International Conference on Finance, Economics, Management, Accounting and Informatics

"Digital Transformation and Sustainable Business: Challenges and Opportunities for Higher Education Research and Development"

Factors Affecting the Profitability of Real Estate Companies Listed on the Stock Exchange in Vietnam

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Abstract

In early 2024, Vietnam's real estate market is forecast to have development potential, will change and progress significantly well, this will also be the year that lays the foundation for a new cycle. Understanding factors affecting profitability of real estate firms on the Stock Exchange will help investors, regulators and businesses have a clearer view of the potential and risks of the real estate market. This article studies the factors affecting profitability of 44 real estate firms listed on the Vietnamese Stock Exchange in the period 2018-2023 using 3 regression models OLS, FEM, REM. The results show that financial leverage has a negative impact on the profitability of real estate businesses, on the contrary, asset structure, liquidity and revenue growth rate have a positive influence.

Keywords: Real Estate Firms, Profitability, Factors Affecting.

Introduction

In a competitive market, achieving a satisfactory level of profitability is a crucial concern for business owners, who recognize that profitability is the key determinant of success. Profitability serves as a vital indicator of a company's operational efficiency and is a central component of corporate finance. The real estate sector is considered to have significant potential for further development and plays an essential role in economic activities and national economic growth worldwide, including in Vietnam. However, this sector still faces several persistent challenges, particularly regarding the regulatory framework for land use, urban planning, and taxation policies, which remain ambiguous and unstable. Legal procedures and administrative processes are often complex and burdensome. These issues highlight the urgent need for Vietnamese real estate enterprises to achieve more stable and sustainable profitability, to respond effectively to market dynamics, and to contribute to long-term economic growth.

Recognizing that the real estate industry accounts for a substantial proportion of national GDP—Vietnam being no exception—listed real estate companies play a pivotal role in shaping the sector. Nevertheless, the industry in Vietnam continues to experience difficulties, especially with respect to land planning and unstable legal policies. These factors can have adverse effects on corporate profitability. Accordingly, this study focuses on the topic: "Factors Affecting the Profitability of Real Estate Companies Listed on the Stock Exchange in Vietnam.".

Literature Review

A number of empirical studies have investigated the factors influencing firm profitability across different industries and national contexts. Dogan (2013), in a study conducted in Turkey, examined the relationship between firm size and profitability. His findings revealed a positive and statistically significant association, suggesting that larger firms tend to achieve higher profitability levels due to advantages such as economies of scale and better market positioning. In a different setting, Vladyslav, Harbi, and Meng Li (2021) analysed the

impact of financial leverage on profitability among 18 real estate companies listed on the Swedish Stock Exchange between 2016 and 2020. The study reported an average ROA of 1.94% and found that financial leverage did not have a statistically significant influence on profitability, as measured by ROA, in the Swedish real estate sector. Meanwhile, research by Pontoh and Ilat (2013) explored the relationship between capital structure and profitability in both Indonesia and India. The results of their regression analyses consistently indicated a negative correlation, suggesting that higher debt levels may adversely affect firm profitability due to increased financial risk and interest obligations. Tsagem, Aripin, and Ishak (2015) expanded the discussion by examining how working capital management, family ownership, and board size impact the profitability of 47 SMEs in Nigeria over the period 2008–2012. Their results highlighted a statistically significant link between board size and firm profitability, pointing to the potential role of governance structures in influencing performance outcomes.

Within the Vietnamese context, several scholars have also contributed to this area of inquiry. Ngo and Nguyen (2020) investigated 27 real estate companies listed on the Ho Chi Minh Stock Exchange during the 2010–2019 period. Their regression results indicated that while most independent variables had a positive effect on profitability, asset structure was the only factor with a significant negative impact. The authors also proposed policy recommendations related to legal frameworks, government support, and information technology applications. Similarly, Do (2019) examined the determinants of profitability in 59 listed construction firms using audited annual financial statements from 2012 to 2016. The study found that five independent variables significantly affected ROA and six variables significantly influenced ROE, all at the 5% significance level. Lastly, the study by Nguyen et. al (2019) focused on the relationship between financial leverage and profitability among listed real estate firms in Vietnam. Their analysis showed that leverage had no significant impact on ROS and ROCE, but exerted a negative effect on ROA and a positive effect on ROE, reflecting the complex and multifaceted nature of leverage-performance dynamics in the sector.

Building on prior research, the study proposes eight hypotheses based on empirical and theoretical literature. Firstly, firm size is widely considered a proxy for various positive business attributes, including profitability. Dogan (2013) identified a significant positive relationship between firm size and profitability in the context of Turkish listed companies, where larger firms exhibited higher profitability. Similar findings were reported by Alarussi (2018).

H1: Firm size positively affects the profitability of listed real estate enterprises in Vietnam.

Francis and Martha (2017), in their study of Indonesian real estate companies, found a negative correlation between financial leverage and firm profitability. Likewise, Dogan (2013) observed a consistently inverse relationship between the debt-to-equity ratio and profitability, particularly in terms of return on assets (ROA), across all model specifications.

H2: Financial leverage has a negative effect on the profitability of listed real estate companies in Vietnam.

Firms with a higher proportion of fixed assets may enjoy more favourable borrowing terms from banks, thereby enhancing their operational efficiency. Supporting this view, Pham (2022) reported a positive and statistically significant association between asset structure and profitability among real estate firms.

H3: Asset structure has a positive effect on the profitability of listed real estate companies in Vietnam.

Liquidity plays a crucial role in ensuring smooth business operations. Gill & Mathur (2011) and Mohammed & Hamza (2020) both found a positive relationship between liquidity and firm profitability. A well-managed cash flow system enables companies to achieve stronger profit margins.

H4: Liquidity has a positive effect on the profitability of listed real estate companies in Vietnam.

Older firms tend to accumulate greater operational experience, which helps them mitigate risks and benefit from preferential lending conditions. As such, firm age is expected to positively influence profitability. This relationship was also confirmed by Ngo and Nguyen (2020) in their study on Vietnamese real estate firms.

H5: Firm age has a positive effect on the profitability of listed real estate companies in Vietnam.

A larger board of directors can provide more effective oversight and strategic input, which contributes to the efficient and sustainable functioning of the firm, thereby enhancing profitability. The positive impact of board size on firm performance was also reported by Ngo and Nguyen (2020).

H6: Board size has a positive effect on the profitability of listed real estate companies in Vietnam.

According to the trade-off theory, rapid growth in retained earnings may lead to increased debt financing to maintain a balanced capital structure. A high revenue growth rate enhances corporate profitability. This relationship was empirically supported by Mendi & Hasan (2018) and Do (2019), who found significant positive effects of revenue growth on firm profitability.

H7: Revenue growth rate has a positive effect on the profitability of listed real estate companies in Vietnam.

A higher GDP growth rate expands market demand and consumer spending, creating favourable conditions for increased sales and profitability. Škuláňová, N. (2021), in a study covering over 89,000 real estate firms from 2010 to 2018, found a statistically significant and positive relationship between GDP growth and corporate profitability.

H8: GDP growth rate has a positive effect on the profitability of listed real estate companies in Vietnam.

Methods

This study employs a quantitative research approach to collect and analyse data, aiming to draw conclusions and test the relationships among variables. The sample consists of real estate firms listed on Vietnam's three stock exchanges: HOSE, HNX, and UPCoM. A total of 44 companies were selected, with data covering the period from 2018 to 2023, resulting in 264 firm-year observations. The author applies three econometric models for regression analysis: the Ordinary Least Squares (OLS) model, the Fixed Effects Model (FEM), and the Random Effects Model (REM). Data were processed using STATA through the following analytical steps: descriptive statistics, correlation analysis, regression analysis, and diagnostic testing.

Based on the aforementioned literature, the regression equations are specified as follows:

$ROA = \alpha + \beta1*SIZE + \beta2*DLF + \beta3*PS + \beta4*LIQ + \beta5*AGE + \beta6*NUM + \beta7*GR + \beta8*GGDP + \varepsilon i$

$ROE = \alpha + \beta1*SIZE + \beta2*DLF + \beta3*PS + \beta4*LIQ + \beta5*AGE + \beta6*NUM + \beta7*GR + \beta8*GGDP + \varepsilon i$

where: α, β1, β2, β3, β4, β5, β6, β7, and β8 are coefficients and ε is error.

Table 1 - List of dependent and independent variables of the regression models

Variable	Role	Explanation	Calculation	Model
ROE	Dependent variable	Return on equity	Net income / Equity	Y1
ROA	Dependent variable	Return on assets	Net income / Total assets	Y2

SIZE	Independent variable	Firm size	Log (total assets)	X1
DFL	Independent variable	Financial leverage	$\frac{\text{Total debt}}{\text{Equity}}$	X2
PS	Independent variable	Asset structure	$\frac{\text{Fixed assets}}{\text{Total assets}}$	X3
LIQ	Independent variable	Liquidity	$\frac{\text{Current assets}}{\text{Current liabilities}}$	X4
AGE	Independent variable	Firm age	from year of establishment to 2023	X5
NUM	Independent variable	Board size	The number of board members	X6
GR	Independent variable	Revenue growth rate	$\frac{(\text{Revenue}_{t} - \text{Revenue}_{t-1}) \times 100}{\text{Revenue}_{t-1}}$	X7
GGDP	Control variable	GDP growth rate	$\frac{(\text{GDP}_{t} - \text{GDP}_{t-1}) \times 100}{\text{GDP}_{t-1}}$	X8

(Reference: Authors' summary)

Results and Discussion

Descriptive Analysis

Table 2 provides the descriptive statistics of the 8 independent and 2 dependent variables. On average, return on assets (ROA) and return on equity (ROE) were 3.69% and 9.94%, respectively. The mean firm size (SIZE) was 12.19, while financial leverage (DLF) had an average value of 1.2047. The asset structure (PS) remained relatively low, averaging 0.0545, and average liquidity (LIQ) was 0.2840. The firms in the sample had operated for an average of 18 years. Revenue growth rate (GR) averaged 15.54%, while the GDP growth rate (GGDP) during the study period stood at 5.44%.

Table 2 - Descriptive Analysis

Variable	Obs.	Mean	Std. dev.	Min	Max
ROA	264	0.0368811	0.0725767	-0.483408	0.2192835
ROE	264	0.0994916	0.2017754	-1.434497	1.499411
SIZE	264	12.19926	0.6592423	9.91913	13.72575
DFL	264	1.204683	1.961808	-19.41047	6.142857
PS	264	0.0545153	0.0861999	0	0.4427559
LIQ	264	0.2839491	0.2178729	0.0028787	0.9560218
AGE	264	18.70455	4.095325	10	31
NUM	264	6.07197	1.631012	3	15
GR	264	15.5352	195.2612	-2416.141	756.2767
GGDP	264	5.44333	2.108553	2.58	8.02

(Reference: Authors' summary from STATA)

Correlation Matrix

Table 3 presents the correlation coefficients between the variables. ROA and ROE showed positive correlations with asset structure (0.0619 and 0.0434), revenue growth rate (0.1327 and 0.1011), and GDP growth (0.0466 and 0.0710). Meanwhile, firm size, liquidity, firm age, and board size demonstrated negative correlations with profitability. Notably, financial leverage was positively correlated with ROA but negatively correlated with ROE. All correlation coefficients were below 0.75, with most under 0.3, suggesting no multicollinearity concerns.

Table 3 - Correlation Matrix

	ROA	ROE	SIZE	DFL	PS	LIQ	AGE	NUM	GR	GGDP
ROA	1.0000									
ROE	0.7431	1.0000								
SIZE	-0.0094	-0.0281	1.0000							
DFL	0.1157	-0.0380	0.1688	1.0000						
PS	0.0619	0.0434	-0.1525	-0.0677	1.0000					
LIQ	-0.2441	-0.0278	0.0688	0.1190	-0.1187	1.0000				
AGE	-0.1593	-0.1237	-0.2391	0.0555	0.0256	0.0014	1.0000			
NUM	-0.0578	-0.0322	0.1908	-0.0629	0.1285	0.0072	-0.0742	1.0000		
GR	0.1327	0.1011	-0.0730	0.0288	0.0293	-0.0636	-0.0067	0.1755	1.0000	
GGDP	0.0009	0.0294	-0.0241	-0.0788	0.0170	-0.0034	0.0000	-0.0385	-0.0624	1.0000

Regression results and discussion

To identify the determinants of profitability, three panel data regression models were estimated: Pooled OLS, Fixed Effects Model (FEM), and Random Effects Model (REM). Diagnostic testing guided model selection. The White test for the OLS model indicated heteroskedasticity (Prob > chi2 = 0.0000), and the Wooldridge test confirmed autocorrelation (Prob > F = 0.0188). The Hausman test comparing FEM and REM returned a p-value of 0.0456, supporting the use of the FEM. Variance Inflation Factor (VIF) scores were all below 2, ruling out multicollinearity. However, both heteroskedasticity and autocorrelation were present, warranting robust standard error corrections.

Under the FEM model, ROA was positively influenced by financial leverage (DLF), asset structure (PS), and revenue growth (GR), while ROE was significantly affected negatively by financial leverage (DLF), both positively by liquidity (LIQ), and revenue growth (GR). Other variables—firm size, firm age, board size, and GDP growth—had no significant impact on either measure of profitability.

Table 4 - Regression results of ROA, ROE under FEM model

Variable	Coefficient	Std. err.	t	P>|t|
ROA				
SIZE	0.0115248	0.0311955	0.37	0.712
DLF	0.0044969	0.0022799	1.97	0.050*
PS	0.1257486	0.0681538	1.85	0.066*
LIQ	0.0774059	0.0482825	1.60	0.110
AGE	0	omitted		
NUM	-0.0026444	0.0033645	-0.79	0.433
GR	0.0000496	0.0000203	2.44	0.015**
GGDP	0.0029205	0.0021707	1.35	0.180
ROE				
SIZE	0.0261493	0.0857794	0.30	0.761
DLF	-0.022434	0.0062691	-3.58	0.000***
PS	0.2058996	0.1874048	1.10	0.273
LIQ	0.224632	0.132764	1.69	0.092*
AGE	0	omitted		
NUM	-0.0095754	0.0092514	-1.04	0.302
GR	0.0001011	0.0000558	1.81	0.072*
GGDP	0.0082655	0.0059688	1.38	0.168

Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively
(Reference: Authors' summary from STATA)

Table 5 - Regression results of ROA, ROE under FEM, REM, OLS models

Dependent variables	VIF	Independent variables: ROA			Independent variables: ROE		
		FEM	REM	OLS	FEM	REM	OLS
SIZE	1.19	0.712	0.909	0.644	0.761	0.950	0.682
DLF	1.07	0.050*	0.023**	0.009***	0.000***	0.005***	0.696
PS	1.07	0.066*	0.087*	0.416	0.273	0.257	0.499

LIQ	1.03	0.110	0.148	0.000***	0.092*	0.387	0.882
AGE	1.07	omitted	0.074*	0.003***	omitted	0.268	0.037**
NUM	1.12	0.433	0.362	0.205	0.302	0.338	0.366
GR	1.07	0.015**	0.009**	0.033**	0.072*	0.048**	0.066*
GGDP	1.01	0.180	0.198	0.289	0.168	0.153	0.206
Constant		0.712	0.441	0.096	0.096	0.692	0.255
R2 coefficient		0.0009	0.1171	0.1350	0.0038	0.0247	0.0397
Observations		264	264	264	264	264	264
Wooldridge test		F(1,43) = 0.585 Prob>F = 0.4484			F(1,43) = 5.961 Prob>F = 0.0188		
White test		Chi2(44) = 2.0e+05 Prob>chi2 = 0.0000			Chi2(44) = 1.1e+06 Prob>chi2 = 0.0000		

Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively
(Reference: Authors' summary from STATA)

The results of the analysis highlight several key factors influencing profitability. To begin with, financial leverage (DLF) demonstrates a slightly positive effect on ROA, yet it exerts a statistically significant negative impact on ROE. This dual effect is consistent with prior findings by Francis & Martha (2017) and Dogan (2013). In the context of real estate firms, high levels of debt can increase sensitivity to market volatility, raise the cost of capital, and ultimately reduce returns to equity holders. Moreover, asset structure (PS) shows a clear positive relationship with profitability. A stable and well-balanced asset composition can enhance financial flexibility and reassure investors of a company's long-term orientation. This is particularly important in the real estate sector, where capital stability underpins sustainable growth. These findings are in line with those reported by Mohamed & Hazem (2015) and Pham (2022). In addition, the study confirms that liquidity (LIQ) is positively associated with firm profitability, supporting the substitution hypothesis. Firms with higher liquidity tend to manage cash flows more effectively, improve access to external financing, and build greater trust among investors. This result is also consistent with previous research by Gill & Mathur (2011) and Mohammed & Hamza (2020). Lastly, revenue growth (GR) emerges as a strong determinant of profitability. A high revenue growth rate reflects a firm's market appeal and operational strength. In a competitive industry such as real estate, revenue expansion signals the firm's ability to meet market demand and capture new business opportunities. This finding echoes the conclusions of Đỗ Thị Vân Trang (2019) and Mohammed & Hamza (2020).

Conclusion

This study examined the factors influencing the profitability of real estate companies listed on Vietnam's stock exchanges during the period 2018–2023. Based on panel data regression using the Fixed Effects Model, four variables were found to have statistically significant effects: financial leverage, asset structure, liquidity, and revenue growth. In contrast, firm size, firm age, board size, and GDP growth were not statistically significant.

For enterprises, real estate firms should maintain financial leverage at prudent and sustainable levels to avoid overexposure to financial risk. Strategic asset management should be prioritized, including careful evaluation of acquisition and operational costs, and the adoption of contingency measures such as insurance and financial buffers. To improve liquidity, firms are encouraged to strengthen cash flow management, enhance receivables collection, and minimize inefficient or idle assets. Furthermore, companies should develop targeted strategies

to expand product and service offerings, capture market opportunities, and increase customer engagement—ultimately boosting revenue growth and profitability.

Additionally, the government should focus on maintaining a stable and predictable business environment. Legislative bodies such as the National Assembly are encouraged to revise tax policies to support real estate development, particularly for projects of national importance and those promoting green and sustainable development. Regulatory bodies must also streamline land-use regulations and building permit procedures to reduce administrative burdens. Additionally, the Ministry of Finance should actively promote public-private partnerships (PPPs) through clear and supportive legal frameworks, including BOT, BTO, BT, and PPP project models, to attract investment and facilitate real estate infrastructure development.

The findings contribute to a deeper understanding of how internal financial decisions and operational performance affect profitability in the real estate sector. The study also highlights the importance of maintaining financial balance, strengthening asset structures, and enhancing revenue generation. These insights can assist both business managers and policymakers in formulating more effective strategies. Despite its contributions, the study is limited by its focus on a specific sector and dataset constrained to listed firms in Vietnam. Future research should consider expanding the sample size, incorporating unlisted firms, and applying dynamic models to capture lagged effects over time.

References

Alarussi, A. S. (2018). Factors affecting profitability in Malaysia. *Journal of Economic Studies*, 45(3), 442–458.

Al-Jafari, M. K., & Al Samman, H. (2015). Determinants of profitability: Evidence from industrial companies listed on Muscat Securities Market. *Review of European Studies*, 7(11), 303–311.

Deboi, V., Kurmakhadov, H., & Li, M. (2021). *Impact of financial leverage on the profitability of real estate companies: A quantitative study from Swedish Stock Exchange* [Bachelor's thesis, Jönköping University].

Do, T. V. T. (2019). Factors affecting the profitability of listed construction companies on the Vietnamese stock market. *Journal of Science and Commerce*, *(133)*, 51–62.

Dogan, M. (2013). Does firm size affect the firm profitability? Evidence from Turkey. *Research Journal of Finance and Accounting*, 4(4), 53–59.

Francis, J., & Christianie, M. (2017). Factors affecting the profitability of Indonesian real estate publicly-listed companies. *Asian Journal of Finance & Accounting*, 9(1), 396–428.

Gill, A., & Mathur, N. (2011). The impact of board size, CEO duality, and corporate liquidity on the profitability of Canadian service firms. *Journal of Applied Finance & Banking*, 1(3), 83–95.

Ngo, T. H., & Nguyen, T. T. L. (2020). Factors affecting the profitability of Vietnamese real estate enterprises: Application of random effects and fixed effects models. *Journal of Banking Science and Training*, *(223)*, 13–25.

Nguyen, C., Nguyen, T., Tran, T., & Nghiem, T. (2019, July). The impact of financial leverage on the profitability of real estate companies: A study from Vietnam stock exchange. *Management Science Letters*, *9*, 2315–2326. https://doi.org/10.5267/j.msl.2019.7.023.

Nzalu, F. M. (2013). *An assessment of the factors affecting the growth in real estate investment in Kenya* [Master's thesis, University of Nairobi].

Pham, V. T. N. (2022). *The role of internal factors in forecasting the profitability of Vietnamese enterprises* [Doctoral dissertation, National Economics University]

Pontoh, W., & Ilat, V. (2013). Determinant capital structure and profitability impact: Study of listed company in Indonesian Stock Exchange. *Research Journal of Finance and Accounting*, 4(15), 43–49.

Škuláňová, N. (2021). Determinants of corporate profitability of companies from construction and real estate industries in selected European countries. Acta Academica Karviniensia, 20, 48–64. https://doi.org/10.25142/aak.2020.009

Tsagem, M. M., Aripin, N., & Ishak, R. (2015). Impact of working capital management, ownership structure and board size on the profitability of small and medium-sized entities in Nigeria. *International Journal of Economics and Financial Issues*, 5(Special Issue), 77–83.

Zaitoun, M., & Alqudah, H. (2020). The impact of liquidity and financial leverage on profitability: The case of listed Jordanian industrial firms. *International Journal of Business and Digital Economy*, 1(4), 29–35.