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The factors affecting the profitability of listed companies on the Vietnamese stock market

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Abstract
This study aims to investigate the factors affecting the profitability of companies listed on the Vietnamese stock market. Using panel data from 420 listed firms over the period 2014–2022, the research employs fixed effects regression models with robust standard errors to address issues of autocorrelation and heteroskedasticity. Profitability is measured by return on assets (ROA), while the independent variables include firm size, revenue growth, tangible fixed assets (PPE), and financial leverage (LEV). The empirical results show that revenue growth has a positive impact on profitability, whereas financial leverage and the proportion of tangible fixed assets have negative effects. Firm size, although negatively associated with ROA, is statistically insignificant. The findings highlight the importance of managing capital structure and asset allocation to enhance firm performance. This research provides useful insights for corporate managers, investors, and policymakers in improving the financial efficiency of listed enterprises in Vietnam.

Keywords: Profitability, Listed Companies, Firm Size, Financial Leverage

1. Introduction

Profitability is one of the most critical indicators reflecting a firm's operational efficiency and financial health. It not only determines the firm's ability to survive and grow sustainably but also serves as a fundamental basis for shareholders, investors, and other stakeholders to assess its growth potential and competitive strength in the market. For companies listed on the Vietnamese stock exchange, profitability holds even greater significance, as it directly influences stock value, capital mobilization capacity, and overall market confidence. However, amid a volatile global economic environment and the uneven development of Vietnam's stock market, listed firms are facing considerable challenges in maintaining and improving their profitability.

The profitability of a firm is influenced by a variety of both internal and external factors. Internal factors may include capital structure, management efficiency, firm size, business strategy, and asset utilization. In contrast, external factors consist of macroeconomic conditions, tax policies, industry competition, and fluctuations in the financial market. A comprehensive understanding of these determinants not only enables firms to develop strategies that optimize operational efficiency but also supports managers and investors in making well-informed decisions aligned with real market conditions.

Despite its importance, research on the profitability of listed firms in Vietnam remains limited, particularly in analyzing the effects of domestic market-specific factors. Moreover, many Vietnamese enterprises are burdened with high capital costs, limited competitiveness, and an unstable legal and regulatory environment. These challenges may significantly undermine profitability, leading to adverse impacts on both the long-term development of enterprises and the stock market as a whole. Therefore, studying the factors that affect the profitability of listed companies is not only academically relevant but also practically valuable for enhancing business performance and promoting the sustainable growth of Vietnam's capital market.

2. Literature Review

Internationally, the study by Alarussi and Alhaderi (2018) [1] in Malaysia analyzed the factors influencing corporate profitability, focusing on key variables such as firm size, asset turnover ratio, financial leverage, and debt-to-asset ratio. The

results indicated that firm size and asset turnover had a positive impact on profitability, while financial leverage and the debt-to-asset ratio exerted negative effects. This study successfully provided empirical evidence within the Malaysian context; however, it had certain limitations, particularly in its lack of consideration for macroeconomic factors such as the business environment and economic policy. Compared to domestic studies, international research tends to adopt a more generalizable approach, often employing well-established quantitative models to examine the relationships between internal financial indicators and firm profitability.

In addition to the study by Alarussi and Alhaderi (2018) [1], other international research has also explored the determinants of firm profitability across different contexts. For example, Goddard *et al*. (2005) [3] conducted a study across several European countries and found that firm size, capital structure, and revenue growth significantly affected profitability. Notably, they emphasized that the relationship between size and profitability was not strictly linear, but rather dependent on the effectiveness of internal management. Similarly, Pervan and Višić (2012) [4], focusing on Croatian firms, concluded that firm size had a positive effect on profitability, but this effect was more pronounced in larger firms, while smaller firms were more vulnerable to financial risk. In the case of Portugal, Nunes, Serrasqueiro, and Sequeira (2009) [5] investigated small and medium-sized enterprises (SMEs) and concluded that high levels of financial leverage tend to reduce profitability, especially under conditions of limited access to long-term capital and high borrowing costs. A notable feature across these international studies is the incorporation of control variables such as industry-specific characteristics and macroeconomic conditions, as well as the application of advanced econometric techniques like the Generalized Method of Moments (GMM) or dynamic panel data models to enhance the robustness of findings. Compared to Vietnamese studies, international research tends to have broader scopes, more comprehensive modeling frameworks, and a stronger emphasis on the interaction between internal firm dynamics and the external economic environment. These aspects offer valuable direction for domestic research aiming to improve generalizability and practical relevance.

In Vietnam, many studies have focused on specific sectors, such as agriculture (Nguyen Thi Cam Huong, 2023) [2], construction, and pharmaceuticals. Despite differences in industry scope, these studies commonly find that firm profitability is affected by several factors including firm size, financial leverage, revenue growth, and asset turnover. However, the impact of these variables is not consistent across sectors: while revenue growth was found to be statistically insignificant in the agricultural sector, it had a significant effect in both the construction and pharmaceutical sectors. Financial leverage, on the other hand, tended to have a negative impact across most sectors. A common limitation among domestic studies is the limited consideration of macroeconomic factors such as inflation, interest rates, and economic growth—although the study by Nguyen Thi Cam Huong (2023) [2] did incorporate macroeconomic variables into the model. Overall, research in Vietnam has primarily focused on individual sectors and employed linear regression techniques, suggesting a strong need to broaden the research scope and integrate macro-level determinants to improve explanatory power and generalizability.

3. Theory and Hypotheses

Identifying the factors that affect firm profitability must be grounded in a solid theoretical foundation to ensure logical consistency, explanatory power, and clear guidance for model development. In this study, two primary theories are employed: **Transaction Cost Theory (TCT)** and the **Resource-Based View (RBV)**. These theories help explain the relationship between firm characteristics—such as size, growth, and fixed assets—and profitability.

3.1 Transaction Cost Theory (TCT)

Proposed by Coase (1937) [6] and further developed by Williamson (1975), Transaction Cost Theory suggests that firms exist to minimize the costs incurred from market-based transactions, such as negotiation, monitoring, and enforcement costs. Larger firms are typically better positioned to benefit from economies of scale, allowing for more efficient allocation of fixed costs, stronger bargaining power, and lower per-unit production costs, thereby improving profitability. However, increased size may also lead to higher administrative costs and reduced organizational flexibility if not managed effectively.

Based on this theoretical framework, the following hypothesis is formulated:

H1: Firm size (SIZE) affects profitability.

In the context of corporate finance, the use of financial leverage (i.e., debt ratio) is considered a form of "financial transaction" between the firm and lenders. Transaction Cost Theory posits that borrowing can yield short-term financial advantages through the tax shield effect, thereby enhancing net profitability. However, the use of debt also gives rise to additional transaction costs, including interest payments, monitoring costs imposed by creditors, the risk of default, and the opportunity costs associated with reduced financial autonomy. When leverage exceeds a manageable threshold, the firm may face escalating financial burdens, which can negatively affect cash flow and profitability. This issue is especially evident in emerging markets like Vietnam, where firms often struggle to optimize their capital structures.

Thus, the following hypothesis is proposed:

H2: Financial leverage (LEV) affects firm profitability.

3.2 Resource-Based View (RBV)

The Resource-Based View, as articulated by Barney (1991) [7], asserts that a firm's competitive advantage and financial performance primarily derive from its ability to acquire and effectively utilize valuable, rare, inimitable, and non-substitutable resources. Among these, revenue growth reflects a firm's capability to capture market opportunities and innovate in products and services. Firms experiencing high growth rates often benefit from expanded scale, improved cost efficiency, and enhanced profitability. Nevertheless, rapid growth can also entail financial imbalances and increased operational costs if not supported by adequate internal resources. Accordingly, the following hypothesis is developed:

H3: Revenue growth (GROWTH) affects firm profitability.

In addition, RBV highlights the role of tangible assets—such as buildings, machinery, and equipment (PPE)—as key resources that enable firms to sustain production capacity and maintain long-term operational efficiency. When effectively utilized, tangible fixed assets can improve productivity, reduce operational costs, and thereby enhance profitability. Conversely, excessive or inefficient investment in fixed assets can result in higher depreciation expenses and lower return on assets. Based on this reasoning, the final hypothesis is proposed:

H4: Tangible fixed assets (PPE) affect firm profitability.

4. Data

The dataset employed in this study consists of panel data from listed companies on the Vietnamese stock market. The variables used in the regression model are presented in the table below, including their names, classifications, and measurement methods.

Variable	Abbreviation	Type	Measurement
Profitability	ROA	Dependent variable	Return on Assets (ROA) = Net income after tax / Total assets
Firm size	SIZE	Independent variable	Firm size, measured as the natural logarithm of total assets.
Financial leverage	LEV	Independent variable	Total liabilities / Total assets
Revenue growth	GROWTH	Independent variable	(Revenue in year *t* – Revenue in year *t–1*) / Revenue in year *t–1*
Tangible fixed assets	PPE	Independent variable	Tangible fixed assets / Total assets

Research subject: The impact of earning quality on corporate performance in non-financial enterprises.
Research scope: Data is sourced from Fiin Group JSC.
In terms of geography: non-financial companies listed on the Vietnamese stock market are identified, excluding financial companies such as insurance, securities, and banks. These entities are considered to have their own corporate governance rules and financial reporting standards, which may affect the research results (Davidson, Goodwin-Stewart, & Kent, 2005).
The linear regression model is employed to examine the impact of earnings quality on the dependent variables. A general model can be expressed as follows:

$$ROA = \beta_0 + \beta_1 Size_{it} + \beta_2 Lev + \beta_3 Growth + \beta_4 PPE_{it} + \varepsilon_{it}$$

5. Results and discussion

5.1 Examining the research model

Statistical data on the factors in the research model are as follows:

Table 1: Descriptive statistics of variables

Variable	Obs	Mean	Std. dev.	Min	Max
stt	3,779	291.6107	153.7567	1	550
mã	0				
năm	3,779	2018.001	2.581852	2014	2022
roa	3,360	.0651104	.0802338	-.6246	.7219
roe	3,360	.1281419	.1933632	-3.2938	5.2319
size	3,360	12.12334	.7254189	10.18013	14.76148
lev	3,360	.477714	.2218299	.0026735	1.294471
growth	3,360	.2321349	2.882456	-116.4356	55.05934
ppe	3,360	.2322543	.2197899	0	.9626768
eq	3,360	30.77523	478.2864	-24539.27	9384.433
mack_num	3,779	210.4557	121.2447	1	420
san_num	3,779	1.733263	.4423124	1	2

The correlation between variables is shown in Table 2. This table shows that the correlation coefficient between the independent variables in the model has no pair greater than 0.5. Therefore, there is little possibility of multicollinearity among the independent variables in the model.

Table 2: Correlation coefficient matrix

	roa	size	lev	growth	ppe
roa	1.0000				
size	-0.1015	1.0000			
lev	-0.3251	0.3526	1.0000		
growth	0.0351	-0.0086	0.0043	1.0000	
ppe	0.0261	0.0720	-0.0120	-0.0537	1.0000

The study examines the multicollinearity of variables in the research model based on the acceptable threshold of the variable (Tolerance) and the VIF coefficient. The results of the regression analysis show that the variance exaggeration factor VIF is less than 5, so it is possible to reject the hypothesis that the model has multicollinearity (Table 3).

Table 3: Multicollinearity test result

Variable	VIF	1/VIF
size	1.15	0.869846
lev	1.14	0.874255
ppe	1.01	0.990439
growth	1.00	0.997062
Mean VIF	1.08	

The study tests to choose an appropriate regression model between OLS and FEM by employing the F test and the Hausman test before analyzing factors affecting the truthfulness of financial reporting. As a result, the FEM model was selected for further tests. The results are shown in Table 4.

Tables 4: F test and Hausman test results

Overall model	Inspection results	Conclusion
Step 1: Comparison between OLS and FEM	F(419, 2936) = 9.69; Prob > F = 0.0000	FE model selection
Step 2: Comparison between OLS and REM	Chi2(4) = 18.77, p-value = 0.0009	FE model selection

Table 5: Results of testing the autocorrelation and variance of variance

Overall model	Inspection results	Conclusion
Verification of variance	$Chi^2(420)$ = 3.8e+07 Prob > chi2 = 0.0000	There is a phenomenon that the variance of the error changes
Test for the phenomenon of series correlation	F(1, 419) = 47.220 Prob > F = 0.0000	There is a phenomenon of series correlation

The selected FEM model appears to have defects of the research model, such as the variance of the error change and series correlation. To address potential issues of heteroskedasticity and autocorrelation that commonly arise in panel data, the study employs the fixed effects (FE) model with cluster-robust standard errors at the firm level (mack_num).

This approach effectively controls for unobserved time-invariant heterogeneity across firms and ensures that the standard errors are robust to within-group correlation and heteroskedasticity. By clustering at the firm level, the estimates become more reliable and suitable for inference in the context of unbalanced panel data.

Table 6: Results of fixed effects (FE) model with cluster-robust standard errors at the firm level (mack_num)

Fixed-effects (within) regression Number of obs = 3,360

Group variable: mack_num Number of groups = 420

R-squared: Obs per group:

Within = 0.0312 min = 8

Between = 0.0133 avg = 8.0

Overall = 0.0152 max = 8

F(4, 419) = 9.35

corr(u_i, Xb) = -0.2318 Prob > F = 0.0000

(Std. err. adjusted for 420 clusters in mack_num)

roa	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
size	-.0157271	.0086636	-1.82	0.070	-.0327567	.0013025
growth	.0013128	.0004545	2.89	0.004	.0004195	.0022061
ppe	-.0831453	.0231737	-3.59	0.000	-.1286966	-.0375941
lev	-.03124	.0151045	-2.07	0.039	-.06093	-.0015499
_cons	.2897056	.1048013	2.76	0.006	.0837038	.4957074

sigma_u | .06450437

sigma_e | .05251276

rho | .60141238 (fraction of variance due to u_i)

The regression results indicate several significant relationships between firm-specific characteristics and profitability, measured by return on assets (ROA). The growth variable exhibits a positive and statistically significant coefficient ($\beta = 0.0013$, $p = 0.004$), implying that firms with higher growth rates are more likely to achieve better profitability. In contrast, firm size shows a negative relationship with ROA ($\beta = -0.0157$, $p = 0.070$), statistically significant at the 10% level, suggesting possible diseconomies of scale or increasing operational complexity as firms expand.

Moreover, the coefficient of capital intensity (ppe) is negative and highly significant ($\beta = -0.0831$, $p < 0.01$), indicating that firms with a higher proportion of fixed assets tend to generate lower returns, possibly due to inefficient asset utilization or high depreciation costs. Similarly, financial leverage (lev) is found to be negatively associated with ROA ($\beta = -0.0312$, $p = 0.039$), reflecting the adverse impact of debt on profitability through interest obligations and financial risk.

The model is statistically significant overall ($F(4, 419) = 9.35$, $p < 0.001$), and the within R-squared of 0.0312 suggests that approximately 3.12% of the variation in ROA within firms over time is explained by the independent variables. The intra-group correlation (rho = 0.6014) implies that a substantial proportion of the total variance is attributable to firm-level effects, justifying the use of fixed effects.

6. Conclusion and policy implication

6.1 Conclusion

The research findings offer several important implications for strategic planning and decision-making aimed at enhancing firm profitability. First, the variable revenue growth (GROWTH) is found to have a positive and statistically significant relationship with ROA, indicating that firms with higher growth rates tend to achieve better profitability performance. This suggests that corporate leadership should focus on strategies that expand market share, develop new products or services, or enter new markets in order to sustain and accelerate revenue growth over the long term.

In contrast, firm size (SIZE) has a negative effect on ROA, significant at the 10% level. This implies that as firms grow larger, they may experience diminishing returns to scale or face challenges related to organizational complexity and inefficiencies in management and operations. Therefore, managers should regularly review the organizational structure, streamline administrative systems, and continuously improve internal processes to maintain operational efficiency even as the company scales up.

A particularly noteworthy finding is that the capital intensity ratio (PPE) has a strong and statistically significant negative relationship with ROA. This indicates that excessive investment in fixed assets may reduce profitability, possibly due to high depreciation costs or suboptimal asset utilization. This highlights the need for management to optimize asset usage, enhance performance monitoring, and ensure that investments in fixed assets are made only when they are expected to generate substantial added value for the firm.

Finally, financial leverage (LEV) also exhibits a negative effect on ROA, reflecting how financial risk and interest expenses may erode profitability. Consequently, managers should aim to build a well-balanced capital structure and avoid overreliance on debt financing, particularly in contexts of interest rate volatility or unstable cash flows.

6.2 Policy implication

First, to enhance firm profitability, both macroeconomic and microeconomic policies should facilitate revenue growth through the promotion of innovation, market expansion, and improvements to the business environment. Specifically, the government and relevant regulatory bodies should consider simplifying administrative procedures, enhancing digital infrastructure, and increasing financial support for small and medium-sized enterprises (SMEs) with high growth potential.

Second, the findings indicate that a larger firm size does not necessarily translate into higher efficiency. Therefore, policies should encourage enterprises to optimize their organizational and governance structures rather than focusing solely on physical or quantitative expansion. This recommendation is particularly relevant for state-owned enterprises and firms undergoing rapid growth, as it helps avoid inefficiencies and excessive bureaucracy associated with large, unwieldy organizational structures.

Third, the negative impact of financial leverage and fixed assets on profitability suggests that fiscal and credit policies should be reoriented toward encouraging more efficient capital utilization. Credit institutions should strengthen oversight of loan usage and simultaneously support businesses in accessing lower-risk financing alternatives, such as equity capital or joint ventures. This approach would help reduce financial pressure while promoting more effective investment in revenue-generating assets.

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