Foreign Ownership and Corporate Financial Performance in Vietnam: New Insights from the Generalised Method of Moments

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Abstract. This study seeks to explore the influence of foreign ownership on the financial performance of corporations. Using panel data of 73 firms from 2009 to 2018 and the Generalised Method of Moments (GMM), our results show that foreign ownership positively correlates with return on assets. Moreover, we document that financial leverage hinders firm performance. Based on the empirical findings, this study suggested various practical implications for corporate managers and policymakers, such as considering the potential benefits of liberalizing foreign investment policies to promote economic growth and development.

Keywords: Foreign ownership · Corporate financial performance · GMM · Vietnam

1 Introduction

Despite some initial setbacks and challenges, foreign investment has generally played a significant role in the development of transition economies over the past few decades. Although several studies have been conducted to interpret the impact of foreign ownership (FO) on corporate financial performance (CFP), achieving a consensus has proven difficult. This presents a significant challenge for companies in developing countries, as foreign investment is essential for financial growth and business expansion. Notably, the relationship between FO and CFP is influenced by endogeneity and the measurement of CFP [1]. In layman's terms, both the mutual connection between the two variables and the proxy of CFP can lead to inconsistent estimates and incorrect conclusions. While addressing endogeneity bias has gained significant attention in applied economics, it is not yet widely explored in management disciplines. Such observations reinforce the call for taking endogeneity into consideration to understand the nexus between FO and CFP [2].

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Vietnam is a compelling location to examine the link between FO and CFP. Between 2016 and 2019, Vietnam experienced an average growth rate of approximately 7.1% [3], which can be partially attributed to an increasing inflow of foreign direct investment (FDI) [4, 5]. FDI inflows have risen from US$2.4 billion in 2000 to US$20 billion by 2020, and the M&A activities, which are a form of FDI, have increased significantly for the same period [3]. This has positively impacted firms' operational performance [6].

As discussed, Vietnam presents an interesting setting to study the FO and CFP nexus. Various studies on foreign ownership and corporate financial performance in Vietnam were conducted [5, 7–10]. To the best of our knowledge, although the above studies significantly contributed to the relevant literature, the insights on FO and CFP nexus remains unclear. We are aware that past value of CFP can explain its current value [2, 11] and there is two-way linkage between FO and CFP, which results in a dearth of literature on the subject. As such, this study is conducted to solve these problems. Based on the empirical findings, this study suggests various practical implications.

2 Literature Review

Paper [12] asserted that foreign direct investment can be accomplished through greenfield investment or mergers and acquisitions (M&A). In the case of greenfield investments, companies should decide between complete ownership or joint ventures with local companies. Academics have displayed considerable interest in examining the correlation between foreign ownership and firm performance. However, an ongoing debate surrounds this topic.

The impact of foreign ownership on corporate financial performance is a subject of debate in current literature. While some studies suggest a negative effect of foreign ownership on firm performance [9, 13, 14], others suggest a positive effect [7, 15–17], and others suggest a non-linear, inverted U-shaped relationship [8, 18]. Previous research indicates that foreign ownership can hurt firm performance due to agency problems arising from conflicts of interest between foreign investors and managers, lack of accountability, and issues with monitoring of managers. For example, authors in [9] used data from firms listed on the Ho Chi Minh Stock Exchange during the period 2008–2011 and found that foreign ownership has a negative impact on firm performance. The study's findings indicate that foreign ownership cannot effectively monitor corporate governance practices in Vietnam, primarily due to the lack of ownership concentration.

There is a consensus that foreign ownership has a negative impact on firm performance in Vietnam. However, there are contradictory studies in other emerging markets that acknowledge the role of foreign ownership in economic development and corporate financial growth. For instance, a study on the Indian market found that foreign ownership positively impacts firm performance [3]. They argued that their foreign affiliation gives domestic firms relatively easy access to superior technical, managerial, and financial resources. Similarly, paper [19] investigated the Ukrainian market and studied the effect of ownership structure on corporate governance and performance. They found a positive relationship between foreign ownership and corporate financial performance at a certain level. They argued that if outside owners do not have an unambiguous common interest in enforcing a value-maximizing policy of the firm, then the effect of concentrated

outside ownership on performance may be insignificant. These points are contradicted by the findings of studies conducted in the context of Vietnam when the authors argued that there is a negative relationship since there is a need for concentrated ownership. As such, we aim to revisit the relationship between foreign ownership and corporate financial performance in Vietnam.

3 Methodology and Data

3.1 Empirical Model

Based on the existing empirical studies relating to the foreign ownership-firm performance nexus, we propose the following model to investigate the effect of foreign ownership on firm performance. The baseline panel data model is as follows:

$$ROA_{it} = \beta_0 + \beta_1 FO_{it} + \beta_2 A_{it} + \beta_3 S_{it} + \beta_4 FL_{it} + \beta_5 K_{it} + \beta_6 G_{it} + \varepsilon_{it}$$

where ROA is return on asset, FO is foreign ownership, A is firm's age, S is firm size, FL is financial leverage, K is capital intensity, G is annual economic growth, and ε is the error term.

3.2 Econometrics Techniques

Cross-Section Dependence Test

To detect cross-section correlation, we employ the CD-test for cross-sectional dependence [20, 21]. The statistics of the Pesaran's CD-test is calculated as follows:

$$CD = \sqrt{\frac{2}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \sqrt{T_{ij}} \hat{\rho}_{ij} \rightarrow N(0, 1)$$

Panel Unit-Root Test

The unit-root testing framework for panel data is divided on the basis of cross-section dependence. The first generation involves the studies [22–24], which does not account for cross-unit correlation. On the other hand, the second generation is robust to the correlation among panels. The latter refers to the following statistics.

$$CIPS = N^{-1} \sum_{i=1}^{N} CADF_i$$

The CADF statistics is derived from the following equation.

$$\Delta y_{it} = \alpha_i + \beta_i y_{it-1} + \theta_i \overline{y}_{t-1} + \sum_{j=0}^{p} \delta_{ij} \Delta \overline{y}_{t-j} + \sum_{j=0}^{p} \gamma_{ij} \Delta y_{it-j} + \varepsilon_{it}$$

Estimation Methodology

To align with the above empirical model, we use various estimators dedicated to the panel data model, they are pooled ordinary least squares (OLS), random effect (RE) estimator, and fixed-effect (FE) estimator. Each of them becomes the appropriate estimator, depending on the assumption of the underlying data-generating process. To quantify the effect of foreign ownership on firm performance, we use the pooled OLS, RE, and FE estimators in this study.

Next, we proceed to conduct various tests to choose the most appropriate estimator. The procedure is as follows. *First,* we employ Breusch and Pagan Lagrangian multiplier test for random effects. If the statistics is statistically significant, RE is preferable than pooled OLS. *Second,* we use Hausman's specification test for selecting FE or RE estimators. If the statistics is statistically significant, FE is preferable to RE.

It is true that the panel data model highly relates to the problem of heteroscedasticity and autocorrelation. Ignoring these issues yields inconsistent estimates [25]. To this end, we calculate the modified Wald statistic and perform Wooldridge test for serial correlation in panel-data models. In these tests, if the null hypothesis is rejected, it indicates that our data encounters heteroscedasticity and autocorrelation. To obtain robust results, we use the feasible generalised least squares.

In addition to the pooled OLS, FE, and RE estimators, we also use GMM in this study. This is because our baseline model may encounter the problem of endogeneity. In fact, various empirical studies showed that there is an effect running from corporate firm performance to foreign ownership [26]. Moreover, both FE and RE estimators are inconsistent if the true model is dynamic. Various issues relating to endogeneity, such as incorrect inference, inconsistent estimates become a stylized fact. These problems partly give rise to GMM. The GMM has two variations, difference GMM (DGMM) and system GMM (SGMM). Each of them involves two specifications. They are: one-step and two-step. Paper [27] showed that the SGMM outweighs the DGMM in providing the estimated coefficients with lower bias and standard errors. A detailed discussion on GMM and its variations can be found in the study [28].

3.3 Data

With the aim of examining the effect of foreign ownership on corporate financial performance in Vietnam, we focus on the companies listed on both two stock exchanges. By 2022, there are 410 listed companies on Ho Chi Minh Stock Exchange (HOSE), and 348 listed companies on Hanoi Stock Exchange (HNX), operating in various industries. We proposed the following criteria to select appropriate firms for investigation. They are: (1) non-financial listed firms; (2) annual financial reports are audited by the trusted third-party; and (3) the information of foreign ownership is publicly disclosed. As such, our panel data involves 73 firms, spanning from 2009 to 2018. Data is sourced from https://cafef.vn/—a reliable website for financial report at firm level in Vietnam. In relation to economic growth, we collect the data from the World Bank (Tables 1 and 2).

Table 1. Descriptive statistics

Variable	Observation	Mean	S.D	Min	Max
ROA	730	0.075	0.069	− 0.170	0.453
FO	730	0.186	0.178	0	0.769
A	730	29.089	13.456	7	92
S	730	5.592	18.030	0.064	287.974
FL	730	0.480	0.209	0.030	0.871
K	730	0.405	0.215	0.009	0.977
G	730	6.380	0.662	5.398	7.465

Table 2. Correlation table

	ROA	A	FO	S	FL	K	G
ROA	**1.000**						
A	0.109	**1.000**					
FO	0.333	− 0.041	**1.000**				
S	− 0.042	− 0.092	0.091	**1.000**			
FL	− 0.547	− 0.098	− 0.272	0.148	**1.000**		
K	− 0.031	0.032	0.122	0.128	− 0.125	**1.000**	
G	− 0.087	0.158	0.055	0.111	0.010	− 0.010	**1.000**

4 Empirical Results

This section provides the empirical results, which is derived from the techniques discussed in Sect. 3.2. Before presenting estimation results, we show findings relating to the cross-section dependence test and the unit-root test.

Table 3. The cross-sectional dependence results.

	ROA	FO	S	FL	K
CD test	15.940***	6.022***	76.897***	− 1.209	0.644
p-value	(0.000)	(0.000)	(0.000)	(0.227)	(0.519)

Table 3 demonstrates various figures relating to the cross-section dependence. According to the statistics, there is evidence of cross-unit correlation in the variables of interest, except financial leverage. These findings imply that the unit-root test should account for the problem of cross-section dependence.

Table 4. The stationary results.

Variable	Pesaran's CADF	Level of integration
ROA	− 5.067*** (0.000)	I (0)
FO	− 2.155** (0.016)	I (0)
S	− 2.545*** (0.005)	I (0)
FL	− 1.399* (0.081)	I (0)
K	− 1.992** (0.023)	I (0)

Table 4 indicates all the variables of interest are stationary at level form. This is because the null hypothesis of non-stationary is rejected at the level of 10%. This claim exhibits that ROA, FO, Size, FL, and K can join the model without differencing.

To be consistent with the econometrics techniques discussed above, we present our empirical findings in a systematic way, from pooled OLS to GMM.

Table 5 illustrates the results of estimating our baseline model, using various estimators dedicated to panel data, including pooled OLS, RE, FE, and GMM.

Before presenting the estimated coefficients, we briefly explain various statistics relating to selecting an appropriate estimator among pooled OLS, RE, and FE as well as detecting the potential problem of heteroscedasticity and autocorrelation in our dataset. According to the statistics, it is true that the RE estimator is preferable to the OLS estimator and that the FE estimator is preferable to the RE estimator due to the LM $\overline{\chi}^2 = 345.020$ and the Hausman $\chi^2 = 40.450$, which are statistically significant. Accordingly, these claims indicate that the FE estimator is the most suitable. The figures derived from the Modified Wald test show that there is evidence of heteroscedasticity. Moreover, the Wooldridge test for autocorrelation in panel data rejects the null hypothesis of no first-order autocorrelation. All in all, these two tests suggest that our dataset encounters both heteroscedasticity and autocorrelation. In this sense, we run these estimators augmented with robust option to deal with the problem of heteroscedasticity and autocorrelation.

We report estimates based on pooled OLS (column (1)), random effect (column (2)), and fixed effect (column (3)). In general, the figures provide consistent effects of FO, FL, and K on ROA. We find that FO is positively correlated to ROA as the reported estimates of FO are 0.085; 0.074; and 0.080 with the p-value is less than 1%, implying that a higher proportion of foreign ownership improves firm performance. FL negatively affects ROA. This is because the reported estimates of FL are − 0.165; − 0.166; and − 0.153 with the p-value is less than 1%, too. The results indicate that FL hinders firm performance. The same picture can be applied to K where we find that it negatively associates with ROA. In concrete terms, the estimated coefficients of K are − 0.042; − 0.051; and − 0.066 with the p-value is less than 5%, indicating that K reduces firm performance. To other regressors, we find inconsistent impact on ROA across pooled,

Table 5. Estimation results.

Estimation method	(1) OLS	(2) RE	(3) FE	(4) One-step DGMM	(5) Two-step DGMM	(6) One-step SGMM	(7) Two-step SGMM
L.ROA	–	–	–	0.569***	0.591***	0.576***	0.582***
				(0.000)	(0.000)	(0.000)	(0.000)
FO	0.085***	0.074***	0.080***	0.197**	0.223**	0.010	− 0.003
	(0.000)	(0.001)	(0.006)	(0.010)	(0.014)	(0.626)	(0.878)
Age	0.000***	− 0.000	− 0.005***	− 0.001	− 0.001	0.000	0.000
	(0.006)	(0.656)	(0.000)	(0.183)	(0.229)	(0.772)	(0.695)
Size	0.000193*	− 0.000028	− 0.000049	− 0.000351	− 0.000379	0.000123	0.000149*
	(0.061)	(0.531)	(0.764)	(0.192)	(0.280)	(0.130)	(0.100)
FL	− 0.165***	− 0.166***	− 0.153***	− 0.111*	− 0.121*	− 0.139***	− 0.136***
	(0.000)	(0.000)	(0.000)	(0.071)	(0.081)	(0.000)	(0.000)
K	− 0.042***	− 0.051***	− 0.066**	0.086	0.062	0.008	− 0.007
	(0.000)	(0.002)	(0.011)	(0.213)	(0.509)	(0.814)	(0.838)
G	− 0.012***	− 0.009**	0.007*	0.004	0.004	0.001	0.002
	(0.000)	(0.012)	(0.066)	(0.155)	(0.235)	(0.596)	(0.534)
Observations	730	730	730	584	584	657	657
LM-P	345.020***		–	–	–	–	–
	(0.000)						
Hausman		40.450***		–	–	–	–
		(0.000)					
MW-P	34525.230***			–	–	–	–
	(0.000)						
Wooldridge	44.559***			–	–	–	–
	(0.000)						
No. IVs	–	–	–	53	53	59	59
AR(1)	–	–	–	− 3.800***	− 3.810***	− 3.670***	− 3.470***
				(0.000)	(0.000)	(0.000)	(0.001)

(*continued*)

Table 5. (*continued*)

Estimation method	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	RE	FE	One-step DGMM	Two-step DGMM	One-step SGMM	Two-step SGMM
AR(2)	–	–	–	− 0.390	− 0.340	− 0.510	− 0.510
				(0.698)	(0.730)	(0.610)	(0.611)
Hansen statistics	–	–	–	48.940	48.940	55.69	55.69
				(0.356)	(0.356)	(0.303)	(0.303)

RE, and FE. We put our attention to the fixed effect (column (3)) to justify the effect of A, S, and G on ROA as FE is better than pooled OLS and RE in fitting data in this study. In particular, we find that A is negatively correlated with ROA while G is positively associated with ROA and that S has no effect on ROA.

Moreover, we present estimates based on one-step DGMM (column (4)), two-step DGMM (column (5)), one-step SGMM (column (6)), and two-step SGMM (column (7)). It is worth noting that DGMM performs poorly when the dependent variable is closely related to a random walk [28] and that two-step GMM outweighs one-step GMM for estimation [27]. As such, we lean on two-step SGMM to provide reliable conclusions. One of the drawbacks of the GMM estimator is the problem of instrument proliferation. Author in [28] argued that the problem of too many instruments gives rise to an implausibly good p-value of 100% in Hansen test, thus we use the sub-option *collapse* to collapse the matrix of instruments, which reduces the issue significantly.

We begin with various test statistics relating to the GMM estimator and then focus on the estimated coefficients. We are able to reject the null hypothesis of no first-order autocorrelation in first difference (row AR(1)) and unable to reject the null hypothesis of no second-order autocorrelation in first difference (row AR(2)) for all the four specifications of GMM. Similarly, the Hansen statistics (the value of χ^2 for DGMM and SGMM are 49.440, 50.470, respectively) is statistically insignificant, implying the validity of instrumental variables used in this study. We also report the number of instrumental variables (row No. IVs) for each specification. That for DGMM and SGMM are 53 and 59, respectively.

Next, we proceed to the estimated coefficients. Our estimation results show that the first lag of ROA is positively and statistically significant across the four specifications. The coefficient is slightly greater than 0.5, meaning that fluctuation in ROA can be explained by its past values. We find that FO is positively correlated to ROA as the estimated coefficients are 0.197; and 0.223 with the p-value is less than 10% in the one-step DGMM and two-step DGMM. These results reinforce our figures relating to pooled OLS, RE, and RE. Unfortunately, the impact of FO on ROA disappears in the one-step SGMM and two-step SGMM specification. Regarding FL, our figures demonstrate a consistent effect of FL that has on ROA. In concrete terms, we claim that FL hinders firm performance as the estimated coefficients are − 0.111; − 0.121; − 0.139; − 0.136 with the p-value is less than 10%. Interestingly, this relationship is also found with the

pooled OLS, RE, and FE estimator. In relation to S, we find that the estimated coefficient is 0.000149 and the variable is statistically significant at the level of 10%. These finding claims that firm size negatively affects firm performance. To the other variables (A, K, and G), our figures illustrate no impact on firm performance across the four specifications.

All in all, our estimation results indicate that (1) fluctuation in ROA is partly explained by its past values; (2) FO is positively correlated with ROA; (3) A has no impact on firm performance; (4) S is negatively related to ROA, according to the two-step SGMM; (5) FL hinders firm performance. This claim is supported by the pooled OLS, RE, FE, and the four specifications of GMM; and (6) G is unrelated to firm performance in this study.

5 Discussion

This study carries out research on the effect of foreign ownership on firm performance, using a panel data of 73 listed firms in Vietnam over the period of 2009–2018 and various estimators, such as pooled OLS, RE, FE, and GMM. This section discusses the findings which emerged from the estimation results presented in the previous section.

In relation to the main interest variable - FO, the results of this study show that FO positively affects ROA within the pooled OLS, RE, FE, and DGMM setting. Our results also accord with earlier study [19], which showed that foreign ownership positively relates to corporate firm performance. However, our claims on foreign ownership-firm performance nexus are contrary to the findings of [9], who focused on the relationship over the period of 2008–2011 and used FE estimator and simultaneous equation model. As such, this discrepancy could be attributed to the time frame used, the approach of modelling, and methodologies adopted. In summary, our study supports the resource-based view theory, which posits that firms can gain competitive advantages and above-average returns through valuable and unique resources that are provided by the foreign owners.

Our estimation results illustrate that FL negatively affects ROA, which is supported by all the estimators used in this study. This finding is in accord with those of [29, 30] and differs from some published studies, such as [31–33]. Mainly, our findings reveal that firms with high financial leverage exhibit poor financial performance since it reduces financial flexibility by constraining firms from an incremental expansion and exploiting growth opportunities, which could have significant implications for their stakeholders [34].

6 Conclusion

The main goal of the current study is to examine the impact of foreign ownership on firm performance with a focus on Vietnam. To this end, we employ a model where firm performance is used as a dependent variable and measured by ROA and the independent variables are foreign ownership (FO), firm's age (A), firm's size (S), financial leverage (FL), capital intensity (K), and economic growth (G). Our panel data covers 73 listed firms over the period of 2009–2018. In this study, we use the pooled OLS, RE, FE and GMM to quantify the effect of the regressors on ROA.

Our empirical results show a consistent and positive impact of FO on ROA within the pooled OLS, RE, and FE setting. These findings are reinforced by the one-step DGMM and two-step DGMM estimators, which illustrates that FO is positively correlated with ROA. In relation to the financial leverage-firm performance, we claim that FL negatively affects ROA, which is supported by all the estimators used in this study. The capital intensity-firm performance nexus is found by the pooled, RE, and FE. In particular, our empirical findings reveal that K negatively associates with ROA. This relationship is not supported by the GMM estimator. Moreover, using the FE estimator, we claim that G is positively correlated with ROA. In relation to the firm's age and firm's size, we are unable to find their impact on firm performance in this study.

Based on these empirical findings, we suggest some policy implications for practitioners. Firstly, it sheds light on the relationship between foreign ownership and corporate financial performance in Vietnam. A thorough understanding of this relationship is crucial for Vietnamese corporations to attract foreign investment, which can alter their business strategies. In a small and open economy like Vietnam, comprehending foreign ownership is especially crucial, as global resource assessment is necessary for economic development. Secondly, stakeholders can use this paper to understand better the ongoing discussion regarding the potential expansion of foreign investor ownership. Lastly, our study examines policymakers' current trend to reduce legal barriers to cross-border capital flows and foreign direct investments. This sends a message to national governments, encouraging them to reconsider any legal restrictions on the amount of foreign investment allowed in emerging markets.

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