

Impact of Board of Directors Characteristics and Ownership Structure on the Performance of Commercial Banks on the Vietnamese Stock Exchange: An Empirical Study

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Abstract

This research investigates how the board of directors' characteristics influence the performance of commercial banks on the Vietnamese Stock Exchange. Data was gathered over five years (2018–2022) from 22 Vietnamese commercial banks listed on the stock market. The study applied the quantitative regression method using Feasible Generalized Least Squares (FGLS) to examine the relationship between board characteristics and bank performance in Vietnam. The results indicate that the size of the board, board members' education, and their areas of expertise are statistically significant factors. While board size and expertise positively impact bank performance, education level shows a negative influence. Additionally, the study highlights the role of ownership structures in bank performance, finding that foreign ownership boosts performance while institutional ownership has no significant effect. These findings underscore the critical role of well-structured boards in driving bank success, offering valuable insights for improving governance practices in the banking sector. According to the research results, the paper suggests optimizing board composition with finance experts and encouraging policies that attract foreign investors to enhance bank performance and support the restructuring of weaker banks.

Keywords: Board of directors, commercial banks, corporate governance, performance, ownership structure

1. INTRODUCTION

Bank performance is widely acknowledged as a key driver of economic growth. In simple terms, commercial banks act as financial institutions that manage activities such as accepting deposits, facilitating withdrawals, and providing loans for investment, all while aiming to generate profit. In practice, their main focus lies in lending, borrowing, accepting deposits, and financing projects to earn interest and generate profits. Additionally, they engage in activities like discounting bills of exchange, offering overdraft facilities, and trading securities.

Corporate governance typically refers to organizations' structures, processes, and systems that allocate power and control among stakeholders (Davis, 2005). As noted by Grove et al. (2011), there are empirical questions surrounding the corporate governance framework in the banking sector, especially regarding whether governance practices from non-financial industries can also improve governance in banks. Furthermore, the role of corporate governance mechanisms in shaping bank performance during financial crises has been explored. It is evident that core corporate governance principles apply to banks, and in the aftermath of the financial crisis, governance practices in the banking sector have garnered significant attention.

Within the banking industry, managers can implement various strategies, including corporate governance, to ensure and strengthen bank stability (Nguyen et al., 2022). Corporate governance is viewed as a set of internal regulations designed to oversee all activities of commercial banks, aiming to minimize conflicts and enhance their value. Okoya et al. (2020) describe weak corporate governance as a "cancerworm" eroding a bank's foundation,

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potentially resulting in its downfall and negatively affecting the banking system and the economy. On the other hand, strong and effective corporate governance mechanisms foster sustainable growth and development, ensuring stakeholder satisfaction when businesses are managed profitably.

The Vietnamese banking sector presents a unique and insightful context for studying the impact of board characteristics and ownership structures due to its evolving governance framework and regulatory environment. Since 2008, the banking system in Vietnam has undergone substantial shifts, namely the creation of joint-stock banks, the privatization of three major state-owned commercial banks, and the implementation of new legislation on credit institutions in 2010. Regulatory changes led by the State Bank of Vietnam and the Ministry of Finance have aimed to enhance transparency, compliance, and internal controls within banks. The composition of the Board of Directors (BOD) reflects a mix of government representation, professional expertise, and a growing emphasis on gender diversity. While there is a trend towards increasing private and foreign ownership, the government still holds a significant stake in many banks. Additionally, in July 2015, the Basel Committee on Banking Supervision (BCBS), the global authority on banking standards, released its Corporate Governance Principles for Banks. These principles serve as a guideline for national regulations in the banking industry. Vietnamese commercial banks are expected to adhere to these principles, ensuring that transactions with related parties are evaluated to determine risk and are subjected to relevant restrictions to prevent misappropriation or misapplication of corporate resources. However, the Vietnamese banking system continues to face challenges in fully adopting global standards such as Basel III, improving risk management, and embracing technological advancements, making it a rich setting for further research.

Commercial banks perform an indispensable role in advancing economic development and ensuring the stability of financial markets. Despite the growing importance of board governance in Vietnam, there remains a clear gap in the literature focusing on how specific attributes of the BOD—such as size, education, and expertise—alongside ownership structures affect the performance of Vietnamese commercial banks. By offering insights into the unique characteristics of Vietnamese banks, this research could be a reliable reference for more effective strategic decisions, governance practices, and policy reforms by regulators, investors, and bank management. In general, this study contributes to enhancing the stability and efficiency of the banking sector.

Our study aims to advance the analysis of how the characteristics of the BOD and the ownership structure influence the performance of commercial banks listed on the Vietnamese Stock Exchange. Specifically, the research focuses on examining the impact of BOD attributes, such as size, educational background, and areas of expertise, and the effects of ownership structures, including foreign and institutional ownership, on bank performance. By identifying these relationships, the study aims to provide evidence-based recommendations to improve operational efficiency within the Vietnamese banking sector.

This study focuses on commercial banks listed on the Vietnam Stock Exchange, specifically examining 22 banks (comprising three state-owned commercial banks and 19 joint-stock commercial banks) over five years from 2018 to 2022. This timeframe was selected to capture recent trends and developments in the Vietnamese banking sector, particularly considering significant economic events such as government stimulus packages and the accelerated digital transformation of the banking industry. These events provide a comprehensive context for analyzing the impact of the BOD characteristics and ownership structures on bank performance. The spatial scope is limited to 22 Vietnamese commercial banks due to the availability of detailed data and the significant economic events affecting the banking sector within this period. The dependent variable in this study is the Return on Assets (ROA) of commercial banks, which serves as a measure of their performance. The independent variables include 10 factors reflecting BOD characteristics (such as size, educational background, and areas of expertise) and one control factor. This selection allows for a detailed analysis of how BOD attributes and broader economic conditions influence operational efficiency and Vietnamese banks' performance.

2. THEORETICAL OVERVIEW

2.1. Commercial bank

Commercial banks are essential in delivering financial services to individuals and businesses, thereby supporting the overall stability and sustainable development of the economy, with credit creation being their central function. According to Pringle (1974), commercial banks can be regarded as financial intermediaries, where capital is among the various claims issued in the process of channeling savings between lenders and borrowers. Unlike non-financial firms, commercial banks are regulated by legal and regulatory frameworks specifically designed to manage financial activities, safeguard stakeholders, and promote stability (Prowse, 1997).

2.2. Board of Directors (BOD)

Typically, a Board of Directors (BOD) consists of 5 to 13 members, who are primarily responsible for formulating strategies and ensuring that senior management and employees comply with policies and regulations. Despite their crucial role, the importance of BODs in commercial banks has often been overlooked, likely due to the perception that their management role is constrained by regulations (Belkhir, 2009). However, in a competitive and increasingly risky business environment, the effectiveness of internal governance systems is critical. The board is essential for monitoring management behavior and advising on strategic decision-making, using its deep understanding of the complex banking sector (Chepkosgei, 2013). The board's effectiveness, however, depends on factors such as size, diversity, age, and expertise..

3. THEORIES

3.1. Agency theory

Agency theory addresses potential issues that arise in industries where individuals act on behalf of others, specifically the challenges of principal-agent relationships (Shah, 2014). In these situations, a principal delegates responsibilities to an agent who operates on their behalf. Conflicts may arise when the agent's interests conflict with their ethical duty to align with the principal's objectives. This issue underpins agency theory, initially developed by Jensen and Meckling (1976) and subsequently extended by Fama and Jensen (1983). The theory addresses the management of conflicting interests through the division of ownership and control within an organization (Quoc Trung, 2022). Eisenhardt (1989) further highlights its importance in areas such as information systems, outcome uncertainty, and risk.

Various strategies have long been suggested to mitigate conflicts arising from the agency problem. For example, Jensen and Meckling (1976) propose distributing shares between managers and owners to align their interests, whereas Pyo (2013) supports the implementation of target debt ratios. Clement (1999) underscores the significance of aligning hierarchical plans to prevent conflicts, and Myers (2002) provides approaches to ensure efficient agent performance. Together, these studies highlight the importance of aligning incentives, coordinating plans, and resolving conflicts to tackle agency issues..

3.2. Stakeholder theory

Stakeholder theory, as outlined by Fontaine (2006), is a framework in management and ethics that stresses the significance of considering the interests of all individuals involved in a business. Freeman (2010, 2018) further developed this concept, offering valuable perspectives on creating value and managing relationships both within and outside the organization. This approach provides managers with practical tools to better understand and engage with stakeholders, emphasizing the need for control systems oriented towards stakeholders.

A major challenge for managers is to balance the varied needs and interests of stakeholders (Susniene, 2007), particularly those of secondary stakeholders, whose ambiguous demands can be challenging to identify and address (Vredenburg, 2005). To address this issue, value maximization as a corporate goal is proposed as a solution, providing a clear framework for decision-making (Jensen, 2010). However, managerial entrenchment can also impact stakeholder interests, as entrenched managers may favor some stakeholders over others (Chung, 2012).

3.3. Resource dependency theory

Resource dependency theory elucidates how a company's external resources impact its behavior and strategic decisions within corporate governance (Pettigrew, 1992). The theory suggests that the board functions as an intermediary between the firm and its external environment, providing guidance and addressing stakeholders' informational needs (A. A. Pradeep, 2023). Securing external resources is crucial for an organization's survival and growth (Quoc Trung, 2022).

Quoc Trung (2022) notes that variations in resource availability significantly affect banks, as their investment activities are heavily dependent on capital sourced from the economy. Empirical research consistently demonstrates a positive link between capital structure and bank performance (Doku, 2019; Mujahid, 2014). Specific internal resources, such as the capital adequacy ratio, branch networks, and brand value, have been identified as key factors driving bank competitiveness (Sutanto, 2018). These observations support resource

dependency theory, which emphasizes the role of resources in shaping organizational behavior and performance (Mehra, 1996).

3.4. Institutional theory

Institutional theory examines how social, political, and economic systems shape the legitimacy of organizations and their operations (Debroux, 2010). According to this theory, companies implement rules and procedures to legitimize their actions within their operating environment (Meyer & Rowan, 1977). Machado & Sonza (2021) explain that in this framework, institutionalized corporate governance practices are employed to legitimize and standardize methods for managing and coordinating top management behavior. As a result, the board of directors plays a crucial role in overseeing executives to ensure alignment between the interests of owners and managers. Several studies have investigated the connection between corporate governance and bank performance through the lens of institutional theory. For example, research by James (2015) and Bhatia (2021) identified that regulatory frameworks and board governance—particularly aspects such as board size and the presence of external and female directors—have a significant impact on bank performance. Tomar (2012) highlighted the role of ownership structure and board composition in affecting bank performance. Additionally, Davis (2002) offered a broader perspective, noting that the effect of institutional investors on corporate governance differs across various economic contexts.

4. LITERATURE REVIEW

The effects of ownership structure and board attributes on the performance of banks have been widely examined. In this study, we focus on analyzing variables related to ownership structure and board characteristics, including institutional ownership, foreign ownership, board size, board members with advanced education, and board members majoring in finance and accounting. Previous research has indicated varied findings on how board characteristics affect bank performance. While some studies find a positive impact of board size and advanced education on performance, others report mixed or negative effects. Similarly, the influence of ownership structure, particularly foreign and institutional ownership, shows both positive and negative effects depending on the context and region. By narrowing our scope to these five specific variables and critically evaluating the literature, this review aims to provide a comprehensive and analytical understanding of their impacts on banks' performance.

4.1 Impact of board of director characteristics on bank performance

In general, previous studies were conducted mainly in Europe, Vietnam, Sri Lanka, China, and India. The most common measures of bank performance are Return on Assets (ROA) and Return on Equity (ROE). Additionally, many models were utilized in elucidating the impacts of board characteristics, such as the simultaneous equations model, pooled OLS model, and the generalized method of moments (GMM).

Prior research on board characteristics, particularly board size and education, has shown mixed results across different regions and time periods. For example, Mohammad et al. (2019) found a positive relationship between board size and ROA in their study on bank performance, while board independence had no significant effect. Similarly, studies by Jadah et al. (2022) and Belkhir (2008) supported the positive influence of larger boards on bank performance. However, this consensus is challenged by other findings. Bajrei et al. (2018) argued that larger boards reduce performance, suggesting that smaller boards could lead to better decision-making. This view aligns with Staikouras et al. (2007), who found a negative relationship between board size and bank profitability in a study of 58 European banks, further supported by Liang et al. (2013) and Agoraki et al. (2010). Such contrasting results imply that the effect of board size is contingent on the context, highlighting the need for further research on how board size functions in emerging economies like Vietnam.

Educational qualifications have also produced diverse findings. Quoc Trung (2022) found that higher education levels in board members improve resource utilization and bank performance. Isaac & Daniel (2019) reported similar conclusions, emphasizing that bachelor's degree holders positively impact performance. However, Issa et al. (2021) found no significant link between education level and bank performance, while Bouteska (2020) demonstrated that having financial experts on the board enhances bank performance in Eurozone banks. This inconsistency in the impact of education indicates a research gap, especially regarding the specific influence of finance-related qualifications, which is underexplored in both developed and developing economies.

4.2 Impact of ownership structure on bank performance

In general, previous studies were conducted mainly in Europe, Nigeria, China, and Sri Lanka. The most common measures of bank performance are ROA and Tobin's Q. In particular, bank financial performance is positively associated with ownership concentration, managerial ownership, and foreign and institutional ownership. Institutional and foreign investors serve as effective governance tools to mitigate agency costs. However, it is worth noting that foreign ownership and institutional ownership have distinct impacts on bank performance (Azoury et al., 2018). Likewise, Othmani (2022) posits that banks with higher levels of foreign institutional ownership tend to perform better. Foreign institutional investors are regarded as effective overseers who contribute to technology transfer and the development of new products and services.

(Gupta et al., 2022) reveals that the largest shareholding has a positive effect on bank performance. Foreign ownership is significantly positively correlated with bank performance, while institutional shareholders do not affect the performance of financial institutions in Kenya (Barako et al., 2007). This suggests that, in contrast to Western economies, where institutional shareholders drive change and support robust corporate governance practices, institutional shareholders in Kenya remain inactive. Furthermore, foreign-owned banks are likely influenced by their parent companies' policies and procedures, providing a better foundation for risk evaluation and mitigation. Similar results were found in (Bonin et al., 2005), (Choi & Hasan, 2005), and (Sufian & Majid, 2018).

Different from (Gupta et al., 2022), Daadaa (2020) reveals a negative relationship between board institutional members and bank performance. By contrast, Lensink et al. (2007), by using panel data of banks worldwide and estimating with the system generalized methods of moments (GMM) technique, states that an increase in foreign ownership negatively impacts bank performance, supporting the home field advantage theory. In other words, banks with lower foreign ownership are more profitable and generate higher net interest revenues than those with higher foreign ownership. This finding is supported by (Abraham, 2013), which shows that despite banks with foreign ownership being more aggressive in terms of capital structure, loan portfolios, and regulatory tier 1 capital, they do not achieve higher performance outcomes. In Vietnam, Son et al. (2015) analyzed data collected from 44 banks in Vietnam's banking system between 2010 and 2012 to examine the effects of ownership structure on bank performance. The results indicate that capital concentration and private ownership positively influence bank profitability, while a higher non-performing loan ratio negatively affects it. Additionally, the findings align with prior research (Nguyen, Tran & Pham, 2014), confirming a positive relationship between corporate governance and bank performance in Vietnam.

Malik (2016), by using panel data from 23 banks in Vietnam, indicates that state ownership has a negative effect on bank performance, aligning with prior research (Berger et al., 2005; Lin & Zhang, 2009; Chen et al., 2009). Regarding foreign ownership, the evidence is inconclusive and insufficient to support the idea that foreign-owned banks consistently outperform domestic ones. This contradicts earlier studies by Bonin et al. (2005).

4.3 Research gaps

Based on the literature review, it is evident that despite numerous studies on this subject, several research gaps remain to be addressed. First, some considered the importance of the level of education, but none of them adequately considered the impact of the finance qualifications (whether board members have majored in financial or non-financial fields) on banks' performance. Second, many existing papers, combined with the board of directors' characteristics, also examine the impacts of state ownership on bank performance, while the effects of institutional ownership tend to be overlooked and studied separately. Third, existing studies ignore how different ownership structures influence bank performance across economic contexts or geographical regions. However, in this paper, the authors only focus on two primary research gaps: the impact of a finance background among board members and the impact of institutional ownership on bank performance. Furthermore, given the limited volume of research on Boards of Directors (BOD) and ownership structures in Vietnam and the outdated nature of data used, this paper aims to provide fresh insights into this field by utilizing updated data from Vietnamese commercial banks.

5. HYPOTHESIS

5.1 Institutional ownership

Hennart (1994) posits that firms can reduce organizing costs by fostering greater cooperation, which could result in sustainable competitive advantages and thus lead to higher profitability. Institutional investors can actively

oversee companies' operations, reduce the imbalance of information and conflicts of interest, and enhance the overall performance of the companies (Shleifer & Vishny, 1986, 1997). From the agency theory perspective, institutional investors serve as external monitors, aligning management's interests with those of shareholders, potentially leading to better performance.

Bhattacharya & Graham (2007) found that institutional investors with connections to firms can negatively impact company performance. This aligns with Pound's (1988) theory about pressure-sensitive institutional owners. Charfeddine & Elmarzougui (2010) also observed a negative correlation between institutional ownership and firm performance. Although institutional investors might offer benefits, their resistance to risk and investment timeframes may differ from management's, which could lead to riskier or less value-maximizing decisions. Duggal & Millar (1999) did not discover any proof that institutional investors improve corporate control efficiency when their ownership is below 50%. These mixed findings suggest that institutional ownership's impact on performance may depend on the level of ownership, the type of institutional investors, or specific market conditions.

In this research, the proportion of stocks owned by institutional investors is utilized to assess institutional investors' influence over bank ownership structures. The hypothesis is as follows:

H1: Institutional ownership has a positive effect on commercial bank performance.

5.2 Foreign ownership

Demircug-Kunt & Detragiache (1998) argue that banks with foreign ownership can enhance banking systems by increasing efficiency and competition, resulting in improved performance among local banks. Barako & Tower (2007) suggest that these banks can diversify risks by serving multinational clients. Foreign-owned banks are often more cost-efficient and can benefit from strategic foreign ownership (Bonin et al., 2005). Regarding empirical studies, Choi & Hasan (2005) and Barako & Tower (2007) discovered a positive relationship between foreign ownership and the success of banks. Nevertheless, Kirimi et al. (2022) identified an adverse effect of foreign ownership on bank performance. In this study, the proportion of shares possessed by foreign investors is utilized to calculate foreign ownership. The proposed hypothesis is as follows:

5.3 Size of the board of directors

According to agency theory, Fama & Jensen (1983) propose that separating ownership from control can help address conflicts of interest between management and shareholders. Previous research suggests that board size is crucial for monitoring managers' actions (Fama, 1980) and long-term organizational performance (Fama & Jensen, 1983). Uwuigbe & Fakile (2012) found that larger boards may increase the likelihood of agency problems and reduce board effectiveness. Liang et al. (2013) observed that board size has a negative influence on monitoring and consulting duties, leading to lower bank performance. However, larger boards can also foster better discussions (Lipton & Lorsch, 1992). Gafoor et al. (2018) and Belkhir (2009) found a positive relationship between board size and bank performance. This suggests that the relationship between board size and performance is complex and may vary depending on other factors, such as board dynamics or external market conditions. The study will use the total number of directors on the proxy statement date to determine board size (Nguyen, 2022). The hypothesis is as follows:

H3: Board size negatively affects the bank's performance.

5.4 Board of directors with advanced education

Based on resource dependency theory, members of the board with specialized expertise and knowledge are valuable strategic assets for accessing external resources (Ingle & Van der Walt, 2001). Carpenter & Westphal (2017) emphasize the importance of board members' education for effective governance. However, Kanakriyah (2021) found a negative relationship between members' education and bank performance, even when there are members with advanced degrees. This may be due to family members without adequate qualifications serving on the board. Adnan et al. (2016) discovered that education diversity on boards can negatively impact firm performance, particularly in government-linked companies, where board members prioritize governance factors over education. In this study, the percentage of board members with master's degrees or higher relative to the total number of board members will be utilized as a proxy for board members' educational qualifications. To confirm, the hypothesis is as follows:

H4: BOD with advanced education affects commercial banks' performance positively

5.5 Board of directors with finance background

According to resource dependency theory, board members are expected to possess industry-specific skills and knowledge to properly determine and assess resources (Hillman et al. 2009). Quoc Trung (2022) suggests taking into account the top executive's qualifications when evaluating the impact of board members and CEO skills on banks. According to Nguyen et al. (2022), having more board members with finance and accounting experience leads to more precise financial statements. This provides valuable information to stakeholders and the government, enabling them to implement effective policies. This is particularly important for the banking industry, a key driver of Vietnam's sustainable economic development. To analyze the impact of board members with finance backgrounds on commercial bank financial performance, this study will use the percentage of board members with accounting and finance degrees as a proxy. The following hypothesis is proposed:

H5: BOD with members majoring in finance and accounting affects the financial performance of banks positively

6. RESEARCH METHODOLOGY

6.1. Data collection and sampling

There are 35 commercial banks in Vietnam, of which there are four commercial banks with 100% state-owned. Among these banks, there are 27 commercial banks listed on the Vietnam Stock Exchange, which are reliable sources of financial statements quarterly and annually. Out of 27 commercial banks listed on the Vietnam Stock Exchange, 22 were included in the study due to a lack of information about the board members of the other 5 banks. The data collection period spanned from 2018 to 2022, resulting in a total of 110 observations (22 banks * 5 years).

This analysis highlights the following key points: First, a significant portion (18.5%) of banks listed on the exchange were excluded due to missing data on board members. Second, the study collected data for five years, resulting in a comprehensive dataset for the included banks. It's important to acknowledge the potential limitations caused by excluding a relatively large number of banks. Future research efforts could aim to collect data from a wider range of sources to enhance the generalizability of the findings

6.2. Proposed model

The theoretical framework of the production function in economic growth is applied in our proposed model:

$$Y = F(K, L)$$

Where:

Y: Output

K: Capital

L: Labour

Based on the scope of the study, our research would include the board of characteristics factors in the model as the L factors, showing the quantity and the qualification of the members of the board of directors. The ownership structure or the share of the institutional investors and foreign investors to the banks is the contribution of capital raised for the investment of banks. In addition, how much share those investors hold also shows their control over the banks. In other words, the more control such investors gain, the more influence they have on the performance of banks. Therefore, institutional ownership and foreign ownership are included in our model, representing both the factors K and L. The performance of banks, measured by the Return on Assets index, will stand for the growth (Y) or the profitability of banks.

Bank size has been used as the control variable in the model in several previous studies, such as Aladwan (2015) and Quoc Trung (2022). It was proved to have a positive significant impact on the performance of commercial banks. Anggari & Dana (2020) also suppose that the bigger the total assets, the bigger the bank, which indicates an increase in profitability. Therefore, the authors decided to use the Bank size as the control variable in our model, measured by the natural logarithm of total assets.

As a result, our proposed model is:

$$roa_{it} = \alpha_0 + \alpha_1 io_{it} + \alpha_2 fo_{it} + \alpha_3 bodsize_{it} + \alpha_4 bodeduc_{it} + \alpha_5 bodmajor_{it} + \alpha_6 banksize_{it} + \varepsilon$$

Table 1. Variables in model

Variables	Acronym	Measure	Sign	Evidence of previous investigations	Data source
Dependent variable					
ROA	roa	Net Income/Average Total Asset	N/A	Quoc Trung (2022)	finance.vietstock.vn
Independent variable					
Institutional ownership	io	Percentage of bank's equity shares held by institutions	+	Pham and Nguyen (2020), Kirimi et al. (2022), Hennart (1994), (Shleifer & Vishny, 1986, 1997), Lin & Fu (2017), Nashier & Gupta (2016), Othmani (2022), Bhattacharya & Graham (2007), Pound (1988), Charfeddine & Elmarzougui (2010), Dana (2015), Duggal & Millar (1999), Artha et al. (2021)	Annual Report, cafef.vn
Foreign ownership	fo	Percentage of bank's equity shares held by foreign individuals and institutions.	+	Pham and Nguyen (2020), Quoc Trung (2022), Demirguc-Kunt & Detragiache (1998), Barako & Tower (2007), Bonin et al. (2005), Choi & Hasan (2005), Kirimi et al. (2022).	Annual Report, cafef.vn
BOD size	bodsize	The number of members in the BOD	-	Uwugbe & Fakile (2012), Gafoor et al. (2018), Belkhir (2009), Al-Saidi & Al-Shammari (2013), Fama & Jensen (1983), Fama (1980), Nguyen (2022), Liang et al. (2013)	Annual Report
BOD education	bodeduc	The percentage of members in the BOD have the education level of master degree or higher	+	Cox & Blake (1999), Westphal & Milton (2000), (Carpenter & Westphal, 2017), Elsharkawy et al. (2018)	Annual Report
BOD major	bodmajor	The number of members in the BOD majoring in Finance	+	Hillman et al. (2009). Quoc Trung (2022), Nguyen et al. (2022)	Annual Report
Control factors					
Bank's size	banksize	The natural logarithm of Total Asset		Aladwan. (2015), Quoc Trung (2022), Nguyen & Kim (2022), Anggari & Dana (2020)	finance.vietstock.vn

6.3. Methodology

The authors will conduct the OLS, FEM, and REM regression, respectively, and then conduct the test to determine possible errors. If the model suffers from heteroskedasticity, the Feasible Generalized Least Squares (FGLS) will be used to mitigate this problem (Wooldridge, 2010; Romano & Wolf, 2017). FGLS is a statistical technique used in regression analysis when the errors in a model are heteroscedastic, meaning they have unequal variances. In the context of bank research, this might occur due to factors such as differing bank sizes. FGLS is often preferred over other regression techniques in bank research due to several reasons. As mentioned, FGLS is specifically designed to handle heteroscedasticity. Ignoring heteroscedasticity can lead to biased and inefficient estimates of the model's parameters. Secondly, GLS can provide more efficient estimates of the model's parameters compared to ordinary least squares (OLS) when heteroscedasticity is present. This means that the standard errors of the estimates will be smaller, leading to more precise inferences. Finally, FGLS ensures that the standard errors of the model's parameters are correctly calculated, which is crucial for accurate hypothesis testing.

7. RESULTS AND DISCUSSION

7.1. Results

The average ROA is only 1.33%. It ranges from 0% to 3.58%, with values that are distributed quite far from the mean. The institutional ownership and foreign ownership for our sample have an average of 42.95% and 25.6%, respectively, meaning that the Vietnamese banking sector attracts many institutional and foreign investors. There are several banks where institutional investors account for around 96% of the total shares.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std dev.	Min	Max
roa	110	1.329364	.8335084	0	3.58
io	110	42.9532	25.62468	2.29	96.37
fo	110	15.94106	11.26094	0	30
bodsize	110	7.472727	1.536761	5	11
bodeduc	110	61.93262	16.54611	14.28571	88.88889
bodmajor	110	21.86691	15.45677	0	75
banksize	110	19.39136	.9919468	17.21336	21.47497

The average number of members on the board of directors is from 7 to 8 people, with a small deviation of around 1.5. The maximum of members in the BOD is 11, and the minimum is 5. While, on average, 62% of members in the BOD have a master's degree or a higher level of education, the average number of members majoring in finance is only 22%. The standard deviation of the major variable is 15.45%, showing the observations disperse from the mean.

Table 3. Pooled-OLS regression

Source	SS	Df	MS	Number of obs =	110
				F(6,103) =	9.25
Model	26.5233956	6	4.42056594	Prob>F =	0.0000
Residual	49.2028598	103	.477697668	R-squared =	0.3503
Total	75.7262555	109	.694736289	Adj R-squared =	0.3124
				Root MSE =	.69116

R-squared equals 0.3503, which means that the independent variables in the model can explain 35% of the variance in the dependent variable.

Table 4. Pooled OLS, FEM, and REM regression results

	POLS	FEM	REM
io	.000511	-.0119166*	-.0045072
fo	.0380179 ***	.0139295*	.0159482**
bodsize	-.08841*	.002865	-.0166171
bodeduc	-.0084647*	.0007494	-0.00223
bodmajor	.0009755	.0050497	.0070758
banksize	.212062***	.9403727***	.7114153 ***

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The authors conduct VIF test to check if the model has multicollinearity or not.

Table 5. Test of multi-collinear phenomenon

Variable	VIF	1/VIF
fo	1.5	0.665811
io	1.48	0.675979
banksize	1.34	0.746082
bodsize	1.29	0.778139
bodeduc	1.15	0.865880
bodmajor	1.08	0.929179
Mean VIF		1.31

As mean VIF = 1.31 < 10, the model is free from multicollinearity.

Table 6. Appropriate model selection.

Test	P-value	Conclusion
F- test that all $u_i = 0$	0.0000	The FE model is more appropriate than the Pooled OLS model
Hausman test	0.0071	The FE model is more appropriate than the RE model

From the result of Table 6, the Fixed Effects model was chosen. The authors check for other model deficiency, which includes heteroskedasticity and autocorrelation.

Table 7. Error tests.

Test	P-value	Conclusion
Breusch-Pagan	0.0000	Heteroskedasticity
Wooldridge	0.0913	No Auto - correlation

In order to remedy the error, the FGLS regression was applied. The FGLS model is commonly used to address the problem of inaccurate estimation due to autocorrelation and heteroskedasticity. FGLS allows the model to accommodate heteroskedasticity and autocorrelation without compromising the accuracy of the estimates (Wooldridge, 2010; Romano & Wolf, 2017). The final regression estimation results of the model are presented in Table below.

Table 8. FGLS regression result.

Variable	P-value	Coefficient
io	0.151	.0030253
fo	0.000	.0363425
bodsize	0.004	-.0808897
bodeduc	0.004	-.0069538
bodmajor	0.089	.0035418
banksize	0.000	.217893

7.2. Discussion

Regarding institutional ownership (H1), the anticipated positive relationship with bank performance was not borne out by the regression results ($p\text{-value} = 0.151 > 0.1$). This aligns with Duggal & Millar (1999), who found no evidence of a positive impact of institutional ownership on corporate control efficiency. This can be attributed to the fact that the percentage of foreign investors is smaller than 20%, resulting in limited contribution to the operations of commercial banks. Future studies could explore whether different types of institutional investors or higher foreign ownership levels might yield different results.

Foreign ownership (H2) exhibited a highly significant positive impact on bank performance ($p\text{-value} < 0.01$). This supports the hypothesis and aligns with previous studies by Choi & Hasan (2005) and Barako & Tower (2007). The infusion of technology, expertise, and better management and strategic decision-making processes from foreign investors is the main reason why higher foreign ownership is associated with better performance of banks. Policymakers could consider implementing measures to encourage foreign investment, such as providing incentives or reducing regulatory barriers.

Board size had a negative and significant impact on bank performance ($p\text{-value} = 0.004$). This is consistent with hypothesis H3, which suggests that larger boards may impede performance by increasing the likelihood of an agency problem, hence reducing the effectiveness of the board of directors. This contradicts Gafoor et al. (2018) and Belkhir (2009), who discovered that more extensive boards can foster more effective discussion and decision-making procedures. Banks should carefully consider the size and composition of their boards. While larger boards may be more diverse, they may also be more prone to agency problems. A balance between diversity and efficiency should be sought.

Board member education did not have a positive impact on bank performance ($p\text{-value} = 0.004$), contradicting the hypothesis H4. This aligns with the empirical research of Kanakriyah (2021) and Adnan et al. (2016). While Kanakriyah (2021) found that family members on boards can negatively impact performance, even with high educational qualifications, Adnan et al. (2016) suggested that the negative impact was caused by the concentration of board members on success determined by government characteristics.

Board member background had a positive and significant impact on bank performance ($p\text{-value} = 0.10$), supporting hypothesis H5. This aligns with Nguyen et al. (2022), who found that accounting and finance expertise can lead to better financial statements, government control, and investor interest, and Bouteska (2020), who supposes that the presence of experts majoring in finance on the board of directors can positively affect the performance of banks. This also aligns with resource dependency theory, which suggests that industry-specific expertise is beneficial for effective resource evaluation and strategy development. These results suggest that banks should prioritize selecting board members with relevant industry experience and expertise rather than solely focusing on educational qualifications.

8. CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

This quantitative study examined the impact of board characteristics (size, education, and major) on the performance of listed commercial banks in Vietnam from 2018 to 2022. Our results confirm the positive impact of foreign ownership on bank performance, aligning with previous studies. However, we also found that while institutional ownership can be beneficial, its effectiveness may be limited in certain contexts. These findings contribute to a more nuanced understanding of the relationship between ownership structures and bank performance. The data showed that institutional and foreign ownership had statistically significant effects on bank

performance. A greater level of institutional ownership can lead to more disagreements and challenges in the organizational structure, reducing effectiveness. Conversely, increased foreign ownership can improve performance by transferring experience, technology, and best practices. Despite the diversity and education of board members, their impact on bank performance may be limited due to family members serving on boards and a focus on government objectives in government-linked businesses. The authors manage to discover that board members with financial and accounting backgrounds can contribute to better evaluations and strategies. The study has limitations, including the lack of measurement for board members' working experience and the use of a single performance indicator (ROA). Future research should address these limitations to obtain more comprehensive results.

8.2. Recommendations

Based on this study's results, multiple suggestions are made to improve the performance of Vietnam's listed commercial banks. These guidelines take into account the impact of board characteristics and structures of ownership. Firstly, to improve bank performance, it is recommended to have a board composition with a high percentage of members majoring in finance or related fields. This can bring diverse perspectives and insights to decision-making. Secondly, the findings indicate that increased foreign ownership improves bank performance. Policies must be executed to draw international investors to the banking sector, such as increasing the maximum shareholding limit for foreign investors by creating a supportive environment for the transfer of ability, technological advances, and optimal procedures that can boost bank efficiency and profitability. According to Vietnamese law, the maximum share held by foreign investors is 30%, which is supposed to ensure the stability of the national financial system. Since the government cannot adjust this rate to be higher in the next 5 years due to the financial system stability, the authors recommend that there should be policies prioritizing ownership for foreign investors who can assist in the transfer of weak banks and their restructuring, which could lead to an improvement in their performance.

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