

RESEARCH ON THE IMPACT OF CASH FLOW ON FINANCIAL PERFORMANCE OF LISTED ENTERPRISES ON VIETNAM STOCK EXCHANGE

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Abstract

Research purpose:

This study aims to investigate the impact of cash flows (CF) from operating, investing, and financing activities on the financial performance (FP) of listed enterprises on the Vietnam stock exchange (VNX). The research seeks to clarify which types of cash flows contribute most to firm profitability and provide empirical evidence for enhancing financial management practices in emerging markets.

Research motivation:

Cash flow information is considered more reliable than accounting profit in evaluating a firm's sustainability and value creation. However, existing studies present mixed evidence regarding the relationship between cash flow components and FP, particularly in developing nations. Vietnam, with its dynamic stock market and significant role of listed enterprises, provides an appropriate context to reexamine this issue.

Research design, approach, and method:

Panel data from 119 non-financial firms that were listed on the Vietnam stock exchange between 2021 and 2023 is used in the study. ROE, ROA, and ROS are metrics used to assess FP. Cash flows from financing, investing, and operating operations are examples of independent variables; business size and financial leverage serve as controls. The findings of the Hausman test are used to determine whether to use fixed or random effects in panel regression models.

Main findings:

The findings show that all three profitability metrics are positively impacted by operating cash flow (OCF). Investing cash flow (ICF) is positively correlated with ROS but has no influence on ROA or ROE. Financing cash flow (FCF) positively affects ROE, while leverage reduces both ROE and ROS. Firm size shows no significant impact.

Practical/managerial implications:

The findings highlight the central role of operating cash flow in sustaining firm profitability and suggest that managers should improve cash flow management, optimize investment decisions, and control financial leverage. The study provides insights for investors, regulators, and policymakers in enhancing financial stability and efficiency in emerging capital markets.

Keywords: cash flow, financial performance, profitability, financial leverage, listed enterprises, Vietnam stock market

1. INTRODUCTION

The financial performance of enterprises has been a central concern in both academic research and business practice, as it reflects the efficiency of resource utilization, the sustainability of operations, and the long-term value creation of firms (Richard et al., 2009). Traditional profitability indicators, such as ROA, ROE, and ROS, have been widely used to measure FP. However, these measures are based on accrual accounting and may be affected by accounting discretion, which sometimes limits their reliability in assessing a firm's actual financial health (Dechow, 1994). In contrast, cash flow information provides direct evidence of a company's liquidity, solvency, and ability to generate resources for future growth, making it a more reliable indicator of performance (Asif et al., 2016).

A large body of research has investigated the link between cash flows (CF) and financial performance. According to Malik et al. (2016), OCF is typically shown to be positively correlated with firm profitability since it measures a company's capacity to raise capital from its core operations. Investing and financing cash flows, however, show more mixed results. While investment in fixed assets and long-term projects may enhance firm value, inefficient or excessive investment often leads to poor performance (Fama & French, 2002). Similarly, financing cash flow can improve profitability by supporting capital structure, but high leverage may increase financial risk and reduce returns (Myers, 2001).

There are still a number of research gaps in spite of this corpus of effort. First, most existing studies have concentrated on developed economies, where financial markets are relatively mature and firms operate under stable institutional frameworks. Evidence from emerging markets remains limited, and findings are often inconsistent. Second, within the context of Vietnam, while prior studies have examined cash flow management and FP, they are either outdated, focus narrowly on single aspects of cash flow, or do not consider the moderating role of firm characteristics such as leverage and size (Hieu & Quyen, 2021). Third, the COVID-19 pandemic and subsequent economic volatility during 2021–2023 created new challenges for Vietnamese listed enterprises, yet empirical evidence on how CF dynamics influenced profitability during this turbulent period is still scarce.

To address these gaps, this study makes several contributions. It provides updated empirical evidence on the relationship between CF components and FP of Vietnamese listed enterprises during 2021–2023, a period marked by both recovery and instability. By simultaneously examining OCF, ICF, FCF, the study offers a more comprehensive view than prior research that often focused on single dimensions. Moreover, by incorporating financial leverage and firm size into the analysis, the study extends existing frameworks and highlights how firm-specific characteristics condition the cash flow–performance nexus in an emerging market context.

Thus, the purpose of this study is to look at how OCF, ICF and FCF affect the FP of companies listed on the VNX between 2021 and 2023. The research aims to add to the body of knowledge on the variables influencing financial success by presenting new empirical data from a developing economy using panel regression analysis.

The study tackles the following research questions in light of the theoretical underpinnings and gaps mentioned above:

- How does OCF affect the FP of businesses?
- How does ICF affect the FP of businesses?
- How does FCF affect the FP of businesses?
- Do financial leverage (FL) and firm size (SIZE) affect the FP of businesses?

It is anticipated that by addressing these issues, the study will offer managers, investors, and policymakers in Vietnam and other emerging countries both theoretical understanding and real-world applications.

2. LITERATURE REVIEW

2.1 Cash flow classification on the cash flow statement

VAS 24 states that the cash flow statement is a crucial component of financial statements (FS) because it gives users information to assess changes in net assets, financial structure, solvency, and the enterprise's capacity to produce cash flows while conducting business.

Operating cash flows (OCF):

The primary revenue-generating activities of a business produce operating cash flows. They offer essential data for evaluating the company's capacity to produce cash on hand to pay dividends, continue operations, pay off debt, and fund new ventures without the need for outside funding. Significant inflows include commissions, royalties, cash from sales of goods and services, and other operating revenues. Outflows include payments to suppliers and employees, interest expenses, income tax payments, insurance, and contractual penalties. Cash flows related to trading securities for short-term profit purposes are also classified as operating cash flows.

Investing cash flows (ICF):

The purchase and sale of long-term assets as well as other investments that aren't categorized as cash equivalents are related to ICF. Key outflows include expenditures for purchasing or constructing property, plant, equipment, and intangible assets, as well as loans and equity investments in other entities. Inflows include cash receipts from the sale or disposal of long-term assets, repayments of loans made to others, sales of debt instruments, returns on equity investments, dividends, and interest income.

Financing cash flows (FCF):

Financing cash flows reflect changes in a company's equity and debt structure. They provide insight into how a firm

finances its operations and growth. Inflows include proceeds from issuing shares and obtaining short- or long-term borrowings. Outflows include repayment of loan principal, payment of lease liabilities, share buybacks, returns of capital to shareholders, and dividend distributions.

2.2 Theoretical Framework

This research is based on several key theories that explain the relationship between CF and corporate FP.

First of all, Jensen and Meckling's (1976) groundbreaking agency theory offers a critical perspective. According to the hypothesis, managers (agents) and shareholders (principals) may have conflicts of interest. This rivalry revolves around cash flow, especially free cash flow. Instead of maximizing shareholder value, managers may be enticed to spend extra money on less-than-ideal projects that benefit them personally (such as empire-building) (Stulz, 1990). Effective management of OCF, therefore, is crucial to mitigate these agency costs and align managerial actions with profitability goals.

Second, the trade-off theory of capital structure clarifies how choices about investments and financing, which are represented in FCF and ICF, affect the profitability and value of the company. According to this view, businesses try to strike a balance between the tax advantages of debt and the expenses associated with financial difficulties (Myers, 1984). Decisions regarding debt issuance or repayment (affecting FCF) and capital expenditures (affecting ICF) are thus not made in isolation but as part of a broader strategy to optimize the firm's capital structure and, consequently, its profitability.

Finally, the signaling theory (Ross, 1977) suggests that a firm's financial decisions can convey important information (signals) to investors about its future prospects. A strong and stable OCF can signal operational efficiency and health, positively influencing investor confidence and firm valuation (Bhattacharya, 1979), which is often linked to profitability metrics like ROE.

2.3. Overview of research on the impact of cash flow on business FP

The relationship between a company's CF and its FP is a central theme in corporate finance literature. However, the findings are not monolithic; the direction and significance of this impact often depend on the type of CF (OCF, ICF, FCF) and the specific economic and industrial context. The following review synthesizes these divergent findings.

* *Positive impact of CF on business FP*

A substantial body of research demonstrates a positive relationship between CF and corporate FP, particularly stemming from operating and financing activities. Theoretically, this is based on the notion that although access to FCF supplies the required funds for strategic initiatives, strong OCF indicates a company's core operational health and capacity to self-fund expansion.

Corporate profitability is positively impacted by OCF and FCF, according to numerous research. Multiple regression analysis was used in a study by Ikechukwu et al. (2015) in Nigeria utilizing data from commercial banks for the years 2009–2013. The study's findings demonstrated that OCF and FCF significantly and favorably affect these institutions' profitability. It's interesting to note that the study also verified that ICF significantly reduce profitability. This conclusion is frequently ascribed to the investing activities' nature, which entails large short-term cash outlays for long-term assets that might only generate returns in the future (Ikechukwu et al., 2015).

Frank and James (2014) discovered that OCF and FCF have a strong positive correlation with performance as determined by ROA in the Nigerian food and beverage sector, which is consistent with this trend in a different industry. Imran Ahmad Khan's (2017) study on cement companies in India supports this finding by demonstrating a favorable correlation between profitability and OCF and FCF (Khan, 2017). The consistency of these findings across different countries (Nigeria, India) and industries (banking, food, cement) underscores the fundamental role of healthy operating cash generation in driving profitability.

To bolster this opinion even more, Bobihoe Arjanto et al. (2019) conducted a study in Indonesia on 20 manufacturing companies during the period 2014-2017. This study uses multiple regression models to analyze the relationship between OCF, FL, and ROE. According to the findings, OCF significantly and favorably affects profitability, with a significance level is less than the threshold of 0.05 (Arjanto et al., 2019).

To ascertain the effect of OCF on profitability and the effect of earnings management on corporate growth, Hari Liandu et al. (2023) carried out a study at PT. Baturaja Multi Usaha throughout the course of a monthly study period from 2019-2021. Discretionary provisions were used to gauge earnings management, and asset growth was used to gauge growth. The study employed hypothesis testing, quantitative approaches, and basic linear regression data processing techniques. The findings demonstrated that while earnings management had a major impact on corporate growth, OCF had a favorable and considerable impact on profitability (ROA) (Liandu et al., 2023).

* *Negative impact or no relationship of CF on business FP*

However, there isn't always a favorable correlation between CF and FP. Several studies highlight contexts where the impact is negative, insignificant, or mixed. These discrepancies often arise from differing economic environments, industry-specific dynamics, or the overriding influence of other financial variables.

For instance, Guda (2013) investigated the connection between the profitability of SMEs and the OCF, ICF, FCF, in Nairobi, Kenya. The findings demonstrated a negative relationship between net profit and OCF, indicating that when OCF rise, the firm's profit falls and vice versa. This counter-intuitive result suggests that in certain small-business contexts, aggressive revenue generation might be tied to high-cost structures or inefficient working capital management that ultimately erodes net profit. However, ICF and FCF had a positive correlation with net profit, meaning that when these cash flows increase, net profit also increases, indicating a reliance on external funding and asset turnover for profitability in that specific SME environment (Guda, 2013).

The study by Tariverdi et al. (2014) in Iran used the Kolmogorov-Smirnov test to examine the relationship between OCF, ICF, FCF and FP indicators (ROA and ROE) of companies listed on the Tehran Stock Exchange during the period 2007-2011. According to the findings, the relationship between ICF, FCF and ROA and ROE was not statistically significant. (Tariverdi et al., 2014).

Ogbeide and Akanji (2017) investigated how CF affected the FP of 27 insurance businesses in Nigeria between 2009 and 2014. The results demonstrated that CF was statistically significant and used to assess the insurance businesses' FP. It was found that FCF increased the FP of the insurance businesses in the sample, however this improvement was not statistically significant. During the examination, it was discovered that OCF significantly increased the FP of the insurance companies. Ogbeide and Akanji (2017) found no statistically significant relationship between the insurance company's size and its FP. This demonstrates how the influence might change based on the cash flow's source even within a single research.

Pordea et al. (2020) examined how OCF and the current ratio affected construction companies' profitability. The findings of a linear regression model built using cross-sectional financial data from western Romanian construction enterprises for a single reporting year did not demonstrate statistical significance for the exogenous variables in the model. In the context of maintaining performance promises, the authors believe it is crucial to examine the cash flow problem and construction businesses' capacity to fulfill their immediate responsibilities in further detail (Pordea et al., 2020).

Overall, the literature reveals a divergent pattern. On one hand, operating cash flow is frequently associated with improved profitability because it captures the firm's ability to generate income from core activities and sustain liquidity. On the other hand, studies reporting negative or insignificant effects suggest that the impact of CF depends heavily on contextual factors, including industry characteristics, firm size, financial structure, and the efficiency of capital markets. For instance, in capital-intensive industries, large investments may temporarily reduce profitability, while in emerging markets with volatile institutions, cash flow figures may not consistently align with firm performance. These inconsistencies highlight the need for further research in emerging economies such as Vietnam, where firms face challenges in cash flow management, investment efficiency, and financial leverage.

*** The impact of FL and SIZE on FP**

The effect of control parameters like SIZE and FL on the connection between CF and business profitability has also been the subject of numerous research. Alarussi and Alhaderi (2018) investigated this relationship in Malaysian non-financial enterprises and discovered that, whereas FL had a negative link with profitability, SIZE had a strong positive relationship.

The impact of FL and SIZE on the FP of Nigerian food and beverage enterprises was examined by Owolabi (2022). The results showed that company size had a positive impact on ROA but a negative one on ROS. FL had a slight positive impact on ROA but a positive impact on ROE and ROS (Owolabi, 2022).

The impact of FL on FP was also studied by Rahman, and Sharma (2020) in insurance and manufacturing companies in Saudi Arabia. The results showed that there is a negative and insignificant relationship between FL and FP. This indicates that firms in the insurance and manufacturing industries are sustaining a manageable level of debt, potentially enhancing their value (Rahman & Sharma, 2020).

Arifaj et al. (2023) studied the impact of OCF, SIZE and FL on the FP of ten largest public companies in Kosovo. The hypothesis was tested using a variety of analytical methods. The analysis's findings demonstrated that while cash flow was shown to have a negligible effect, company size had a detrimental effect on ROA. Conversely, ROA was positively impacted by debt leverage (Arifaj et al., 2023).

Overall, studies on the impact of CF on corporate FP have yielded mixed results, reflecting the complexity and multidimensionality of this relationship. The results suggest that OCF, ICF, FCF may have a positive or negative impact or even no impact on profitability, depending on the research context. In addition, factors such as SIZE and FL also play an important role in influencing FP. Therefore, further empirical studies are needed to clarify the interaction between these factors and corporate FP.

3. METHODOLOGY

* Data and Sample

Listed businesses on the VNX comprise the research sample for this topic. The research team specifically chose non-financial businesses that were listed on the Ho Chi Minh City Stock Exchange (HOSE), one of Vietnam's biggest stock exchanges.

One sampling method is stratified random sampling: dividing the population into groups according to main areas of activity (Production, business, trade, services and others such as technology, oil and gas, energy, ...). One hundred and nineteen (119) companies were identified for research from available data of listed enterprises on the HOSE. The study includes research data extracted from the FS of the businesses in three years from 2021 to 2023.

The study applies secondary data. Data is taken from the listed companies studied. The nature of the data is audited FS.

* Research model and measurement scale of variables

The objective of this topic is to study the impact of cash flow on the FP of listed companies on the Vietnamese stock exchange. In which, the financial performance of the company is measured by three accounting indicators: ROA, ROE, ROS. These indicators are selected because they capture different but complementary dimensions of firm performance. ROA reflects the efficiency with which a company utilizes its total assets to generate profits; ROE evaluates the return created for shareholders, thereby indicating the effectiveness of equity utilization; and ROS assesses profitability relative to revenue, highlighting the firm's ability to control costs and convert sales into net income. By employing all three measures, the study provides a more comprehensive assessment of FP than relying on a single indicator. The research model on the impact of CF on FP is as follows:

Model 1:

$$ROA_{it} = \beta_0 + \beta_1 OCF_{it} + \beta_2 ICF_{it} + \beta_3 FCF_{it} + \beta_4 SIZE_{it} + \beta_5 FL_{it} + \varepsilon$$

Model 2:

$$ROE_{it} = \beta_0 + \beta_1 OCF_{it} + \beta_2 ICF_{it} + \beta_3 FCF_{it} + \beta_4 SIZE_{it} + \beta_5 FL_{it} + \varepsilon$$

Model 3:

$$ROS_{it} = \beta_0 + \beta_1 OCF_{it} + \beta_2 ICF_{it} + \beta_3 FCF_{it} + \beta_4 SIZE_{it} + \beta_5 FL_{it} + \varepsilon$$

Where:

Dependent variables (Financial Performance): Firm FP is measured by three accounting-based indicators:

Return on Assets (ROA): Net income divided by total assets.

Return on Equity (ROE): Net income divided by total equity.

Return on Sales (ROS): Net income divided by net sales.

Independent variables (Cash Flows):

Operating Cash Flow (OCF): Cash generated from operating activities.

Investing Cash Flow (ICF): Net cash used in or generated from investing activities.

Financing Cash Flow (FCF): Net cash used in or generated from financing activities.

Control variables:

Firm Size (SIZE): Natural logarithm of total assets, representing economies of scale and resource availability.

Financial Leverage (FL): which represents the firm's capital structure, is calculated by dividing total debt by total assets.

* Estimation Method

To ascertain the level of association between the variables in the research model, the authors additionally looked at the relationship between independent and control variables using the correlation matrix. The team evaluates the probability of multicollinearity between independent and control variables with the use of the correlation matrix results.

Next, to ensure the selection of an appropriate analysis model, the research team applied the Hausman test. This method is crucial for figuring out which model—the random effects model (REM) or the fixed effects model (FEM)—is better suited to the study data. This test is based on the difference between the two estimation methods to make a decision on

the optimal model, ensuring the accuracy and efficiency of the analysis results.

Following the selection of the suitable model, the authors investigated the effect of CF on business profitability using the fixed effects regression model (FEM) or random effects model (REM) estimate approach. This procedure entails constructing regression equations from the theoretical model and estimating the parameters using real data.

4. RESULTS AND DISCUSSION

4.1 Research results

** Sample descriptive statistics:*

Research data from the FS of 119 companies listed on the HOSE for the three years between 2021 and 2023 are used in this study (the total observation sample is 357). Specifically, the characteristics of 119 companies in terms of field of operation and operating time (years) are as follows:

Table 1. Sample descriptive statistics results

Business sector		Number of firms	Percentage (%)
	Manufacturing	41	34.5
	Trading	28	23.5
	Services	21	17.6
	Others (Technology, energy,...)	29	24.4
	Total	119	100.0
Years of operation		Number of firms	Percentage (%)
	Not more than 10 years	8	6.7
	Less than 20 years	54	45.4
	Less than 30 years	50	42.0
	30 years and above	7	5.9
	Total	119	100.0

Table 1 presents the distribution of the sampled enterprises by business sector. Of the 119 enterprises, the majority were operating in the manufacturing sector (34.5%), followed by trade (23.5%), services (17.6%), and other sectors, including technology and energy (24.4%). This indicates a relatively balanced sample representation of the industries listed on the HOSE, thus enhancing the generalizability of the findings.

Regarding the age of the businesses, nearly half of the enterprises (45.4%) have been operating for less than 20 years, while 42.0% have been operating for less than 30 years. Only a small proportion have a shorter operating history (6.7% less than 10 years) or a longer experience (5.9% more than 30 years). This distribution suggests that most of the sampled businesses are in the growth and maturity stages of their life cycle, which may affect both their cash flow patterns and FP.

** Descriptive statistics of dependent variable*

Table 2. Dependent variable descriptive statistics results

	ROA (%)	ROE (%)	ROS (%)
Mean	5.506676	9.276884	14.78758
Maximum	65.37000	78.94000	357.7310
Minimum	-28.23000	-117.8600	-626.1000
Observations	357	357	357

Table 2 presents the descriptive statistics of the dependent variables. On average, firms achieved a ROA of 5.51%, a ROE of 9.28%, and a ROS of 14.79%. However, the wide ranges between minimum and maximum values suggest substantial variation in profitability across listed enterprises. Some firms recorded negative performance, particularly in ROE and ROS, while others achieved exceptionally high levels, reflecting the heterogeneity of financial outcomes in the Vietnamese stock market.

** Descriptive statistics of independent variables and control variable*

Table 3. Independent variable and control variable descriptive statistics results

	Observations	Minimum	Maximum	Mean
OCF (VND)	357	-2,513,762,675,346	26,720,913,303,108	562,830,323,173

ICF (VND)	357	-24,626,212,744,553	5,757,231,937,325	-570,588,859,666
FCF (VND)	357	-9,773,308,216,323	11,640,088,445,552	39,822,417,750
SIZE	357	10.102	14.273	12.327
FL	357	0.0055	6.3652	0.4713

Table 3 shows the descriptive statistics of the independent and control variables. The results indicate substantial variation in cash flow components across firms. On average, OCF is positive, while ICF is negative, suggesting that most firms allocated significant resources to long-term investments during the study period. FCF is relatively small on average, but with large fluctuations, reflecting differences in capital structure strategies. Firm size (SIZE) ranges between 10.1 and 14.3 (logarithmic scale), while financial leverage (FL) averages 0.47, with some firms exhibiting very high debt ratios. These statistics highlight the heterogeneity of financial characteristics among listed enterprises in Vietnam.

*** Correlation matrix**

Table 4. Correlation matrix of independent and control variables

	FCF	ICF	OCF	SIZE	FL
FCF	1	-0.34822486908	-0.27686710580	0.02297008220	0.11948572857
ICF	-0.34822486908	1	-0.48954473000	-0.46191828654	-0.05149671162
OCF	-0.27686710580	-0.48954473000	1	0.48518937062	-0.01901770738
SIZE	0.02297008220	-0.46191828654	0.48518937062	1	0.19936160677
FL	0.11948572857	-0.05149671162	-0.01901770738	0.19936160677	1

According to the correlation coefficients between the independent and control variables, which are shown in Table 4, there is no multicollinearity issue because the majority of the correlation values are modest and fall below the crucial 0.8 threshold.

*** Regression test results**

Model 1 (ROA is the dependent variable):

With model 1, the fixed effects model (FEM) is supported and the null hypothesis of utilizing the data panel's random effects model is rejected based on the Hausman test results, which show a P-value (Hausman) = 0.0195 < 0.05.

Table 5. Regression model 1 (the dependent variable is ROA)

Dependent Variable: ROA

Method: Panel Least Squares

Sample: 2021 2023

Periods included: 3

Cross-sections included: 119

Total panel (balanced) observations: 357

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.849931	55.32777	-0.051510	0.9590
OCF	1.03E-12	3.36E-13	3.067179	0.0024
ICF	1.40E-13	3.04E-13	0.462465	0.6442
FCF	3.19E-13	3.13E-13	1.020784	0.3084
SIZE	0.652054	4.495209	0.145055	0.8848
FL	-0.413825	1.130979	-0.365899	0.7148

The table above shows the results of model 1: With P value < 0.05 , it shows that OCF has a positive impact on the ROA of enterprises. With P value > 0.05 , the remaining variables (ICF; FCF; SIZE; FL) are not statistically significant enough to confirm that they have an impact on ROA. According to the ROA index, the adjusted R2 coefficient is 0.4956, which indicates that 49.56% of the impact on ROA can be explained by the parameters in the study model.

Model 2 (ROE is the dependent variable):

The null hypothesis that the data table's random effects model should not be used is not sufficiently supported by model 2, as indicated by the Hausman test findings, which show a P-value (Hausman) = 0.4913 > 0.05 . As a result, the random effects model (REM) was used for the investigation.

Table 6. Regression model 2 (the dependent variable is ROE)

Dependent Variable: ROE

Method: Panel EGLS (Cross-section random effects)

Sample: 2021 2023

Periods included: 3

Cross-sections included: 119

Total panel (balanced) observations: 357

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-30.40894	21.44047	-1.418297	0.1570
OCF	1.26E-12	3.70E-13	3.877165	0.0413
ICF	5.71E-13	6.37E-13	0.895712	0.3710
FCF	2.12E-13	5.05E-13	2.726362	0.0368
SIZE	3.288855	1.760839	1.867778	0.0626
FL	-2.676698	2.165981	-1.235790	0.0174

Table 6 shows the results of model 2: With P value < 0.05 , it shows that OCF and FCF have a positive impact on the ROE of the enterprise; FL has a negative impact on the ROE of the enterprise. In which, the FL variable has the largest impact on ROE, followed by the OCF variable, and the smallest impact of the 3 variables on ROE is FCF. With P value > 0.05 , the remaining variables (ICF and SIZE) have no impact on ROE. The adjusted R2 coefficient (according to the ROE indicator) is 0.5862, meaning that the factors in the research model explain the impact on ROE by 58.62%.

Model 3 (ROE is the dependent variable):

The Hausman test findings for model 3 show that the P-value (Hausman) = 0.9687 > 0.05 , which means that there is insufficient evidence to reject the hypothesis that the data table's random effects model is not being used. As a result, the random effects model (REM) was used for the investigation.

Table 7. Regression model 3 (the dependent variable is ROS)

Dependent Variable: ROS

Method: Panel EGLS (Cross-section random effects)

Sample: 2021 2023

Periods included: 3

Cross-sections included: 119

Total panel (balanced) observations: 357

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-81.23702	236.2211	-0.343903	0.7311
OCF	2.05E-13	4.69E-12	4.021172	0.0331
ICF	1.47E-12	5.36E-12	3.156813	0.0255
FCF	9.79E-13	1.05E-11	0.093312	0.9257
SIZE	9.304375	19.48484	0.477519	0.6333
FL	-37.69326	28.74575	-1.311264	0.0190

Table 7 shows the results of model 3: With P value < 0.05, it shows that OCF and ICF have a positive impact on the ROS of the enterprise; FL has a negative impact on the ROS of the enterprise. In which, the order of the impact of the factors on the ROS variable is as follows: FL, ICF, OCF. With P value > 0.05, the remaining variables (FCF; SIZE) have no impact on ROS. According to the ROS index, the adjusted R2 value is 0.5351, which indicates that 53.51% of the impact on ROS can be explained by the parameters in the study model.

Through the process of analyzing research data, the research results are summarized as follows:

- OCF has a positive impact on FP in all 3 dependent variables ROA, ROE, ROS
- ICF does not affect ROA, ROE but has a positive impact on ROS
- FCF does not affect ROA, ROS but has a positive impact on ROE
- FL does not affect ROA but has a negative impact on ROS, ROE
- SIZE has no impact on profitability.

4.2. Discussion of research results

* *Operating Cash Flow (OCF)*

The regression results indicate that OCF has a positive and statistically significant impact on all three measures of FP: ROA, ROE, and ROS. This finding underscores the fundamental role of cash generated from core business activities in sustaining firm profitability and enhancing shareholder value. Unlike accrual-based earnings, OCF directly reflects the company's ability to generate liquidity, cover operating expenses, repay debt, and finance future growth without depending on external sources of capital (Dechow, 1994). The result is consistent with prior empirical studies, which highlight OCF as the most reliable predictor of FP like Phuong (2020) and Huong (2021), Ikechukwu et al. (2015), Liman & Mohammed (2018). These findings support the notion that strong OCF provide firms with financial flexibility, reduce reliance on external financing, and enable more efficient allocation of resources.

From a managerial perspective, the positive association between OCF and FP suggests that firms should prioritize improving operational efficiency, managing receivables and payables effectively, and maintaining stable revenue streams. For investors, OCF can serve as a more reliable indicator of firm health than net income, particularly in emerging markets like Vietnam, where accounting practices and disclosure standards may still face limitations. In summary, the strong and consistent effect of OCF on ROA, ROE, and ROS confirms its central role in driving firm profitability. This finding reinforces the argument that OCF is not only a measure of liquidity but also a key determinant of long-term financial sustainability.

* *Investing Cash Flow (ICF)*

The empirical results indicate that ICF has no significant impact on ROA and ROE, but exhibits a positive effect on ROS. This finding suggests that while investment activities may not directly enhance overall returns on assets or equity, they can improve profit margins relative to sales. One possible explanation is that in the Vietnamese context, many listed firms allocate substantial resources to long-term investments, including fixed assets and infrastructure, which may not immediately generate proportional returns in terms of ROA or ROE due to the large asset base and capital requirements involved. However, successful investments in technology, capacity expansion, or efficiency improvements can reduce operating costs and thereby enhance profit margins, as reflected in ROS. This result aligns with the arguments of Fama and French (2002), who noted that investment efficiency is crucial for translating capital expenditures into higher profitability. When investments are well-targeted, firms can improve cost structures and operational performance, thereby boosting margins without necessarily increasing total asset or equity returns in the short run. This result is different from the results of authors Huong (2020) and Ikechukwu et al. (2015), these studies have shown that ICF has a negative impact

on ROA and ROE.

The lack of significant association between ICF and ROA/ROE may also reflect inefficiencies in investment practices among Vietnamese firms, such as over-investment, delayed project execution, or misallocation of capital. These issues dilute the expected returns on assets and equity, even when investment activities generate some positive effects on revenue-related performance.

From a managerial perspective, the results highlight the need for firms to carefully evaluate the efficiency and timing of their investment decisions. Investments that enhance productivity and reduce costs are more likely to improve ROS, but translating these benefits into ROA and ROE requires effective utilization of assets and prudent capital structure management. For policymakers, strengthening regulations on capital allocation and project evaluation could help improve the effectiveness of corporate investments in Vietnam's capital market.

*** *Financing Cash Flow (FCF)***

The results show that FCF has a positive and significant effect on ROE, but no significant impact on ROA or ROS. This finding suggests that financing activities—such as raising equity, issuing debt, or repaying loans- are more directly linked to returns for shareholders than to overall efficiency in asset utilization or sales profitability. This result is similar to the study of Weshah (2021) but different from the result that author Huong (2020) studied that FCF has a negative impact on ROA.

The positive relationship with ROE can be explained by the leverage effect: when firms raise external financing and allocate these funds effectively, they can enhance the returns attributable to equity holders (Myers, 2001). This is especially true in developing nations like Vietnam, where growth and expansion are greatly aided by access to outside funding. The outcome is in line with research by Asif and Akbar (2012), which shown that financing choices have a big impact on shareholder returns in developing nations.

However, the absence of significant effects on ROA and ROS indicates that financing activities do not necessarily improve operational efficiency or sales margins. In some cases, additional financing may increase the asset base or sales volume, but higher financial costs- such as interest expenses and debt servicing- can offset the potential improvements in overall profitability (Frank & Goyal, 2009). This reflects the trade-off between the benefits of additional capital and the risks of increased leverage. In the Vietnamese context, many firms rely heavily on debt financing, and the effectiveness of such financing depends on how well borrowed funds are utilized. If external funds are primarily used for debt restructuring or covering short-term obligations rather than productive investment, the impact on operational and sales efficiency remains limited. Nevertheless, the positive association with ROE highlights that financing policies can enhance shareholder value in the short term, provided firms manage leverage prudently.

From a managerial perspective, the results emphasize the importance of aligning financing strategies with long-term performance objectives. Managers should balance debt and equity financing to optimize capital costs and ensure that borrowed funds are allocated to value-creating activities. For investors, monitoring FCF provides insights into a firm's financing policies and their potential implications for equity returns.

*** *Financial Leverage (FL)***

The analysis shows that financial leverage (FL) has no significant effect on ROA but exerts a negative impact on ROE and ROS. This finding highlights the dual nature of leverage in emerging markets: while the use of debt may not directly influence the efficiency of asset utilization (ROA), it increases financial costs and risk exposure, thereby reducing returns to equity holders (ROE) and profit margins (ROS).

The insignificant effect on ROA suggests that higher debt ratios do not necessarily impair a firm's ability to generate income from its assets. This may be because Vietnamese firms often channel borrowed funds into maintaining operations or financing working capital, which sustains asset productivity in the short term. However, the negative impact on ROE and ROS reflects the burden of interest expenses and repayment obligations, which reduce net income and weaken returns available to shareholders. This result is contrary to the results of authors Lam and Anh (2022), who found a negative impact on bank ROA.

This result is consistent with the trade-off theory of capital structure (Myers, 2001), which posits that while debt can provide tax shields, excessive borrowing increases bankruptcy risk and financial distress, ultimately lowering profitability. It also aligns with empirical studies in emerging markets.

From a managerial perspective, the findings highlight the importance of prudent debt management. Firms should balance the benefits of external financing with the associated risks, ensuring that borrowed funds are allocated to value-creating projects rather than short-term obligations. For investors, the evidence suggests that high leverage levels may serve as a warning signal of reduced profitability and increased financial risk.

*** *Firm Size (SIZE)***

The findings indicate that SIZE does not have a significant impact on FP, whether measured by ROA, ROE, or ROS. This result suggests that in the Vietnamese context, larger firms do not necessarily achieve higher profitability compared to smaller firms.

From a theoretical standpoint, larger firms are often expected to benefit from economies of scale, greater access to capital markets, and stronger bargaining power, which should enhance profitability (Penrose, 1959). However, empirical evidence in emerging markets has been mixed. Contrary to the results of this study, some authors found a positive correlation between size and performance such as: Huong (2021) found a negative correlation between enterprise size and ROA, ROE; research results of Lam & Anh (2022) showed that bank size (Size) has a positive impact on the profitability of Vietnamese commercial banks; Studies by Hang & Linh (2020), Alarussi and Alhaderi (2018) showed that enterprise size has a positive impact on ROE profitability.

The insignificance of SIZE in this study may be explained by several factors. First, Vietnamese listed enterprises, regardless of size, often face similar institutional constraints, including capital allocation inefficiencies, regulatory barriers, and competitive pressures. Second, larger firms may suffer from higher operating costs and administrative complexities that offset the potential benefits of scale. Third, small and medium-sized enterprises (SMEs) may achieve comparable or even higher efficiency by being more flexible, innovative, and responsive to market changes.

From a managerial perspective, the evidence suggests that managers should not rely solely on firm expansion to drive profitability. Instead, emphasis should be placed on improving operational efficiency, innovation, and financial discipline. For policymakers, the result underlines the importance of supporting firms of all sizes, rather than assuming that larger firms inherently contribute more effectively to financial stability and growth.

5. CONCLUSION

This study examined how the FP of 119 non-financial firms listed on the HOSE during the years 2021–2023 was impacted by the cash flow components of operating (OCF), investing (ICF), and financing (FCF). The study offers empirical evidence from a developing market environment by using panel regression models with ROA, ROE, and ROS as performance measures.

The results show that OCF positively and significantly influences all three measures of FP (ROA, ROE, and ROS), confirming its central role as the most reliable driver of profitability. ICF has no significant effect on ROA and ROE but demonstrates a positive association with ROS, suggesting that investment activities may improve profit margins relative to sales rather than overall asset or equity returns. FCF positively affects ROE, indicating its relevance to shareholder returns, but has no significant impact on ROA or ROS. Regarding control variables, firm size (SIZE) shows no significant effect on performance, while financial leverage (FL) negatively affects ROE and ROS, highlighting the risks of excessive debt financing.

Overall, these findings contribute to the literature on FP determinants by clarifying the distinct roles of cash flow components in the Vietnamese context. The study confirms the importance of OCF as a foundation for sustainable profitability, reveals the nuanced effects of ICF and FCF, and emphasizes the risks associated with high financial leverage.

From a practical perspective, managers should place stronger emphasis on building and sustaining positive operating cash flows by tightening credit policies, reducing receivable collection periods, and controlling operational costs. For investment decisions, managers should carefully evaluate capital projects using rigorous cost-benefit analysis to avoid inefficient or speculative investments, while ensuring that investments align with long-term strategic goals. In terms of financing, managers should strike a balance between debt and equity financing- limiting overreliance on short-term debt that raises financial risk- while considering equity issuance or retained earnings as safer alternatives to support growth.

For investors, cash flow indicators- especially OCF- should be regarded as a primary screening tool when evaluating firm quality, since they provide a clearer picture of financial resilience than accrual-based earnings. Investors should also pay attention to firms with consistently negative financing cash flows, which may signal unsustainable debt repayment obligations.

For policymakers, the results underline the need to enhance disclosure requirements on cash flow reporting, strengthen corporate governance practices to curb inefficient investment, and support capital market reforms that facilitate more balanced financing structures for listed enterprises.

Despite these contributions, the study has certain limitations. The sample is limited to three years of data from listed non-financial firms, which may not fully capture long-term effects. Future research could expand the timeframe, include firms from different sectors, and apply advanced econometric techniques or robustness checks to enhance the generalizability of findings.

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