

# Foreign investment and the firm performance in emerging securities market: evidence from Vietnam

Foreign  
investment and  
firm  
performance

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Received 15 December 2022  
Revised 10 April 2023  
7 November 2023  
9 January 2024  
Accepted 12 January 2024

## Abstract

**Purpose** – The authors investigate how foreign investment in securities market informs about the future firm performance in emerging markets.

**Design/methodology/approach** – The authors define the independent variable, abnormal foreign investment (AFI) as the residuals of the foreign ownership equation. The authors regress foreign ownership on its first lag and factors and define the residuals as the AFI. The AFI is the over- or under-investment reflecting foreign conscious (clear-purpose) investment, thus better indicating how foreign investment affects firm performance. The dependent variable is Tobin's  $q$  ( $Q$ ), which represents the firm performance. Then, the authors regress the Tobin's  $q$  next quarters ( $Q_{t+k}$ ) on the AFI current quarter (AFI<sub>t</sub>). The authors use a two-step generalized method of moments (GMM) and check endogeneity with the D-GMM model for the regression.

**Findings** – The results show that the current AFI is positively correlated with the firm performance in each of the next four quarters (the following one year). This positive relationship is pronounced for large firms, firms with no large foreign investors, liquid firms and firms listed in the active market. The results suggest that foreign investment might choose well-productive firms already. Also, the current AFI is significantly positively correlated with stock returns in each of the next three quarters. These results suggest that the AFI is informative up to one-year period.

**Research limitations/implications** – The results suggest that foreign investors (most of them are small) in the Vietnamese market might choose well-productive firms already. However, if the large investors have long-term investment in tangible, intangible, human capital and so on, and lead to a significant increase in firms' performance is still the limitation of this paper.

**Practical implications** – The results of this paper may guide investors whose portfolios are composed of stocks with foreign investment.

**Originality/value** – This paper adds to the literature to enrich the conclusion of a positive relationship between foreign ownership and firm performance.

**Keywords** Foreign investment, Foreign ownership, Stock market, Informed trading, Firm performance

**Paper type** Research paper

## 1. Introduction

Foreign investment and international capital flow have been discussed for decades. In securities market, it is argued that foreign investors buy and sell as a herd, so trades by

### JEL Classification — G13, G14, G15

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Journal of Economics and  
Development  
Emerald Publishing Limited  
e-ISSN: 2632-5330  
p-ISSN: 1859-0020  
DOI 10.1108/JED-12-2022-024

foreign investors may destabilize equity markets. However, [Choe \*et al.\* \(1999\)](#) find no evidence that trades by foreign investors have a destabilizing effect on the Korea's stock market. Moreover, the literature documents the positive effects of institutional foreign investment on equity markets. For example, [Bena \*et al.\* \(2017\)](#) found that foreign institutional ownership fosters long-term investment in tangible, intangible and human capital and leads to a significant increase in innovation output using the data from 30 countries. Inferably, this result suggests a positive relationship between foreign investment and firm performance.

In fact, prior studies controversially document the relationship between foreign investment and firm performance. Some studies have provided evidence regarding the effect of foreign ownership on firm performance. For example, [Ferreira and Matos \(2008\)](#) found that firms with higher ownership by foreign and independent institutions have higher firm valuations, better operating performance and lower capital expenditures. Similarly, [Lin and Fu \(2017\)](#) proved that pressure-insensitive, foreign and large institutional shareholders have greater positive effects on firm performance than pressure-sensitive domestic and small institutional shareholders. [Iwasaki \*et al.\* \(2022\)](#) also found that foreign investors as company owners positively affect firm performance. However, some studies find there is no or negative relationship between foreign ownership and firm performance. For example, [Mihai and Mihai \(2013\)](#) found that there is a nonsignificant link between economic and financial performance and the existence of foreign ownership. [Amin and Hamdan \(2018\)](#) concluded that foreign ownership had a negative and statistically significant relationship with firm performance.

Additionally, how foreign investment affects firm performance or through which channels foreign investment impacts on firm performance are the questions that encourage scientists the most while examining the relationship between foreign investment and firm performance. [Hafiluddin and Patunru \(2022\)](#) found that foreign investment increases the contribution of firms in terms of tax and employment yet drives no significant change in firm productivity. This result implies that foreign investors might have picked already productive domestic firms. This applies to the theory of ex-ante selection bias of investors ([Pasali and Chaudhary, 2020](#)). Differently, [Ferreira and Matos \(2008\)](#) interpret the positive valuation effect of foreign ownership on firm value as a form of reputational bonding stemming from monitoring by highly reputable institutions. This may afford evidence that highly productive foreign firms transfer technology, skills and capital to the domestic firms and thus, increase their performance ([Pasali and Chaudhary, 2020](#)). In contrast, [Amin and Hamdan \(2018\)](#) found that Saudi firms with a high percentage of foreign ownership achieve a lower return on assets. They explained that this is because foreign investors are far away from the real workplace and have no control over it.

Considering the wide array of results from studies analyzing the effects of foreign ownership and firm performance, this study purposes to shed further light on this issue, using the data from an emerging market: the Vietnamese securities market. We would like to investigate how the relationship is in markets where foreign institutional ownership is not major, but small and tiny foreign investors. Thus, the Vietnamese market is a good representative [1]. Also, the Vietnamese securities market is a frontier market (according to the FTSE Russell – a unit of the Information Services Division, wholly owned subsidiary of the London Stock Exchange Group). It is new and much smaller than those in other Asian economies. The stock market capitalization to GDP of Vietnam's stock market was 72.6% of GDP in 2019, while those of ASEAN-5, Japan and Korea were 104.56, 121.8 and 87.3%, respectively ([Larry and Luis, 2021](#), p. 95). However, the market has achieved robust growth. Therefore, it becomes a potential market in the Asian region. Moreover, the literature has little focus on the market, and a vast number of research topics have been divested. Thus, examining economic and finance theories using data from such markets may provide useful proof as to where a comparison among markets (small versus large, great growth rate versus developed, . . .) is required.

Literature uses different methodologies to investigate the relationship between foreign investment and firm performance. For example, [Likitwongkajon and Vithessonthi \(2021\)](#) used a panel sample of publicly listed non-financial firms in 17 countries in Asia Pacific from 1990 to 2016 and found, with the IV-2SLS regression, that firms with larger foreign investments tend to have poorer firm performance than firms with smaller foreign investments at both short and long horizons. They also found evidence that revenue growth partially mediates the relationship between foreign investments and firm performance. Differently, [Camino-Mogro \*et al.\* \(2023\)](#) offered empirical evidence of direct and indirect effects of FDI on a firm's ROA, using the generalized method of moments (GMM) methodology for dynamic panel data, and found that firms with higher amounts of FDI as a share of total revenues have on average higher levels of gross revenues. Also, [Hafiluddin and Patunru \(2022\)](#) employed a combination of propensity score matching and difference-in-difference methods to eliminate endogeneity problems and to examine causality when estimating the effect of foreign investment on the productivity and contribution of firms in relation to the new FDI law in Indonesia.

We first construct the independent variable AFI. We regress foreign ownership on its first lag and factors and define the residuals as the AFI. AFI measures the abnormal foreign investment (AFI) (out of the optimal investment levels). Given the current market and firm conditions, there exist reasons why investors pour funds into firms out of the optimal levels. These over- or under-investments reflect foreign conscious (or clear-purpose) investment; therefore, it better indicates how foreign investment affects firm performance.

We use Tobin's  $q$  ( $Q$ ) as the dependent variable, representing the firm performance. In the baseline regression, given  $t$  as the current quarter, we regress the firm performance next quarters ( $Q_{t+k}$ ,  $k = 1, 2, \dots, n$ ) on the AFI current quarter ( $AFI_t$ ) using a two-step GMM model and check endogeneity with the D-GMM model. The results show that the current AFI is statistically positively correlated with the firm performance in the next four quarters ( $AFI_t$  correlates to  $Q_{t+k}$ ,  $k = 1, 2, 3$  and  $4$ ). This result is consistent even with different proxies for the firm performance, such as MTBV or ROA. This suggests that foreign investment informs us about the firm performance in the next one year.

To give more detail of the positive relationship between the AFI and the firm performance, we run the sub-sample regressions. We construct portfolios of large, small, liquid, less liquid firms, firms with or without large foreign investors, and firms listed on the Ho Chi Minh Exchange (HOSE) or Hanoi Exchange (HNX). Then, we run the baseline regression for each portfolio. We find that the relationship is pronounced for large firms and firms with no large foreign investors. Given that larger firms are on average more productive than smaller ones ([OECD, 2015](#)) and small investors are not likely associated with highly productive foreign firms who could transfer the technology, skills or capital to domestic firms, these results suggest that foreign investment might choose already well-productive firms. In addition, the sub-sample regression shows that the relationship is pronounced for liquid firms and firms listed at HOSE, which is more active than HNX.

One may question whether, when the current AFI informs us about firm performance, should it also inform us about stock price changes in the near future? Literature documents the relationship between foreign investment and stock returns either positively or negatively ([Berko and Clark, 1997](#); [Alawi, 2019](#)). We test if the AFI current quarter ( $AFI_t$ ) relates to the stock returns next quarters ( $r_{t+k}$ ,  $k = 1, 2, \dots, n$ ). The result shows that the AFI is significantly positively correlated with stock returns in the next three quarters. For example, a 1% increase in AFI current quarter is associated with a 0.006% increase in the stock return next quarter. Economically, this informativeness could be a source of profits for foreign investors.

In the robustness test, we regress firm performance on the first differences of FO ( $\Delta FO$ ) as another measure of the foreign investment. The results in the robustness test are consistent with the results in our baseline model, although they are a little weaker.

The results from this paper add to enrich the literature on the positive relationship between foreign ownership and firm performance. In detail, the empirical results show that AFI in the current quarter positively relates to the firm performance in each of the following four quarters. Moreover, foreign investors in the Vietnamese market choose already highly productive firms. This applies to the theory of ex-ante selection bias of investors. We also find that current AFI is positively associated with the future stock prices in the next three quarters, providing a profitability channel for foreign investors. These results suggest that AFI is informative up to a one-year period.

The rest of the paper is organized as follows: [Section 2](#) gives explanation of the variables and the empirical models used in the paper. [Section 3](#) discusses the empirical results. [Section 4](#) presents the relationship between foreign investment and stock returns. [Section 5](#) concludes.

## 2. Variable and model construction

### 2.1 The variables

**2.1.1 Firm performance.** For the robust results, we measure firms' performance using three different proxies: Tobin's q ratio (Q), the market-to-book ratio (MTBV) and ROA ratio. We follow [Bena et al. \(2017\)](#) to calculate the Tobin's q ratio, that is, total assets plus market value of equity minus book value of equity divided by total assets. The MTBV is the market value of equity divided by the book value of equity. The ROA ratio is calculated as the operating income divided by total assets. These ratios are displayed in percentages in the paper.

**2.1.2 Informed foreign ownership.** We collect data of FO from a private data company in Vietnam. The FO represents the total shareholding in percentage of foreign investors in a firm at a quarter. This FO is collected on the last trading day of each quarter. As the FO is displayed as the total foreign shareholding percentage, we cannot separate types of investors from each other (e.g. small or large, individual or institution). However, we could estimate the abnormal investment as using the AR(1) model of foreign ownership. Specifically, we use the residuals of foreign ownership in [Equation \(1\)](#) as a measure of AFI. Details of the model are explained in [Section 2.2.1](#).

**2.1.3 Firm characteristics.** The variables for firm characteristics used in the baseline regression include firm size, leverage, age, capital expenditure, selling and general administrative expenses and insider ownership. The firm size is represented by the logarithm of firm total assets (lnTA). For firm age, we calculate the month ages of the sample firms at the end of each quarter. Then, the variable used in the regression is the logarithm of month ages (lnAge). The firm leverage (Leverage) is the ratio of firm total debts divided by firm total assets. Similarly, capital expenditure (CAPEX) and selling and general administrative expenses (SGA) are both scaled by firm total assets.

Besides, other firm characteristics including the firm presence in the international market, the idiosyncratic risk, the stock liquidity, the dividend per share ratio and the cash holding ratio are used in the model for estimating the AFI. We use the FTSE Vietnam Index inclusion as a proxy for the firm presence in the international market. The FTSE Vietnam Index is one index in the FTSE Vietnam Index Series [\[2\]](#), which is a comprehensive and complementary series that provides international investors with a more accurate presentation of the performance of the Vietnamese market. In particular, the indices take into account the shares available to international investors when selecting index constituents and provide a tradable and broader benchmark by which to measure the performance of the Vietnamese market. Thus, the stock addition to the FTSE Vietnam Index could be associated with an increase in foreign ownership. A dummy variable FTSE is used to represent the international presence

characteristics of firms. Specifically, FTSE equals 1 if firms are included in the FTSE Vietnam Index and 0 otherwise. Panel B [Table 1](#) gives more information on firms' inclusion in the FTSE Vietnam Index during the sample period.

The idiosyncratic risk (IDVOL) is defined as the unsystematic risk estimated for each stock under the three-factor Fama and French model ([Fama and French, 1993](#)). Specifically, the IDVOL is the standard deviation of residuals from the three-factor model. Meanwhile, we measure the stock illiquidity using a measure estimated from the model by [Amihud \(2002\)](#). The dividend per share ratio (DPS) is the dividend payout per common share. Finally, the cash holding ratio (cash) represents money available for use in a normal operation scaled by total assets.

Foreign  
investment and  
firm  
performance

	N	Mean	Median	STD
<i>Panel A. Panel variables</i>				
FO	14,417	10.97	4.42	14.22
AFI	14,158	0.00	-0.13	2.41
Tobin's Q	14,409	109.68	97.41	51.31
MTBV	14,410	112.06	89.00	82.22
ROA	14,226	7.91	6.36	9.42
r	13,510	1.43	2.42	44.46
lnTA	14,417	20.45	20.39	1.50
Leverage	14,417	0.23	0.22	0.19
IDVOL	14,417	0.03	0.02	0.01
lnAge	14,417	3.96	4.19	0.85
Amihud	14,417	0.01	0.00	0.01
CAPEX	14,417	0.05	0.02	0.07
SGA	14,417	0.91	0.31	19.42
Cash	14,417	0.09	0.05	0.11
MV	14,410	1.71	0.25	6.29
ln_sale	14,417	18.76	18.78	1.62

Year	Inclusion	Number of (During the year)	Exclusion	Number of Institutions (Year end)
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*Panel B. FTSE Vietnam index inclusion-*

2009	2		5	27
2010	17		10	35
2011	3		10	28
2012	3		5	23
2013	3		4	22
2014	4		4	22
2015	5		7	20
2016	11		1	30
2017	7		12	25
2018	6		6	25

**Note(s):** This table reports the descriptive statistics for variables used in the paper. Data were collected quarterly in 2009–2018 for all firms listed in HOSE and HNX. Foreign ownership *FO* is the shareholding of all foreign investors in a firm, displayed in percentages. *AFI* is the residuals from [Equation \(1\)](#), named as abnormal foreign investment. Tobin's Q, MTBV and ROA are displayed in percentages. Market value of equity *MV*, displayed in  $10^{12}$  of VND, is the share price multiplied by the number of ordinary shares in issue. *r* is the average of daily stock returns (%). *ln sale* is the logarithm of net sales. The other variables are explained in [Section 2](#). All (except the dummy) variables are winsorized at 1.99%

**Source(s):** Authors' own work

**Table 1.**  
Descriptive statistics

The definitions of all the variables are provided in the [Appendix](#). [Table 1](#) shows the descriptive statistics of all variables used.

## 2.2 Model construction

To address the research questions, we used panel data regression analysis in the study. Before pulling data into the regressions, we conducted the unit root tests (augmented Dickey–Fuller zero-lag tests) for all the variables to check if the variables are stationary. The test results show that all the variables have at least one panel stationary.

**2.2.1 The abnormal foreign investment (AFI).** We firstly estimate the AFI using a foreign ownership model. The AFI measures the abnormal foreign investment (out of the optimal investment levels). Given current market and firm conditions, there exist reasons why investors pour funds into firms out of the optimal levels. These over- or under-investments reflect foreign conscious (or clear-purpose) investment; thus, it could better indicate how foreign investment affects firm performance. In this paper, we study the effects of foreign investment by examining how these AFIs impact on the firm performance.

Under neoclassical theories of investment, any deviation from the optimal investment policy can be identified as an inefficient capital investment (see, for example, [Gao and Yu, 2018](#)). As one of the neoclassical theories of investment, the accelerator theory of investment assumes that the level of capital is proportional to the level of output. Then, the literature on investment inefficiency predicts the expected level of investment based on the output growth (e.g. sales growth) and uses the residuals as the proxy for investment inefficiency, e.g. [Biddle et al. \(2009\)](#) and [Gomariz and Ballesta \(2014\)](#).

Noticeably, when seeking to measure the capital investment efficiency, [Biddle et al. \(2009\)](#) constructed a model to identify over- or underinvestment. They regressed the capital investment on the sales growth at the firm level and used the extreme positive or negative residuals as the indicators of over- or under-investment. Inspired from their model, we construct a model to estimate the expected level as well as the over- or underinvestment of foreign investors in securities markets, given current market and firm conditions.

We learn from [Biddle et al. \(2009\)](#) and the literature of foreign investment in securities market to construct [Equation \(1\)](#). Literature documents that foreign investors on securities markets generally prefer large firms, firms with low unsystematic risk and low leverage, firms paying low dividends and firms with large cash positions on their balance sheets ([Kang and Stulz, 1997](#); [Dahlquist and Robertsson, 2001](#)). Moreover, market liquidity and presence in international markets seem to characterize foreign holdings better than firm size alone ([Dahlquist and Robertsson, 2001](#)). We use all these variables and the first lag of foreign ownership as the factors to estimate the optimal level of foreign ownership. Then, the residuals from this model are the over- or under-investment of foreign investors in securities markets. Moreover, because the residuals are the deviations from the optimal level of foreign ownership given current market and firm conditions, they could be identified as the AFI. The model is formed as follows:

$$FO_{i,t} = \lambda_0 + \lambda_1 FO_{i,t-1} + \lambda_2 IDVOL_{it} + \lambda_3 FTSE_{it} + \lambda_4 \ln TA_{it} + \lambda_5 Leverage_{it} + \lambda_6 Amihud_{it} + \lambda_7 DPS_{it} + \lambda_8 Cash_{it} + Qut_t + TF_t + \nu_{it}, \quad (1)$$

where  $FO$  is the foreign ownership, the other variables and the calculation for them is explained in the previous section. The variables are collected for each firm  $i$  at quarter  $t$ . We relax firm fixed effects in this model because firm fixed effects in the dynamic panel model



may cause biased coefficients (Flannery and Hankins, 2013). Instead, we control for only time fixed effects (TF<sub>it</sub>), and standard errors are clustered at firm-quarter level (Qut<sub>it</sub>).

Endogeneity could be relaxed in Equation (1) since it is a dynamic panel model, which includes the lagged terms for the dependent variable. This dynamic panel model is applicable when dynamic endogeneity may be present (Li et al., 2021).

In short, we define the residuals of Equation (1) as the AFI and use it as the independent variable in the main regression.

**2.2.2 The main regression.** After calculating the AFI, we examine the relationship between foreign ownership and the firm's performance. We use the two-step GMM model and the D-GMM estimator to check the robustness of the results of the system GMM estimation (Li et al., 2021). We do not report the D-GMM tests, but all the results are robust.

We regress the firm performance for the next quarters on the estimated AFI and the control variables for the current quarter. The regression is constructed as follows:

$$\begin{aligned} performance_{i,t+k} = & \alpha + \beta_1^k AFI_{i,t} + \beta_2^k lnTA_{i,t} + \beta_3^k Leverage_{i,t} + \beta_4^k lnAge_{i,t} + \beta_5^k CAPEX_{i,t} \\ & + \beta_6^k SGA_{i,t} + \varepsilon_{it} \end{aligned} \quad (2)$$

where performance is one of the three firm performance variables Tobin's q, MTBV or ROA. Performance<sub>t+k</sub> represent the firm performance variables at k quarter ahead. Given t as the current quarter, then k = 1, 2, . . . n. AFI is abnormal foreign investment measured by the residuals from Equation (1). lnTA, Leverage, lnAge, CAPEX and SGA are control variables explained in the previous section.

In this equation, we focus on  $\beta_1^k$  to examine whether the AFI gives information about the future firm performance. In the baseline analysis, we repeat Equation (2) from k equal to 1 onward, and stop at k equal to n which yields an insignificant coefficient of the AFI (insignificant  $\beta_1^k$ ). The empirical results for these regressions are reported in the next section.

### 3. Data and empirical results

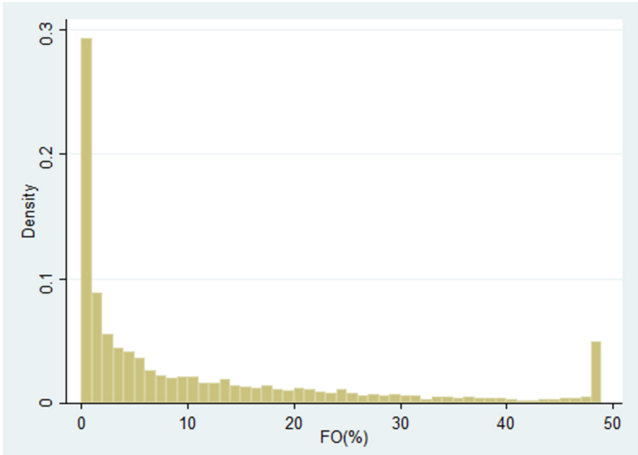
#### 3.1 Data and descriptive statistics

Data for constructing the variables were collected from WorldScope and Datastream, except for foreign ownership, which was requested from a private data company in Vietnam.

The data sample starts from 2009 to 2018 with quarterly frequency. We include all available firms listed on the Ho Chi Minh Exchange and Hanoi Exchange. This leaves us with a sample of 612 firms over a ten-year timeline. The descriptive statistics of all variables used are presented in Table 1.

Panel A Table 1 reports the means of all variables used, together with the medians and the standard deviations. For example, the FO averages at 10.97%, and its median and standard deviation are 4.42 and 14.22%, respectively. Reasonably, the AFI has a normal distribution with a mean of 0 and a median of -0.13. As the dependent variables, Tobin's q, MTBV, and ROA all average at high values, representing an increasing market. Furthermore, Panel B Table 1 reports the dummy variable FTSE Vietnam Index inclusion. This variable represents the presence of firms in the international market and is used in estimating the AFI.

For more information about FO, the histogram of FO in Figure 1 is skewed right, showing that most of foreign investors are small or minor. Specifically, about 30% of foreign ownership is from investors who hold at or less than 1% of total firm shares. We are encouraged by this fact to investigate how is the relationship between foreign investment and the firm performance in emerging markets where most of the foreign investment is small.



**Note(s):** This figure plots the histogram of foreign ownership with the column width of 1%. The data are winsorized at 1.99%. Foreign ownership is calculated in percentage. Most of the foreign investors are small or minor. About 30% of the foreign holding is from investors who hold at or less than 1% of total firm shares

**Source(s):** Authors' own work

**Figure 1.**  
The histogram of  
foreign ownership

3.2 The abnormal foreign investment and the firm performance

In this section, we present the results of the regressions. We first estimate the AFI using Equation (1), and then investigate whether the AFI gives information about the future firm performance using Equation (2).

3.2.1 The AFI. Table 2 reports the results of Equation (1) with all coefficients on the factors. The fact is that quarterly FO in the Vietnamese market is remarkably dependent on its last quarter. The coefficient on the first lag of FO is nearly equal to 1 and significant at 1% level. Since FO is displayed as the total foreign shareholding percentage, the high coefficient implies that foreign investors in the Vietnamese market are stationary. Then, pure foreign ownership could blurrily uncover the impacts of foreign investment on firm performance. Therefore, we use the AFI instead in the main regression.

In addition, the foreign investors obviously prefer firms with low idiosyncratic risk, low DPS and low leverage, as represented by the relative significant negative coefficients. However, firm size, firm presence in the international market, stock market liquidity or cash position on the firm balance sheets have no significant effect on the investment decisions of foreign investors.

The residuals from Equation (1), as explained before, will be used as a proxy for the AFI. This new variable obviously has a normal distribution with a mean of 0 (shown in Panel A Table 1).

3.2.2 The relationship between foreign investment and firm performance. We first examine the correlation matrix to sketch out the relationship between the AFI and the future firm performance. Table 3 reports the correlation coefficients among the variables. We observe that the correlation coefficients between the AFI current quarter and Tobin's q next quarter ( $Q_{t+1}$ ) are 0.04 and significant at 1% level. Similarly, the correlation between AFI and the other two proxies of the firm performance, MTBV and ROA, is also positive and significant.



	FO <sub>t</sub>	Foreign investment and firm performance
FO <sub>t-1</sub>	0.99*** (457.25)	
FTSE <sub>t</sub>	-0.12 (-0.77)	
IDVOL <sub>t</sub>	-9.81*** (-4.75)	
Amihud <sub>t</sub>	-1.60 (-0.84)	
DPS <sub>t</sub>	-0.07** (-2.05)	
Cash <sub>t</sub>	0.14 (0.36)	
lnTA <sub>t</sub>	0.02 (1.21)	
Leverage <sub>t</sub>	-0.53*** (-2.95)	
α <sub>t</sub>	-0.43 (-1.28)	
Time fixed effects	yes	
N	14,158	
R <sup>2</sup>	0.971	

**Note(s):** This table reports the coefficients for Equation (1). The residuals from this regression are the under- or over-investment of foreign investors in securities markets, representing the abnormal foreign investment. The variables are explained in Section 2. The subscript *t* indicates the current quarter. Standard errors are clustered at the firm-quarter level. *t*-statistics in the parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively

**Source(s):** Authors' own work

**Table 2.**  
Estimating the informed foreign ownership

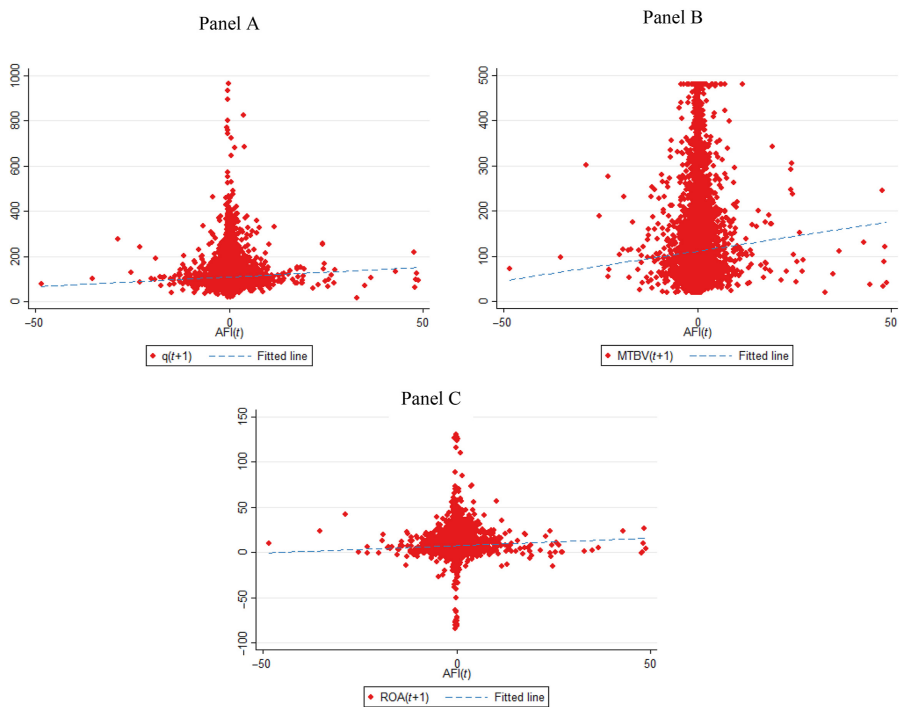
	Lead1_Q	Lead1_MTBV	Lead1_ROA	AFI	lnTA	Leverage	lnAge	CAPEX	SGA
Lead1_Q	1.00								
lead1_MTBV	0.85***	1.00							
Lead1_roa	0.45***	0.36***	1.00						
AFI	0.03***	0.03***	0.04***	1.00					
lnTA	0.09***	0.18***	-0.06***	-0.02	1.00				
Leverage	-0.14***	-0.13***	-0.12***	0.00	0.29***	1.00			
lnAge	-0.09***	-0.06***	-0.11***	-0.03***	0.14***	0.09***	1.00		
CAPEX	0.13***	0.14***	0.17***	0.03***	-0.01	0.09***	-0.05***	1.00	
SGA	-0.01	-0.01	-0.03***	-0.00	-0.03***	-0.02*	-0.01	-0.01	1.00

**Note(s):** This table reports the *t*-test for Pearson correlation coefficients among the variables. *AFI* is the abnormal foreign investment, estimated as the residuals from Equation (1). *Lead1* represents the respective variables at one quarter ahead. The variables are explained in Section 2. All variables were winsorized at 1.99% before the test. \*, \*\* and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively

**Source(s):** Authors' own work

**Table 3.**  
Correlation matrix

This positive relationship is supported by the plots of AFI and the firm performance proxies in Figure 2. Panel A, B and C Figure 2, respectively, present the fitted lines of the AFI current quarter versus Tobin's q, MTBV and ROA next quarter (*t*+1). We observe that all the fitted



**Figure 2.** The plots of the abnormal foreign investment and the firm performance

**Note(s):** This figure plots the fitted lines between the abnormal foreign investment (AFI) and the firm performance. Panel A, B, and C respectively present the fitted lines between the AFI current quarter and Tobin’s  $q$ , MTBV, and ROA one quarter ahead. The variables are explained in Section 2

**Source(s):** Authors’ own work

lines slope upward, suggesting that the AFI and the future firm performance are positively correlated.

With the observation of these positive results, we investigate whether the AFI gives information about the future firm performance, using Equation (2). As explained before, we repeat Equation (2) from  $k$  equal to 1 onward and stop at  $k$  equal to  $n$  which yields an insignificant coefficient on the AFI ( $\beta_1^k$ ).  $\beta_1^k$  is also the coefficient of interest in the baseline regression. The results are reported in Table 4.

In Panel A Table 4, we observe that the AFI is informative about the firm performance up to the next four quarters, even though the informative power of the AFI becomes weaker over time. Specifically, all the coefficients on the AFI of the regressions at  $k = (1,4)$  are positive and significant at 1, 5 and 10% levels. They are decreasing from 0.54 at  $k = 1$  to 0.36 at  $k = 4$ . However, the coefficient on the AFI of the regression at  $k = 5$  is not statistically significant. This means that the AFI loses its informative power at the fifth quarter ( $t+5$ ).

The behavior of financial firms may be different from that of non-financial firms, so we test Equation (2) with nonfinancial-firm data. We delete the data of the financial firms out of the panel and run Equation (2) again. The results are reported in Panel B Table 4, showing the same results as in Panel A of the table: the AFI is informative about the firm performance up to the next four quarters.

	$Q_{t+1}$	$Q_{t+2}$	$Q_{t+3}$	$Q_{t+4}$	$Q_{t+5}$	Foreign investment and firm performance
<i>Panel A. Full sample</i>						
$AFI_t$	0.54 <sup>***</sup> (2.67)	0.43 <sup>**</sup> (2.08)	0.35 <sup>*</sup> (1.77)	0.36 <sup>**</sup> (1.95)	0.28 (1.52)	
$\ln TA_t$	5.33 <sup>***</sup> (16.73)	4.87 <sup>***</sup> (15.29)	4.55 <sup>***</sup> (14.34)	4.20 <sup>***</sup> (13.31)	3.83 <sup>***</sup> (12.15)	
$Leverage_t$	-50.40 <sup>***</sup> (-21.85)	-50.79 <sup>***</sup> (-21.42)	-50.23 <sup>***</sup> (-20.93)	-48.56 <sup>***</sup> (-20.33)	-46.66 <sup>***</sup> (-19.49)	
$\ln Age_t$	-5.77 <sup>***</sup> (-7.53)	-4.26 <sup>***</sup> (-5.19)	-1.92 <sup>**</sup> (-2.43)	-0.21 (-0.30)	-1.36 <sup>**</sup> (1.94)	
$CAPEX_t$	101.38 <sup>***</sup> (14.84)	98.82 <sup>***</sup> (14.36)	99.12 <sup>***</sup> (13.86)	93.48 <sup>***</sup> (13.96)	88.61 <sup>***</sup> (13.10)	
$SGA_t$	-0.02 (-0.83)	-0.02 (-0.66)	-0.03 <sup>*</sup> (-0.84)	-0.03 <sup>**</sup> (-2.41)	-0.02 <sup>**</sup> (-2.30)	
$a_t$	29.93 <sup>***</sup> (4.63)	33.10 <sup>***</sup> (4.86)	29.32 <sup>***</sup> (4.32)	29.02 <sup>***</sup> (4.38)	29.77 <sup>***</sup> (4.44)	
$N$	13,215	12,569	11,943	11,473	10,978	
<i>Panel B. Nonfinancial-firm sample</i>						
$AFI_t$	0.53 <sup>***</sup> (2.53)	0.42 <sup>**</sup> (1.98)	0.33 <sup>*</sup> (1.65)	0.33 <sup>**</sup> (1.68)	0.26 (1.35)	
$Controls_t$	yes	yes	yes	yes	yes	
$N$	12,643	12,018	11,413	10,965	10,493	
<p><b>Note(s):</b> This table reports the results of Equation (2) where Tobin's q is used as the proxy for the firm performance. The AFI is the abnormal foreign investment, estimated as the residuals from Equation (1). The other variables are explained in Section 2. Controls are control variables used in Equation (2). All financial firms (including financial, banking and insurance services according to the Vietnam Standard Industrial Classification, VSIC) are deleted from the nonfinancial-firm sample. The subscript <math>t</math> indicates the current quarter. We use the two-step GMM model. z-statistics in the parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1% levels, respectively</p> <p><b>Source(s):</b> Authors' own work</p>						

**Table 4.**  
Informed foreign ownership and firm performance

For robust results, we tested the informativeness of the AFI using alternative variables of the firm performance, MTBV and ROA. Table 5 reports the results of this test. We observe the same pattern of the informativeness as that in Table 4 for both the full sample and the nonfinancial-firm sample. For example, in the full sample, for both MTBV and ROA, all coefficients on the AFI of the regressions at  $k = (1, 5)$  are positive and statistically significant at 1, 5 or 10% level.

In short, Table 4 and Table 5 show that the abnormal foreign investment is positively informed about the future firm performance in the short term (within one year).

**3.2.3 Subsample regressions.** In this section, we give more detail of the relationship between AFI and the firm performance in the market, so that we might observe the channel through which the AFI affects firms' performance. We construct different portfolios according to firm features and run Equation (2) for each portfolio. Specifically, we construct the portfolios basing on firm size, stock liquidity, firms with or without large foreign investors [3], and firms listed at HOSE or HNX, and then test whether the coefficient of the AFI for each portfolio is significantly positive. Practically, at each quarter, we sort the firms into large or small groups, liquid or illiquid groups and so on. The results are presented in Table 6 and Table 7.

Panel A Table 6 reports the results of Equation (2) for firm size, large and small firms. For large firms, the coefficients on the AFI of the regression at  $k = (1, 4)$  are positive and significant. For example, the coefficient on the AFI of the regression at  $k = 1$  is 0.63 and

**Table 5.**  
Informed foreign  
ownership and firm  
performance:  
alternative outcomes

	MTBV <sub><i>t</i>+1</sub>	MTBV <sub><i>t</i>+2</sub>	MTBV <sub><i>t</i>+3</sub>	MTBV <sub><i>t</i>+4</sub>	MTBV <sub><i>t</i>+5</sub>	ROA <sub><i>t</i>+1</sub>	ROA <sub><i>t</i>+2</sub>	ROA <sub><i>t</i>+3</sub>	ROA <sub><i>t</i>+4</sub>	ROA <sub><i>t</i>+5</sub>
<i>Panel A. Full sample</i>										
AFL <sub><i>t</i></sub>	0.81 <sup>***</sup> (2.62)	0.77 <sup>***</sup> (2.44)	0.59 <sup>***</sup> (1.92)	0.60 <sup>***</sup> (2.02)	0.50 <sup>*</sup> (1.76)	0.12 <sup>***</sup> (3.08)	0.10 <sup>***</sup> (2.67)	0.10 <sup>***</sup> (2.60)	0.09 <sup>***</sup> (2.56)	0.10 <sup>***</sup> (2.70)
lnTA <sub><i>t</i></sub>	13.98 <sup>***</sup> (22.32)	13.39 <sup>***</sup> (20.81)	12.84 <sup>***</sup> (19.55)	12.37 <sup>***</sup> (18.45)	10.81 <sup>***</sup> (17.78)	-0.02 <sup>***</sup> (-0.44)	-0.02 <sup>***</sup> (-0.45)	-0.03 <sup>***</sup> (-0.55)	-0.04 <sup>***</sup> (-0.69)	-0.08 <sup>***</sup> (-1.30)
Leverage <sub><i>t</i></sub>	-93.55 <sup>***</sup> (-24.32)	-96.07 <sup>***</sup> (-24.52)	-97.57 <sup>***</sup> (-24.22)	-98.43 <sup>***</sup> (-23.61)	-85.70 <sup>***</sup> (-21.39)	-6.19 <sup>***</sup> (-13.80)	-5.59 <sup>***</sup> (-12.40)	-5.18 <sup>***</sup> (-11.14)	-4.74 <sup>***</sup> (-10.15)	-4.06 <sup>***</sup> (-8.43)
lnAge <sub><i>t</i></sub>	-6.59 <sup>***</sup> (-7.05)	-3.63 <sup>***</sup> (-3.77)	-0.11 <sup>***</sup> (0.11)	-2.14 <sup>***</sup> (2.14)	-6.75 <sup>***</sup> (7.12)	-1.08 <sup>***</sup> (-10.56)	-0.97 <sup>***</sup> (-9.27)	-0.91 <sup>***</sup> (-8.39)	-0.82 <sup>***</sup> (-7.29)	-0.70 <sup>***</sup> (-5.98)
CAPEX <sub><i>t</i></sub>	176.40 <sup>***</sup> (15.77)	183.46 <sup>***</sup> (15.57)	177.56 <sup>***</sup> (14.96)	170.10 <sup>***</sup> (14.70)	142.18 <sup>***</sup> (13.27)	22.32 <sup>***</sup> (15.15)	20.08 <sup>***</sup> (15.30)	19.60 <sup>***</sup> (14.72)	18.21 <sup>***</sup> (13.39)	16.76 <sup>***</sup> (12.83)
SGA <sub><i>t</i></sub>	0.01 <sup>***</sup> (-0.84)	-0.03 <sup>***</sup> (-1.80)	-0.03 <sup>***</sup> (-1.74)	-0.04 <sup>***</sup> (-2.32)	-0.03 <sup>***</sup> (-1.34)	-0.02 <sup>***</sup> (-2.07)	-0.02 <sup>***</sup> (-2.03)	-0.02 <sup>***</sup> (-2.11)	-0.02 <sup>***</sup> (-2.11)	-0.00 <sup>***</sup> (-0.43)
<i>a<sub>t</sub></i>	-135.23 <sup>***</sup> (-11.11)	-135.29 <sup>***</sup> (-10.83)	-139.94 <sup>***</sup> (-10.96)	-138.38 <sup>***</sup> (-10.61)	-123.18 <sup>***</sup> (-10.34)	12.81 <sup>***</sup> (11.85)	12.22 <sup>***</sup> (11.05)	11.93 <sup>***</sup> (10.45)	11.60 <sup>***</sup> (9.95)	11.75 <sup>***</sup> (9.51)
<i>N</i>	13,608	13,095	12,584	12,089	13,327	13,032	12,389	11,766	11,302	10,824
<i>Panel B. Nonfinancial-firm sample</i>										
AFL <sub><i>t</i></sub>	0.78 <sup>***</sup> (2.46)	0.75 <sup>***</sup> (2.32)	0.57 <sup>*</sup> (1.80)	0.56 <sup>*</sup> (1.84)	0.47 <sup>***</sup> (1.62)	0.12 <sup>***</sup> (2.92)	0.10 <sup>***</sup> (2.58)	0.09 <sup>***</sup> (2.50)	0.08 <sup>***</sup> (2.41)	0.10 <sup>***</sup> (2.68)
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
<i>N</i>	13,023	12,531	12,040	11,566	12,759	12,468	11,845	11,242	10,799	10,343

**Note(s):** This table reports the results of Equation (2) where MTBV or ROA are used as alternative proxies for the firm performance. Controls are control variables used in Equation (2). The subscript *t* indicates the current quarter. We use the two-step GMM model. *z*-statistics in the parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively

**Source(s):** Authors' own work

Panel A. Firm size		Q <sub>t+1</sub>	Q <sub>t+2</sub>	Large firms		Q <sub>t+4</sub>	Q <sub>t+5</sub>	Small firms		Q <sub>t+4</sub>	Q <sub>t+5</sub>
AFI <sub>t</sub>	0.63 <sup>***</sup>		0.49 <sup>**</sup>	0.38 <sup>*</sup>		0.41 <sup>*</sup>	0.29	0.31		0.29	0.25
Controls <sub>t</sub>	(2.72) yes		(2.17) yes	(1.76) yes		(2.18) yes	(1.48) yes	(0.81) yes		(0.80) yes	(0.69) yes
N	6,642		6,355	6,058		5,831	5,581	6,214		5,885	5,397

Panel B. With large foreign investors		Firms with large foreign investors				Firms without large foreign investors			
AFI <sub>t</sub>	0.21	0.30	0.00	0.02		0.97 <sup>*</sup>	0.75	0.71	0.73
Controls <sub>t</sub>	(0.96) yes	(0.16) yes	(0.01) yes	(0.13) yes		(1.97) yes	(1.55) yes	(1.48) yes	(1.53) yes
N	6,077	5,814	5,552	5,355		7,138	6,755	6,118	5,839

**Note(s):** This table reports the subsample analysis for Equation (2). Firms with large foreign investors are firms whose shares are held by large foreign investors (>5% of total firm shares) at any quarter during the sample period. Large (small) firms are firms in the first (second) half of the sample by firms' total assets at each quarter. Controls are control variables used in Equation (2). The subscript *t* indicates the current quarter. Standard errors are clustered at the firm-quarter level. *t*-statistics in the parentheses, \*, \*\*, and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively

**Source(s):** Authors' own work

Foreign investment and firm performance

**Table 6.**  
AFI and firm performance – large foreign investors and firm size subsamples

**Table 7.**  
AFI and firm  
performance – firm  
liquidity and firm  
location subsamples

Panel A: Firm liquidity										
	$Q_{t+1}$	$Q_{t+2}$	High liquid firms			Less liquid firms			$Q_{t+4}$	$Q_{t+5}$
			$Q_{t+3}$	$Q_{t+4}$	$Q_{t+5}$	$Q_{t+1}$	$Q_{t+2}$	$Q_{t+3}$	$Q_{t+4}$	$Q_{t+5}$
AFI <sub><i>it</i></sub>	0.61 <sup>***</sup> (2.43)	0.44 <sup>**</sup> (1.88)	0.22 (1.00)	0.26 (1.25)	0.24 (1.09)	-0.04 (-0.09)	-0.00 (-0.01)	0.37 (0.82)	0.33 (0.82)	0.09 (0.31)
Controls <sub><i>i</i></sub>	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	6,609	6,311	6,017	5,790	5,550	6,606	6,258	5,926	5,683	5,428

Panel B: Firm location										
	Firms listed at HOSE					Firms listed at HNX				
AFI <sub><i>it</i></sub>	0.74 <sup>***</sup> (2.85)	0.62 <sup>***</sup> (2.50)	0.49 <sup>**</sup> (2.01)	0.53 <sup>***</sup> (2.38)	0.44 <sup>*</sup> (1.81)	0.13 (0.39)	0.07 (0.20)	0.11 (0.31)	0.02 (0.05)	-0.11 (-0.39)
Controls <sub><i>i</i></sub>	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	7,195	6,866	6,532	6,273	5,977	6,020	5,703	5,411	5,200	5,001

**Note(s):** This table reports the subsample analysis for [Equation \(2\)](#). High (less) liquid firms are firms in the first (second) half of the sample by firms' Amihud levels at each the current quarter. AFI is the abnormal foreign investment, estimated as the residuals from [Equation \(1\)](#). Controls are control variables used in [Equation \(2\)](#). The subscript *i* indicates the current quarter. Standard errors are clustered at the firm-quarter level. *t*-statistics in the parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively.

**Source(s):** Authors' own work

statistically significant at 1% level. For small firms, all the coefficients are not significant. Therefore, the informativeness of the AFI is pronounced for large firms.

Panel B Table 6 reports the results of Equation (2) for firms with and without large foreign investors separately. While the coefficients on the AFI of all the regressions are insignificant for firms having large foreign investors, those at  $k = 1, 2$  are significant for firms having no large foreign investors. In detail, for firms without large foreign investors, the coefficients on the AFI of the regressions at  $k = 1$  and  $k = 2$  are 1.00 and 0.97, respectively, both significant at 5 and 10% levels. But the other coefficients are not significant. The informativeness of the AFI is thus stronger for firms which have no large foreign investors.

In short, the results in Table 6 show that the relationship between the AFI and firm performance is pronounced for large firms and firms with small foreign ownership. Given that larger firms are on average more productive than smaller ones (OECD, 2015), and small foreign investors are not likely associated with highly productive foreign firms who could transfer the technology, skills or capital to domestic firms (Pasali and Chaudhary, 2020), the results in Table 6 suggest that foreign investors in the the Vietnamese market might choose already well-productive firms.

Similarly, Table 7 reports the results of Equation (2) for firm liquidity and firm location. Panel A Table 7 shows that the AFI gives information about the liquid-firm performance directly from the next quarter, while it has no effect on the illiquid-firm performance after the investment pool. Specifically, for high liquid firms, the coefficients on the AFI of the regression at  $k = 1$  and  $k = 2$  are positive (0.61 and 0.44, respectively) and significant at 1 and 5% levels. But for less liquid firms, the coefficients on the AFI of all the regressions are insignificant.

Panel B Table 7 shows that the informativeness of the AFI is pronounced for firms listed at HOSE, which is more active than HNX. In detail, for firms listed at HOSE, the coefficients on the AFI of all the regressions at  $k = (1, 5)$  are positive and statistically significant. Meanwhile, for firms listed at HNX, all the coefficients are not significant.

### 3.3 Test on another measure of abnormal foreign investment

In this section, we give more evidence of the informativeness of abnormal foreign investment using another proxy,  $\Delta FO$ . Specifically,  $\Delta FO$  is the first difference of the FO variable. By taking the first differences of FO, we can quarterly measure the changes of foreign investment in the market. Those changes can represent the abnormal investment of foreign investors.

This new variable is used as the independent variable in the equation below to examine whether FO informs us of the future firm performance.

$$\begin{aligned} performance_{i,t+k} = & \alpha + \delta_1^k \Delta FO_{i,t} + \delta_2^k \ln TA_{it} + \delta_3^k Leverage_{it} + \delta_4^k FTSE_{it} + \delta_5^k Cash_{it} \\ & + \delta_6^k CAPEX_{it} + \delta_7^k SGAI_{it} + \delta_8^k \ln Age_{it} + \delta_9^k Close_{it} + TF_t + \varepsilon_{it} \end{aligned} \quad (3)$$

where performance is one of the three firm performance variables Tobin's q, MTBV or ROA. Performance<sub>t+k</sub> represents the firm performance variable at k quarter ahead. Given t as the current quarter, then  $k = 1, 2, \dots, n$ .  $\Delta FO$  is the first difference of FO variable. Close is insider ownership, measured by the fraction of insider ownership. The other variables are explained in Section 2. Firm fixed effects are not required since the first difference independent variable is used. However, time fixed effects ( $TF_t$ ) are added and standard errors are clustered at the firm-quarter level.

To be aligned with the baseline regression (Table 4), we repeat Equation (3) from  $k = 1$  to  $k = 5$  and report the results in Table 8.



**Table 8.**  
Foreign ownership and  
firm performance:  
robustness test

	$Q_{t+1}$	$Q_{t+2}$	$Q_{t+3}$	$Q_{t+4}$	$Q_{t+5}$	MTBV <sub><i>t</i>+1</sub>	MTBV <sub><i>t</i>+2</sub>	MTBV <sub><i>t</i>+3</sub>	MTBV <sub><i>t</i>+4</sub>	MTBV <sub><i>t</i>+5</sub>	ROA <sub><i>t</i>+1</sub>	ROA <sub><i>t</i>+2</sub>	ROA <sub><i>t</i>+3</sub>	ROA <sub><i>t</i>+4</sub>	ROA <sub><i>t</i>+5</sub>
<i>Panel A. Full sample</i>															
$\Delta FO_t$	0.43*** (2.11)	0.30 (1.50)	0.21 (1.23)	0.14 (0.81)	0.04 (0.18)	0.62*** (2.05)	0.59* (1.84)	0.38 (1.51)	0.30 (1.05)	0.16 (0.50)	0.10*** (2.25)	0.08* (1.84)	0.08*** (2.05)	0.07 (1.49)	0.08 (1.63)
Controls <sub><i>t</i></sub>	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
and Time															
FE															
$N$	13,215	12,569	11,943	11,473	10,978	13,608	13,095	12,584	12,089	13,341	13,032	13,095	11,766	11,302	10,824
$R^2$	0.143	0.133	0.126	0.124	0.116	0.199	0.194	0.178	0.171	0.157	0.083	0.194	0.067	0.059	0.005
<i>Panel B. Non-financial firm sample</i>															
$\Delta FO_t$	0.46*** (2.29)	0.34 (1.63)	0.24 (1.35)	0.14 (0.79)	0.04 (0.17)	0.70*** (2.32)	0.65*** (2.04)	0.44* (1.80)	0.33 (1.19)	0.22 (0.68)	0.10*** (2.15)	0.08*** (2.04)	0.09*** (2.02)	0.06 (1.38)	0.08 (1.59)
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
and Time															
FE															
$N$	12,643	12,018	11,413	10,965	10,493	13,023	12,531	12,040	11,566	12,759	12,468	11,845	11,242	10,799	10,343
$R^2$	0.156	0.149	0.144	0.145	0.139	0.209	0.205	0.191	0.185	0.169	0.098	0.086	0.080	0.071	0.059

**Note(s):** This table reports the results of the robustness test for the forecastability of the firm performance, with [equation \(3\)](#).  $\Delta FO$  is the changes of FO over time, calculated as the first difference of the FO. Controls are control variables used in [Equation \(3\)](#). The subscript *t* indicates the current quarter. Standard errors are clustered at the firm-quarter level. *t*-statistics in the parentheses, \*, \*\*, and \*\*\* indicate statistical significance at the 10, 5 and 1 % levels, respectively

**Source(s):** Authors' own work

Table 8 reports the results from the regressing Equation (3). We observe that the changes in FO have a positive relationship with firm performance up to one quarter ahead in Tobin's q regressions, two quarters ahead in MTBV regressions and three quarters ahead in ROA regressions. For example, the coefficient on  $\Delta FO$  of the Q<sub>t</sub> at  $k = 1$  is 0.43 and significant at 5% level, but that at  $k = 2, 3, 4$  and 5 are insignificant. Meanwhile, the coefficient on  $\Delta FO$  of the MTBV<sub>t</sub> at  $k = 1$  and  $k = 2$  are 0.62 and 0.59 and significant at 5 and 10% levels, respectively, but that at  $k = 3$  is 0.38 and not statistically significant. Similarly, the coefficients on  $\Delta FO$  of the ROA at  $k = 1, 2$  and 3 are significant but that at  $k = 4, 5$  are not.

The nonfinancial-firm sample presents a similar result.

Although the results are a little weaker than those of Equation (2), they generally prove that informed foreign investment gives information about the future firm performance in the short term. This finding is consistent with what we have seen in the previous tests.

#### 4. Abnormal foreign investment and stock returns

The results in previous sections prove that abnormal foreign investment is informed about the firm performance in the next four quarters. Then, the question may arise as to whether abnormal foreign investment gives information about the future stock returns. In fact, literature documents foreign investment has a positive relationship to the stock prices. For example, Berko and Clark (1997) investigated the economically and statistically significant positive correlation between monthly foreign purchases of the Mexican stocks and Mexican stock returns. However, recent papers find that the relationship is not significant. For example, Alawi (2019) found that foreign direct investment had an insignificantly positive impact on stock price volatility.

In this paper, we test whether abnormal foreign investment is correlated to stock returns next quarters. We regress the stock returns on the AFI using the equation below:

$$r_{i,t+k} = \alpha + \gamma_1^k AFI_{i,t} + \gamma_2^k MTBV_{it} + \gamma_3^k \ln MV_{it} + \gamma_4^k Amihud_{it} + \gamma_5^k \ln sale_{it} + \gamma_6^k DPS_{it} + FF_i + TF_t + \varepsilon_{it}, \quad (4)$$

where  $r$  is the average of daily stock returns in the quarterly,  $\ln MV$  is the logarithm of the market value of equity quarterly,  $\ln sale$  is the logarithm of net sales quarterly. The other variables are explained in Section 2.  $t$  indicates the current quarter,  $k = 1, 2, \dots, n$ . Firm fixed effects and quarter fixed effects are represented by  $FF_i$  and  $TF_t$ , respectively. Standard errors are clustered at the firm-quarter level.

Table 9 reports the results for Equation (4). We observe that the coefficients of AFI at  $k = (1, 3)$  are positive and statistically significant. The result suggests that AFI is also informative about stock prices in the three quarters ahead. For example,  $\gamma_1^1$  is 0.006 and significant at 1% level, meaning that 1% increase in the AFI current quarter is associated with a 0.006% increase in the stock return next quarter. Economically, this relationship predicts a potential profit to foreign investors. We find a similar result with the nonfinancial-firm sample.

#### 5. Conclusion

The relationship between foreign investment and the firm performance seems a controversial issue. Some papers prove it has a negative relationship, while some document that it is a positive one. This paper adds more evidence to the literature. We test how the relationship is, using data in an emerging market where most of the foreign investment is small. Specifically, we investigate the informativeness of the abnormal foreign investment about future firm performance.

	$R_{t+1}$	$\Gamma_{t+2}$	$\Gamma_{t+3}$	$\Gamma_{t+4}$
<i>Panel A. Full sample</i>				
$AFI_t$	0.006*** (3.13)	0.005*** (3.12)	0.003** (2.42)	−0.001 (−0.62)
$MTBV_t$	0.083*** (3.07)	0.020 (0.75)	−0.056** (−2.34)	−0.087*** (−3.56)
$\ln MV_t$	0.079*** (2.65)	−0.062*** (−2.68)	−0.191*** (−7.88)	−0.294*** (−11.05)
$Amihud_t$	−2.397*** (−3.87)	−2.356*** (−3.78)	−1.850*** (−2.86)	−1.090 (−1.55)
$\ln\_sale_t$	0.038*** (3.81)	0.049*** (4.78)	0.061*** (6.36)	0.057*** (5.98)
$DPS_t$	−0.106*** (−8.53)	−0.085*** (−6.95)	−0.051*** (−4.04)	−0.024* (−1.91)
$a_t$	−1.698*** (−4.09)	0.467 (1.38)	1.885*** (5.82)	3.035*** (8.65)
Time and firm FE	yes	yes	yes	yes
$N$	13,161	12,887	12,607	12,122
$R^2$	0.432	0.432	0.473	0.533
<i>Panel B. Non-financial-firm sample</i>				
$AFI_t$	0.005*** (2.72)	0.004*** (2.61)	0.002* (1.73)	−0.002 (−1.12)
Controls	yes	yes	yes	yes
Time and firm FE	yes	yes	yes	yes
$N$	12,607	12,338	12,063	11,602
$R^2$	0.434	0.436	0.475	0.533

**Note(s):** This table reports the coefficients for Equation (4).  $R$  is the average daily stock returns.  $\ln MV$  is logarithm of the market value of equity.  $\ln sale$  is logarithm of the net sales. The other variables are explained in Section 2. Controls are control variables used in Equation (4). The subscript  $t$  indicates the current quarter. Standard errors are clustered at the firm-quarter level.  $t$ -statistics in the parentheses, \*, \*\* and \*\*\* indicate statistical significance at the 10, 5 and 1% levels, respectively

**Source(s):** Authors' own work

**Table 9.**  
Informed foreign  
ownership and stock  
prices

We find that the AFI gives information about the firm performance in the next four quarters. Moreover, the AFI is also informed about the stock return in the next three quarters. These findings suggest that the AFI in emerging security markets, where most of the foreign investment is small, is informative about the market potential in a one-year period.

Bentivogli and Mirenda (2017) outlined two sets of mechanics prevalent in the literature that explain the performance advantages foreign-owned firms have over local firms. These include intra-sectoral heterogeneity in productivity between firms that engage in FDI and those that do not. Intra-sectoral heterogeneity in productivity entails existing productivity and performance advantages that some firms have over others in the same sector. Pasali and Chaudhary (2020) explained that the rationale is that only highly productive firms can afford to engage in foreign investment; therefore, the transfer of technology, skills and capital from these firms will have a positive effect on the firms that they invest in. The other stream highlights the ex-ante selection bias of investors. Put simply, foreign investors only choose well-performing firms to invest in, so the superior performance can be attributed to selection bias (for example, Guadalupe *et al.*, 2012). Moreover, Bena *et al.* (2017) found that foreign institutional ownership fosters long-term investment in tangible, intangible, and human capital, and leads to significant increases in innovation output. Therefore, this should be the economic mechanism through which foreign investment affects the firm performance.

In this paper, we find that foreign investors in the Vietnamese market might choose already well-productive firms, because the effects of the AFI on the firm performance are pronounced for large firms and firms with no large foreign ownership. Given that larger firms are on average more productive than smaller ones (OECD, 2015), and small foreign ownership is not likely associated with the technology, skills, or capital transformation investment on domestic firms, these findings suggest that foreign investors in the Vietnamese market might choose already well-productive firms, and the superior performance can be attributed to selection bias, following the ex-ante selection bias theory above.

However, there are truly large foreign ownerships in the Vietnamese market. Thus, if these investors have long-term investment in tangible, intangible, human capital and so on, whether this leads to a significant increase in firms' performance is still the limitation of this paper. Shedding light on this issue raises a call for future studies. Further, future research could suggest a few practical guidelines for policymakers in terms of promoting foreign investment (FI) and developing targeted FI promotion policies.

## Notes

1. According to the OECD Equity Market Review Asia 2018 by OECD (2018), Vietnam has low market capitalization weighted average ownership for foreign institutional investors.
2. More information can be found at <https://www.ftserussell.com/>
3. Firms with large foreign investors are firms whose shares are held by any large foreign investors (possess from 5% of total firm shares) at any quarter during the sample period, otherwise they are firms without large foreign investors.

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## Appendix

Variables	Description	Used in equation
FO	Represents total shareholding in percentage of foreign investors in a firm at a quarter	(1), (3)
AFI	Abnormal foreign investment measured by the residuals of the investment efficiency model (Equation 1)	(2), (4)
Tobin's q	Represents firm performance. Calculated as total asset plus market value of equity minus book value of equity divided by total asset	(2), (3)
MTBV	Represents firm performance. Calculated as the market value of equity divided by the book value of equity	(2), (3), (4)
ROA	Represents firm performance. Calculated as the operating income divided by total assets	(2), (3)
IDVOL	Idiosyncratic risk, defined as the unsystematic risk estimated for each stock under the three-factor Fama and French model (Fama and French, 1993)	(1)
FTSE	FTSE Vietnam Index inclusion, the proxy for the firm presence in the international market. FTSE equals 1 if firms are included in the FTSE Vietnam Index and 0 otherwise	(1), (3)
lnTA	The logarithm of firm total assets	(1), (2), (3)
Leverage	Firm leverage. Calculated as the ratio of firm total debts divided by firm total assets	(1), (2), (3)
Amihud	Measures the stock illiquidity, estimated from the model by Amihud (2002)	(1), (4)
DPS	Dividend payout per common share	(1), (4)
Cash	Cash holding ratio (money available for use in a normal operation), scaled by total assets	(1), (3)
lnAge	The logarithm of firm month ages	(2), (3)
CAPEX	Firm capital expenditure scaled by total assets	(2), (3)
SGA	Firm selling and general administrative express scaled by total assets	(2), (3)
Close	Insider ownership, measured by the fraction of insider ownership	(3)
lnMV	The logarithm of the market value of equity	(4)
ln_sale	The logarithm of net sales	(4)
r	The average of daily stock returns	(4)

Source(s): Authors' own work

**Table A1.**  
Description of  
variables in the model

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