THE IMPACT OF THE OWNERSHIP STRUCTURE ON CORPORATE GOVERNANCE LEVELS: A STUDY BETWEEN STATE-OWNED AND PRIVATELY-OWNED BANKS IN CHINA

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Abstract

The banking sector is often considered the backbone, as the credit facilities, also investment functions, are controlled through this sector. China is one of the fastest-growing nations with a robust banking sector. However, several banks in China are owned and governed by the state (Lu, 2016). This has a significant impact on banking operations and performance. This develops the research problem of finding the magnitude of ownership structure's impact on governance levels. As a result, this would provide substantial insights to the bank management and regulatory authorities. This study aims to analyse the impact of the ownership structure on the governance levels of the banks in China by using data from 42 banks across 13 years. It adopts a quantitative design using the random effects model and cross-sectional time-series feasible generalized least squares (FGLS) (Awan et al., 2020). The findings show that ownership structure significantly impacts the corporate governance ratings of Chinese banks. However, parameters like board member number and environmental, social and governance (ESG) ratings have a negative yet significant impact on Chinese banks' corporate governance levels. Hence, it has been concluded that state-owned banks exhibit higher governance standards compared to privately-owned banks. This provides policies for duality and regulatory practices on ownership structure guidelines.

Keywords: Corporate Governance, Ownership Structure, China, Random Effects Model, Cross-Sectional Time-Series FGLS

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1. INTRODUCTION

The role of corporate governance in the banking sector has become increasingly important in emerging economies such as China. According to the research conducted by Almoneef and Samontaray (2019), corporate governance stability has a positive effect on bank return on equity (ROE). Corporate governance is an important determinant of corporate performance, and accountability for the same is needed in some areas to sustain a business. As a result, banking businesses with appropriate corporate governance standards can achieve financial performance which is appropriate. It is also important for research on the level of corporate governance in the banking sector. The analysis of the level of corporate governance across the banking sector identifies long-term benefits for the business and risks for the sector (Zulfikar et al., 2020). The banking industry is important in any economy, as it involves financing and investing in the economy. In addition, the sector also interacts with various stakeholders and faces significant market risk. It is, therefore, important to understand the level of corporate governance in this research, as this allows stakeholders to understand the sustainability of the project the risky nature of the bank and the leadership of a particular enterprise. Finally, given the ownership structure of banks in China, it is also critical to estimate the influence that corporate governance levels have on the Chinese banking sector. As per Lu (2016), a majority of the banks in the Chinese economy are state-owned. This makes the performance objectives of the state-owned banks substantially unique in nature when compared to the private banks. These banks mostly focus on the socioeconomic development of the nation, rather than the profitability criterion. Therefore, such factors also impact the levels of corporate governance within the banking enterprise. As a result, it becomes increasingly important to understand the impact that such ownership factors can have on corporate governance across banking enterprises.

On the basis of the research background, it can be understood that the corporate governance levels vary across state-owned and privately-owned enterprises. This leads to a scenario of dual ownership across banking enterprises in the nation. As per Cordeiro et al. (2020), dual ownership leads to disagreements between the principal and the agent who is operating the baking sector within an economy. This could lead to inefficient allocation of resources within an economy, leading to eventual deadweight loss within the society and the economy. This would lead to a fall in the socioeconomic welfare of the country. Moreover, the same within the banking sector could cause significant risk for the stakeholders as the banking sector controls most of the financial activities within an economy. Therefore, this emerges as a research problem to understand the impact that ownership structure has on the performance of an enterprise.

With the research problem described, it is significantly important to understand the impact that ownership characteristics have on the functioning of the board of a banking enterprise. As a result, the aim of this paper is to understand the impact that the ownership structure on the corporate governance levels within the banking industry in China. The explicit research question is to find the impact of ownership structure on the board governance levels of Chinese banks. Moreover, the paper also tends to find how factors such as board composition, board duality, environmental, social, and governance (ESG) scores, and non-performing loan ratios mediate this relationship.

Furthermore, this study is substantially significant as it allows to understand the impact of how state-owned banks and private-owned banks influence the corporate governance of the enterprise. Given the pivotal role of the corporate governance parameters on the functioning of the banks and the integral role that the banking sector plays in the economic development of an economy, it is important to understand the relationship between these parameters. As a result, this study would shed light on the differences in governance between public and private banks. Moreover, the study would also analyse how corporate governance can be optimized to enhance efficiency and performance within the banking sector in China.

This paper is divided into six different sections. Section 1 introduces the topic and provides the research question and objectives. Section 2 of the study provides the theoretical framework and reviews the various literature available. Section 3 provides the theoretical framework of the empirical analysis used in the study to test the research hypothesis. Section 4 describes the data and the variables used in the study, along with the empirical data analysis. Section 5 provides a discussion of the findings, while Section 6 proposes conclusion as well as the limitations and directions for future research.

2. LITERATURE REVIEW

In the banking sector, a stable corporate governance would invoke accountability, credibility and trust. The banking sector is often considered the backbone of a developing economy, and having stable corporate governance in such an instance would mean the interests of the stakeholders of the banking sector would be safeguarded. However, the ownership structure of a bank also impacts the level and efficiency of corporate governance. As a result, this particular study aims to find the impact that ownership structures have on the corporate governance performance of the banks. In order to do so, this section will showcase the theoretical framework and then move to the analysis of the different factors that impact the corporate governance performance of the banks.

2.1. Theoretical framework

2.1.1. Agency theory

Agency theory is the most important theoretical framework to be used to understand the influence that the ownership of the bank has on the corporate governance levels. In modern industrial organizations, there is a sharp separation between management and ownership. This is illustrated by agency theory, where management acts as the agent of ownership, which acts as the principal (Musa et al., 2022). Using agency theory, it can be understood that ownership appoints agents to act on their behalf and to carry out organizational activities. Consequently, this means that agency theory is a fundamental value that views management and ownership as separate entities in an organization. However, managers do not always act in the best interests of companies. As reported by Lin et al. (2020), government agencies typically expect to increase social and economic well-being. Agents involved in such projects, however, expected high personal returns. This leads to a problem with the agent, where disputes arise between both parties. This leads to inefficient allocation of resources within the organization, which ultimately leads to decreased productivity and productivity.

2.1.2. Stewardship theory

The stewardship theory is another critical theoretical framework that showcases the relationship between the management and the ownership of an enterprise. As per Keremidchiev and Nedelchev (2020), it could be understood that managers when left to work independently, disperse their duties according to the best interest of the organisation. This is because the managers put a high value on the enterprise, which allows them to operate at an efficient level to maximise the revenue of the enterprise. As a result, the goals of the managers in such an instance are aligned with the organisational goals. This leads to the efficient operation of the organisation and a good corporate governance factor for the organisation as well. However, the managers are also dependent on incentives to act in tandem with the organisational goals. This has been highlighted in the study by Klettner (2021), who reveal that private sector employees are provided with heavy financial incentives to operate at par with the organisational goals. This leads to the managers working at their best interest without any conflict with the ownership. As a result, there is an efficient allocation of resources within the organisation.

2.1.3. Institutional theory

The institutional theory is another substantial theoretical framework that determines the impact of the internal environment of the organisation on corporate governance practices. As per the study by Chang and Lin (2022), the organisational objectives of state-owned enterprises mostly revolve around the maximisation of socioeconomic welfare. This is at par with the national interest to maximise welfare, which leads the enterprise to look beyond financial performance. This in turn changes the work habits of the employees, as they focus on the socio-economic development of the country. As a result, the level of corporate governance of such enterprises also alters, with respect to the organisational goals of the firm. However, for private enterprises, the institutional goals and objectives are different from the ones of state-owned enterprises. Private enterprises operate within the market forces and are bound to maintain their welfare through the same (Rönnegard & Smith, 2024). This makes the private firms more competitive within the market, and they focus more on market share and revenues. Thus, these private enterprises have a more transparent and market-oriented governance practice, in order to sustain the market. Therefore, this shows that the institutional theory is another substantial theoretical framework that determines the corporate governance performance of the firm across state-owned and private enterprises.

2.2. Corporate governance in the banking sector

The corporate governance of a bank has a substantial impact on the organisational performance of the banking sector. According to El-Chaarani et al. (2022), it is understood that corporate governance mechanisms such as the presence of independent members on the board of directors have a positive impact on financial performance in the banking sector. The study which used data from 158 banks across 20 Middle East and North Africa (MENA) countries reached this particular conclusion using a panel data regression analysis using fixed effects. The presence of individual board members on the bench allows efficient decision-making that is at par with the organisational goals. Moreover, it also leads to the reduction of conflicts and the optimal allocation of resources. This refers to the ability of the board to exercise authority in the direction of the organization during business cycles. Consequently, such a parameter increases the governance level of the companies in the sector. The corporate governance of a banking organization also determines how well a bank can meet its legal obligations. It is argued that banking organizations with an experienced board of directors and a large audit committee operate with less market risk (Zulfikar et al., 2020). Using multiple regression analysis to analyze data from Indonesian banks from 2010 to 2015, the study concluded that such effects occur because experienced boards guide boards to take risks changes provide that the audit committee does not ensure that the board complies with the legal obligations established by the National Treasury Code Framework (Zulfikar et al., 2020). This implies that good corporate governance reduces the riskiness of market-based funds, thereby increasing their performance.

Although the importance of corporate governance in firm performance capability has been emphasized, other governance-related factors do not have the same significant influence as El-Chaarani et al. (2022), board size does not positively influence the corporate governance environment of banks. This is because the performance of a bank depends on the ability of the board members and not on the size of the board. Moreover, board size also has a negative impact on firm performance, as having a larger board creates conflicting perceptions. This leads to inefficient allocation of resources, which ultimately has a negative impact on corporate governance. As a result, certain factors regarding governance levels do not impact the operational outcomes of an enterprise positively. In addition to this, strong corporate governance by the bank also makes the banking sector more efficient in terms of operations. According to the study by Khanifah et al. (2020), 72.4 per cent of banks with high corporate governance standards exhibit high return on assets (ROA). The study uses a three-stage linear regression method and data from ten banks from 2014 to 2018 came to this conclusion. Higher levels of governance resources lead to better resource allocation and higher efficiency. This makes the fund more liquid in the market, increasing ROA.

2.3. Impact of ownership structure

2.3.1. Public sector banks

The banking industry is generally affected by the ownership of the firm. As reported by Queiri et al. (2021), bank ownership has a significant impact on corporate governance. The study, which analyzed panel data over 7 years for 14 firms, found that state ownership negatively impacts the financial performance of such firms. This is especially true because a state-owned company has a very different structure of organizational performance and results. These organizations emphasize the socio-economic welfare of these banks rather than their financial performance. The same has been observed in the study of El-Chaarani et al. (2022), which shows that political pressure on board members leads to lower financial performance in the banking sector in the MENA region. This shows that the state-owned enterprise has a board that is less independent and acts according to the directives provided by the state. As a result, the outcomes of these state-owned banks are substantially different from the ones which are not owned by the state. A study by Dang et al. (2025), further reveals that there is a positive relation between technical efficiency and financial ratios. The same could be understood using data from state-owned commercial banks in Vietnam between 2013 and 2022. The main reason behind such an association was that having greater technical efficiency within banks would lead to an efficient allocation of funds. As a result, it would also develop better ratios because the financial performance improves. Another research by Riabichenko et al. (2019), reveal that state-owned and privately owned banks have different risk profiles. The same could be understood by using data from Ukraine and following a Kohonen self-organizing map methodology. The results find that state banks often exhibit high concentration ratios in investments in securities. This remarks the primary objective of the banks to buy or sell government bonds. However, such government and political activities highly influence their risk profiles as well.

2.3.2. Private sector banks

The private form of ownership however has a very different impact on the corporate governance levels within the banking sector. According to the research conducted by Sakawa and Watanabel (2020), organizational presence has a significant positive impact on firms' ROE. This study which follows a panel data analysis across 1924 firm-year observation found the impact that institutional investors have on firm performance as well as corporate governance quality. The stakeholder-oriented system allows a more dynamic corporate governance framework, that not only leads to welfare-oriented benefits by the enterprise towards the society but also leads to sustainable firm performance. As a result, the ROA and other financial parameters are significantly impacted under such ownership structures, as the corporate governance gets more dynamic. Another study by Dike and Tuffour (2021) finds that board size alone is not a key indicator towards better financial performance of banks. This has been found in a study held in the banking industry of Nigeria. Such a conclusion has been drawn as it is often found that outsider directors add significant value by bringing additional expertise and offering strategic input. This leads to a diverse perspective within the company as well. Hence, depending on one parameter does not improve operations. A separate study held in Ukraine used data from 21 private banks and 20 state banks between 2006 and 2009 to understand the impact between corporate governance and performance. The study by Kostyuk et al. (2011), revealed that privately owned banks have a greater variety of corporate governance practices. This is because private banks in the nation often have foreign roots, which makes it mandatory for them to have a wider scope for governance activities. However, the correlation between governance and ROA in Ukraine remains weak because of inefficient banking regulation. Finally, a study by Mohammed et al. (2024), revealed that corporate governance has a positive impact of 0.001 per cent points on the return on total assets of banks in the UAE. This is because efficient governance leads to better decision making which leads to better resource allocation and operational efficiency. Hence, it leads to positive impact between the parameters.

Some studies have also found that ownership of a firm does not impact the financial performance and the corporate governance levels of an enterprise. A study by Kyere and Ausloos (2021), concluded that the ownership structure of a company has a non-linear impact on the ROA and Tobins'Q ratio. The study concluded the results by employing cross-sectional regression methodology across 252 firms based in the United Kingdom in 2014. This impact remains non-linear because for institutional shareholders, the concentration of ownership reduces. This leads to diverse organisational objectives across multiple stakeholders leading to a fall in the corporate governance quality, and the eventual financial performance. Overall, the ownership structure plays a substantial role in understanding the impact on enterprise performance.

H1: The ownership structure of the bank impacts the corporate governance levels

2.4. Impact of fintech

In the modern world, the importance of fintech has become more substantial. The adoption of fintech brings transformative changes within the banking sector, eventually altering the operation and the governance of the banking system. A study by Li et al. (2021), has revealed that fintech development can substantially promote innovation and improve the firm value within the market. The same study which uses a panel fixed effects model for A-share listed enterprises in Shanghai and Shenzhen between 2011 and 2019 finds that the adaptation of fintech also determines the level of corporate governance within the enterprise. A firm with stable corporate governance would be open to adapting to new technology and influencing innovation. This would lead to the firm operating more efficiently, leading to a greater level of profitability. Moreover, the fintech index has also been considered a proxy for corporate governance indicators by many. Another study by Al-Matari et al. (2022), also found that the fintech index has a positive impact on the corporate performance of a company. The study which uses data across the banking and insurance sector firms in Saudi Arabia between 2014 and 2020 uses a logistic regression to reach the results. This is because the adaptability of fintech by the board leads to increased efficiency and the reduction of costs within the enterprise. This improves customer experience, which in turn drives profitability for the company. Consequently, fintech could be considered as a proxy for the level of corporate governance within the firm.

However, the absolute impact of the fintech index on the impact on the firm's corporate governance level remains questionable. The same study by Al-Matari et al. (2022), also revealed that the fintech index does not distort the relationship between board of directors scores and firm performance. This is because the board does not explicitly focus on technological change on the business unit's performance metrics. The experience and the judgement of the board members allow them to analyse the costs and benefits of implementing a technological change. Moreover, the finding of a positive impact of such adaptation of technology would move the board to agree on a technological change. Consequently, even if fintech is a new driver of innovation, do not directly undercut the governance level of the company's enterprise.

2.5. Role of environmental, social, and governance initiatives

Consideration of ESG initiatives has become essential to understanding the sustainability of a company. In today's economy, according to Alareeni and Hamdan (2020), a firm's ESG exposure has a positive impact on firm performance. The survey, which used data from companies across the United States between 2009 and 2018, adhered to using a panel regression analysis. This particular study finds that ESG disclosure influences higher levels of corporate governance disclosure, which in turn positively influences corporate ROE. This is because the disclosure of ESG parameters shows the sustainability levels of the firm in the modern business environment. As a result, positive feedback on the environmental and social parameters of the ESG parameters influences the governance parameter substantially. This leads to better financial performance by the firm under such circumstances. Furthermore, there is also a simultaneous causal effect where the governance of the company influences the environmental sustainability and the social sustainability of the firm. According to the study. By Parikh et al. (2023), the governance parameter has a 25.5 per cent impact on the ESG scores of an enterprise. This particular study which uses equity returns from 225 Indian companies finds that a stable board of an enterprise leads to efficient management, thereby leading to sustainable environmental and social indicators.

However, other studies have also put forward that the governance indicator is not an efficient parameter to moderate the relationship between governance levels and ESG engagement. This has been understood from the study by Kuzey et al. (2023), which reveals that corporate governance is a substitute for encouraging firms to commit to ESG. This leads to a fact where the strong corporate governance of a company would lead to diminishing ESG activities. This is because the focus of the board will turn towards profit maximisation and risk management. It is also necessary for the banking sector to maintain its risk levels, as the financial performance is directly impacted by it. As per Arifaj and Baruti (2023), there is an inverse relation between banking risk and ROA, and ROE of firms. This is because the risk can lead to substantial losses to banking operations causing a loss in ROA and ROE. Hence, risk management comes as a critical operation of corporate governance to protect the financial performance of banks. Overall, this shows that the ESG scores have a substantial impact on the governance levels of an enterprise.

2.6. Role of economic development and financial development

The economic development as well as the financial sector development of an economy also leads to changes within the corporate governance of the enterprise. The levels of corporate governance of an enterprise vary based on the economic development of the nation. According to the study of Şahin (2015), the psychological legitimacy of corporate governance in developed countries is higher than in emerging countries. The particular study used data on governance and development for enterprises across 58 countries in 2008. The study further used a logit regression analysis to find the actual impact of the explanatory variables on the dependent variables. The main reason behind such a diverse impact on developed nations is that the regulatory framework is much more mature in such nations. This leads to a better cognitive approach by the board to reach higher efficiency levels. As a result, this shows that the economic development in an economy impacts the corporate governance within an enterprise.

Similarly, the development of the financial markets also plays an integral part in shaping the levels of corporate governance of an enterprise. A study by Gerged et al. (2023), has revealed that the developed financial markets require a greater level of transparency and accountability from financial institutions, in order to meet the regulatory standards. The study used a generalised method of moment framework and data from financial organisations in Jordan to reach conclusions. This requirement of maintaining a greater level of transparency and accountability would require a dynamic board, dispersing a greater level of corporate governance. As a result, this shows that the financial development of a nation would directly influence the corporate governance parameter within an enterprise.

H2: Factors such as ESG, the number of board of directors and duality impact the corporate governance levels of the banks.

2.7. Research gap

From the literature review, it could be realised, that a number of studies across the globe have been conducted regarding the impact of enterprise ownership on the corporate governance levels. However, it has been realised that a majority of the studies do not include state-owned banks and privately owned banks across China. As a result, this particular study aims to analyse the impact of ownership patterns across the banking sector of China.

3. METHODOLOGY

3.1. Research design

The literature in the study has shown that various internal and external factors of an enterprise impact the corporate governance levels of an economy. However, as per the research gap, there are not a lot of studies held across China to understand the impact that the ownership structure of a bank has on the corporate governance levels in the country. As a result, to meet this research question this particular study adheres to a quantitative research design. According to Dey and Bhattacharjee (2015), the concept of a quantitative research design will enable the testing of larger sample sizes, potentially enabling the generalizability of the results as data sources are measured banks over a period of time by limiting the number. This ensures that the information provided is robust enough to be used for the design of the regulatory system. Considering the quantitative research design, the study also tests the hypothesis statistically. A study by Alagathurai et al. (2013), used a regression method using quantitative design to understand the impact of ownership structure on banking firm performance. This led to a test of the hypothesis, providing strong results for the study of how ownership structure affects corporate governance performance. Overall, this shows that the quantitative research design is suitable for the analysis of this research question.

3.2. Data and variables

It has been determined that the study would use a quantitative research design, therefore, the data has been considered for 42 banking enterprises in the country. Moreover, the data has been collected between 2010 and 2022 for all the banking enterprises. As per Turner et al. (2012), there was a substantial rise in the growth and profitability of banks in China. As a result, this is one of the key reasons behind considering the data between 2010 and 2022. Moreover, this period also contains a number of global shocks, which have been also integrated into the time period. Moreover, there was a substantial gap in the collection of ESG data before 2010, hence these periods have been excluded from the paper. The data for the study has been collected from the China Stock Market & Accounting Research Database (CSMAR, n.d.).

Based on the research design, the variables have been divided into dependent variables and independent variables. The main dependent variable used in the study is the corporate governance index. Moreover, the independent variables used in this study involve the ownership structure of the bank. Finally, the study also controls for variables such as the size of the board and the ESG score of the bank.

3.2.1. Dependent variables

Corporate governance: The corporate governance index of the company indicates the capability of the board as well as the sustainability practices followed by the board. This portrays the magnitude at which the board can guide the enterprise during times of crisis.

3.2.2. Independent variables

Ownership structure: The ownership structure of the organisation is a categorical variable used in the study to determine whether the bank is owned by the state or publicly held.

3.2.3. Control variables

The control variables include:

ESG score: The ESG score is an indexed score that is assigned to each banking enterprise based on their performance on the ESG front. This is another key control variable used in the study.

Size of board: The size of the board determines the number of members on the board of the particular banking organisation. It is numerical data that shows the total number of members on the board.

Duality of board: The duality of the board describes whether the board also acts actively within the management of the company. This is a binary variable where 0 means there is no duality of the board members and management, and 1 means that the board members and management play a dual role in the operations of the banks.

Non-performing loan ratio: The non-performing loan ratio is a financial indicator that determines the financial health and credit risk of the bank. It is the ratio of non-performing loans against the total loans issued by the bank.

3.3. Empirical model

The empirical model considered in the particular research is as follows:

$$\begin{aligned} &Corporate\ governance_{it} \\ &= \beta_0 + \beta_1(Ownership\ structure\ _{it}) + \beta_2(ESG\ score_{it}) + \beta_3(Size\ of\ board_{it}) \\ &+ \beta_4(Duality\ of\ board_{it}) + \beta_5(Non-performing\ loan\ ratio_{it}) + \varepsilon_{it} \end{aligned} \tag{1}$$

3.4. Statistical technique

This empirical study uses a random effects model to determine the impact that ownership of a bank has on its corporate governance performance. According to Almutairi and Quttainah (2017), the random effects model examines how possession shape affects corporate governance through considering interbank and intrabank variation. This method along with time-invariant coefficients can give a better idea of how banks' ownership level affects corporate governance the random effects model is very useful when the goal is to find out how the dependent variable changes based on change a occurs in the independent. The study also performs a cross-sectional time-series feasible generalized least squares (FGLS) regression in order to find more robust insights on the impact of ownership on corporate governance. According to Awan et al. (2020), the FGLS regression is critical within panel data where heteroscedasticity could be a concern. In this scenario, the usage of the FGLS model will account for the impeding heteroscedasticity and allow an unbiased output on the impact that the ownership structure of a bank have on the corporate governance performance.

The study could also use an alternate methodology of the generalized method of moments (GMM). As per Rahman and Ali (2022), the GMM estimation would use the Arellano-Bond estimator and Sargan test to understand the viability of the instruments used in the study. This would help to analyse data with multiple instrument variables. However, the presence of factors like ownership structure remains time-invariant. As a result, the FLGS model and random effects model has been considered here.

4. EMPIRICAL ANALYSIS AND RESULTS

The empirical analysis is divided into descriptive statistics and the panel data analysis.

4.1. Descriptive statistics

This segment of the study first provides the descriptive statistics of the various indicators for both the state-owned banks and the privately-owned banks. Furthermore, a correlation matrix of the variables of the study across the state-owned enterprises and the privately-owned enterprises is also presented within this segment. Table 1 shows the descriptive statistics for the study.

Table 1. Descriptive statistics of the variables for banks

Variable	*Mean*	*Std. dev.*	*Min*	*Max*
Corporate governance	-1.8168	0.7623	-3.4229	0.4066
Ownership structure	0.6190	0.4861	0	1
ESG score	38.4772	9.3748	16.9802	60.3863
Duality of board	0.0449	0.2076	0	1
Size of board	13.5843	1.6508	6	15
Non-performing loan ratio	1.2850	0.7934	0.16	13.97

Source: Authors' elaboration.

As per Table 1, it can be realized that for the study, the average level of corporate governance is -1.8168. This comes with a standard deviation of 0.7623. The minimum level of corporate governance within the study is -3.4229 whereas the maximum level of corporate governance level in the study is 0.4066. For the ownership structure, it has been observed that 38.10 per cent of the banks are not owned by the state, whereas 61.90 per cent of them are owned by the government. The standard deviation of the ownership structure is 0.4861. For the ESG scores of the bank, it has been realized that the average ESG score for the study is 38.4772 with a standard deviation of 9.3748. The minimum level of ESG score in the study is 16.9802, whereas the maximum level of ESG score in the study is 60.3863. The duality of the board is another important parameter, where it has been observed that 95.51 of the banks do not represent duality. On the other hand, only 4.49 per cent of the banks show characteristics of duality. The average size of the board is 13.58 members with a standard deviation of 1.6508. The minimum number of members in a board is six whereas, the maximum number of members within a board is 15. Finally, for the non-performing loan ratio, it has been observed that the average is 1.28. The standard deviation of the same is 0.7934 with a minimum ratio of 0.16 and a maximum ratio of 13.97.

The study also considers the correlation matrix to understand the relationships among variables. As per Table A.1 (see Appendix), it can be observed that the majority of the variables do not have a strong correlation with each other. However, instances have been found for the corporate governance and the number of board members, which show a strong negative correlation. However, given the overall analysis of the correlation matrix, there are no major instances of multicollinearity issues within the model. Furthermore, a variance inflation factor (VIF) as shown in Table A.2 (see Appendix), shows that the mean VIF within the model is 1.16. This confirms that there is no case of multicollinearity within the model.

4.2. Panel data analysis

Table 2 represents the cross-sectional time-series FGLS regression. The results are as follows:

Table 2. Data analysis using cross-sectional time-series FGLS

Corporate governance	*Coefficient*	*Std. err.*	*z*	*P > |z|*	*[95% conf.] interval*	
ESG score	-0.020	0.004	-5.370	0.000	-0.028	-0.013
Ownership structure	0.232	0.070	3.290	0.001	0.094	0.370
Duality of board	0.760	0.143	5.320	0.000	0.480	1.040
Size of board	-0.266	0.020	-13.27	0.000	-0.305	-0.227
Non-performing loan ratio	0.280	0.094	2.970	0.003	0.095	0.465
Cons.	1.979	0.329	6.010	0.000	1.334	2.624

Source: Authors' elaboration

From the analysis, it can be observed that the state-ownership have a positive impact on the corporate governance levels by 0.232 points. However, the value is also statistically significant, with the p-value being less than 0.05 at a 95 per cent confidence interval. The ESG score and the number of board members have a negative impact on the corporate governance levels. The coefficients are -0.020 and -0.266 respectively with a p-value being less than 0.05. The duality of the board has a positive impact of 0.76 and the non-performing loan ratio have a positive impact of 0.28. These factors are also statistically significant.

The panel data analysis for the study is considered using the random effects model is shown in Table 3.

Table 3. Panel data analysis using random effects model

Corporate governance	*Coefficient*	*Std. err.*	*z*	*P > |z|*	*[95% conf.] interval*	
ESG score	-0.0153	0.0035	-4.3800	0.0000	-0.0221	-0.0084
Ownership structure	0.0841	0.1780	0.4700	0.6370	-0.2648	0.4331
Duality of board	0.7656	0.1009	7.5800	0.0000	0.5677	0.9634
Size of board	-0.2761	0.0177	-15.6000	0.0000	-0.3107	-0.2414
Non-performing loan ratio	0.2184	0.0764	2.8600	0.0040	0.0686	0.3681
Cons.	2.2074	0.3294	6.7000	0.0000	1.5617	2.8531

Source: Authors' elaboration.

The random effects model does not show the impact on ownership as the variable is time-invariant. From Table 3, it is understood that board ownership has a positive effect on corporate governance levels. However, the same is not statistically significant as the p-value is greater than 0.05. The ESG score of the bank negatively impacts the corporate governance level of the bank. This is also statistically significant as the p-value of the same is less than 0.05. Furthermore, other factors such as the duality of the board and the non-performing loan ratio have a positive impact on the corporate governance levels. The coefficient for the same is 0.76 and 0.21 respectively. These parameters are also statistically significant. Finally, board composition has a negative impact on the level of board governance with a coefficient of -0.27 and a significant p-value at the 95 per cent confidence interval.

On the basis of the data analysis, it could be observed that the corporate governance levels are substantially low for banks. In China, 61.90 per cent of them are owned by the government, whereas the rest are owned privately. Moreover, a majority of the banks are not characterized by duality. The banks also have around 13 board members on average across private and state-owned banks. Finally, the average non-performing loan ratio is at 0.28 showing banks have around 0.28 per cent of their loans being classified as non-performing.

On the basis of the cross-sectional time-series FGLS regression, a positive relation between ownership and corporate governance levels has been found. Moreover, this relation was deemed to be statistically significant. On using a panel data regression, the random effects model shows there is also a positive impact of ownership on the corporate governance levels. However, the relation of the impact of the independent variable on the dependent variable was not statistically significant. As a result, this shows that there is a positive impact of ownership of banks on the corporate governance levels. Other variables such as ESG score and number of board members impact the corporate governance levels negatively across private and state-owned banks. This has been determined from both the panel data regression with random effects and FGLS regression. Finally, variables like the duality of the board and a low non-performing loan ratio have a positive impact on the corporate governance levels.

5. DISCUSSION

The results of the data analysis showed that ownership structure significantly influences corporate governance in banks in China. This is mostly because the banks follow the organizational goals set by the board. A study by Keremidchiev and Nedelchev (2020), shows that nationalized public enterprises act as guardians of social and economic stability in society. In such a scenario, the board sets business policies to promote social and economic prosperity within China. Consequently, this enables the company to maintain the highest standards of corporate governance. Furthermore, agency theory is an important alternative framework to understand why the ownership structure of Chinese banks has a significant impact on the corporate governance level, according to research by Musa et al. (2022), employees act as agents of the company and perform their duties. Under this principle, bank ownership is excluded from the operation of banks. As a result, executives work in tandem to the ownership and maintain the company's performance. Therefore, on the basis of the stewardship theory and the agency theory, it could be understood that within the corporate enterprise, the management and ownership are considered separate entities. The performance of the banks totally depends on the guidelines and the aims presented by the ownership. Moreover, this corporate structure is followed by the management in the operation of the banks. This is the reason why there is a significant impact of the ownership structure on the levels of corporate governance across banks in China.

The results of the study also indicated that board composition has a negative effect on corporate governance in the banking industry in China. This can be understood from the study of El-Chaarani et al. (2022), which reveals that the independence of board members significantly affects the governance level of a firm. Since the presence of many board members challenges the decision-making process, which reduces the value and welfare of board operations, it consequently leads to a decrease in board performance which allows for a greater negative impact on firms no governance analysis. El-Chaarani et al. (2022), also found that board size had no positive effect on governance level. This is because, the larger the size of the board, the greater the risk of disagreement in the decision-making process. As a result, board size has a negative impact on corporate governance. The ESG score also has a negative but significant effect on corporate governance level across banks in China. From the study of Kuzey et al. (2023), we can understand that the board of the company pays more attention to the performance value than the ESG ratings. Robust corporate governance may serve as a substitute for proactive ESG engagement. This could lead to boards with strong governance putting more emphasis on financial performance and risk management over ESG initiatives. This leads to a negative correlation between ESG scores and corporate governance levels. Boards concentrate on performance metrics, ESG considerations may receive less focus. This also causes a diminishing impact of ESG on corporate governance. As a result, this shows the reason why the ESG ratings have a negative impact on the corporate governance levels across banks in China.

Based on the discussions policies regarding the enhancement of regulatory practices could be recommended. As per Jiang and Kim (2020), it has been revealed that the regulatory framework in banks with respect to corporate governance is important, as it helps set the performance and efficiency of the sector. As a result, having a uniform regulatory practice across the private and state-owned banks would enhance the efficiency of the entire banking industry in China. Furthermore, policies towards the monitoring of Duality structures in the Chinese banking industry could also be implemented. Research by Dogan et al. (2013), revealed that duality often led to negative company performance. This is because of the concentration of powers within a minor segment of the board. The research finds that duality has a positive impact on the governance levels. Thus, it is recommended for regulatory policies to ensure to set out directives towards the balancing of company performance and governance levels even with a dual board structure.

6. CONCLUSION

In conclusion, this particular study aims to investigate the effect of the ownership structure of the banking sector within China on the level of corporate governance in such industries. To answer the research question, the study employs a quantitative research design using data from 42 state-owned private banks across China. Data on banking services are considered from 2010 to 2022, and the hypotheses are tested using panel regression analysis. The descriptive statistics showed that the level of corporate governance was found to be relatively higher in state-owned banks compared to private banks. However, the empirical findings of the research found that there is a significant impact of the ownership structure on the corporate governance levels across banks in China. This is mainly because the ownership is considered to be a separate entity from the management of the banks. The management acts on the guidance of the board, who eventually decide the business path of the banks. This business path is followed by the managers, leading to substantial firm performance which also impacts the corporate governance levels. On the other hand, other parameters such as the number of board members, and the ESG levels of the bank have all negative but significant impact on the corporate governance levels across banks in China. A higher number of board members leads to conflicts, which leads to inefficient decision-making. This results in the fall of corporate governance levels within the banks. On the other hand, the banks are solely focused on the operating profits, and the ESG parameters are often sidelined while doing so. This leads to a negative impact on the ESG ratings on corporate governance.

The literature review presented in the previous segment of the study has revealed that there are a substantial number of studies conducted across the world that gauge the impact of ownership structure on the corporate governance levels of banks. However, there was a substantial research gap with regard to the studies held across private and state-owned banks in China. This particular research on the impact of ownership structure on corporate governance ratings across the banking sector in China fills that current research gap. Moreover, the study also provides substantial guidelines to form policies regarding the regulatory framework of the banking industry in China. The study also uses a robust methodology that brings in dynamic results. This also could be used as a benchmark towards future studies to understand the impact of firm ownership on firm performance. The study also provides substantial policy recommendations on enhancing regulatory practices and monitoring duality. This could be done by improving the transparency and accountability of the board. The regulators could also enhance the independence of the board to enhance their financial outcomes.

The major limitation of this research is the unavailability of data regarding ESG and corporate governance for a number of companies across the years of the study. These missing variables lead to questions regarding the validity of the study. In the future, researchers could analyse the private and state-owned banks separately using econometric methods such as the GMM. This would provide a unique approach to analysing the impact of ownership structure on corporate governance levels.

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APPENDIX

Table A.1. Correlation matrix of private-sector banks

Variables	*Corporate governance*	*ESG score*	*Ownership structure*	*Duality of board*	*Size of board*	*Non-performing loan ratio*
Corporate governance	1					
ESG score	-0.2112	1				
Ownership structure	0.347	-0.048	1			
Duality of board	0.3316	-0.0268	0.1628	1		
Size of board	-0.6714	0.0107	-0.2307	-0.0969	1	
Non-performing loan ratio	0.1875	0.4314	0.1205	0.1071	-0.19	1

Source: Authors' elaboration

Table A.2. VIF table of the variables

Variable	*VIF*	*1/VIF*
Non-performing loan ratio	1.32	0.758598
ESG score	1.26	0.79509
Size of board	1.1	0.912066
Ownership structure	1.09	0.916231
Duality of board	1.04	0.959845
Mean VIF	1.16	

Source: Authors' elaboration