board independence, and busy independent directors) and ESG performance were explored. Chapter Two of this thesis provides a review of the relevant theories and empirical studies, followed by the formulation of the corresponding research hypotheses. Subsequently, the experimental design to verify the hypotheses was discussed. In the chapter on data analysis and discussion, the empirical results were presented, interpreted, and discussed to determine whether the findings are consistent with the hypotheses. Next, the current chapter summarises the findings and conclusions of this study, followed by a discussion of the implications of this study to existing literature, regulators, companies, crediting agencies, and investors. Finally, this chapter addresses the limitations of this study and offer recommendations for future research.

5.2 Summary and Conclusion

China's rapid economic growth has been accompanied by a range of environmental, social, and governance issues. Among the three pillars of ESG, corporate governance

poses serious issues in China. Agency theory suggests that weak governance may affect ESG performance. Therefore, although many studies in developed markets have addressed the relationships between board characteristics and ESG performance, the experience of their markets may not be applicable to China. For example, compared to the listed companies in other developed countries, the listed companies in China tend to have higher concentrated shareholdings. On average, the largest shareholder in US listed companies holds less than 10 per cent of the shares, which is much lower than the shareholding of the largest shareholder in Chinese listed companies that exceeds 30 per cent (Azar et al., 2018; Lu & Zhu, 2020). Thus, it is easier for the controlling shareholders in China to exploit the interests of minority shareholders. Therefore, in addition to the agency problem between shareholders and management as experienced in Anglo-American countries, China also faces the unique agency conflict between dominant and minority shareholders (Rajagopalan & Zhang, 2008; Raja & Zhu, 2020; Wen, 2022). Thus, the present study examined the impacts of board characteristics (board diversity, board independence, and busy independent directors) on ESG performance in China.

To improve the governance of listed companies as a whole, regulators provide guidance for companies' behaviour through corporate governance reforms, such as encouraging participation in ESG activities and optimisation of board structures. In addition, SOEs pose another corporate governance issue in China. SOEs represent the government in economic activities and serve public interests. Unlike non-SOEs, SOEs

are directly regulated by the government, which may weaken the monitoring role of the boards in SOEs. Therefore, this study examined how corporate governance reforms and SOEs affect the relationships between board characteristics (board diversity, board independence, and busy independent directors) and ESG performance.

Overall, this study investigated the impacts of board characteristics (board diversity, board independence, busy independent directors), corporate governance reform, and SOE on ESG performance. This study also examined the moderating roles of corporate governance reform and SOE in the relationships between board characteristics (board diversity, board independence, busy boards) and ESG performance. In addition, eight control variables were included, consisting of ROE, CEO duality, leverage, net profit margin, net profit growth, R&D ratio, company size, and shareholding concentration. Agency theory (Ross, 1973), resource dependence theory (Wernerfelt, 1984), stakeholder theory (Freeman, 1984), and institutional theory (Dimaggio & Powell, 1983) were used as the underpinning theories to support and explain the relationships between board characteristics and ESG performance. Based on the research objectives of this study, the following 11 hypotheses in Table 5.1 were developed:

Table 5.1
Summary of Research Objectives and Hypotheses

Research Objectives	**Hypotheses**	**Underpinning theory**	**Expected results**
(a) To determine the effect of board diversity on ESG performance.	H1: There is a positive relationship between board diversity and ESG performance.	Resource dependency theory, stakeholder theory	Supported

(b) To determine the effect of board independence on ESG performance.	H2: There is a positive relationship between board independence and ESG performance.	Agency theory, stakeholder theory	Not supported
(c) To determine the effect of busy independent directors on ESG performance.	H3: There is a negative relationship between busy independent directors and ESG performance.	Agency theory, stakeholder theory	Supported
2. To examine whether corporate governance reform affects ESG performance.	H4: The 2018 CG reform positively affects ESG performance.	Institutional theory	Supported
3. To examine whether SOE has an impact on ESG performance.	H8: SOEs have a positive relationship with ESG performance.	-	Supported
4. To demonstrate the moderating effect of corporate governance reform in 2018 on the relationships between board characteristics and ESG performance.			
	H5: The 2018 CG reform positively moderates the relationship between board diversity and ESG performance.	Institutional theory	Supported
	H6: The 2018 CG reform positively moderates the relationship between board independence and ESG performance.	Institutional theory	Not supported
	H7: The 2018 CG reform positively moderates the relationship between busy independent directors and ESG performance.	Institutional theory	Not supported
5. To examine the moderating effect of SOEs on the relationships between board characteristics and ESG performance.			
	H9: SOE negatively moderates the effect of board diversity on ESG performance.	Agency theory	Supported

	H10: SOE negatively moderates the effect of board independence on ESG performance.	Agency theory	Not supported
	H11: SOE positively moderates the effect of busy independent directors on ESG performance.	Agency theory	Not supported

This study used a sample of 879 companies and 3,629 observations from SSE and SZSE from 2012 to 2022 to test the hypotheses. Special treatment (ST) and financial companies were not included in the sample. The fixed effects model was used in the regression analysis. In the diagnostic analysis, the regression analysis results did not encounter the problem of multicollinearity but faced the problems of heteroskedasticity and serial correlation. In the robustness analysis, this study firstly used the GLS model to solve the problem of heteroskedasticity and serial correlation. Next, the GMM model was used to detect the potential endogeneity problem. Finally, the Heckman two-step selection model was used to address the potential selection bias. The results of the Heckman two-step selection model are consistent with the findings of the fixed effects model, proving that selection bias is not a concern in this study. The findings of this study are discussed as follows.

First, this study's findings support hypothesis one (H1), which states that board diversity has a positive relationship with ESG performance. The findings lend support to the notion of resource dependence theory that diverse directors can bring a wealth of intangible and tangible resources to the organisation, thereby enhancing the board's

effectiveness in overseeing ESG strategy. Board decisions are a reflection of collective wisdom (Yeung & Lento, 2018). Hence, board diversity in multiple dimensions can combine the strengths brought by directors with a range of knowledge, skills, and experiences to enhance the quality of board oversight. And diverse board also play a significant role in serving stakeholders' interests by intensively overseeing managers.

Second, this study does not support hypothesis two (H2). The positive relationship between board independence and ESG performance is insignificant. The effectiveness of independent directors is controversial in China. Reputational incentives can motivate independent directors to enhance their monitoring role (Miranda et al., 2023; Luo et al., 2023a). However, too many independent directors can also create a free-rider problem where some independent directors become lazy (Wang & Hussainey, 2013; Oyewo, 2023). In addition, independent directors who lack experience and knowledge of ESG practices struggle to provide effective decision-making, even if they are committed to improving the company's ESG performance.

Third, this study supports hypothesis three (H3), which states that a higher percentage of busy independent directors harms ESG performance in China. Like the studies of Qiu and Sun (2021) and Chen et al. (2021b), this study also shows that busy independent directors are weaker in governance. Although busier independent directors are considered talented and knowledgeable, they are unable to provide effective oversight and guidance in multiple companies at the same time due to limited

time and energy, supporting agency theory (Ferris et al., 2003; Latif et al., 2020). This limitation may reduce the quality of their decision-making related to ESG strategies.

Fourth, this study supports the propositions that the 2018 CG reform positively affects ESG performance (H4) and that the 2018 reform positively moderates the relationship between board diversity and ESG performance (H5). These findings prove the effectiveness of the 2018 corporate governance reform. Based on institutional theory, companies should not only focus on profitability, as compliance with the rules of society helps organisations to survive, remain stable, and gain legitimacy and resources. Hence, the 2018 reform has succeeded in promoting corporate engagement in ESG activities and in directing corporate attention to the benefits of board diversity.

Fifth, the results of this study do not support hypothesis six (H6), which states that t the 2018 CG reform moderates the relationship between board independence and ESG performance. In addition to formal institutions, informal institutions (e.g., *guanxi* culture) also influence independent directors (Li et al., 2021b). The *guanxi* culture encourages people to maintain harmonious relationships and respect the interests of all parties (Barbalet, 2021; Chen et al., 2022b). Thus, the independent directors in China may decide to compromise with executives for their own interests and to maintain a good relationship with company insiders (Li et al., 2021b). Therefore, although the revised 2018 Code encourages companies to pay attention to board independence at the institutional level, it does not liberate independent directors from the constraints

posed by the informal system.

Sixth, this study does not support hypothesis seven (H7). In other words, the 2018 CG reform is insignificant in moderating the negative impact of busy independent directors on ESG performance. Although the revised 2018 Code imposes more duties and workloads on independent directors, it does not exacerbate the negative impact of busy independent directors on ESG performance. Shao (2019) explains that even though independent directors are not very effective in their supervisory roles, they still try to meet the minimum regulatory requirements, as doing so can help them avoid the regulatory risks.

Seventh, this study support hypothesis eight (H8), which states that SOEs have a positive relationship with ESG performance. As a result of their close ties with the government, SOEs take on the dual role of developing the economy and serving the society. Thus, SOEs have more obligations than non-SOEs to serve the interests of society. Further, SOEs have abundant resources (e.g., financial resources, political resources) and face less budgetary pressure in spending on ESG activities.

Eighth, the findings of this study support hypothesis nine (H9), which states that SOE negatively moderates the effect of board diversity on ESG performance. The direct government oversight and appointment of SOE executives reduces the SOE's dependence on the board of directors. It is difficult for the board of directors to ensure

that SOE executives serve the interests of shareholders. Therefore, in China, SOEs face more severe agency problems than non-SOEs.

Nineth, hypothesis 10 (H10) is not supported in this study. In other words, SOEs do not play an effective moderating role in the relationship between board independence and ESG performance. SOEs are both involved in economic development and committed to serving public interest. Although the government may intervene in the strategic decisions of SOEs, engaging in ESG practices is consistent with the political orientation of SOEs. Therefore, the government will not constrain the efforts of independent directors in monitoring ESG practices.

Finally, this study supports that SOE positively moderates the effect of busy independent directors on ESG performance.. This finding is contrary to hypothesis 11 (H11). Busy directors are regarded as reputable directors, as their outstanding abilities make them a more popular choice for directorship positions. Luo and Liu (2023) argue that busy directors prefer to work in SOEs, as SOEs can enhance their reputation and popularity. However, limited energy and time still reduces the efficiency of busy directors' supervision in SOEs (Luo & Liu, 2023).

5.3 Implications of the Study

This study adds evidence to the current literature. In addition, the findings of this study have important implications for regulators, companies, rating agencies, and investors.

5.3.1 Implications to Theoretical Framework

This study provides additional evidence on the relationships between board characteristics and ESG performance in China. Further, it demonstrates the moderating effects of corporate governance reform and SOEs on the relationships between board characteristics and ESG performance. Specifically, the implications of this study to current literature are as follows.

First, some Chinese studies have demonstrated the positive effect of board gender diversity on ESG practices (He & Jiang, 2019; Ma & Chen, 2023). However, this study utilised three single dimensions of diversity (gender, expertise, and tenure) to construct an overall board diversity index, focusing more on the impact of overall board diversity on ESG performance. Thus, this study expands the existing literature on the relationship between board diversity and ESG performance. The findings prove that ESG performance is not only related to a single dimension of diversity but also influenced by multiple diversity dimensions.

Furthermore, as expected, this study's findings support resource dependency theory in relation to board diversity. This study extends the application of resource dependency theory and highlights the importance of a diverse board in monitoring ESG practices. Resource dependency theory suggests that board diversity can bring many intangible resources (e.g., knowledge, experience, and social networks) to help companies

improve the quality of their decision-making regarding ESG strategies. It indicates the benefits of establishing a diverse board with rich resources for corporate governance.

Second, this study provides important evidence on the relationship between busy independent directors and ESG performance in China. This study supports the busyness hypothesis that busy independent directors are unable to play an effective role in supervisory decision-making; hence, they potentially exacerbate companies' agency problems due to their limited effort. In China, the benefits of busy independent directors are lower than their costs.

Third, the findings further extend the evidence of institutional theory that companies tend to follow social rules to achieve legitimacy and resources (Meyer & Rowan, 1977; Vadasi et al., 2020). This study proves that companies actively adapt their governance structures to gain institutional legitimacy when faced with institutional reforms. This not only proves the legitimacy motive in institutional theory but also demonstrates that companies enhance their board governance by following external norms.

Fourth, this study further extends the evidence on the agency costs of SOEs (Ben-Nasr, 2015). This study demonstrates that the positive impact of board diversity on ESG performance is more pronounced in non-SOEs than in SOEs. Since the government directly appoints and evaluates the management of SOEs, the SEOs' boards have weaker monitoring role and their management lacks attention to shareholders' interests,

thus exacerbating the agency conflicts.

5.3.2 Implications to Regulators

This study provides interesting implications to Chinese regulators, enabling the Chinese regulators to improve the regulatory mechanisms based on this study's findings. First, this study has proven that increasing the percentage of busy independent directors will weaken their effectiveness in monitoring companies. Therefore, to enhance the quality of governance by independent directors, regulators may establish new guidance on board composition, such as restricting the number or the percentage of busy independent directors or limiting the number of board directorships that can be held by independent directors. These measures will ensure that busy independent directors can devote sufficient effort to their watchdog role.

Second, this study shows that the positive impact of board diversity on ESG performance is weaker in SOEs than in non-SOEs. Regulators may improve the corporate governance regulations related to SOEs, for example, by exploring how board diversity can improve the quality of corporate governance in SOEs. In addition, regulators may consider improving the governance efficiency of the boards in SOEs to ensure that SOEs are able to balance the relationship between government intervention and shareholder interests.

Third, regulators need to be aware of the limitations posed by informal systems (e.g.,

the *guanxi* culture) on the monitoring role of independent directors. To further enhance the effectiveness of independent directors, regulators may consider introducing legislation to limit the influence of the informal systems on independent directors. In addition, regulators may strengthen the sense of responsibility of independent directors by offering more reputational incentives to them, such as "best independent director" awards.

Fourth, this study is also relevant for policy makers in other emerging markets (e.g., Malaysia). Like many emerging markets, China is also facing the problem of weak governance. When implementing corporate governance reforms, policymakers in emerging markets should also consider the advantages and disadvantages of having a busy independent board, as well as the advantages of board diversity in terms of diversifying resources. In addition, policymakers may also want to consider whether local informal institutions (e.g., culture) may affect the efficiency of companies' corporate governance.

5.3.3 Implications to Companies

According to the findings of this study, Chinese companies can optimise their board structure and improve the quality of their corporate governance. First, the findings suggest that companies should emphasise the benefits of board diversity when structuring their boards. Board diversity can combine the strengths of directors from different backgrounds and specialisations to enhance the quality of corporate decision-

making and the ability to monitor a company's ESG strategy. Based on the findings of this study, companies can consider the overall board diversity in terms of gender, expertise, and tenure in the director selection and appointment process.

Second, this study finds that increasing the percentage of busy independent directors is not conducive to monitoring corporate ESG practices. In particular, the monitoring role of busy independent directors is significantly less effective in SOEs than in non-SOEs. Busy independent directors are more likely to serve in SOEs because SOEs provide better reputational incentives (Luo & Liu, 2023). Therefore, companies should avoid appointing independent directors who hold board positions in multiple companies. Although busy independent directors are perceived as talented, limited time and energy can interfere with their oversight role, leading to a decline in the corporate governance quality. In addition, companies should explore offering incentives to busy independent directors to motivate them to utilise their talents and skills for the benefit of the companies.

Third, the results of the study demonstrate the effectiveness of the 2018 corporate governance reform in increasing companies' ESG performance and in positively moderating the positive relationship between board diversity and ESG performance. Enterprises should focus on promoting corporate governance reforms and optimising their ESG strategies and board structures to be in line with regulators' guidelines. Companies that adapt to new regulatory requirements can gain an advantage in

compliance, achieve improvements in corporate governance efficiency, and increase their competitive advantage. In addition, companies need to be aware of the inhibiting effect of informal institutions (e.g., the *guanxi* culture) on the monitoring role of independent directors. Increasing the effectiveness of independent directors will contribute to the quality of corporate governance in companies.

Fourth, this study finds that board diversity contributes less to ESG practices in SOEs than in non-SOEs. Even though SOEs' executives are directly supervised and appointed by the government, SOEs should pay attention to the board's role as a watchdog and should not allow board members to become tokens. A diverse board can bring in richer knowledge, experience, and social resources to improve the governance efficiency and quality of SOEs. Further, the increased role of independent directors helps to reduce the agency costs between management and shareholders.

5.3.4 Implications to ESG Rating Agencies

This study provides valuable findings for Chinese crediting agencies. First, this study shows that board characteristics (board diversity and busy independent directors) can have a significant impact on the effectiveness of corporate governance. Thus, rating agencies should consider incorporating board characteristics into the evaluation system of corporate governance quality. Specifically, board diversity facilitates corporate governance quality because heterogeneous directors possess rich experience and knowledge to enhance the board's monitoring ability and decision-making quality.

Therefore, rating agencies should consider incorporating board diversity as a positive factor in corporate governance quality ratings.

Second, rating agencies may regard the percentage of busy independent directors as a negative factor in assessing corporate governance quality. The monitoring ability of busy independent directors can be weakened by their limited time and energy, thereby potentially increasing the corporate governance risks.

Third, credit rating agencies should be aware of corporate governance reforms. In each reform, regulators will issue new guidelines to enhance the quality of corporate governance. After the reform, rating agencies need to update the rating models and criteria to better reflect the governance performance of companies.

5.3.5 Implications to Investors

Chinese investors can use this study's findings to refine their investment frameworks. First, investors will better understand the relationship between ESG performance and board characteristics and will be able to identify the potential ESG risks based on this relationship. For example, while a diverse board may have better governance quality, a higher percentage of busy independent directors may weaken the board's oversight role.

Second, investors who are concerned about board structure can exert pressure on

companies through social media and public opinion to compel the companies to improve their board structure. For example, investors can propose through the general meeting of shareholders for companies to increase the level of board diversity or reduce the percentage of busy directors. Through playing the role of watchdog, investors can push organisations to improve governance, reduce risk, or increase return on investment.

5.4 Limitations and Recommendations to Future Research

Like other studies, this study has some limitations. First, the sample did not include financial companies and ST companies, thus limiting the generalisation of the findings to such companies. The financial reporting of financial companies is special, and some financial indicators of financial companies cannot be directly compared with those of non-financial companies. ST companies generally face serious financial problems or other abnormal conditions. Including ST companies in the sample might affect the results, as ST companies could be outliers in this study. Future research could conduct similar studies on financial companies or ST companies alone to expand the existing findings.

Second, this study focused on the characteristics of the board. However, management is also an important party to corporate strategy. Management characteristics (e.g., gender, specialisation, tenure) may result in different strategy execution capabilities. In addition, the management's leadership and interpersonal interests with the board of

directors may influence the execution of the company's long-term strategies. Therefore, examining board characteristics alone may neglect the critical role of management in executing corporate strategy. Future research could attempt to explore the interactions between the board and management and how they work together to influence the governance of the company.

Third, this study ignored the corporate events that could trigger board reform, solely focusing on the regulator's role in moderating board characteristics. The optimisation of a company's board structure is influenced by several factors, including shareholder demand, public opinion pressure, and regulatory requirements. These factors can collectively affect the governance structure and performance of companies. Therefore, future research could consider the combined impact of shareholder demand, public opinion pressure, and regulatory requirements on corporate governance.

Fourth, since the research was conducted in China, there may be geographical limitations in the empirical results. The results may not be applicable to other countries due to the different institutional and cultural environments. Thus, scholars in other countries could conduct similar studies in the future and could also compare samples from different countries to investigate the country-level determinants of corporate governance. In addition, scholars can also study the impact of cultural factors on corporate governance aspects or ESG performance in different countries.

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APPENDICES

Appendix A

Comparison between the 2002 Code and the revised 2018 Code

Item	The 2002 Code	The revised 2018 Code	Differences
第三章 董事与董事会 Chapter 3 Directors and Board of Directors	第四十条 董事会的人数及人员构成应符合有关法律、法规的要求，确保董事会能够进行富有成效的讨论，作出科学、迅速和谨慎的决策。 Article 40 The number and composition of the Board of Directors shall comply with the requirements of relevant laws and regulations to ensure that the Board of Directors is able to conduct fruitful discussions and make scientific, prompt and prudent decisions. 第四十一条 董事会应具备合理的专业结构，其成员应具备履行职务所必需的知识、技能和素质。 Article 41 The Board of Directors shall have a reasonable professional structure and its members shall possess the knowledge, skills and qualities necessary for the performance of their duties.	第二十五条 董事会的人数及人员构成应当符合法律法规的要求，专业结构合理。 董事会成员应当具备履行职责所必需的知识、技能和素质。**鼓励董事会成员的多元化。** Article 25 The number and composition of the board of directors shall meet the requirements of laws and regulations, and the professional structure shall be reasonable. Members of the Board of Directors shall possess the necessary knowledge, skills and qualities to perform their duties. **Encourage diversity on the board.**	The revised 2018 Code highlight the board diversity for the first time.
	第五十一条 独立董事的任职条件、选举更换程序、职责等，应符合有关规定。 Article 51 The terms of office, election and replacement procedures, and duties of independent directors shall be in accordance with the relevant provisions.	第三十五条 独立董事的任职条件、选举更换程序等，应当符合有关规定。**独立董事不得与其所受聘上市公司及其主要股东存在可能妨碍其进行独立客观判断的关系。** Article 35 The terms of office and procedures for the election and replacement of independent	The revised 2018 Code emphasises the independence of independent directors and at the same time requires them to take on more responsibilities.

	第五十条 独立董事应独立履行职责，不受公司主要股东、实际控制人、以及其他与上市公司存在利害关系的单位或个人的影响。 独立董事对公司及全体股东负有诚信与勤勉义务。独立董事应按照相关法律、法规、公司章程的要求，认真履行职责，维护公司整体利益，尤其要关注中小股东的合法权益不受损害。 Article 50 Independent directors shall perform their duties independently and shall not be influenced by the company's major shareholders, de facto controllers, and other entities or individuals with an interest in the listed company. Independent Directors shall be obliged to the Company and all shareholders in good faith and diligence. Independent Directors shall conscientiously perform their duties in accordance with the requirements of relevant laws, regulations and the Articles of Association of the Company, safeguard the interests of the Company as a whole, and in particular, pay attention to the legitimate rights and interests of small and medium-sized shareholders not to be harmed.	directors shall be in accordance with the relevant provisions. **An independent director shall not have a relationship with the listed company by which he is employed and its major shareholders that may impede his independent and objective judgement.** 第三十六条 独立董事享有董事的一般职权，同时依照法律法规和公司章程针对相关事项享有特别职权。 独立董事应当独立履行职责，不受上市公司主要股东、实际控制人以及其他与上市公司存在利害关系的组织或者个人影响。**上市公司应当保障独立董事依法履职。** Article 36 The independent directors shall enjoy the general powers and functions of directors, and at the same time enjoy special powers and functions in respect of relevant matters in accordance with laws and regulations and the Articles of Association of the Company. Independent directors shall perform their duties independently, and shall not be influenced by major shareholders, actual controllers, or other organisations or individuals with an interest in the listed company. **The listed company shall ensure that the independent directors perform their duties in accordance with the law.**	

		第三十七条 独立董事应当依法履行董事义务，充分了解公司经营运作情况和董事会议题内容，维护上市公司和全体股东的利益，尤其关注中小股东的合法权益保护。 **独立董事应当按年度向股东大会报告工作。** **上市公司股东间或者董事间发生冲突、对公司经营管理造成重大影响的，独立董事应当主动履行职责，维护上市公司整体利益。** Article 37 The independent directors shall fulfil their obligations as directors in accordance with the law, fully understand the company's business operation and the contents of the board of directors' issues, safeguard the interests of the listed company and all shareholders, and pay particular attention to the protection of the legitimate rights and interests of small and medium-sized shareholders. **Independent directors shall report their work to the general meeting of shareholders on an annual basis.** **In the event of conflict between shareholders or directors of a listed company, which has a significant impact on the operation and management of the company, the independent directors shall take the initiative to perform their duties and safeguard the interests of the**	

		listed company as a whole.	
第八章 利益相关者、环境保护与社会责任 Chapter 8 Stakeholders, Environmental Protection and Social Responsibility			
	第八十五条 上市公司应鼓励职工通过与董事会、监事会和经理人员的直接沟通和交流，反映职工对公司经营、财务状况以及涉及职工利益的重大决策的意见。 Article 85 Listed companies shall encourage employees to reflect their opinions on the company's operations, financial situation and major decisions involving employees' interests through direct communication and exchange with the board of directors, supervisory board and managers.	第八十五条 **上市公司应当加强员工权益保护，支持职工代表大会、工会组织依法行使职权。董事会、监事会和管理层应当建立与员工多元化的沟通交流渠道**，听取员工对公司经营、财务状况以及涉及员工利益的重大事项的意见。 Article 85 **A listed company shall strengthen the protection of employees' rights and interests and support the staff congress and trade union organisations in exercising their powers in accordance with the law. The board of directors, supervisory committee and management shall establish diversified communication channels with employees** and listen to their opinions on the company's operation, financial situation and major matters involving employees' interests.	The revised 2018 Code adds a new section to support the work councils in exercising their powers in accordance with the law, emphasising the protection of employees' rights and interests.
	第八十六条 上市公司在保持公司持续发展、实现股东利益最大化的同时，应关注所在社区的福	第八十六条 **上市公司应当积极践行绿色发展理念，将生态环保要求融入发展战略和公司治理过程，**	The revised 2018 Code adds the concepts of green development and social

	利、环境保护、公益事业等问题，重视公司的社会责任。 Article 86 A listed company shall, while maintaining its sustainable development and maximising the interests of its shareholders, pay attention to the welfare of the community in which it is located, environmental protection and public welfare, and attach importance to the company's social responsibility.	**主动参与生态文明建设，在污染防治、资源节约、生态保护等方面发挥示范引领作用。** Article 86 **Listed companies shall actively practice the concept of green development, integrate the requirements of ecological and environmental protection into the development strategy and corporate governance process, take the initiative to participate in the construction of ecological civilisation, and play an exemplary and leading role in pollution prevention and control, resource conservation and ecological protection.** 第八十七条 上市公司在保持公司持续发展、提升经营业绩、保障股东利益的同时，应当在社区福利、救灾助困、公益事业等方面，积极履行社会责任。 **鼓励上市公司结对帮扶贫困县或者贫困村，主动对接、积极支持贫困地区发展产业、培养人才、促进就业。** Article 87 Listed companies shall, while maintaining sustainable development, improving business performance and protecting the interests of shareholders, actively fulfil their social responsibilities in terms of community welfare, disaster relief and relief assistance, and public welfare undertakings. **Listed companies are**	responsibility and highlights the special work on poverty alleviation.

		encouraged to pair up with poor counties or villages to help them, and take the initiative to dock with and actively support the development of industries, cultivation of talents and promotion of employment in poor areas.	
第九章 信息披露与透明度 Chapter 9 Information disclosure and transparency			
		第九十五条 **上市公司应当依照法律法规和有关部门的要求，披露环境信息以及履行扶贫等社会责任相关情况。** Article 95 **Listed companies shall, in accordance with laws and regulations and the requirements of the relevant departments, disclose environmental information and information relating to the fulfilment of social responsibilities such as poverty alleviation.**	The revised 2018 Code adds and clarifies the basic elements of environmental, social responsibility and corporate governance disclosures.

Note: The bolded portions primarily relate to provisions added or modified by the revised 2018 Code.