Available online at www.rajournals.in

International Journal of Management and Economics Invention

ISSN: 2395-7220

DOI: 10.47191/ijmei/v11i5.03

Volume: 11 Issue: 05 May 2025

International Open Access

Impact Factor: 8.518 (SJIF)

Page no. 4167-4176

The Influence of Ownership Structure on Bank Profitability: A Case Study of Vietnamese Commercial Banks

Hang Thi Thu Bui[1], Yen Thi Hai Nguyen[2], Hung Thanh Pham[3], Ngoc Thi Bich Nguyen[4], Trang Thi Minh Ho[5]

[1]Department of Economics, Tay Nguyen University, 630000, Buon Ma Thuot, Viet Nam, ORCID: 0000-0002-6148-2117

[2]Department of Economics, Tay Nguyen University, Viet Nam, ORCID: 0009-0003-4176-7718

[3]Department of Economics, Tay Nguyen University, Viet Nam

[4,5]Banking and Finance Class K2021 Students, Tay Nguyen University, Viet Nam

ARTICLE INFO

Published Online:
05 May 2025

Corresponding Author:
Hang Thi Thu Bui

ABSTRACT

This study analyzes the impact of ownership structure on the profitability of 29 commercial banks in Vietnam during the period from 2012 to 2023. The measurement variables include the ownership stakes of state investors, foreign investors, and private investors to evaluate the role of ownership structure. The profitability of the banks is assessed through three indicators: the Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE). The study employs various statistical regression methods, including Pooled Ordinary Least Squares (Pooled OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). After considering the limitations of these models, the Feasible Generalized Least Squares (FGLS) method is applied to provide a more comprehensive discussion of the research results. The empirical findings indicate that state ownership negatively affects the profitability of commercial banks in Vietnam, whereas foreign ownership and private ownership exert a positive influence. These findings reflect the divergent roles of different ownership types and provide a practical basis for constructing and adjusting governance policies and developing the commercial banking system within the context of Vietnam.

KEYWORDS: ownership structure; profitability; commercial banks; state; foreign; private.

I. INTRODUCTION

Commercial banks play a crucial role in allocating capital within the economy, thereby promoting economic growth and supporting the government's macroeconomic objectives. Alongside the expansion in scale, the increasing number of banks, and improvements in operational quality, the diversity of ownership structures among banks has contributed to positive changes within the Vietnamese banking system in recent years. Commercial banks need to adjust their ownership structures not only to strengthen financial capacity, enhance transparency, and improve governance efficiency but also to attract investment capital and improve competitiveness, ultimately aiming to increase profitability.

Ownership structure is a critical determinant in bank governance, significantly influencing the profitability of commercial banks. Both theoretical perspectives and empirical evidence from international and Vietnamese contexts have affirmed the impact of ownership structure on the profitability of commercial banks. Research on the effect of ownership structure on the profitability or financial performance of Vietnamese commercial banks is highly relevant for several reasons:

First, the Vietnamese economy is heavily dependent on the banking system, with bank credit accounting for over 50% of GDP. This underscores the vital role that banks play in capital allocation, stimulating growth, and fostering economic development (Duyen, 2018).

Second, a prominent feature of the Vietnamese economy is the dominant role of state ownership, with strong participation by state-owned enterprises in key sectors, including banking.

Third, the liberalization of the banking sector to foreign investors is part of Vietnam's broader trend toward integration and globalization, aimed at attracting investment capital, enhancing competitiveness, and promoting economic development. This is a necessary step for Vietnam to deepen its integration into the global economy and to generate more opportunities for domestic enterprises.

Research on the impact of ownership structure on the profitability of commercial banks will provide deeper

insights into the role of different forms of ownership. Identifying the relationships between state ownership, foreign ownership, and private ownership with bank profitability can lead to practical policy recommendations that encourage the adoption of more efficient ownership structures. Consequently, ownership structures can be adjusted towards optimal configurations. This process not only enhances the profitability of commercial banks but also contributes to the sustainable development of the financial market and the economy as a whole.

II. THEORETICAL BACKGROUND AND RESEARCH HYPOTHESIS DEVELOPMENT

A. Theoretical Background

The fundamental theories of the impact of ownership structure on profitability include Agency theory, Public Choice theory, and Property Rights theory. These theories help explain how a firm's ownership structure affects its performance and profitability.

Agency Theory, based on the self-interested behavior of individuals, addresses the conflicts of interest between owners and managers (Jensen & Meckling, 1976). Information asymmetry, particularly in situations where ownership and control are separated, can exacerbate agency costs (Fama & Jensen, 1983). State ownership may result in higher agency costs due to less efficient governance, with the extent of government control varying depending on the shareholding ratio (La Porta et al., 2002). Furthermore, a higher proportion of foreign investment can enhance control mechanisms and help to mitigate agency costs. Therefore, ownership structure plays a significant role in shaping agency costs.

Public Choice Theory analyzes the behavior of politicians, suggesting that they act based on personal interests and utility maximization, not solely profit. This theory explains why state ownership is often less efficient than private ownership, as leaders may prioritize political objectives over economic efficiency. Public Choice Theory applies economic tools to examine political issues (Buchanan & Tullock, 2003).

Property Rights Theory emphasizes the crucial role of ownership rights in fostering economic efficiency and resource allocation. The separation between ownership and management, though common, can lead to agency relationship problems. According to this theory, state-owned enterprises tend to be less efficient because managers often have motivations that diverge from profit maximization, favoring political objectives instead. Effective monitoring is a key factor in addressing issues arising from this separation (Holcombe, 2014).

B. Literature Review and Hypotheses

Enterprises employ various instruments to enhance and promote their profitability. Ownership structure is a critical tool widely utilized by corporate directors, as the effectiveness of any board of directors largely depends on the overall diversity of ownership structure. Globally, the relationship between ownership structure and profitability has been a central concern for scholars, managers, policymakers, and investors for decades. This concern stems from the reality that ownership structure influences corporate governance in making key decisions, thereby affecting profitability. The decisions of the board of directors are shaped by corporate governance mechanisms based on ownership structures adopted by companies. Ownership structure often gives rise to agency problems resulting from conflicts between management and shareholders. Such conflicts diminish firm value when managers prioritize their interests over those of the owners.

A commercial bank is a special type of enterprise, primarily engaged in monetary business and related services. The ownership structure of commercial banks exerts significant influence on their governance, strategic directions, and profitability. Different ownership proportions among investors (state, foreign, and private) result in varying degrees of influence and control over the management board, thereby impacting decision-making processes and operational efficiency. Within the frameworks of Agency Theory, Public Choice Theory, and Property Rights Theory, this study addresses a critical question: whether ownership structure constitutes a key component in enhancing the profitability of commercial banks. The following is a literature review section that supports the development of research hypotheses aimed at addressing this question.

State Ownership and the Profitability of Commercial Banks

According to the study by Davydov (2018), state ownership in commercial banks diminishes profitability, primarily due to political intervention which undermines managerial incentives. Commercial banks with a high proportion of state ownership are often subject to weaker oversight compared to those with predominant private ownership, hindering the objective of profit maximization. Previous empirical studies have also indicated that commercial banks with state presence in their ownership structure tend to exhibit lower profitability, which is often related to poor corporate governance and higher risk levels (Cornett et al., 2010; Shah & Hussain, 2012). Furthermore, the research by Lee and Kim (2013) found a negative relationship between state ownership and financial performance in the banking sector in South Korea. This result was corroborated by Jiang et al. (2013) in the context of Chinese banks, with empirical findings suggesting that poor profitability is closely associated with state ownership. However, these results are contradicted by the work of Zouari and Taktak (2014), who found a positive relationship between state ownership and financial performance among 53 commercial banks in 15 Islamic countries from 2005 to 2009. A more recent study by Shawtari (2018) also reported a similar positive relationship between state ownership and the financial

performance of banks in Yemen. In contrast, the research by Figueira et al. (2006) did not find any significant difference in profitability between state-owned and private banks in Africa. This finding was reinforced by Shen et al. (2014) through a cross-country data sample from 1993 to 2007, which enabled the assessment of the performance of various types of state-owned banks.

Empirical evidence from studies worldwide on the relationship between state ownership and profitability reveals a lack of consensus among scholars regarding a common finding. A similar conclusion is observed in the context of Vietnamese commercial banks. Specifically, while Dung and Trinh (2023) identified a positive impact of state ownership on return on assets (ROA) and return on equity (ROE) in 26 Vietnamese commercial banks during the period 2007–2021, other studies - including those by Thinh (2018), Phong and Tuan (2019), Dung and Trinh (2020), and Xuyen (2024) - have found negative effects within the same context.

Therefore, this study aims to examine the relationship between state ownership and the profitability of commercial banks by proposing the following research hypothesis:

H1: State ownership has a negative impact on the profitability of Vietnamese commercial banks

Foreign Ownership and the Profitability of Commercial Banks

Foreign ownership is another ownership structure known to influence corporate governance in firms. In the banking sector, foreign ownership impacts strategic decision-making, partly through the participation of foreign banks in an economy, which can result in increased efficiency, better capitalization, and potential spillover of technical expertise to other banking institutions (Claessens & Jansen, 2000).

The impact of foreign ownership on bank profitability has been widely discussed in previous literature, with mixed findings. Empirical evidence suggests that the introduction of foreign ownership tends to benefit banks. For example, Boateng et al. (2015) found that banks with foreign ownership exhibit better asset quality and overall performance in China. Furthermore, foreign-owned banks in Uganda and Botswana outperform their domestic counterparts (Okeahalam, 2004). Foreign ownership is often accompanied by greater experience and knowledge, thereby facilitating the adoption of new corporate governance practices (Meng et al., 2018). Moreover, Bonin et al. (2005) found that foreign-owned banks are significantly more cost-efficient than domestic banks. Key explanations for the higher performance associated with foreign ownership include, first, that foreign owners are more likely to monitor managers and provide performance-based incentives, leading managers to act more prudently, supply relevant information to investors, and avoid entrenchment or passive behaviors that undermine value creation. Second, technology and expertise brought by foreign investors enable managers to enhance efficiency by reducing operating costs and generating savings for the bank.

Contrarily, Liu et al. (2018) argued that some foreign owners may behave passively rather than exercising their monitoring roles, for various reasons, allowing managers to misrepresent information for their benefit-particularly when foreign owners are affected by the investment horizon. Similarly, Nikiel and Opiela (2002) found that foreign banks are less profitable than domestic banks, and Lensink et al. (2008) also reported a negative association between increasing foreign ownership and bank performance.

Empirical evidence for the impact of foreign ownership on the profitability of Vietnamese commercial banks has been documented in several studies. Foreign ownership, measured by the proportion of shares held by foreign shareholders, has been demonstrated to have a positive effect on the profitability of commercial banks. This conclusion has been reported in numerous studies, including the works of Thinh (2018), Phong and Tuan (2019), Dung and Trinh (2023), Xuyen (2024), and Trang (2024).

In contrast to the aforementioned conclusions, the study by Dan et al. (2016), based on a sample of Vietnamese commercial banks during the period 2004–2014, found a positive effect of the share of foreign investors on bank performance (measured by the cost-to-income ratio). This result suggests that banks with a higher proportion of foreign capital tend to control operating costs less efficiently than purely domestic banks. One explanation for this phenomenon is that the transfer of management technology from foreign partners, which typically comes at a high cost, may lead to a decline in the operational efficiency of these banks. Moreover, due to safety requirements imposed by foreign partners (as reflected in the increasing share of foreign ownership), foreign-invested banks have a tendency to make higher provisions, thereby increasing the cost-to-income ratio.

Furthermore, the study by Dung and Trinh (2020), using data from 25 commercial banks during 2007–2017 to analyze the impact of ownership structure on the profitability of commercial banks via ROA and NIM indicators, found that for foreign ownership, the regression results from the employed models were not statistically significant. This suggests that their empirical study did not find a pronounced impact of foreign ownership on the profitability of Vietnamese commercial banks.

Based on both domestic and international empirical evidence, we propose the following research hypothesis:

H2: Foreign ownership has a positive impact on the profitability of commercial banks.

Private Ownership and the Profitability of Commercial Banks

Private ownership in the banking sector is typically defined as the shareholding held by domestic individuals and organizations, excluding foreign individuals, organizations, and state-owned enterprises. Private ownership can directly

influence how banks are managed and operated, thereby affecting profitability. Banks with high levels of private ownership often demonstrate quicker and more efficient decision-making, as evidenced by La Porta et al. (2002). This increase in managerial power may help improve bank profitability through the optimization of management processes and the reduction of operational costs. Furthermore, commercial banks owned by private investors often have stronger incentives to maximize profits, a finding corroborated by Beck et al. (2006). Private owners tend to emphasize the financial interests and long-term success of the bank, resulting in more rational decisions regarding investment and risk management. Notably, the study by Iannotta et al. (2007) indicates that commercial banks with a higher proportion of private ownership typically achieve higher interest margins due to better risk management practices and lower operating costs.

The positive effect of private ownership on the profitability of Vietnamese commercial banks has also been confirmed in previous studies, such as those by Son et al. (2015), Dung and Trinh (2020), and Xuyen (2024). Therefore, we propose the following research hypothesis:

H3: Private ownership has a positive effect on the profitability of Vietnamese commercial banks

III. RESEARCH METHODS

This study employs a quantitative research approach, specifically panel data regression techniques, utilizing data from 29 Vietnamese commercial banks over a 12-year period from 2012 to 2023. The research findings are estimated using three models: the Pooled OLS model, the Fixed Effects Model (FEM), and the Random Effects Model (REM). Subsequently, the authors carry out the necessary diagnostic tests, including tests for multicollinearity, autocorrelation, and heteroskedasticity. In cases where no specification errors are detected, the authors apply the Likelihood Ratio (LR) test, the Lagrangian Multiplier (LM) test (Breusch and Pagan, 1980), and the Hausman test (1978) to determine the most appropriate regression method among the three. Conversely, if specification errors are present, the study will employ the Feasible Generalized Least Squares (FGLS) estimation method to draw conclusions for the models.

To examine the impact of ownership concentration, state ownership, foreign ownership, and private ownership on the profitability of Vietnamese commercial banks, and based on the preceding research by Dung and Trinh (2023), the following research model is proposed:

$$BP_{i,t} = \alpha + \beta_1 x\, STATE_{it} + \gamma\, x\, KS_{it} + \varepsilon \quad \textbf{(Model 1)}$$

$$BP_{i,t} = \alpha + \beta_1 x\, FORE_{it} + \gamma\, x\, KS_{it} + \varepsilon \quad \textbf{(Model 2)}$$

$$BP_{i,t} = \alpha + \beta_1 x\, PRIV_{it} + \gamma\, x\, KS_{it} + \varepsilon \quad \textbf{(Model 3)}$$

Where: BP represents the variables measuring the profitability of commercial banks, including NIM, ROA, and ROE; STATE is the variable representing state Ownership; FORE is the variable representing Foreign Ownership; PRIV is the variable representing Private Ownership; KS denotes the control variables; *i* indicates the bank; *t* represents time; α is the intercept; β and γ are the coefficients; and ε is the error term (residual).

The variables are described in detail in Table I below:

Table I: Description of Variables in the Research Model

Symbol	*Describe*	*Determination formula*
Dependent variables (BP)		
NIM	Net interest margin	$NIM = \frac{\text{Net interest income}}{\text{Average interest earning asset}}$
ROA	Return on total assets	$ROA = \frac{\text{Profit after tax}}{\text{Average total assets}}$
ROE	Return on equity ratio	$ROA = \frac{\text{Profit after tax}}{\text{Average equity}}$
Independent variables		
STATE	State ownership	The percentage of shares owned by shareholders is the state investor.
FORE	Foreign ownership	Percentage of shares owned by foreign investors.
PRIV	Private ownership	Ratio of shares owned by shareholders who are domestic private investors (including both institutional and individual investors)
Control Variables (KS)		
SIZE	Size of bank i in year t	SIZE = Logarit (Total assets)
CAR	Capital adequacy of bank i in year t	$CAR = \frac{\text{Equity}}{\text{Total assets}}$
CIR	Management quality of bank i in year t	$CIR = \frac{\text{Operating costs}}{\text{Total operating income}}$
AQ	Asset quality of bank i in year t	$AQ = \frac{\text{Cost of the credit risk provision}}{\text{Total outstanding loan}}$

IV. RESEARCH METHODS

A. *Descriptive Statistics*

Table II presents the descriptive statistics based on a sample of 29 commercial banks, with the research period spanning from 2012 to 2023. The profitability of Vietnamese commercial banks is measured using three indicators: net interest margin (NIM), return on assets (ROA), and return on equity (ROE). NIM reflects a bank's ability to generate net interest income from lending and investment activities.

A higher NIM indicates stronger profitability. The average NIM among Vietnamese commercial banks is 2.98%, with the maximum value at 9.45% and the minimum at only 0.42%. The mean ROA is 0.84%, with a maximum of 3.28% and a minimum of -0.72%. This lowest value is associated with National Citizen Commercial Joint Stock Bank (NVB) in 2023, when NVB reported a post-tax loss of VND 670 billion (approximately USD 28 million). The average ROE is 10.22%, while the maximum and minimum values are 30.33% and -12.34%, respectively. Similar to ROA, the lowest (negative) ROE value pertains to NVB in 2023. These statistics indicate substantial disparities in profitability among the banks included in the sample.

Table II: Descriptive statistics of the variables in the research model

Variable	Obs	Mean	Std.Dev	Min	Max
NIM	346	0.030	0.014	0.000	0.095
ROA	346	0.008	0.007	-0.007	0.033
ROE	346	0.102	0.080	-0.123	0.303
STATE	326	0.174	0.303	0.000	1.000
FORE	326	0.113	0.117	0.000	0.300
PRIV	326	0.709	0.318	0.000	1.000
SIZE	346	5.196	0.527	4.123	6.362
CAR	346	0.087	0.036	0.018	0.238
CIR	346	0.520	0.158	0.000	1.723
AQ	346	0.012	0.011	-0.001	0.112

Source: Own elaboration based on results from Stata software

The average shareholding ratio of state investors among the 29 commercial banks in the research sample is 17.4%. The highest level of state ownership is found at the Vietnam Bank for Agriculture and Rural Development (Agribank), where the state holds 100% of its shares. This is followed by the Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV), with state ownership of 95.76% during 2012–2018, which subsequently declined to 80.99% in the 2019–2023 period. A similar downward trend is observed at the Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank), where state ownership fell from 80.31% in 2012 to 77.11% during 2013–2018, and further to 74.8% in 2019–2023. For the Vietnam Joint Stock Commercial Bank of Industry and Trade (Vietinbank), the state ownership ratio remained stable at 66.46% throughout 2012–2023. Outside of these three banks in which the state maintains a controlling interest, the highest proportion of state ownership among the remaining commercial banks is found at Baoviet Commercial Joint Stock Bank (Baovietbank), which held 52% in 2012–2013, decreasing to 49.52% during 2014–2023. Several other joint stock commercial banks also report notable but lower levels of state ownership, including Military Commercial Joint Stock Bank (MB) and Petrolimex Group Commercial Joint Stock Bank (PGBank), among others. In contrast, several joint stock commercial banks have no state ownership; these include An Binh Commercial Joint Stock Bank (ABB), Asia Commercial Bank (ACB), Bac A Commercial Joint Stock Bank (Bac A Bank), Viet Capital Commercial Joint Stock Bank, Kien Long Commercial Joint Stock Bank (Kienlongbank), Nam A Commercial Joint Stock Bank, National Citizen Commercial Joint Stock Bank (NCB), Saigon Commercial Joint Stock Bank (SCB), and Vietnam International Commercial Joint Stock Bank (VIB).

The maximum allowable shareholding ratio for foreign investors in a credit institution is 30%, as stipulated in Article 7 of Decree No. 01/2014/NĐ-CP. Accordingly, the maximum value of the variable FORE is 30%, while the minimum is 0%, indicating that some banks have no foreign ownership. The mean value is 11.32%.

The average shareholding ratio of domestic private investors (including both institutional and individual investors) is 70.93%. The minimum value is 0%, which corresponds to Agribank, a bank wholly owned by the state with no private ownership. Conversely, there are also some banks that, in certain years, had neither state nor foreign ownership, and thus private ownership accounted for 100% (the maximum value).

Table III. Variable correlation matrix and results of multi-collinearity test using VIF

Variables	NIM	ROA	ROE	STATE	FORE	PRIV	SIZE	CAR	CIR	AQ	VIF		
NIM	1.0000												
ROA	0.7369*	1.0000											
ROE	0.6251*	0.8923*	1.0000										
STATE	-0.0648	-0.0806	0.1016*	1.0000							1.30		
FORE	0.2846*	0.4189*	0.3693*	-0.0834	1.0000							1.36	
PRIV	-0.0435	-0.0812	-0.2385*	-0.9250*	-0.2894*	1.0000							1.66
SIZE	0.2900*	0.4212*	0.5922*	0.4747*	0.4570*	-0.6250*	1.0000				2.50	2.78	2.97
CAR	0.1916*	0.1776*	-0.1349*	-0.2415*	-0.0407	0.2478*	-0.5082*	1.0000			1.74	1.85	1.75
CIR	-0.4601*	-0.6458*	-0.6826*	-0.2469*	-0.2835*	0.3452*	-0.4962*	-0.0656	1.0000		1.67	1.67	1.67
AQ	0.4133*	0.1619*	0.0914*	0.1255*	0.0921*	-0.1534*	0.1558*	0.1877*	-0.3238*	1.0000	1.17	1.17	1.17
Mean VIF											**1.68**	**1.77**	**1.85**

Source: Own elaboration based on results from Stata software

The commercial bank with the largest total assets is BIDV in 2023 (over VND 2.3 quadrillion, equivalent to approximately USD 96 billion), while the smallest is Baovietbank in 2012 (only VND 13,283 billion, or about USD 0.56 billion). The average capital adequacy ratio (CAR) among Vietnamese commercial banks is nearly 8.73%, with the lowest recorded at just 1.8% and the highest reaching 23.84%. There is also substantial variation in management quality among these banks. The maximum value of the cost-to-income ratio (CIR) is 1.723227, meaning that operating expenses are more than 1.7 times total income. This figure pertains to NVB in 2023, a year in which the bank also reported negative post-tax profits. Conversely, the bank demonstrating the most efficient management is Vietinbank in 2022, with a CIR of only 0.042%, while the average CIR for the 29 banks in the sample is 52.3%. The mean value of the asset quality (AQ) ratio is 1.23%, indicating that, overall, the banks in the sample maintain a relatively low level of credit risk provisions relative to total outstanding loans. However, marked differences exist among individual banks, as reflected by the minimum and maximum AQ values. The highest AQ was reported by MSB in 2014, reaching 11.22%, demonstrating effective credit risk management and an ability to sustain high asset quality. In contrast, NVB recorded the lowest AQ at -0.06% in the same year, highlighting significant challenges in credit risk management and potential financial stress.

B. Regression Analysis

Table III presents the correlation matrix of the variables. The results indicate that there are no high correlations among the variables. High correlations are observed between the pairs ROA and ROE, as well as PRIV and STATE. However, these correlations do not raise concerns regarding multicollinearity, as these variables are included in different models. Furthermore, the Variance Inflation Factor (VIF) values in all models are less than 4, indicating a low degree of multicollinearity that does not affect the regression results.

The Prob values of the Wooldridge test presented in Table IV are all less than 0.05, indicating the presence of autocorrelation in the research models.

Table IV. Autocorrelation test results

Variables	NIM	ROA	ROE
Model 1			
F	32.993	7.453	8.819
Prob	0.0000	0.0108	0.0061
Model 2			
F	31.252	7.868	9.065
Prob	0.0000	0.0090	0.0055
Model 3			
F	31.251	7.711	8.804
Prob	0.0000	0.0097	0.0061

Source: Own elaboration based on results from Stata software

Table V shows that the results of the Breusch-Pagan, Wald, and Breusch-Pagan Lagrangian tests in all models have Prob values below 0.05, leading to the conclusion that all models estimated using Pooled OLS, FEM, and REM methods exhibit heteroskedasticity.

Given the deficiencies encountered by the models as indicated above, the Feasible Generalized Least Squares (FGLS) regression method was employed to test the research hypotheses. Table VI presents the estimation results of the impact of state ownership (STATE) on the profitability of Vietnamese commercial banks. The results indicate that the STATE variable has a negative effect on NIM, ROA, and ROE of the banks at a statistical significance level of 1%. Thus, the research hypothesis H1 is accepted. This finding is consistent with previous international studies (Cornett et al., 2010; Shah & Hussain, 2012; Lee & Kim, 2013; Jiang et al., 2013; Davydov, 2018) as well as domestic studies in Vietnam (Thinh, 2018; Phong & Tuan, 2019; Dung & Trinh, 2020; Xuyen, 2024) regarding the impact of state ownership on bank profitability, and supports the Agency Theory and Public Choice Theory.

Table V. Heteroscedasticity test results

Estimation method	Type of inspection	NIM		ROA		ROE	
		Chi^2	Prob	Chi^2	Prob	Chi^2	Prob
Model 1							
Pooled OLS	Breusch-Pagan	72.89	0.0000	34.98	0.0000	20.50	0.0000
FEM	Wald	1571.99	0.0000	2321.06	0.0000	9066.34	0.0000
REM	Breusch-Pagan Lagrangian	166.53	0.0000	84.85	0.0000	121.54	0.0000
Model 2							
Pooled OLS	Breusch-Pagan	70.09	0.0000	38.25	0.0000	14.31	0.0000

FEM	Wald	1545.21	0.0000	2046.53	0.0000	5428.25	0.0000
REM	Breusch-Paga Lagrangian	258.05	0.0000	182.96	0.0000	173.69	0.0000
Model 3							
Pooled OLS	Breusch-Pagan	81.39	0.0000	43.38	0.0000	21.93	0.0000
FEM	Wald	2062.00	0.0000	2131.50	0.0000	5756.16	0.0000
REM	Breusch-Pagan Lagrangian	157.18	0.0000	103.30	0.0000	131.22	0.0000

Source: Own elaboration based on results from Stata software

State ownership in commercial banks may undermine profitability for various reasons. State-owned commercial banks are often subject to political interference, which can weaken management incentives and operational efficiency. Furthermore, these banks tend to face challenges in governance and supervision, with generally lower oversight levels compared to commercial banks with a higher proportion of private ownership, which consequently limits their ability to pursue profit maximization objectives. In addition, state-owned commercial banks are often required to prioritize policy objectives over profit objectives, which can lead to suboptimal business decisions and increased operational risks. This phenomenon is evident in Vietnam, where state-owned commercial banks frequently pursue multiple objectives beyond profit maximization.

Table VI: Estimation results of the impact of state Ownership on the profitability of Vietnamese commercial banks

Variable	NIM	ROA	ROE
STATE	-0.01317***	-0.00878***	-0.06223***
	(-5.86)	(-9.34)	(-5.98)
SIZE	0.01108***	0.00791***	0.07281***
	(6.26)	(10.67)	(8.87)
CAR	0.10376***	0.07323***	0.08051
	(4.89)	(8.24)	(0.82)
CIR	-0.01878***	-0.02066***	-0.27114***
	(-3.87)	(-10.18)	(-12.06)
AQ	0.33341***	-0.06354***	-0.98162***
	(5.72)	(-2.61)	(-3.63)
_cons	-0.02895**	-0.02609***	-0.11950**
	(-2.44)	(-5.24)	(-2.17)
N	326	326	326

t statistics in parentheses* $p < .1$, ** $p < .05$, *** $p < .01$

Source: Own elaboration based on results from Stata software

Tables VII and VIII indicate the positive impact of foreign ownership and private ownership on the profitability of Vietnamese commercial banks at the 1% and 5% statistical significance levels, respectively. Both research hypotheses H2 and H3 are therefore accepted.

Table VII: Estimation results of the impact of Foreign Ownership on the profitability of Vietnamese commercial banks

Variable	NIM	ROA	ROE
FORE	0.01266**	0.01085***	0.05664**
	(2.04)	(3.96)	(1.96)
SIZE	0.00594***	0.00414***	0.04893***
	(3.05)	(4.83)	(5.40)
CAR	0.09421***	0.06464***	0.03838
	(4.11)	(6.40)	(0.36)
CIR	-0.01905***	-0.02090***	-0.27232***
	(-3.76)	(-9.36)	(-11.56)
AQ	0.31875***	-0.07208***	-1.05257***
	(5.24)	(-2.69)	(-3.72)
_cons	-0.00469	-0.00824	-0.00709
	(-0.36)	(-1.45)	(-0.12)
N	326	326	326

t statistics in parentheses* $p < .1$, ** $p < .05$, *** $p < .01$

Source: Own elaboration based on results from Stata software

Foreign ownership in Vietnamese commercial banks is positively correlated with profitability, aligning with several previous studies (Bonin et al., 2005; Okeahalam, 2004; Boateng et al., 2015; Meng et al., 2018; Thinh, 2018; i Phong & Tuan, 2019; Dung & Trinh, 2023; Xuyen, 2024; Trang, 2024). This can be explained by several factors. First, commercial banks with foreign ownership tend to have better governance practices and comply with international standards. Second, they can leverage relationships with foreign partners to expand their operations. Third, they have access to technology, professional processes, and financial resources from foreign investors. Finally, the involvement of foreign investors often leads to more frequent reporting and auditing, thereby minimizing information asymmetry.

Table VIII: Estimation results of the impact of Private Ownership on the profitability of Vietnamese commercial banks

	NIM	ROA	ROE
PRIV	0.01329***	0.00839***	0.06246***
	(5.46)	(8.06)	(5.53)

SIZE	0.01297***	0.00898***	0.08159***
	(6.68)	(10.81)	(9.05)
CAR	0.11578***	0.08089***	0.13704
	(5.40)	(8.82)	(1.38)
CIR	-0.01861***	-0.02054***	-0.27032***
	(-3.81)	(-9.85)	(-11.94)
AQ	0.32620***	-0.06885***	-1.01610***
	(5.57)	(-2.75)	(-3.74)
_cons	-0.05158***	-0.03982***	-0.22539***
	(-3.80)	(-6.85)	(-3.57)
N	326	326	326

t statistics in parentheses* $p < .1$, ** $p < .05$, *** $p < .01$

Source: Own elaboration based on results from Stata software

Similar to previous studies (La Porta et al. 2002; Beck et al., 2006; Mamatakis et al., 2017; Son et al., 2015; Dung & Trinh, 2020; Xuyen, 2024), this study has demonstrated that Private ownership in Vietnamese commercial banks is positively correlated with NIM, ROA and ROE. Privatization helps increase transparency, close supervision, reduce agency costs, and improve governance, leading to higher operational efficiency and increased profitability. This is especially important in the current context of Vietnam, encouraging domestic investors and promoting sustainable development of the banking industry.

In addition, other factors affecting the profitability of commercial banks in Vietnam, when included in the models as control variables, all showed statistical significance. The bank size variable (SIZE) has a positive relationship with all three independent variables, NIM, ROA, and ROE, in all analytical models. This confirms that larger banks will have higher profitability. Similarly, commercial banks with a high level of capital adequacy (measured by the ratio of equity to total assets) also show better profitability. On the contrary, the variable of management quality (CIR - measured by the ratio of operating expenses to total operating income) hurts the profitability of banks. The analysis results of the asset quality variable (AQ) show a difference in influence: while AQ has a positive impact on NIM, it has a negative impact on ROA and ROE. This phenomenon is completely reasonable because when banks increase their provisioning for credit risk, their after-tax profits will decrease, leading to a decline in ROA and ROE.

V. CONCLUSION AND RECOMMENDATIONS

This study examines how ownership structure affects the profitability of Vietnamese commercial banks. Three regression models were constructed to assess the impact of state ownership, foreign ownership, and private ownership on NIM, ROA, and ROE of 29 commercial banks over the period 2012-2023. Pooled OLS, FEM, and REM regressions were employed accordingly. However, diagnostic tests revealed issues of autocorrelation and heteroskedasticity in these models. Therefore, the discussion of the research findings is based on the FGLS regression method.

The regression analysis conducted in this study provides empirical evidence on the impact of ownership structure on the profitability of commercial banks in Vietnam. The results indicate the heterogeneous effects of different types of ownership, thereby serving as a basis for proposing appropriate policy solutions.

The regression results show that state ownership hurts the profitability of Vietnamese commercial banks, highlighting the need for policy recommendations to address this issue. Firstly, the government should consider implementing governance reforms in state-involved banks, including the separation of management and political functions to minimize unnecessary governmental intervention. In addition, the participation of private and foreign investors should be encouraged by relaxing regulations on equity ownership, thereby enhancing competition and optimizing bank performance. Equally important, banks should strengthen transparency, and accountability, and adopt better corporate governance principles to improve operational efficiency and achieve optimal benefits for all shareholders.

Besides the issue of state ownership, the regression results also indicate that foreign ownership has a positive effect on the profitability of Vietnamese commercial banks. Therefore, the government should implement measures to capitalize on this advantage. Specifically, commercial banks should be encouraged to expand cooperation with foreign investors by relaxing regulations on the maximum ownership ratio for foreign investors in domestic banks, thereby attracting more capital and technology. Furthermore, it is necessary to create a more favorable business environment for foreign banks, including improving the legal infrastructure and reducing administrative procedures. The government should also promote training cooperation programs between domestic banks and international financial institutions to enhance management capacity and operational efficiency in Vietnamese commercial banks.

Finally, the regression results reveal that private ownership also exerts a positive influence on the profitability of Vietnamese commercial banks. To foster this effect, the government should strengthen training and support programs for privately managed banks to facilitate the adoption of advanced corporate governance principles, thereby optimizing risk management and operational efficiency. In addition, encouraging cooperation between private banks and international financial institutions will create opportunities to learn from and apply modern technologies and service products, thus improving competitiveness and increasing profitability.

As with any empirical research, this study has certain limitations. The current analysis focuses only on ownership structure, whereas various factors related to board characteristics and other aspects may also affect bank

profitability. Variables representing board characteristics could include board size, gender diversity, independent members, foreign members, age, educational level, and duality, among others. Therefore, future research may incorporate these additional factors.

ACKNOWLEDGMENT

This research was funded by Tay Nguyen University. The article is part of the Basic Science Project No. T2025-31CB.

REFERENCES

1. Beck, T., Demirgüç-Kunt, A., and Levine, R. 2006. Bank concentration, competition, and crises: First results. Journal of banking and finance, 30(5), 1581-1603. https://doi.org/10.1016/j.jbankfin.2005.05.010.
2. Boateng, A., Huang, W., and Kufuor, N. K. 2015. Commercial bank ownership and performance in China. Applied Economics, 47(49), 5320-5336. https://doi.org/10.1080/00036846.2015.1047089
3. Bonin, J. P., Hasan, I., and Wachtel, P. 2005. Bank performance, efficiency and ownership in transition countries. Journal of banking and finance, 29(1), 31-53. https://doi.org/10.1016/j.jbankfin.2004.06.015
4. Buchanan, J. M., and Tullock, G. 2003. What is public choice theory. *Rationalizing capitalist democracy: The cold war origins of rational choice liberalism, 133*. https://aier.org/wp-content/uploads/2013/11/EEB-5.03-Public-Choice.pdf
5. Claessens, S., and Jansen, M. 2000. The Internationalization of Financial Services: issues and lessons for developing countries. Kluwer Law International, London
6. Cornett, M. M., Guo, L., Khaksari, S., and Tehranian, H. 2010. The impact of state ownership on performance differences in privately-owned versus state-owned banks: An international comparison. Journal of financial intermediation, 19(1), 74-94. https://doi.org/10.1016/j.jfi.2008.09.005
7. Dan, T. N., Minh, L. T. H. and Huy, C. T. 2016. Analysis of the impact of capital ownership structure on the business performance of Vietnamese banks before and after the 2008 crisis. Journal of Banking Science and Training, 167 (August 2018), 68-72
8. Davydov, D. (2018). Does state ownership of banks matter? Russian evidence from the financial crisis. Journal of Emerging Market Finance, 17(2), 250-285. https://doi.org/10.1177/0972652718776862
9. Dung, L. C., and Trinh, V. H. D. 2020. The impact of ownership structure on the profitability of Vietnamese commercial banks, Banking Magazine, 6 (2020), 19-26
10. Dung, L. C., and Trinh, V. H. D. 2023. The impact of ownership structure on the profitability and risk of Vietnamese commercial banks. Online Banking Journal. Available at: https://tapchinganhang.gov.vn/tac-dong-cua-cau-truc-so-huu-den-kha-nang-sinh-loi-va-rui-ro-cua-cac-ngan-hang-thuong-mai-viet-nam-12273.html
11. Duyen, N. K. 2018. The role of banks in implementing sustainable development goals. Available at: http://khoahocnganhang.org.vn/news/vi/vai-tro-cua-ngan-hang-doi-voi-viec-thuc-hien-cac-muc-tieu-phat-trien-ben-vung/
12. Fama, E. F., and Jensen, M. C. 1983. "Separation of Ownership and Control." Journal of Law and Economics, 26(2), 301-325. https://www.jstor.org/stable/725104
13. Figueira, C., Nellis, J. G., and Parker, D. 2006. Does ownership affect the efficiency of African banks?. The Journal of Developing Areas, 40(1), 37-62. 10.1353/jda.2007.0004
14. Holcombe, R. G. 2014. The economic theory of rights. Journal of Institutional Economics, 10(3), 471-491.https://doi.org/10.1017/S1744137414000137
15. Iannotta, G., Nocera, G., & Sironi, A. (2007). Ownership structure, risk and performance in the European banking industry. *Journal of banking & finance*, *31*(7), 2127-2149. https://doi.org/10.1016/j.jbankfin.2006.07.013
16. Jensen, M. C., and Meckling, W. H. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." Journal of Financial Economics, 3(4), 305-360.https://doi.org/10.1016/0304-405X(76)90026-X
17. Jiang, C., Yao, S., and Feng, G. 2013. Bank ownership, privatization, and performance: Evidence from a transition country. Journal of banking and finance, 37(9), 3364-3372. https://doi.org/10.1016/j. jbankfin.2013.05.009
18. La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. 2002. Government ownership of banks. The journal of finance, 57(1), 265-301.https://doi.org/10.1111/1540-6261.00422
19. Lee, J. Y., and Kim, D. 2013. Bank performance and its determinants in Korea. Japan and the World Economy, 27, 83-94. https://ideas.repec.org/a/eee/japwor/v27y2013icp83-94.html
20. Lensink, R., Meesters, A., and Naaborg, I. 2008. Bank efficiency and foreign ownership: Do good institutions matter?. Journal of Banking and

Finance, 32(5), 834-844. https://doi.org/10.1016/j.jbankfin.2007.06.001

21. Liu, C., Chung, C. Y., Sul, H. K., and Wang, K. 2018. Does hometown advantage matter? The case of institutional blockholder monitoring on earnings management in Korea. *Journal of International Business Studies*, *49*, 196-221.https://doi.org/10.1057/s41267-017-0093-9
22. Meng, Y., Clements, M. P., and Padgett, C. 2018. Independent directors, information costs and foreign ownership in Chinese companies. Journal of International Financial Markets, Institutions and Money, 53, 139-157. https://doi.org/10.1016/j.intfin.2017.09.016
23. Nikiel, E. M., and Opiela, T. P. 2002. Customer type and bank efficiency in Poland: Implications for emerging market banking. Contemporary Economic Policy, 20(3), 255-271. https://doi.org/10.1093/cep/20.3.255
24. Okeahalam, C. C. 2004. Foreign ownership, performance and efficiency in the banking sector in Uganda and Botswana. Studies in Economics and Econometrics, 28(1), 89-118. https://doi.org/10.1080/10800379.2004.12106362
25. Phong, N.T., and Tuan, N. Q. 2019. The impact of ownership structure on the operational efficiency of of Vietnamese commercial banks, Journal of Finance, 2 (November 2019), pp. 48-52
26. Shah, S. Z. A., and Hussain, Z. 2012. Impact of ownership structure on firm performance evidence from non-financial listed companies at Karachi Stock Exchange. International Research Journal of Finance and Economics, 84(3): 6–13.
27. Shawtari, F. A. M. 2018. Ownership type, bank models, and bank performance: the case of the Yemeni banking sector. International Journal of Productivity and Performance Management, 67(8), 1271-1289. https://doi.org/10.1108/IJPPM-01-2018-0029
28. Shen, C. H., Hasan, I., and Lin, C. Y. (014. The government's role in government-owned banks. Journal of Financial Services Research, 45, 307-340. https://doi.org/10.1007/s10693-013-0168-0
29. Son, N. H., Tu, T. T. T., Cuong, D. X., Ngoc, L. A., and Khanh, P. B. (2015). Impact of ownership structure and bank performance-an empirical test in Vietnamese banks. International Journal of Financial Research, *6*(4), 123.
30. Thinh, N. Q. 2018. The impact of capital ownership structure on economic efficiency - empirical evidence at Vietnamese commercial banks. Journal of Banking Science and Training, No. 195 (August 2018); 48-53
31. Trang, N. Q. 2024. Impact of Foreign Ownership on Profitability of Listed Joint Stock Commercial Banks in Vietnam, Journal of Commerce, SDB (February 2014), 121-136
32. Xuyen, L. T. K. X. 2024. The impact of ownership structure on the operational efficiency of commercial banks in Vietnam, Finance Magazine, 2 (July 2024), 78-81
33. Zouari, S.B.S., and Taktak, N.B. 2014. Ownership structure and financial performance in Islamic banks: Does bank ownership matter?. International Journal of Islamic and Middle Eastern Finance and Management, 7(2), 146-160. https://doi.org/10.1108/IMEFM-01-2013-0002