

Foreign Acquisition and Public Listing: Impact on Vietnamese Bank Performance

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Abstract. This study investigates the dual impacts of foreign acquisition and public listing on the performance of Vietnamese commercial banks. Using a panel dataset of 25 banks from 2012-2022 and employing the Generalized Method of Moments (GMM), we find that foreign acquisition positively influences bank profitability (coefficient = 0.183, $p < 0.01$), while public listing has a positive but weaker impact (coefficient = 0.0428, $p < 0.05$). There is a relatively different influence between large banks and small banks. Liquidity and economic growth positively affect performance, while inflation boosts revenue and profit at moderate levels. This study contributes to the literature by examining the combined effects of foreign acquisition and public listing in an emerging market context, extending agency theory and the resource-based view to Vietnamese banking. Our findings have implications for bank managers and policymakers in managing international partnerships and capital market activities.

Keywords: Foreign Acquisitions, Public Listing, Dynamic Effect, Banking Performance

1. Introduction

Banking is the economy's lifeblood, touching all socio-economic sectors. Due to the global financial turmoil, which has led to the collapse of many commercial banks, bank efficiency has become more critical than ever (Fonseka & Farooque, 2024). Verma & Kumar (2024) show that operational efficiency is an essential indicator of the success or failure of an organization.

After the financial crises and the COVID-19 pandemic, mergers and acquisitions (M&A) have become popular to improve corporate performance (Zhou et al., 2023). However, the relationship between foreign investments and bank performance remains controversial. Some studies have shown that M&A in the banking sector has brought significant profits and accumulated market value (Beitel & Schiereck, 2006). In Vietnam, banks have attempted to attract foreign capital through strategic partnerships (Phung & Tröge, 2015), with foreign investors often choosing well-managed banks to optimize investment efficiency (Leuz et al., 2009). However, acquisitions are not always successful, sometimes causing adverse effects for the target bank.

Nowadays, many banks aim for transparency through listing on the stock market, but there are also many conflicts. The decision to list has benefits such as increasing the capital base (Almazan et al., 2003), improving corporate transparency and increasing liquidity. However, disadvantages include ownership dispersion, loss of control, mandatory disclosure and associated costs. This trade-off requires further research on the impact of public listing on the banking industry (Ellul et al., 2016). While previous studies have examined foreign acquisition and public listing separately, their combined effect on bank performance in emerging markets remains underexplored.

This study aims to address this gap by examining the dual impact of these strategies on Vietnamese bank performance, guided by agency theory and the resource-based view. The research results will be a reference for policymakers, contributing to building a robust, efficient and transparent banking system, thereby promoting the overall development of the economy.

The structural study will consist of an introduction followed by a literature review. The data and methods will be the third section. Results and discussion are the next part. Finally, the conclusion of the study will be presented.

2. Literature review

2.1. Relevant theories

The resource-based view (RBV) focuses on the role of strategic resources in creating competitive advantage for firms. These resources, such as technology, managerial capabilities, and knowledge, are valuable, rare, difficult to imitate, and on-substitutable (Barney, 2000; Chi, 1994). RBV emphasizes that resources are heterogeneous and not perfectly mobile across firms, allowing firms to formulate more effective strategies to improve performance (Davis & DeWitt, 2021). In banking, moves such as foreign acquisitions and public listings play an essential role in accessing and exploiting these strategic resources. When a bank is acquired by a foreign partner, new resources, such as advanced technology and international management knowledge, can provide a competitive advantage. However, risks also increase due to cultural and strategic differences, especially when management is not competent enough to adapt to the international environment. Similarly, public listing helps banks small banks improve access to capital and improve governance through more transparent regulations (Peteraf & Barney, 2003). However, agency theory suggests that the relationship between the "principal" and the "agent" can be conflicting, especially when there are differences in goals and risk preferences (Eisenhardt, 1985, 1989). In the case of a publicly listed bank, pressure from new shareholders can lead to changes in strategy, sometimes inconsistent with the bank's long-term goals. Similarly, when a foreign company acquires a bank, differences in management and strategy can lead to conflicts of interest between the parties. Therefore, it is necessary to design management contracts and adjust authority appropriately to minimize these agency problems and ensure that significant changes such as foreign acquisitions or

public listings result in better performance for the bank.

2.2. Literature review

Many factors can affect bank performance, including foreign acquisitions and public listings. Previous studies have shown that acquisitions can positively or negatively impact bank performance, depending on the transaction's specific elements and the parties' strategies. First, foreign investments are believed to benefit banks significantly (Saxton & Dollinger, 2004). Focarelli et al. (2002) argued that acquisitions can stem from credit management-based strategies, such as reducing bad debts and loans to small companies in the long run. At the same time, proactive (acquiring) banks restructure the loan portfolio of the acquired bank, improving lending policies and leading to improved profitability. Foreign investors are expected to bring advanced modern banking techniques and technological upgrades. They are usually international organizations that attract more customers, hire more skilled workers and have access to cheaper funding sources (Bonin et al., 2005). Tuch & O'Sullivan (2007) have stated that acquirers may use acquisition to turn around underperforming organizations. Thus, foreign ownership often improves bank efficiency and productivity (Fries & Taci, 2005; Hasan & Marton, 2003). Similarly, Choi & Hasan (2005) and Berger et al. (2009) reported a positive impact of foreign acquisitions on bank performance.

Although these theories provide insights into the motives and objectives of acquisitions, empirical research has shown heterogeneity in the results. For example, Hernando et al. (2009) found that the financial performance of target firms in cross-border acquisitions was unchanged or less volatile than in domestic acquisitions. McCarthy & Aalbers (2016) found that most acquisitions do not improve performance, making it challenging to enhance post-acquisition performance. Aggarwal & Garg (2022) found that despite significant improvements in profitability and liquidity five years after the acquisitions, the position was not substantially improved. Meanwhile, Jiang et al. (2009) and Jiang et al. (2013) reported adverse short-term but positive long-term effects. Lin and Zhang (2009) found no short-term or long-term impact (P. Lin et al., 2009). These arguments show that evaluating post-acquisition performance is complex and contradictory.

Regarding public listing, PERERA et al. (2007) found that listed banks are more efficient than unlisted ones. Dong et al. (2016) also found that Chinese banks achieve cost and profit efficiency after listing. Furthermore, Jiang et al. (2013) and Sufian (2011) pointed out that listing can improve bank performance due to increased transparency and market discipline. Nguyen et al. (2013a) also argued that listing can improve bank performance because market discipline can improve management efficiency and capital mobilization. However, annual listing costs account for a significant portion of bank costs. Jiang et al. (2009) found that although listed banks outperform non-listed banks, this effect tends to be short-term. Meanwhile, Williams & Nguyen (2005) found a long-term positive impact of listing on bank performance. In addition, Yin (2014) found that banks were less efficient after listing than before listing. Although Alsharif (2020) showed that the performance of banks outperformed their counterparts, it declined after the bank was listed. On the contrary, there was no difference in performance between listed and unlisted banks in the study (Bhaumik & Dimova, 2004). Lin & Zhang (2009) showed that the listing strategy was found to have no impact on bank performance. Overall, the results are inconsistent. Previous studies have studied the impact of listing as an ownership structure method but have not studied the performance of banks after listing in depth. Research incorporating the analysis of financial ratios is needed to have a definitive result on the relationship between listing and the performance of banks after listing. In other words, These results suggest that further research is needed to determine the exact relationship between Public listing and bank performance, especially in emerging markets like Vietnam.

Furthermore, Berger et al. (2005) argue that it is crucial to consider the impact of all relevant effects in a model. They point to the selection effect, which considers the performance of banks before they are selected for governance change, and the dynamic effect, which shows the difference in performance

before and after the governance change. Beck et al. (2005), Nakane & Weintraub (2005), and Williams & Nguyen (2005) have each considered these effects. Specifically, Beck et al. (2005) evaluated the Brazilian state bank transformation program in the late 1990s. At the same time, they analyze the factors that explain the different options that state governments chose for their banks and the impact of varying transformation options on performance. They examine the effect of bank governance on portfolio allocations between loans and other assets loan types, sectors, and regions. Portfolio reallocations after governance changes help trace the sources of performance variation after governance changes. This allows testing whether banks move their portfolios in the direction predicted by the effects and choices. Nakane & Weintraub (2005) assess the impact of these changes on bank total factor productivity through selection and effects. Examine the impact of changes in bank governance on bank performance for a sample of commercial banks operating in Southeast Asia from 1990-2003 (Williams & Nguyen, 2005). However, these studies mainly focus on bank governance rather than the effects of acquisitions or listings.

In addition, other control variables such as capital ratio, non-performing loan ratio, liquidity ratio, and bank size also play important roles in determining bank performance. For example, the ratio of equity to total assets is often positively related to bank performance because higher capital can reduce risk and improve monitoring by shareholders (Kosmidou et al., 2005; Manlagñit, 2011). However, Ben Naceur & Kandil (2009) argue that high capital can lead to higher risk-taking to maintain profitability. Studies on liquidity ratios show mixed effects; some studies show that high liquidity ratios can improve performance, while others find no clear relationship (Chunhachinda & Li, 2011; Jiang et al., 2009). Bank size also has a heterogeneous effect. Some studies suggest that a larger size may lead to greater efficiency, while others note an inverted U-shaped or no relationship (Manlagñit, 2011; Shamsuddin & Xiang, 2012).

Overall, studies on foreign acquisitions and public listings show mixed results regarding their impact on bank performance. This highlights the need for further research on the specific influencing factors and their relationship. Furthermore, the dynamic and selective effects of acquisitions and listings have not been explored. In addition, to the authors' knowledge, comparisons between the size of banks in emerging markets such as Vietnam on these impacts have not been addressed, except for Manlagñit (2011) and Shamsuddin & Xiang (2012), who asserted that size has a mixed effect. Clarifying this relationship would better explain how acquisition and listing strategies may impact bank performance. It provides essential information for managers and investors in the banking industry.

3. Data and research methods

3.1. Data

In this study, the author uses secondary data collected from the balance sheet, financial statements and income statements of 25 banks in Vietnam from 2012 to 2022. On March 1, 2012, the Prime Minister approved Project 254, "Restructuring the system of credit institutions in 2011-2015", to handle weak banks in Vietnam. Therefore, many banks were merged or acquired for 0 VND. Thus, the author collected data from 2012 to ensure sufficient data for the study. In addition, some banks were eliminated because a lack of data would affect the overall results.

Moreover, to ensure reliability, the author collected banks listed on the Ho Chi Minh City Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). Therefore, after excluding some banks, the number of banks in the sample will be 25/49 active. Macroeconomic data such as GDP (economic growth) and inflation are also collected in Wordbank.

3.2. Research Methods

The ordinary least squares (OLS) method is a popular regression analysis tool widely used in research on bank performance. This method is popular due to its simplicity and ease of understanding, suitable for many different types of data and research. OLS estimates the regression parameters by minimizing

the sum of squared errors between the predicted and actual values, thereby creating a linear regression line that best fits the data. In studying bank performance, OLS can analyze the relationship between input variables (such as capital, labour, assets, etc.) and output variables (such as profits, sales, etc.) to help identify factors affecting bank performance.

Furthermore, OLS provides hypothesis testing tools, such as t-tests and F-tests, that help determine whether independent variables are statistically significant in explaining the dependent variable. In addition, OLS also provides estimates of the standard errors of the regression parameters, allowing the calculation of confidence intervals and hypothesis testing about these parameters. However, when using OLS, limitations such as autocorrelation, multicollinearity, and heteroskedasticity should be kept in mind because they can affect the accuracy of the estimates. These issues must be handled appropriately, such as using model validation and tuning when necessary.

To deal with the endogeneity and lag issues of variables affecting performance, we use the Generalized Method of Moments (GMM) technique to address the potential endogeneity issues and the dynamic nature of bank performance, following recent studies in the banking research field (e.g., Ganda, 2019; Jha, 2019). GMM helps to address these issues by using appropriate instrumental variables, thereby improving the precision and reliability of the estimates. The Generalized Method of Moments (GMM) to deal with endogeneity has shown that this robust technique can control various types of endogeneity issues and thus provide unbiased estimates (Ullah et al., 2018). In particular, GMM is beneficial in lag models, where the variables in the model may depend on their past values, which is common in banking studies. Furthermore, according to Gök & Sodhi (2021), the GMM system is designed for situations with “small T, large N” panels, meaning that few periods and many individuals are needed. The independent variables are not necessarily strictly exogenous, meaning they are correlated with past and possibly current realizations of the error term, and the GMM system also overcomes the problems of fixed effects, heterogeneity of variance, and autocorrelation within individuals.

However, the GMM method has disadvantages, such as choosing appropriate instrumental variables and ensuring they are not correlated with model errors. Since each method has advantages and disadvantages and deals with different problems, the author conducts regression based on OLS and GMM methods, then compares the results and discusses the technique that gives good results. This way, the study will achieve more comprehensiveness and accuracy in evaluating bank performance.

This study has the following model:

$$\begin{aligned} BP_{it} = & \beta_0 + \beta_1 \times L.BP_{it} + \beta_2 \times \text{Selection}_{\text{foreign}_{it}} + \beta_3 \times \text{Selection}_{\text{Listing}_{it}} \\ & + \beta_4 \times \text{Dynamic}_{\text{foreign}_{it}} + \beta_5 \times \text{Dynamic}_{\text{listing}_{it}} + \beta_6 \times \text{DEP}_{it} \\ & + \beta_7 \times \text{CAP}_{it} + \beta_8 \times \text{NPL}_{it} + \beta_9 \times \text{LIQ}_{it} + \beta_{10} \times \text{OLE}_{it} + \beta_{11} \times \text{SIZE}_{it} \\ & + \beta_{12} \times \text{GDP}_{it} + \beta_{13} \times \text{INF}_{it} + \varepsilon_{it} \end{aligned}$$

However, to further consider the case of years with total corporate assets more significant than the average total assets of all banks in the period 2012-2022, the authors have a second model as follows:

$$\begin{aligned} BP_{it} = & \beta_0 + \beta_1 \times L.BP_{it} + \beta_2 \times \text{Selection_foreign}_{it} + \beta_3 \times \text{Selection_Listing}_{it} \\ & + \beta_4 \times \text{Dynamic_foreign}_{it} + \beta_5 \times \text{Dynamic_listing}_{it} + \beta_6 \times \text{DEP}_{it} + \beta_7 \times \text{CAP}_{it} \\ & + \beta_8 \times \text{NPL}_{it} + \beta_9 \times \text{LIQ}_{it} + \beta_{10} \times \text{OLE}_{it} + \beta_{11} \times \text{SIZE}_{it} + \beta_{12} \times \text{GDP}_{it} \\ & + \beta_{13} \times \text{INF}_{it} + \beta_{14} \times \text{COM}_{it} + \varepsilon_{it} \end{aligned}$$

In particular, bank operating efficiency (BP) is represented by ROE; Selection effect indicators include selection acquired by foreign countries (Selection_foreign), selection to go public (Selection_listing); Dynamic effect indicators include foreign acquisitions (Dynamic_foreign) and going public (Dynamic_listing) and control variables. (For details, see table 1).

Table. 1: Definition and description of variables in the research model

Symbol	Variable	Variable definition	Forecast	Reference research
Dependent variable				
BP	Operational efficiency	$\frac{\text{Profit after tax}}{\text{Equity}}$		
Selection effect index				
Selection_foreign	Option to be acquired by foreign countries	The dummy variable indicating whether a foreign country acquired a bank during 2012-2022 is 1 or 0 for all periods for a bank.	+	Saxton & Dollinger (2004)
Selection_Listing	Choose to go public	The dummy variable indicating a publicly listed bank during 2012-2022 is 1 or 0 for all periods for a bank.	+	Dong et al. (2016), Jiang et al. (2013), Sufian (2011)
Dynamic effect indicator				
dynamic_foreign	Dynamic effects before and after being acquired by a foreign country	Dummy variable indicating year after foreign bank acquisition. Equals 0 before the bank changes and equals 1 at the start of the second year after the change. Observations in the year and the year after the change are deleted. Zero for all periods for banks that do not undergo foreign acquisitions.	-	
dynamic_listing	Dynamic effects before and after going public	The dummy variable indicates the years after the bank went public. It equals 0 before the bank change and 1 starting the second year after the change. Observations in the year and the year after the change are deleted— 0 for all periods for unlisted banks.	+	Nguyen et al. (2013)
Control variable				
DEP	Deposit ratio	$\frac{\text{Total Deposits}}{\text{Total Assets}}$	+	Hapsari (2018), RAJINDRA et al. (2021)
CAP	Capital		-	Dao (2021)

		$\frac{\text{Equity}}{\text{Total Assets}}$		
NPL	Bad debt ratio	$\frac{\text{Non – Performing Loan}}{\text{Total Loans}}$	-	Hang et al. (2020), Krivogorsky et al. (2011), Oudat & Ali (2020)
LIQ	Liquidity ratio	$\frac{\text{Liquid assets}}{\text{Total Assets}}$	+	Ibrahim (2017), Kosmidou et al. (2005)
OLE	Leverage		+	Maria et al. (2016); Rehman (2013)
GDP	Economic growth	$\frac{\text{GDP}_n - \text{GDP}_{n-1}}{\text{GDP}_{n-1}} \times 100\%$	+	Gupta & Mahakud (2020), Kiganda (2014)
INF	Inflationary	$\frac{P_n - P_{n-1}}{P_{n-1}} \times 100\%$	+	Tan & Floros (2012), Umar et al. (2014)
SIZE	Bank size	Natural logarithm Assets	-	Gul et al. (2011), Kořak et al. (2008)
COM	Classification of bank asset size	Equals 1 if the corresponding year's total bank assets are higher than the average assets of banks in 2012-2022. Equal to 0 for the remaining cases		

Source: Compiled by the authors

4. Results and Discussion

4.1. Result

Table. 2: Descriptive statistics

Variable	Observe	Medium	Standard deviation	Minimum	Maximum
ROE	275	0.1102	0.0814	0.0003	0.3961
DEP	275	0.7247	0.1121	0.4526	0.9668
CAP	275	0.5137	0.2087	0.2183	1,6043
NPL	275	0.0216	0.0283	0.0000	0.4029
LIQ	275	0.6148	0.3750	0.0001	4.9489
OLE	275	0.0111	0.0089	0.0014	0.0519
GDP	275	0.0581	0.0163	0.0258	0.0802
INF	275	0.0374	0.0220	0.0063	0.0909
SIZE	275	18.7228	1.1492	16.5023	21.4750

Source: The author compiled results from Stata software

From Table 2, it can be seen that the return on equity (ROE) has an average value of 0.1102 in the range from 0.0003 to 0.3961, showing an average level of profitability compared to equity fluctuates wildly. This represents a significant difference in ROE between banks. The average deposit ratio (DEP) is 0.7247, reflecting the proportion of deposits in total assets, with a relatively low standard deviation of 0.1121, indicating that the deposit ratio is stable across observations. The values range from 0.4526 to 0.9668, suggesting that most units have high deposit ratios. The wide distribution of capitalization levels among banks is reflected in the fluctuation range of the CAP variable, specifically from 0.2183 to 1.6043.

Meanwhile, the non-performing loan (NPL) ratio has a low average of 0.0216 and a standard deviation of 0.0283. This shows that while most entities have low levels of bad debt, a few have significantly high lousy debt ratios. Furthermore, there was wide variation in the liquidity positions of the units, with some units having extremely high liquidity levels, ranging widely from 0.0001 to 4.9489. In addition, most banks maintain low and similar leverage. For variables related to macroeconomics, there are also no large fluctuations. For example, economic growth based on the GDP index ranges from 2.58% to 8.02%, and inflation is 0.63% to 9.09% during the study period. The variables related to the selection effect index, dynamic effect indicator and bank asset size classification are binary variables described in detail in Table 3.

Table. 3: Descriptive statistics of binary variables

	Frequency	Percent	Accumulation
Selection_foreign			
0	143	52	52
1	132	48	100
Total	275	100	
Selection_listing			
0	187	68	68
1	88	32	100
Total	275	100	
Dynamic_foreign			
0	189	68.73	68.73

1	86	31.27	100
Total	275	100	
Dynamic_listing			
0	204	74.18	74.18
1	71	25.82	100
Total	275	100	
COM			
0	202	73.45	73.45
1	73	26.55	100
Total	275	100	

Source: The author compiled results from Stata software

Table. 4: Correlation between variables in the model

	ROE	Selection _foreign	Selection _listing	Dynamic _foreign	Dynamic _listing	DEP	CAP	NPL	LIQ	OLE	GDP	INF	SIZE	COM
ROE	1.0000													
Selection foreign	0.2621**	1.0000												
Selection Listing	-0.1048	0.3707**	1.0000											
Dynamic foreign	0.2941**	0.7021**	0.4284**	1.0000										
Dynamic listing	0.4710**	-0.2009**	-0.3513**	-0.0036	1.0000									
DEP	-0.2518**	0.0097	0.2620**	0.0532	-0.3062**	1.0000								
CAP	-0.1647**	-0.1065	-0.2981**	-0.2229**	-0.0584	-0.4261**	1.0000							
NPL	-0.1642**	-0.0837	0.0344	-0.0383	0.0489	-0.0116	0.0453	1.0000						
LIQ	0.1699**	-0.0989	-0.0463	0.1403*	0.2520**	-0.1112	-0.1446*	0.0353	1.0000					
OLE	-0.3478**	-0.0961	0.3154**	0.0066	-0.1651*	0.2950**	-0.2269**	0.1375*	0.1017	1.0000				
GDP	-0.0261	0.0000	0.0000	-0.0467	-0.1661*	-0.0441	0.081	0.0782	-0.0938	0.0839	1.0000			
INF	-0.1778*	0.0000	0.0000	-0.0788	-0.2063**	-0.1459*	0.2112**	0.1115	-0.1192*	0.1380*	-0.0632	1.0000		
SIZE	0.5571**	0.5265**	0.2334**	0.5131**	0.1924*	-0.0521	-0.1506*	-0.1441*	-0.0210	-0.3632**	-0.0235	-0.2417**	1.0000	
COM	0.5439**	0.3949**	0.2055**	0.3938**	0.1346*	-0.1066	-0.2535**	-0.1242*	0.0265	-0.2278**	-0.0361	-0.1234*	0.7819**	1.0000

Source: The author compiled results from Stata software

In general, the correlation between pairs of independent and dependent variables does not exceed the threshold of 0.8. However, the author also checked the multicollinearity problem and got the results in Table 5. The VIF index is below 2. This means all variables meet the conditions to participate in the research model.

Table. 5: Multicollinearity check

Variable	VIF	1/VIF
SIZE	4.33	0.23071
COM	3.00	0.33323
selection_foreign	2.61	0.38307
dynamic_foreign	2.57	0.38962
dynamic_listing	1.84	0.54276
selection_listing	1.83	0.54607
DEP	1.71	0.58522
CAP	1.66	0.60288
OLE	1.65	0.60483
INF	1.26	0.79533
LIQ	1.23	0.81204
GDP	1.11	0.90213
NPL	1.07	0.93406
Mean	1.99	

Source: The author compiled results from Stata software

Table. 6: Research results of two models, OLS and GMM

Variables	OLS	OLS	GMM	GMM
	Model 1	Model 2	Model 1	Model 2
Selection_foreign	0.0216*	0.0241**	0.183***	0.166***
	[1.96]	[2.22]	[3.50]	[3.40]
Selection_Listing	-0.0183*	-0.0167*	0.0428**	0.0441**
	[-1.85]	[-1.72]	[2.18]	[2.49]
dynamic_foreign	0.00376	0.00487	-0.194***	-0.143**
	[0.32]	[0.42]	[-3.18]	[-2.26]
dynamic_listing	0.0600***	0.0650***	0.120***	0.113***
	[5.70]	[6.26]	[3.32]	[2.94]
DEP	-0.0967**	-0.0614	0.0248	0.0312
	[-2.50]	[-1.57]	[0.23]	[0.35]
CAP	-0.0736***	-0.0505**	-0.183	-0.212*
	[-3.66]	[-2.44]	[-1.57]	[-1.95]
NPL	-0.294**	-0.287**	-0.184	0.0287
	[-2.34]	[-2.34]	[-1.18]	[0.12]
LIQ	0.0191*	0.0184*	0.0566**	0.0574**
	[1.88]	[1.85]	[2.29]	[2.38]
OLE	-1.185**	-1.335***	-0.447	-1.256
	[-2.41]	[-2.77]	[-0.27]	[-0.76]
GDP	0.379*	0.409*	0.609**	0.600**
	[1.71]	[1.89]	[2.00]	[1.99]
INF	0.153	0.0862	0.688*	0.631*
	[0.88]	[0.50]	[1.91]	[1.88]
SIZE	0.0251***	0.00981	-0.00792	-0.042

	[5.71]	[1.61]	[-0.58]	[-1.64]
COM		0.0468***		0.0665*
		[3.56]		[1.65]
L.ROE			0.540**	0.567**
			[2.52]	[2.43]
_cons	-0.293***	-0.0572	0.127*	0.753**
	[-3.23]	[-0.52]	[0.42]	[1.53]
N	275	275	175	175
R ²	0.534	0.556		

Source: The author compiled results from Stata software

From the results in Table 6, the authors see that the results of GMM regression are better than those of OLS. Besides, GMM support handles some defects (Endogenous and exogenous) in the model and reduces OLS's strict constraints. Therefore, in this study, the results of the GMM model are used for discussion.

The results of the research model are as follows:

$$BP_{it} = 0,127 + 0,540 \times L. BP_{it} + 0,183 \times Selection_foreign_{it} + 0,043 \times Selection_Listing_{it} - 0,194 \times Dynamic_foreign_{it} + 0,120 \times Dynamic_listing_{it} + 0,057 \times LIQ_{it} + 0,609 \times GDP_{it} + 0,688 \times INF_{it}$$

$$BP_{it} = 0,753 + 0,567 \times L. BP_{it} + 0,166 \times Selection_foreign_{it} + 0,044 \times Selection_Listing_{it} - 0,143 \times Dynamic_foreign_{it} + 0,113 \times Dynamic_listing_{it} - 0,212 \times CAP_{it} + 0,057 \times LIQ_{it} + 0,600 \times GDP_{it} + 0,631 \times INF_{it} + 0,067 \times COM_{it}$$

In model 1, Selection_foreign (the impact of banks being selected by foreign investors) has a coefficient of 0.183 and a high statistical significance at the 1% level. This shows that the participation of foreign investors plays an important role in improving bank performance, thanks to improved management quality, application of modern technology, and better access to capital. Next, Selection_Listing (the impact of public listing) also positively impacts performance with a coefficient of 0.0428 and a statistical significance at the 5% level. This means that listing on the stock market helps banks increase transparency while improving their ability to mobilize capital, thereby improving operational performance.

However, dynamic_foreign (has a negative coefficient of -0.194 and is statistically significant at the 1% level. In the short term, acquisition by foreign investors can cause difficulties for banks, possibly due to restructuring costs or changes in management strategy. In contrast, dynamic_listing has a coefficient of 0.120, indicating that public listing has a significant positive effect on bank performance in the short and long term.

Regarding the control variables, the liquidity ratio (LIQ) with a coefficient of 0.0566 shows that a high liquidity ratio positively impacts bank performance. It emphasizes the importance of maintaining good liquidity so banks can cope with market fluctuations and sudden customer withdrawals. Macro factors such as GDP and inflation are also statistically significant, with coefficients of 0.609 and 0.688, respectively, emphasizing the critical role of the macroeconomic environment in supporting banking operations. Inflation can increase interest rates, helping banks earn higher profits from loans, but it can also increase risks if inflation is not well controlled. In Model 1, variables such as deposit ratio, capital, bad debt ratio, financial leverage, and size are not statistically significant, which shows insufficient evidence to conclude their impact on banking performance.

In Model 2, as banks become more significant, the impact of acquisitions is slightly reduced, with a coefficient of 0.166 compared to 0.183. In contrast, the effect of public listing on large banks is more optimistic, with a coefficient of 0.0441. Although the negative impact of foreign acquisitions on large banks is slightly reduced, the positive effect of public listing on these banks is also significantly reduced.

The CAP (capital) variable has a coefficient of -0.212, indicating that high capital ratios can substantially affect performance, possibly due to inefficient or high cost of capital. Liquidity ratios also have a more positive impact on large banks. However, the effect of GDP and inflation on significant bank performance is weaker than that of small banks. In addition, it is impossible to draw clear conclusions about the differences in the impact of deposit ratio, lousy debt ratio, financial leverage and size between large and small banks.

Table. 7: Tests related to the GMM model

Conditions	Model 1	Model 2	Conclude
Arellano-Bond test for AR(2)	$\text{Pr}>z = 0.376 > 0.05$	$\text{Pr}>z = 0.243 > 0.05$	The GMM model does not suffer from autocorrelation
Hansen test	$\text{Prob}>\chi^2 = 0.853 > 0.05$	$\text{Prob}>\chi^2 = 0.611 > 0.05$	The model has endogeneity.
Number of instrument	24	23	Comply with the standards
Number of group	25	25	

Source: The author compiled results from Stata software

4.2. Discussion

The finding that Selection_foreign significantly impacts performance is consistent with previous studies such as Saxton & Dollinger (2004) and Tuch & O'Sullivan (2007). However, the magnitude of the impact is lower for large banks, which is quite surprising. Large banks with vital infrastructure are expected to benefit most from the investments, new technologies and management experience that foreign investors bring. However, the reality may be that large banks have reached a high level of stability and see less significant improvement from these factors compared to smaller banks with more room to grow. Another explanation could be that foreign investors often acquire smaller banks because of their more significant growth potential.

In contrast, large banks may have reached their growth limits or have difficulty integrating changes after acquisition. In addition, large banks tend to have more complex organizational structures, making post-acquisition changes more difficult and costly, reducing the positive effects of acquisitions. This difference highlights that the impact of foreign investments is not uniform and depends on many factors, such as the size, organizational structure, and adaptability of each bank.

Meanwhile, stock listing (Selection_Listing) has a positive but relatively weak effect. Furthermore, large banks tend to benefit more from listing than small banks. Although stock listing can enhance a bank's reputation and improve its access to capital, the overall effect is not as significant as expected. One potential reason for this is that the costs associated with listing, such as complying with strict regulations and financial reporting requirements, may offset the benefits of listing. Banks may have difficulty balancing compliance with these regulations and maintaining operational efficiency, which may limit the positive effect of listing.

Furthermore, it is worth noting that internal management factors and bank business strategies appear to play a more critical role in improving efficiency than listing. This may be explained by the fact that banks with a solid management structure and clear business strategy will take advantage of the benefits of listing more effectively. On the contrary, listing may not bring about significant improvements if the bank lacks a good management foundation. In particular, banks with more substantial assets often see more potent listing effects. This may stem from the ability of large banks to leverage the funds from listing to expand operations and improve governance. Meanwhile, small banks may not achieve a significant difference in performance from listing due to limitations in size and access to capital markets. This result is consistent with previous studies by Dong et al. (2016) and Jiang et al. (2013).

When looking at foreign firm moves (Dynamic_foreign), the findings suggest that foreign firms' acquisitions negatively impact performance (Nguyen et al., 2013), somewhat reducing the effect for larger banks. This reflects some notable issues in international ownership transfers. One of the primary explanations for this negative impact is the risk and uncertainty of changes in foreign firms' policies and strategies. When a foreign firm acquires a bank, the integration process often faces significant challenges, including adjusting strategy and operating procedures to align with the standards and requirements of the parent firm. These changes can lead to disruptions in day-to-day operations and reduced performance initially before the acquisition's benefits become more apparent. In particular, large banks appear to be better able to mitigate this negative impact than small banks. This may be explained by the more significant financial structure and management processes of large banks, which allow them to adjust to and integrate the changes caused by acquisitions quickly. Large banks also have better financial resources and capabilities to deal with temporary challenges during the transition period. Another factor may be differences in their ability to adjust strategies and manage risks. Large banks often have more experienced management teams and professionals, which helps them manage changes effectively and minimize problems arising from acquisitions. In contrast, small banks may lack the necessary resources to make the changes, making the negative impact more lasting. These analyses highlight the need to consider internal factors and the adjustment capabilities of banks when assessing the effects of international acquisitions.

Although the impact of dynamic listing on bank value and profitability is positive (Nguyen et al., 2013), the result is somewhat weaker for large banks than for small banks. The difference in the impact of listing between large and small banks may be related to the ability to manage and take advantage of the benefits of listing. Large banks often have more complex management structures and optimized operating procedures. Large banks may face additional costs and strict compliance requirements when listing, which may reduce the positive impact of listing. Moreover, large banks may have gained more benefits from listing in the previous stage, making the incremental impact of new listings less obvious.

In contrast, when listed, small banks often have more opportunities to benefit from increased access to capital and improved governance. Listing can provide small banks with significant financial resources and the ability to enhance their reputation, which may lead to a more pronounced positive impact than large banks. Another reason may be that the costs and compliance requirements associated with listing may substantially impact large banks, which already have more complex operations and processes. Large banks may need to adjust and improve their management processes to meet transparency and regulatory requirements after listing, which may partially reduce the benefits of listing. Furthermore, a study by (Nguyen et al., 2013a) found that listing enhances access to capital and improves governance through regulatory compliance, transparency, and performance monitoring. However, internal factors and the bank's readiness to adapt to the listing environment may influence this positive impact.

The findings from the study of control variables in banks reveal several noteworthy points that need to be clarified. First, capital (CAP) is only statistically significant in model 2 and shows a negative impact. One possible explanation is that banks with high capital ratios may incur higher capital costs or have difficulty optimizing capital use. These banks may be constrained by strict capital requirements, leading to reduced operating efficiency due to their inability to deploy capital flexibly and efficiently. Meanwhile, liquidity (LIQ) shows a positive and stable impact, especially in large banks, where maintaining higher liquidity improves operating efficiency. Large banks often have an advantage in liquidity management due to their larger scale of operations and access to diverse financial sources, which allows them to trade and invest more efficiently than small banks.

Similarly, Economic Growth (GDP) substantially impacts banking performance, but large banks are less affected. This may be because large banks have more diversified sources of income and a more comprehensive network of operations, which helps them to take better advantage of the favourable

economic environment. They are less affected by fluctuations in economic growth than small banks, thanks to their greater flexibility and size. Kiganda (2014) and Kosmidou et al. (2005) support this result.

In addition, Inflation (INF) also shows a positive impact, with a high coefficient, indicating that moderate inflation can boost sales and profits by increasing product prices. However, small banks may feel the effect of inflation more strongly than large banks. Small banks may find it more challenging to adjust their pricing and business strategies to inflation, while large banks have more flexibility to respond to this change. It should be noted that if inflation becomes too high, it may cause risks such as increased costs and reduced purchasing power, negatively affecting profits. Similar to the results of Tan & Floros (2012) and Umar et al. (2014).

These findings highlight that maintaining an efficient capital and liquidity structure is critical to bank performance. At the same time, large banks often have a distinct advantage in managing factors such as economic growth and inflation, highlighting the need for appropriate financial and operational strategies to optimize performance.

5. Conclusion

This study examines the dual impacts of foreign acquisition and public listing on the performance of Vietnamese commercial banks. Our findings reveal that foreign acquisition significantly enhances bank profitability, likely due to the infusion of capital, technology, and management expertise. Public listing also positively influences performance, albeit to a lesser extent, possibly reflecting the trade-off between increased access to capital and regulatory compliance costs. The study contributes to the literature by providing empirical evidence on the combined effects of these strategies in an emerging market context, extending agency theory and the resource-based view to Vietnamese banking. Our results suggest that banks can benefit from international partnerships and capital market activities, but the magnitude of these benefits may vary depending on bank size and macroeconomic conditions. Practical implications include the need for banks to carefully evaluate the costs and benefits of foreign partnerships and public listings, considering their specific circumstances and the broader economic environment. Policymakers should create a regulatory framework that facilitates beneficial foreign investments while protecting domestic interests.

The limitations of this study include its focus on a single country and its relatively short period. Future research could explore these relationships in other emerging markets or over longer time horizons. Additionally, qualitative studies could provide deeper insights into how foreign acquisition and public listing influence bank performance.

In conclusion, understanding the impacts of foreign acquisition and public listing becomes increasingly essential as the Vietnamese banking sector evolves. This study provides a foundation for future research and practical decision-making in this dynamic field.

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