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Impact of economic growth, public investment, and private investment on firm performance in some economic sectors in Vietnam: An SGMM approach

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Abstract

This paper aims to propose policy implications to improve firm performance across various economic sectors in Vietnam by assessing the impact of economic growth, public investment, and private investment on firm performance in several sectors. To achieve this, the study employs the System Generalized Method of Moments (SGMM) with panel data from the General Statistics Office of Vietnam, covering 14 sectors from 2011 to 2022. Data analysis was conducted using Stata software, version 17. Empirical findings indicate that economic growth and public investment negatively affect firm performance in some sectors, whereas private investment has a positive impact in certain sectors. These findings have practical significance for Vietnamese state management agencies aiming to enhance firm performance. Specifically, Vietnam should focus on maintaining stable and sustainable economic growth across sectors. Additionally, improving the efficiency of public investment by addressing delays in project progress and capital pooling, as well as tackling inefficiencies in state-owned enterprises, is essential. Furthermore, the government should promote and facilitate private investment to support sector development.

Keywords: Economic growth, Firm performance, Private investment, Public investment, SGMM, Vietnam.

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1. Introduction

Firm performance is often described as the achievement of outputs through business activities and reflects the business's success [1, 2]. Firm performance represents the relationship between the results achieved and the input resources used in the course of the enterprise's business activities. Although firms collectively contribute to the socio-economic

development of the national economy, most firms today face difficulties in maintaining high operational efficiency due to an unstable and changing business environment [3]. Firms demonstrating agility and adaptability to dynamic market conditions are more likely to achieve superior performance [4].

Firm performance is affected by several factors. However, these factors may differ across economies and nations, particularly between developed and developing economies [5]. In a developing country like Vietnam, to enhance firm performance, firms are often supported by the government [6]. In the Vietnamese context, it is essential for the government to focus on maintaining sustainable economic growth and improving the efficiency of both public and private investments [6, 7].

In Vietnam, in recent years, macroeconomic fluctuations along with shifts in investment and industry development policies have had significant impacts on firm performance, especially in key sectors such as manufacturing and processing, construction, wholesale and retail trade, transportation and warehousing, and information and communications. Public investment plays a crucial role in fostering business development by providing essential infrastructure. Large-scale projects such as the North–South Expressway, Long Thanh International Airport, Ho Chi Minh City Ring Road 3, and Hanoi Ring Road 4 are key examples of this effort. These infrastructure developments not only improve regional connectivity but also significantly reduce operational costs for businesses. Meanwhile, private investment serves as a direct driving force for innovation, creativity, and improved competitiveness. Private investment has significantly increased in key sectors such as manufacturing and processing, which account for a large share of GDP and exports. These investments not only enhance production capacity but also promote technology transfer and improve the performance of domestic enterprises. In strategic sectors such as information technology and renewable energy—key areas in digital transformation and sustainable development—private investment continues to grow rapidly, fostering a wave of startups, innovation, and productivity gains. However, the reality in recent years has shown that the "hot" growth situation leads to an imbalance between supply and demand; the delay in progress and capital pooling of public investment projects and the inefficiency of state-owned enterprises also create challenges to firm performance in some economic sectors in Vietnam.

Currently, there are a number of empirical studies assessing the impact of economic growth, public investment, and private investment on firm performance in economic sectors in Vietnam, but mainly research on the independent impact of each of the above factors on enterprise performance. At the same time, the public investment factor in some studies mainly approaches from the perspective of infrastructure investment but lacks studies that consider public investment as the overall public investment of the state. Therefore, this paper aims to answer the question: What is the combined impact of economic growth, public investment, and private investment on enterprise performance? The findings will assist state management agencies in Vietnam in understanding the relationship between economic growth, public investment, private investment, and firm performance in different economic sectors in Vietnam. This understanding will enable these agencies to design the most appropriate policies to enhance firm performance in these sectors. The remainder of this paper is structured as follows: Section 2 provides an overview of existing literature on the relationship between economic growth, public investment, private investment, and firm performance across several economic sectors. Section 3 describes the research methodology, model, and data used in the study. Section 4 discusses the empirical estimation results. The final section presents the conclusion and policy implications.

2. Literature Review

2.1. The Relationship Between Economic Growth and Firm Performance

Economic growth is a fundamental component of economic development. A nation is generally considered economically robust when it maintains a high and stable growth rate, as measured by key macroeconomic indicators [8, 9]. In practice, there are various approaches to the concept of economic growth. However, in general, economic growth is understood as an increase in output or income over a specific period. This increase is reflected in both the scale and the rate of growth. Commonly used metrics to gauge economic growth include Gross Domestic Product (GDP), Gross National Product (GNP), and Gross National Income (GNI), which collectively capture the overall performance of an economy.

Economic efficiency, in theoretical terms, denotes the optimal allocation and utilization of resources to maximize output without incurring unnecessary costs or resource waste. An economic system is considered more efficient if it can provide more goods and services to society without using additional resources. As noted by Afonso et al. [10], "Operational efficiency is a measure of the profitability generated from operations and is a function of operating costs. The higher the operational efficiency, the more profitable the business or investment activities. Research on firm performance originates from organizational theory and strategic management [11]. To evaluate a firm's performance, both financial and organizational dimensions need to be measured [1]. Financial performance is typically assessed by maximizing profit, return on investment, and shareholder value. Meanwhile, organizational efficiency focuses on the ability to effectively utilize available resources to achieve set goals and evaluates the relevance of these resources to stakeholders. Among the diverse performance indicators, ROA, ROE, and Tobin’s Q are frequently employed in empirical studies to capture firm profitability and market valuation.

Economic growth impacts firm performance in various ways. When the economy grows, people's incomes rise, leading to increased consumption of products from businesses. Additionally, strong macroeconomic growth and industry-specific growth make both direct and indirect capital mobilization channels more effective, allowing firms to access funds for reinvestment and expansion, which boosts revenue and profit. However, in the current trend of globalization, strong domestic economic growth and the growth of industries may attract more businesses to the market, increasing market competition. Meanwhile, during periods of poor growth, business opportunities are often limited due to reduced spending

and shrinking investment capital caused by lower accumulation from individuals, households, and economic organizations. This leads to a rapid decline in business revenue and profit, and the financial situation of firms often becomes more challenging. Nonetheless, recessions may also present certain advantages such as lower input costs, reduced competition, and increased government support factors that can, under specific circumstances, improve firm performance. Hence, the relationship between economic growth and firm performance is context-dependent and warrants a nuanced, sector-specific analysis.

Some empirical studies have shown the positive impact of sectoral economic growth on firm performance. Hackbarth et al. [12] have assessed that since operating cash flow depends on the state of the economy, firms should adjust their policy decisions according to the phase of the business cycle. Additionally, investment decisions are positively influenced by economic growth [13]. The increase in economic activity, as indicated by GDP, leads to improved firm performance in Japan, according to Zeitun and Goaied [14]. Killins [15] explored the relationship between GDP growth rate and the firm performance of Canadian life insurance companies, demonstrating that the relationship is significant and positive. Al-Najjar [16] noted a significant positive relationship between GDP growth and the financial performance of tourism companies in Middle Eastern countries. Mitra et al. [5], examining the impact of economic growth on firm performance in India from 2004 to 2022 using the SGMM method, also found a positive relationship. Issah and Antwi [17] demonstrated that the impact of GDP growth rate on firm performance varies across industries, recording this as a positive influence.

Meanwhile, a study by Tan and Floros [18] using the GMM method showed that economic growth had a negative impact on the performance of 101 banks in China in the period 2003-2009. Ghareli and Mohammadi [19] also showed similar results when studying 35 enterprises in Pakistan. Rao [20], when studying the impact of macroeconomic factors on the performance of firms in the energy and oil sector in Kenya during the period 2004–2015, it was observed that economic growth had a negative impact on the performance of these firms. Sarjono et al. [21] show that economic growth has a negative impact on the performance of 44 Indonesian firms in the period 2014-2019.

Some studies have not found a relationship between economic growth and firm performance. Syafitri et al. [22] show that economic growth has no impact on the performance of firms in Indonesia in the period 2018 – 2022. Nguyen [6] the impact of economic growth on the performance of 50 enterprises in Vietnam during the period 2008-2020 was not found. This indicates that economic growth does not always produce tangible effects for firms. However, economic growth should lead to qualitative changes and assist firms in improving efficiency in a meaningful way, thereby contributing to their development.

2.2. The Relationship Between Public Investment and Firm Performance

In existing theoretical and empirical literature, the definition of public investment remains contested. Although approached from many different angles, the concepts of public investment all have the following commonalities: Public investment is an investment activity presided over by the state to implement socio-economic development programs and projects based on the use of capital sources managed by the state. Public investment is one of the macroeconomic factors that not only directly impacts promoting growth but also indirectly affects the operational efficiency of firms through the provision of good infrastructure, helping businesses save a considerable amount of expenses, especially small and medium-sized enterprises. However, in public investment activities, many representatives of owners participate in management, resulting in management rights being scattered, not centralized, and unclear. Moreover, there is no unified system, and no person is ultimately responsible for the efficiency of public investment. Additionally, there is a lack of inspection and supervision systems for the owner's representatives. However, public investment is susceptible to governance risks, including potential misuse of authority for private gain.

A number of empirical studies have shown the positive impact of public investment on firm performance. Ifeanyi [23] argues that public investment in road infrastructure has a positive long-term impact on the performance of manufacturing enterprises in Nigeria. Wan and Zhang [24], when studying the impact of public investment in infrastructure on firms in China during the period 2002-2007, showed that there is a positive relationship between these factors. Phi et al. [25] applied econometric models; the results of the study showed a positive relationship between road infrastructure and firm performance in the Mekong Delta. The degree of impact varied between economic sectors. Ibekwe et al. [26] point out that capital expenditure on roads, capital expenditure on agriculture, capital expenditure on education, and recurrent expenditure have a positive and significant impact on SMEs in Nigeria, while government borrowing has a negative and negligible impact on SMEs in Nigeria. Therefore, the study concludes that government spending has a positive impact on small and medium-sized enterprises in Nigeria and has helped improve economic growth and development in Nigeria. Chatterjee et al. [27] studied the impact of public investment on the performance of enterprises in India, it was shown that public investment has a positive impact on large enterprises. Meanwhile, small firms do not receive such benefits. Nguyen [7] research in Vietnam indicates that public investment in general, infrastructure investment, and education investment in particular have a positive impact on business efficiency, as measured by the ROA index.

In contrast, Sarjono et al. [21] show that public investment in infrastructure has a negative impact on the firm performance of 44 Indonesian enterprises during the period 2014-2019. Çöllü and Kaya [28], when studying the relationship between fixed public investment capital and the performance of state-owned enterprises in Turkey during the period 2011-2018, it has been observed that there is an inverse relationship between fixed public investment capital and the return on assets (ROA) of state-owned enterprises. Meanwhile, Kasper [29] stated that infrastructure development does not affect firm performance because firm performance is influenced by various variables such as enterprise characteristics, state characteristics, and industry characteristics.

2.3. The Relationship between Private Investment and the Firm Performance

Private investment, comprising domestic private enterprises, individual investors, and foreign direct investment (FDI), represents a key driver of economic dynamism. In particular, private investment includes investments by private enterprises, domestic individuals, and FDI enterprises. Such investments typically encompass capital expenditures on equipment, facilities, construction, and inventories, primarily aimed at profit generation [30].

A number of empirical studies have shown the positive impact of private investment and firm performance. In Turkey, Gürbüz and Aybars [31] examined the impact of FDI on corporate profits. Research indicates that FDI enhances operating profits, including financial income and return on assets (ROA). Salehi et al. [32] showed this positive impact when studying 177 businesses in Tehran between 2014 and 2021. Dang et al. [33] studied the impact of private investment on firm performance in the food and agriculture sector in Vietnam, and it was shown that private investment has a positive impact on the long-term performance of the analyzed enterprises.

In contrast, some studies have found a negative relationship between investment and firm performance, such as the works of Wei et al. [34], Cooper et al. [35] and Yao et al. [36]. At the same time, excessive investment has a negative impact on firm performance, which is the conclusion of a study by Nghia [37] when studying 548 non-financial enterprises listed on the Hanoi Stock Exchange (HNX) and Ho Chi Minh City (HOSE) in the period 2011 – 2019.

However, some authors such as Kapelko et al. [38] and Grozdić [39] argue that capital investment generates significant productivity losses in the first year but improves later, leading to positive effects in the long term. Hafiluddin and Patunru [40] did not find the impact of foreign direct investment on firm performance after the Indonesian FDI Law came into effect.

In summary, existing studies on the impact of economic growth, public investment, and private investment on firm performance show varying conclusions regarding the influence of these factors. Therefore, this issue requires ongoing research, analysis, and careful evaluation.

3. Research Methods, Models and Data

Pooled OLS, fixed-effects model (FEM), and random-effects model (REM) are the primary regression methods used to evaluate the correlation between variables when conducting research on panel data [41]. In fact, the assumption of Pooled OLS is incorrect because of heterogeneous phenomena, especially in cases where unobservable differences develop over time and lead to inaccurate and inconsistent estimates [42]. Although FEM incorporates a set of pseudo variables to address fixed heterogeneity over time, it cannot manage unobservable heterogeneity that changes over time [41]. In addition, REM is only effective in reducing missed bias because it makes heterogeneity unobservable, independent of independent variables, which may not always be the case [43]. To address the issues of autocorrelation and variance of the error term in regression analysis of tabular data, many studies employ feasible generalized least squares regression (FGLS). This approach enables obtaining more accurate estimation results and conducting reliable tests of regression coefficients.

In fact, the factors in the economy are often complex and interdependent. Therefore, economic models often include endogenous phenomena. An endogenous phenomenon describes a situation where one or more explanatory variables are related to the error term of the model. Endogenous phenomena usually occur due to the following main causes: variable omissions, concurrent relationships, and variable measurement errors. To address endogenous phenomena, studies often employ dynamic modeling using estimation techniques such as the Generalized Method of Moments (GMM) system [44]. This method uses the delay of independent variables (which can be endogenous) to transform the tool during regression. The SGMM method helps to solve endogenous problems in the research model that simple estimates such as OLS, FEM, REM, or GLS cannot solve. Using the SGMM regression technique, this study uses the lagged dependent variable in the root equation as the instrumental variable for the endogenous variable in the differential equation and vice versa. The system of equations (the original equation and the differential equation) helps to solve the endogenous problem in the regression model more thoroughly.

To analyze the impact of economic growth, public investment, and private investment on firm performance in Vietnam's economic sectors, with the help of STATA 17, the regression model proposed for the study is as follows:

$$ROA_{it} = \beta_0 + \beta_1 . GDP_{it} + \beta_2 . logGI_{it} + \beta_3 . logPi_{it} + \varepsilon_{it}$$

In which, i is a representative of the research economics in the panel data, i = 1... 14; t is the time of study, t = 2011... 2022.

The data used in the research were compiled from the database of the General Statistics Office of Vietnam for 14 economic sectors (Agriculture, Forestry and Fisheries; Mining; Manufacturing and Processing Industry; Electricity and Gas Production and Distribution; Water Supply; Construction; Wholesale and Retail; Transportation and Warehousing; Information and Communication; Financial, Banking and Insurance Activities; Real Estate Business Activities; Professional Activities and Science and Technology; Education and Training; Health and Social Assistance Activities) from 2011 to 2022.

Table 1.
Variables used in the research model.

Variables	Describe	Source
ROA	Profit rate of acting enterprises having business outcomes by kinds of economic activity (%)	General Statistics Office of Vietnam
GDP	Growth rate of economic sectors (Bill Dongs)	General Statistics Office of Vietnam
logGI	Logarithm of public investment by kinds of economic activity (Bill Dongs)	General Statistics Office of Vietnam
logPI	Logarithm of private investment by kinds of economic activity (Bill Dongs)	General Statistics Office of Vietnam

To assess the impact of economic growth, public investment, and private investment on firm performance, the research is designed to include the following steps:

Step 1: Descriptive statistics

Step 2: Using the Hausman Test to choose between the fixed effects model (FEM) and the random effects model (REM) in panel data analysis. A P-value (Hausman) > 0.05 indicates acceptance of the null hypothesis. The selected model is the REM stochastic impact model. A P-value (Hausman) < 0.05 rejects the null hypothesis. The chosen model is the FEM fixed impact model.

Step 3: Identify model defects: Multicollinearity test; Wald test for variable error variance; Wooldridge test for autocorrelation

Step 4: Using general least squares regression (GLS) to fix model defects

Step 5: SGMM regression

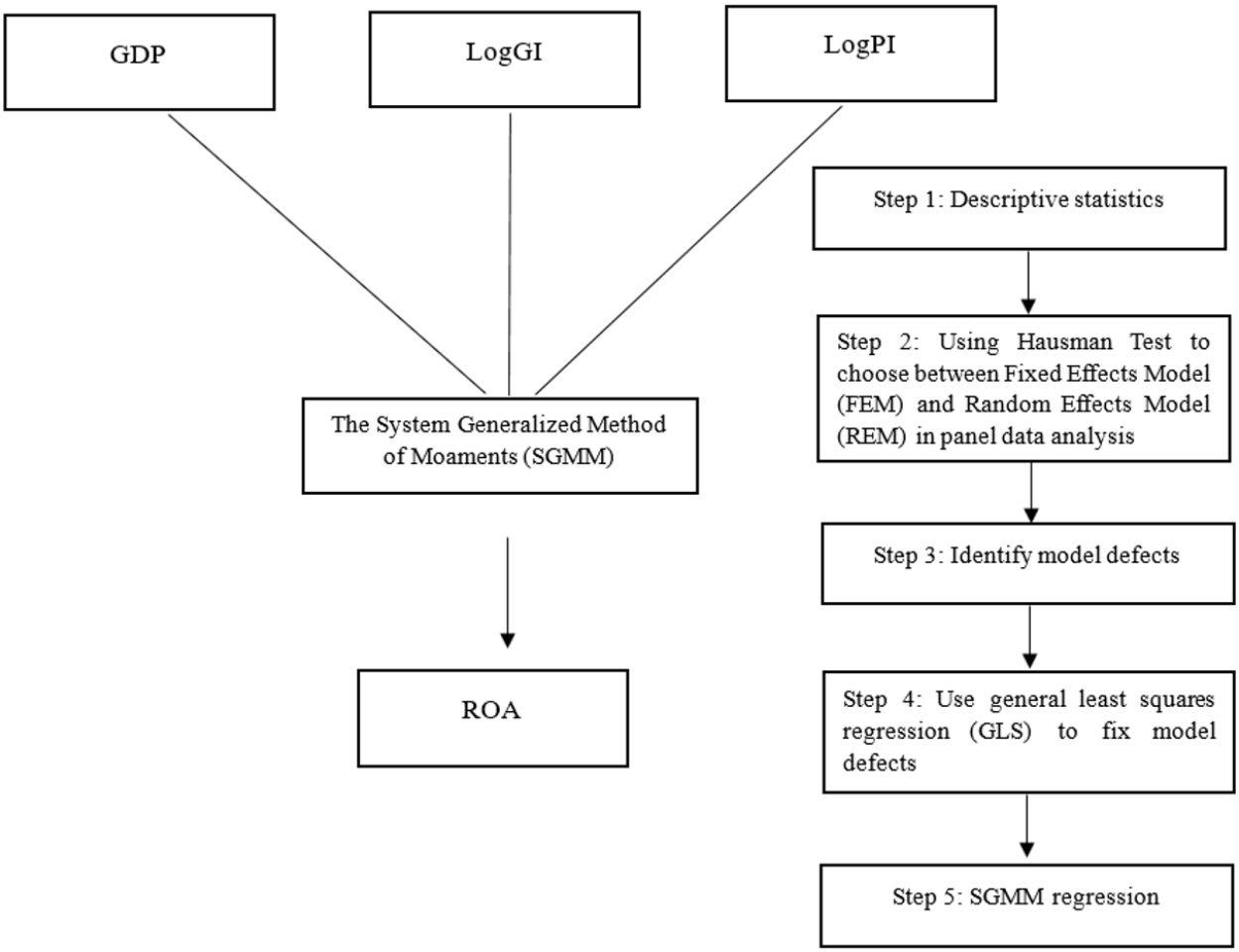

Figure 1.
Research design.

4. Results

With data collected from 14 economic sectors between 2011 and 2022, the statistical results describing the main variables of the study are shown in the following table:

Table 2.
Statistics describing the variables of the model.

Variables	Observations	Mean	Std. Dev	Minimum Describe	Maximum
ROA	168	6.056845	5.496015	-6.78	26.1
GDP	168	12.0043	49.39096	-30.01514	597.768
LogGI	168	4.268512	0.3514869	3.565257	5.257472
LogPI	168	4.483099	0.4675405	2.620136	5.698886

Returns on total assets and growth rates across industries are relatively uneven, reflecting the reality that growth depends on the characteristics of capital-intensive, labor-intensive, or service industries. Independent variables exhibit low volatility, and their standard deviation is also lower than that of the dependent variable.

The Pearson(r) correlation coefficient table indicates that the pairs of independent variables exhibit low correlation and are statistically significant. Specifically, the GDP, LogGI, and LogPI variables are all inversely correlated with ROA.

Table 3.
Pearson Correlation Coefficient(r).

Variables	ROA	GDP	LogGI	LogPI
ROA	1.0000			
GDP	-0.0055	1.0000		
LogGI	-0.4414	0.0032	1.0000	
LogPI	-0.0725	-0.0328	0.1822	1.0000

To select the FEM or REM model, the study carried out the estimation of the FEM model, REM model and Hausman Test. The results summarized in Table 4 show that the REM model is more suitable.

Table 4.
Regression results using FEM and REM models.

Variables	FEM		REM	
	β coefficient	P-Value	β coefficient	P-Value
GDP	-0.0039663	0.434	-0.0042269	0.405
LogGI	-2.624052	0.110	-1.362627	0.456
LogPI	1.719344	0.109	2.030381	0.079
_cons	9.597265	0.221	2.821576	0.741
Hausman Test	0.3328			

The estimation results of the REM model are as follows:

$$ROA = 2.821576 - 0.0042269 * GDP - 1.362627 * LogGI + 2.030381 * LogPI$$

The REM model will check for defects by tests such as: Variable variance, autocorrelation, multicollinearity, and if there are defects, they will be corrected by the GLS method.

Table 5.
Defect test results of the REM model.

Test	Value	Result
Multicollinearity test	VIF <10	No multilinearity occurs
Wald test for variable error variance	Prob>chi2 = 0.0000	The phenomenon of variance and error changes
Wooldridge test for autocorrelation	Prob > F = 0.0023	Occurrence of autocorrelation

To overcome the defects of the REM model, the study using **GLS (**Generalized Least Squares) estimation obtained the regression results as follows:

$$ROA = 27.31909 - 0.0002191 * GDP - 4.192592 * LogGI - 0.861693 * LogPI$$

The use of general least squares regression (GLS) to overcome the limitations of static approach models is also not very effective; evidence shows that only one variable is statistically significant. The study continues to use the generalized method of moments (GMM) system with a one-stage lag of ROA to estimate.

Table 6.
Estimation results according to POLS, FEM, REM, GLS and SGMM models.

	POLS	FEM	REM	GLS	SGMM
Variables	ROA	ROA	ROA	ROA	ROA
GDP	-0.000431 [-0.06]	-0.00423 [-0.83]	-0.00397 [-0.78]	-0.000219 [-0.07]	-0.0697*** [-4.18]
LogGI	-6.924*** [-6.21]	-1.363 [-0.75]	-2.624 [-1.60]	-4.193*** [-3.70]	-10.90*** [-3.50]
LogPI	0.0951 [0.11]	2.030* [1.77]	1.719 [1.60]	-0.862 [-1.33]	1.937* [1.65]
L.ROA					0.255* [1.84]
_cons	35.19*** [6.38]	2.822 [0.33]	9.597 [1.22]	27.32*** [5.09]	43.29*** [4.03]
N	168	168	168	168	154
R-sq	0.195	0.024			

Note: * p<0.1, ** p<0.05, *** p<0.01.

The estimation results show that:

Firstly, economic growth has the opposite impact on firm performance. This result is consistent with the research of Tan and Floros [18], Ghareli and Mohammadi [19], Rao [20] and Sarjono et al. [21]. Industrial economic growth may exert a negative influence on firm performance in Vietnam due to many factors, as evidenced by actual data from a number of industries. In the cement industry, the increase in production leads to a surplus of millions of tons, while domestic consumption demand is low and exports decrease, forcing firms to reduce selling prices, negatively affecting profits. Similarly, the steel industry also faces a supply-demand imbalance when crude steel production reaches 21.98 million tons in 2024, up 14% over the same period in 2023, but consumption demand does not increase accordingly. At the same time, the price of input materials such as electricity and coal has increased, reducing the profit margin of enterprises operating in the industry. Although the retail industry has a profit after tax growth of 20.9% in Q4/2024, it faces competitive pressure and fluctuations in consumer demand, and increasing operating costs. Specifically, Mobile World Investment Corporation (MWG), one of the largest retail firms in Vietnam, announced its financial statements for the fourth quarter of 2024 with revenue up 7% over the same period, but profit after tax only reached 360 billion VND, down sharply from more than 600 billion VND in the same period in 2023, mainly due to high operating costs and a decrease in gross profit margin. Similarly, the Bach Hoa Xanh chain continued to expand its scale but still recorded a loss of nearly VND 80 billion in the fourth quarter of 2024 due to a sharp increase in logistics, transportation, and inventory costs in the context of a slowdown in essential consumer demand. Meanwhile, the increase in competition from e-commerce platforms such as Shopee, Tiki, Lazada, etc., is forcing traditional retailers to be forced to step up investment in technology, marketing, and order management systems. These are factors that significantly increase fixed costs. Thus, although industry growth can expand the market size, if not properly managed and regulated, it can lead to overcapacity, fierce competition, and a decline in business efficiency.

Secondly, public investment has the opposite impact on firm performance as mentioned in the studies of Sarjono et al. [21] and Çöllü and Kaya [28]. The implementation of many public investment projects in Vietnam in recent years has been behind schedule, with capital gaps, causing a loss of urban beauty and environmental pollution, affecting businesses operating around investment projects, especially those that depend on a clean environment and complete infrastructure to attract customers. This also impacts transport and logistics enterprises due to incomplete infrastructure, forcing them to find alternative routes, which leads to increased operating costs and reduced firm performance. Additionally, this adverse impact can also be explained by public investment, especially investments by state-owned enterprises in Vietnam, which account for a high proportion, have high total assets, and often generate negative or low profits, leading to poor efficiency. Notably, some long-term loss-making enterprises include the Shipbuilding Industry Corporation (SBIC), Thai Nguyen Iron and Steel Company, and Dinh Vu Fiber Project. Some large-scale enterprises such as EVN, PVN, and Vinachem are profitable, but their return on assets (ROA) is only 1-2%, much lower than the 5-10% observed in the private and FDI sectors. The inefficient use of resources by state-owned enterprises hampers public investment from fully promoting its potential to foster growth. Conversely, it also hinders the growth of other regions and the overall economy. The inefficiency of state-owned enterprises has overwhelmed public investment and caused it to adversely affect the operational efficiency of enterprises.

Third, private investment has a positive impact on firm performance. Gürbüz and Aybars [31], Salehi et al. [32] and Dang et al. [33] in Vietnam, over the years, private investment has continued to play an important role in promoting firm performance. In 2024, according to the General Statistics Office of Vietnam, the total implementation investment capital of the whole society at current prices is estimated at 3,692.1 trillion VND, an increase of 7.5% compared to 2023. Of which, the non-state sector reached 2,064.2 trillion VND, accounting for 55.9% of total capital and increasing by 7.7% compared to the previous year. Additionally, the FDI sector has also experienced strong development. This increase enables businesses to expand their production scale, enhance their competitiveness, and meet market demand. Simultaneously, private investment encourages businesses to adopt new technologies, improve production processes, and enhance product quality, leading to increased labor productivity and overall operational efficiency.

Thus, private investment has a positive impact on firm performance in Vietnam, making an important contribution to the socio-economic development of the country.

5. Conclusions and Implications

This paper employs the System Generalized Method of Moments (SGMM) to examine the impact of economic growth, public investment, and private investment on firm performance across 14 economic sectors in Vietnam during the period 2011–2022. The results reveal that both economic growth and public investment exert a negative influence on firm performance in certain sectors, while private investment demonstrates a positive effect.

Based on these findings, the following policy implications are proposed to enhance firm performance:

From the above results, the research paper proposes a number of policy recommendations to improve the operational efficiency of enterprises in the future, as follows:

Firstly, it is essential to ensure the economic growth of sectors in a stable and sustainable manner. It is necessary to continue to consistently implement the goal of maintaining macroeconomic stability, controlling inflation, promoting growth, and ensuring macroeconomic balances in the economy. Ministries, departments, and functional agencies need to closely monitor and firmly grasp the situation, conduct thorough analysis, forecasting, and proactively develop synchronous, comprehensive, and targeted plans and solutions to enable timely, flexible, and effective policy responses, especially for emerging problems, difficult, and sensitive issues in economic sectors. Simultaneously, efforts should be made to improve institutions, laws, mechanisms, and policies to promptly remove difficulties and obstacles, thereby promoting economic growth in these sectors. In particular, it is necessary to renew economic growth drivers and promote breakthroughs in various sectors.

Secondly, improve the efficiency of public investment and overcome the inefficiency of state-owned enterprises. To enhance the efficiency of public investment and address the inefficiencies of state-owned enterprises, Vietnam needs to implement solutions such as institutional reform, improved governance capacity, and strengthened financial supervision. First, it is necessary to complete the legal framework for public investment, ensure capital allocation based on principles of efficiency, openness, and transparency, prioritize projects with spillover impacts, and limit spread and lack of focus. Simultaneously, improving the accountability and governance capacity of state-owned enterprises by applying corporate governance standards according to international practices will help minimize the loss and waste of state capital. Additionally, promoting the application of technology and digital transformation in public investment management will aid in controlling progress, costs, and enhancing transparency. Furthermore, the State should increase the rate of public investment by gradually reducing the proportion of investment in the sector of state-owned enterprises, increasing investment in infrastructure, creating positive externalities, and thereby fostering widespread development. This approach will help avoid scattered investments in business fields that the private sector can and is capable of providing efficiently. Moreover, given the limited public investment capital and the inefficiency of state-owned enterprises, Vietnam should promote investment through public-private partnerships (PPPs). However, developing this form requires establishing mechanisms to ensure the interests of all parties involved are aligned. Finally, it is essential to strengthen inspection, supervision, and sanctions for violations in the management of public investment and activities of state-owned enterprises to ensure the effective use of public resources.

Third, strengthen private investment. To promote and strengthen private investment, Vietnam needs to implement solutions related to policies, the business environment, infrastructure, and human resources to create favorable conditions for the development of the private economic sector. First, it is necessary to continue institutional reforms, simplify administrative procedures, and improve transparency in legal regulations, making it easier for private enterprises to access necessary resources. Additionally, ensuring a fair business environment between SOEs and private enterprises will motivate the private sector to expand investment. The government also needs to adopt flexible financial policies, provide credit support with preferential interest rates, and enhance access to capital, especially for small and medium-sized enterprises. Furthermore, promoting innovation and encouraging the application of advanced technology in production and business will improve labor productivity. Another important factor is the development of high-quality human resources through vocational training and improving labor skills to meet the requirements of private enterprises in the context of digital transformation. Finally, the government should create policies that encourage sustainable investment and support private enterprises in participating in strategic areas such as high technology, renewable energy, and the green economy. The comprehensive implementation of these solutions will enhance Vietnam's competitiveness in the era of global integration.

Some limitations and directions for future research: The research has not fully explored the control variables of the model. At the same time, due to limited statistical data, the study only assesses the impact of economic growth, public investment, and private investment on firm performance in different economic sectors in Vietnam during the period 2011-2022. These limitations suggest potential avenues for further development in future research.

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