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Does Firm Characteristics Affect Foreign Investors' Transactions? The Evidence from the Vietnam Stock Market

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Abstract: This paper aims to examine if firm characteristics had an impact on foreign investors' decisions on buying and selling Vietnamese listed firms' stocks between 2015 and 2019. Despite the vast majority of research in the same fields worldwide, answers to this question were not clear. Employing panel data estimation of 222 non-financial firms in the Vietnam stock market, the result of this study indicates that foreign investors have a strong preference for firms with high market capitalization, liquidity, and profitability, whereas they seem to be reluctant to invest in ones with high leverage and price to book values. However, we fail to find clear evidence of the impact of dividend yield on the number of shares bought or sold by foreign investors. Based on these results, this study proposes important policy implications to attract foreign investment in the stock market in Vietnam.

Keywords: Firm's characteristics, trading decision, foreign investor, Vietnam stock market.

1. Introduction

Foreign capital flows have played an important role in Vietnam's economic growth. Along with financial openness, Vietnam's financial market, and especially capital markets, have attracted more attention from foreign investors and have become the most efficient channel of attracting foreign capital flows. Thus, studying the trading behaviour of foreign investors, and their trading determinants seems to be important for scholars, investors, and policy makers.

Studies of investors' trading decisions are mainly divided into two strands: a rational

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paradigm which assumes investment behaviour is rational and therefore emphasizes the importance of fundamental factors such as firm size, market to book value, profitability, firm risk, etc., and a behavioural paradigm which shows that real traders do not follow rational actions, causing them to make adverse decisions [1, 2]. However, while there is extensive literature on the behavioural paradigm, literature for the rational paradigm, which is implied by investors' preferences for firm characteristics, is lacking, despite being supported by mainstream theories [3]. Similarly, there are not many studies investigating the relationship between firm characteristics and foreign investors' trading decisions in Vietnam. Also, there has been a lack of consensus among economists due to the mixed findings from previous studies. Therefore, examining the relationship between a firm's characteristics and trading decisions is important to answer the question: What attracts foreign investors to enter the stock markets in Vietnam?

This research aims to extend the literature on trading decisions and their determinants. We mainly focus on firm characteristics and their relation to foreign investors' trading decisions. By using data from the listed firms in the Vietnam Stock Exchange, we evaluate the effects of firm size, price-to-book value, profitability, current ratio, leverage, dividend yield on foreign investors' decision to sell and buy, and then, give some policy recommendations.

2. Literature review

Using firm characteristics as a factor in foreign investors' trading decisions may have been supported by both theoretical and empirical research. The conventional financial theory posits that market price is primarily determined by the behaviour of rational investors and equals the intrinsic value of stock that is estimated by the present value of all dividend payments or firm's cash flows [1, 4]. Since the rational investors refuse to buy stocks at a price exceeding their intrinsic value, this means their future returns depend on firm performance and how well they determine the firm's true price. Besides, the famous asset pricing model of Fama and French [5] (the three factor model) explains that the main drivers of expected stock returns (which may affect firm selection) are sensitivity to market, sensitivity to firm size (measured by market capitalization) and sensitivity to stock value (measured by price to book value). The Fama & French five factors, then, adds two factors relating to profitability. Statman [6] proposed that several characteristics such as high market to book value or high market capitalization have association in the investors' minds with a high realized return; therefore, this tends to force them to buy more such stocks. Falkenstein [7], Kang and Stulz [8], Huberman [9] suppose that the stock selection is not only based on corporate risk and return, but also firms' characteristics such as growth prospects or investors' knowledge of companies. Furthermore, depending on a firm's fundamentals may reduce the effect of behavioral biases in decision making [10].

Existing empirical researches have documented several common fundamental factors influencing foreign institutional investors' decisions. A vast majority of the research in this field has been carried out in developed countries such as the United States [7, 11], Sweden [12] and Japan [8]. Falkenstein [7] examines the behaviour of mutual funds in the U.S. market and shows that they tend to invest in stocks with high visibility, high idiosyncratic volatility, and of low price. Kang and Stulz [8] find non-Japanese investors' preferences were towards large firms, firms with good accounting performance, low risk and low leverage. Studying the Swedish financial market, Dahlquist and Robertsson [12] indicate that the international investors prefer large firms, firms with low dividends, and large cash positions on their balance sheets. Aggrawal et al. [13] focus on the connection between foreign ownership and corporate governance. Differing from previous studies, which only focus on one

market, Covrig et al. [11] extend Falkenstein's research [7] for 11 developed countries and find the essential effect of return on equity and the visibility of firms. Camilleri and Galea [14] study 172 stocks from four European markets to examine the relationship between trading activity and five business-specific characteristics including market capitalization, dividend yield, earning yield, growth rate and firm age.

The emerging markets have received more attention recently. Vo [15], Batten and Vo [16] report that foreign investors in Vietnam tend to hold stocks of large firms with high book-to-market ratios, low leverage and low ownership concentration. Bae et al. [17] indicate that the international investors in Korea seem to prefer "blue-chip" shares, but with high dividends. Similarly, Zou et al. [18] point out that international investors in Chinese markets mainly invest in financial, transportation and professional services and technology, where stocks are highly-capitalized, under-valued and have good accounting earnings and low risks. Khan et al. [3] document the negative link between profitability, risk characteristics and firm management on trading turnover in Malaysian markets. To compare domestic and foreign institutional investors in India, Deb [19] studies some fundamental factors such as leverage, price to book, dividend yield, liquidity, earning margins, and firm age.

To sum up, when considering the effects of firm characteristics on foreign investors' trading decisions, several commonly-used fundamental factors are size, growth prospect, profitability, dividend policy, financial risk, and visibility of firms. Based on prior literature, we mainly focus on the following six characteristics:

Firm size

Many studies point out that foreign traders might prefer investing in large-capitalization firms mainly because of lower transaction costs and greater liquidity [8, 20, 21]. Also, large firms tend to be well known to foreign investors [22], have more room and fewer restrictions for foreign ownership [13], and have good accounting quality and disclosure [13, 23]. Moreover, large firms whose ownerships are diverse can lead to high information asymmetry, which allows investors to benefit from information trading [20]. This positive relationship is confirmed via many empirical researches, for example Alnaif [24] for the Amman Stock Exchange, and Collver [25] for the US market.

Meanwhile, some studies prove that firm size has negative impacts on trading volumes. Lo and Wang [20] find a positive effect of firm size from 1962 to 1971; however, they document negative effects after 1971. Studying firms in NASDAQ, Halling et al. [26] indicate that there is a negative association between firm size and trading volume, since most firms in that market are young, small, high-tech ones. Misha and Ratti [27] propose that an increase in firm size might signal corporate control issues, for example, inefficient use of resources. Furthermore, since large firms are more likely to gain investors' attention since with their large following of financial analysts, traders have fewer opportunities for gaining private information and benefiting from information-based trading [28, 29].

In Vietnam, foreign investors tend to invest in large firms of which they have knowledge and which bear a lower level of information asymmetry [16] or are less prone to crash risk [30]. Since the Vietnamese market is less informationally efficient [30], we suppose that international investors may prefer large firms to reduce information asymmetry.

H1: Firm size has positive effects on trading volume.

Firm potential growth

Firm potential growth is usually regarded as a significant signal by shareholders whose most common indicators is price to book value (P/B). Fama and French [31] propose that the high P/B firms have persistently high earnings while low P/B firms have consistently poor earnings. Also, according to Fama and French [32], price to book value may also be proxy for exposure to distress since the high P/B implying potential growth may come with a high degree of

uncertainty. Dahlquist and Robertsson [12] document the positive relationship between the P/B ratio and foreign holdings in Swedish firms. According to Aggrawal et al. [13], US mutual funds tend to overweight high P/B firms when investing in emerging markets. Ko et al. [33] examine the foreign and institutional investors' preferences in Japan and Korea and conclude that the high P/B ratios of large-capitalization firms attract large foreign investors. Batten and Vo [16] and Vo [34] find similar results, confirming that foreign investors are interested in large Vietnamese firms with high P/B values. However, evidence by Zou et al. [18] shadow the effect of a firm's P/B.

H2: Price to book value has positive effects on trading volume.

Profitability

Return on assets (ROA), return on equity (ROE), earnings before interest, taxes, depreciation, and amortization (EBITDA) are common criteria that foreign investors use to assess firms' profitability. Azzam et al. [11] document a positive relationship between foreign ownership and ROA and ROE in Egyptian companies [35]. Bae et al. (2011) draw a similar conclusion for Korean firms from 1996 - 2000. However, foreign investors prefer Japanese and Korean stocks with a high ROE but not ROA [33]. Some studies only focus on ROA or ROE but the results are controversial. For example, while Dahlquist and Robertsson [12] and Aggarwal [12] state that high ROE stocks attract foreign investors, Jeon et al. [36] did not find a link between equity profitability measured by ROA and foreign ownership. Regarding EBITDA, Kang et al. [23] indicates that this measure of profitability is positively correlated with foreign ownership, using a sample of firms listed on the Korean Stock Exchange during the 2000-2004 period.

H3: Profitability has positive effects on trading volume.

Firm's liquidity ratio

The liquidity ratio of a firm signals its short-term financial distress and is mainly measured by the current ratio. Dahlquist and Robertsson [12] indicate that international investors prefer Swedish firms with balance sheets showing large cash positions. This finding is consistent with Kang et al. [23] for Korean Stock Exchange-listed companies and consistent with the finding of Batten and Vo [16] for the Vietnam Stock market. This may imply that foreign investors tend to seek firms with a high current ratio and a low level of distress in the short run.

H4: Firm's liquidity ratio has positive effects on trading volume.

Leverage

Foreign investors usually avoid informational asymmetry by choosing firms with certain characteristics, among which is a low debt ratio [12, 16, 37, 38]. The expected negative link between leverage and foreign investment in the stock market may derive from the fact that a high debt ratio may signal the likelihood of financial distress and then bankruptcy in the future. In the research of Kang [37] from 1975 to 1991, non-Japanese investors allocated large funds to Japanese firms with low leverage and high current ratio. Studies of Dahlquist and Robertsson [12] and Lin and Shiu [38] with different regression techniques, also provide similar results in which the relationship between foreign investors and the leverage ratio of the firms is significantly negative. In other words, these authors achieve a consistent conclusion that foreign ownership is higher in firms with low idiosyncratic risk, and therefore in firms with low leverage. However, Bae et al. [16] and Mishra and Ratti [27] find no relationship between leverage in buying or selling stocks by international investors.

H5: Foreign investors prefer firms with low leverage.

Dividend yield

Existing empirical studies reveal the controversy of whether foreign investors tend to choose high or low dividend-paying firms. Jeon et al. [36] state that foreign investors, particularly institutional ones, are attracted by stocks that pay high dividends, which are a proxy of good governance. This result is also supported

by Bae et al. [17], Mishra, and Ratti [27]. One reason for foreign investors' preference for higher yield stocks is that these stocks are considered safe and they have predictive power for returns [39, 40, 41]. However, Dahlquist and Robertsson [12] argue that foreign investors prefer to invest in stocks having a low dividend yield due to tax considerations. Lin and Shiu [38] find similar results in Taiwanese firms. Vo [42] shows that foreign investors in Vietnam prefer to invest in firms that pay a low dividend and when becoming a larger shareholder, foreign investors tend to force firm managers to pay fewer dividends and retain a higher income to exploit future emerging market opportunities.

Following Vo [42] and considering the implication that a low dividend payout may result in higher retained earnings for capital investments, which drive firm's growth, we build hypothesis H6 as follows:

H6: Foreign investors prefer firms with low dividends.

3. Research methodology

3.1. Data

The research collected annual data from the listed companies on the Vietnam stock market, except for financial companies, banks, and insurance companies due to their different business nature. Firms needed to be listed and remain listed during the period of the research (from 2015 to 2019). After eliminating the firms which were listed after 2015 or cancelled listing in the period 2015-2019, the final sample remains at 1110 observations with 222 listed firms observed for five years.

3.2. Variables

Based on the literature review, we use Market capital (MKC), Price to Book value (P/B), current ratio (CR), the proportion of debt over assets (LEVERAGE), the growth of earnings before interest, taxes, depreciation, and amortization (logEBITDA) and return on assets (ROA) as the proxies for firm size, potential growth, firm's liquidity, leverage, and profitablility respectively.

We run two multivariate regression models constructed as follows:

Model 1:

$$Log(Buy_{it}) = \alpha_i + \beta_1 log(MKC_{it}) + \beta_2 PB_{it} + \beta_3 DY_{it} + \beta_4 CR_{it} + \beta_5 log(EBITDA_{it}) + \beta_6 ROA_{it} + \beta_7 LEV_{it} + \varepsilon_{it}$$

Model 2:

$$Log(Sell_{it}) = \alpha_i + \beta_1 log(MKC_{it}) + \beta_2 PB_{it} + \beta_3 DY_{it} + \beta_4 CR_{it} + \beta_5 log(EBITDA_{it}) + \beta_6 ROA_{it} + \beta_7 LEV_{it} + \varepsilon_{it}$$

In this research, we conduct several tests to identify the most appropriate model for each dependent variable among Pooled, Fixed-effects, and the Random-effects model. Also, the study calculates correlation coefficients amongst variables and variance inflation factors (VIF) to detect multicollinearity. We run robust regression to avoid heteroskedasticity problems.

4. Data analysis and empirical results

4.1. Data description

Table 1 presents the description of data in our analysis. This table shows that foreign investors bought an average of over 5.8 million shares whereas the largest figure was 310 million shares in the period 2015-2019. They also sold more than 7.3 million shares of stock on average while their biggest selling was over 342 million shares in the same period. The mean (median) of market capitalization was 4.69 trillion VND with the highest value being 387 trillion VND. The earnings before interest, taxes, depreciation and amortization (EBITDA) range from -2.35 trillion VND to 17.5 trillion VND and its mean (median) was approximately 0.54 trillion VND. In terms of other profitability measures, the mean (median) of ROA was 7.44 per cent and the maximum was 83.91 per cent, while the minimum was -0.18%. For dividend policy, the

percentage of dividends that investors received accounted for 6.7 per cent on average compared to the market price of stock while the lowest and highest figure was 5.7 per cent and 70.8 per cent respectively. Another measure of market value is PB, and its mean (median) was 1.22 and the maximum was 11.67, while the minimum was approximately 0.1. Vietnamese-listed firms did not seem to have a good liquidity situation in the period 2015-2019, with the mean (median) of current ratios being 1.75 times.

Table 1: Descriptive statistics of data

	Buy	Sell	MKC	PB	DY	CR	EBITDA	ROA	LEV
Mean	5824485	7315690	4.69E+12	1.22	6.70	1.75	5.39E+11	7.44	0.48
Standard deviation	22700000	25400000	2.47E+13	1.09	5.73	1.04	1.81E+12	6.27	0.45
Min	1	1	7.39E+09	0.09	0	0.21	-2.35E+12	-0.18	0.00
Max	310000000	342000000	3.87E+14	11.67	70.79	9.15	1.75E+12	83.9	3.95

Source: Thomson Reuter Datastream and authors calculate.

4.2. Correlation amongst variables

Table 2 presents correlation coefficients among variables and their VIF values. Both foreign investors' selling and buying volumes are positively correlated with market value, profitability, and leverage, while there is a negative relationship with dividend policy. This means that foreign investors might prefer trading stocks with firms that have high market value, high profitability, and high leverage, whereas they tend to avoid firms with higher dividend policies. Besides, foreign investors favour investing in firms with high current ratios. Regarding the relationship between independent variables, the coefficients between MKC and EBITDA are quite high while the correlated coefficients among the remaining variables are not high. This table also indicates that the VIF of all variables is smaller than 10. Therefore, we can conclude that multicollinearity does not exist among variables.

Table 2: Correlation coefficients and VIF

	Correlation coefficients									**VIF**
	Buy	**Sell**	**MKC**	**PB**	**DY**	**CR**	**EBITDA**	**ROA**	**LEV**	
Buy[Sell]	1	1								
MKC	0.588	0.600	1							5.97
PB	0.337	-0.338	0.526	1						5.42
DY	-0.160	-0.174	-0.125	-0.212	1					2.06
CR	0.002	-0.004	0.035	0.054	-0.077	1				1.66
EBITDA	0.743	0.711	0.889	0.467	-0.132	0.025	1			1.25
ROA	0.123	0.096	0.177	0.541	-0.045	0.215	0.200	1		1.19
LEV	0.002	0.012	-0.056	-0.124	0.062	-0.367	-0.014	-0.299	1	1.07

Source: Thomson Reuter Datastream and authors calculate

4.3. Empirical results

Table 3 illustrates the results of panel regressions and relevant diagnostics. The Hausman test indicates that random effects estimation is appropriate to investigate the effect of a firm's characteristics on the buying decision of foreign investors whereas fixed effects

estimation is an advantage in examining selling transaction. Modified Wald test and Breusch-Pagan indicatethe occurrence of heteroskedasticity in both models. Wooldridge tests show that there is no autocorrelation in Model 1 while Model 2 contains autocorrelation problems. To correct heteroscedasticity, we use robust effect models and FGLS models. The former does not make any change in the coefficient estimates, but acknowledges the error and therefore widens the confidence intervals. Meanwhile, the latter provides unbiased estimators in case of the existence of heteroscedasticity. Therefore, our discussion is mainly based on the results provided by the FGLS model.

Table 3: Factors affecting buy and sell volume: Regression results

	(1) **logBuy**	**(2)** **logSell**	**(3)** **logBuy**	**(4)** **logSell**
logMKC	1.308***	0.539	1.147***	1.391***
PB	-0.651***	-0.152	-0.693***	-0.714***
DY	0.0206	0.0313***	-0.00882	0.00736
CR	0.00767	-0.0123	0.126**	0.133***
logEBITDA	0.408*	-0.0648	0.504***	0.302***
ROA	0.0242	-0.00245	0.00586	-0.0285**
leverage	-0.414	-0.979*	-0.293*	-0.407**
_cons	-33.46***	-0.123	-31.06***	-31.91***
N	1102	1102	1102	1102
Hausman test	11.39	45.73***		
Wooldridge test	5.858**	2.355		
Modified Wald test		65410.7***		
Breusch-Pagan	544.7***			

Note: (1) Robust Random effect model, (2) Robust fixed-effect model, (3) (4) FGLS model.
***,**,* denotes significance level of 0.01%, 1%, 5% respectively.
Source: Thomson Reuter Datastream and authors calculate.

Firm size/Market capitalization: For most of the models used, market capitalization or firm size is positive and significant, proving the foreigner's tendency to invest in large firms. To be more specific, the magnitude of coefficients of around 1% means that a 1% increase in market capitalization can result in around a 1% increase in the number of shares bought or sold. This finding supports the hypothesis H1 that foreign investors prefer large firms.

Price/Book value: P/B shows a negative impact on the of buy and sell volume. The negative coefficients of these variables indicate that investors prefer firms with low P/B rather than high ones. This finding contrasts with hypothesis H2.

In general, foreign investors prefer firms with high market capitalization and low P/B value. This reflects their risk aversion when investing in Vietnamese stock markets during the period 2015-2019. Firms with high market capitalization tend to be more stable and have less market risk than small ones. Availability of information on large firms allows foreign investors to diminish the effect of information asymmetry [34, 23]. Also, large firms tend to have high market liquidity [12]. Meanwhile, this contrasts Kang et al. [23], Vo Xuan Vinh [34] who proves that the foreign investors prefer value stocks, meaning stocks with high PB. During 2015 – 2019, the high PB values seem to be considered as a bad buy in which the stocks are overvalued and likely to experience a price decline in their intrinsic values.

Profitability: In this paper, we use EBITDA and ROA to measure a firm's profitability. The

logEBITDA is positively and significantly related to Buy/Sell volume, indicating the investor's preference of firms with high EBITDA. Meanwhile, we only find a negative impact of ROA on the sell decision and fail to find the connection between this factor and the buy decision. As a proxy for cash flow from the entire company's operations, that EBITDA has a positive effect on Buy/Sell volume shows the investor's interest in the core profit of a company. Hypothesis H3, therefore, cannot be rejected with EBITDA, while it can be rejected with ROA.

Firm liquidity: Firm liquidity refers to the firm's ability to cover current liabilities by its current assets and is popularly measured by the current ratio. The result of panel regression using FGLS methods shows that foreign investors are in favour of stocks with a high current ratio. However, to some extent, the current ratio is a proxy of short-term financial distress. Therefore, a positive coefficient of the current ratio might show investors' reluctance for firms with a high probability of financial distress in the short term. This finding supports Hypothesis H4.

Leverage: The study find a negative relationship between the leverage and buy/sell decision. This implies that foreign investors tend to select firms with low debt. This finding is consistent with Hypothesis H5.

Dividend policy: There is no clear evidence of the impact of dividend yield on the number of shares bought or sold by foreign investors. However, the signs of coefficients show that the more firms pay dividends to their shareholders, the more tendency the foreign investors have to buy their stocks, and the less tendency the foreign investors have to sell their stocks. La Porta et al. [43] and Lins and Warnock [44] point out that the foreign investor's preference for shareholder-friendly governance, which is communicated via high dividend yield could explain this situation. In fact, when emerging markets tend to be weak institutionally and inefficient, then traders are strongly affected by informational asymmetry. This may suppose that foreign investors prefer good corporate governance signalled through high dividends. In summary, foreign investors prefer a firm with high market capitalization, low PB, high liquidity and profitability, and low leverage.

5. Conclusion

With robust growth, the Vietnamese stock market is an emerging market that is attracting international capital flows. However, the specific factors influencing foreign investors' behavior towards Vietnamese stocks have not yet been clarified. This study examines the effect of firm characteristics on trading volume traded by international investors including firm size, P/Book value, profitability, leverage, firm liquidity ratio and dividend policy. Applying two types of models (fixed-effect and FGLS) on a sample of 1100 observations from 222 listed companies during the 2015-2019 period, the study figures out determinants of foreign ownership in the Vietnamese stock market and contributes empirical evidence of the effects of firm characteristics on trading decisions.

The results reinforce the view in the literature that international capital tends to flow into large-cap firms with high profitability and low financial risk in both the short and long-term. To be specific, the study agrees with most of the literature that international capital tends to flow into firms with high EBITDA and low debt. However, foreign investors are likely to choose low-PB stocks, which is inconsistent with the view of others such as Batten and Vo [16] and Vo [34]. The study provides some evidence challenging common intuition that foreign investors prefer stocks with high ROA. Regarding dividend policy, the study fails to find a clear impact of dividend yield on the number of traded shares. But, the common signs of these variables may imply investors' preference toward paying dividends.

Compared to Batten and Vo [16] and Vo [34], studying what factors affect foreign ownership in the Vietnam Stock market from 2007-2012, we can see a clear change in foreign investors' behavior. It seems that they tend to be

more conservative in their strategies. From investing in value firms with large-cap, high P/B, low current ratio, and low dividend yield, they switch to growth firms with low P/B, require better governance which may present via a higher dividend, and follow firms with conservative management (with low leverage, and high current ratio). This may be explained by the barriers faced by foreign investors and the weak institutional capability of the Vietnam stock market, causing them to have a disadvantage in information-based trading. While foreign investors are typically mutual funds or institutions and may benefit from their large holdings, advanced monitoring and rich experiences in market activities, they still face difficulties in information competition with domestic investors [30]. Therefore, we need more solutions to enhance investment environments and institutional capability.

In general, this study helps to check the determinants of foreigners' buy and sell volumes in the Vietnamese setting and contributes empirical evidence to the field of foreign trading decisions. Its findings can be a reference source for firms, market analysts and management institutions to analyze, evaluate and predict foreign investors' behaviour towards stocks with different attributes and their response to changes in firm characteristics over time.

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