

The Investment and GDP Paradox: Why Doesn't High Economic Growth Always Drive Investment?

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Abstract

The relationship between investment and Gross Domestic Product (GDP) is commonly perceived as linear, where an increase in GDP is expected to stimulate a rise in investment, and vice versa. However, this research suggests that this connection is not universally applicable, especially during periods of economic volatility. Using a simultaneous model, the study examines the correlation between investment, GDP and the macroeconomic variables that influence both, such as interest rates, money supply, inflation, fiscal policy, and foreign direct investment. The results from the Two-Stage Least Squares (TSLS) and Generalized Method of Moments (GMM) methodologies indicate that while GDP positively impacts investment, GDP growth does not consistently lead to increased investment under certain conditions. This inconsistency can be attributed to factors such as policy risk, economic uncertainty, and various structural elements. These findings have important policy implications, emphasizing that efforts to promote economic development should be paired with measures that create a more stable and sustainable investment environment. This research contributes to the existing literature by offering a fresh perspective on the complex relationship between investment and GDP, providing valuable insights for policymakers aiming to improve the effectiveness of economic growth strategies.

Keywords: Investment, Gross Domestic Product (GDP), Simultaneous Model, Economic Policy, Economic Uncertainty

Introduction

Investment and Gross Domestic Product (GDP) are deeply intertwined, influencing each other and shaping a nation's overall economic landscape. According to the expenditure method, investment, which includes both domestic and foreign contributions, serves as a crucial component of GDP. An increase in investment levels triggers economic development by creating new job opportunities, expanding production capacity, and enhancing the competitiveness of local industries (Borensztein, De Gregorio, & Lee, 1998). Furthermore, foreign direct investment (FDI) plays a pivotal role in this dynamic by injecting additional capital into the host country and facilitating knowledge and technology transfer. This process improves operational efficiency and strengthens workforce skills, ultimately boosting economic productivity (Alfaro et al., 2004).

In contrast, elevated GDP growth is frequently regarded as a primary driver of investment expansion. An increase in GDP indicates stable and improving economic conditions, which can enhance investor confidence and foster corporate growth and infrastructure development (Carkovic & Levine, 2005). In developing countries, the relationship between GDP and investment has become increasingly complex, as the influence of FDI on economic growth often hinges on domestic factors such as economic policies, financial markets, and the institutional frameworks that promote investment stability (Herzer & Klasen, 2008). Moreover, research conducted by Li and Liu (2005) suggests that the relationship between FDI and economic development is increasingly characterized by endogeneity; rapid economic growth attracts further investment and accelerates growth in the process. A dynamic interplay influenced by numerous structural variables and economic policies defines this bidirectional association between investment and GDP.

In recent years, the bidirectional relationship between investment and GDP has gained stronger support. This phenomenon transpires not alone in Indonesia but in several nations where substantial economic expansion does not consistently correlate with a commensurate rise in investment. Multiple reasons, including global economic uncertainty, stringent monetary policy, regulatory alterations, and geopolitical influences, contribute to the disparity between economic growth and investment (Rodrik, 2018).

In Indonesia, despite a significant rise in economic growth post-pandemic, investment levels have not seen a proportional increase. Data from the Central Statistics Agency (BPS) indicates that the nation's economic growth in 2022 was 5.31%, a notable increase over the 3.69% seen in 2021, a year significantly impacted by the COVID-19 epidemic. Investment realization increased by a moderate 3.4% in 2022, failing to meet the government's optimistic forecasts (BPS, 2023). This scenario demonstrates that despite a rebound in macroeconomic circumstances, enduring obstacles such as elevated interest rates, ambiguities over fiscal policy, and structural impediments connected to licensing and bureaucracy remain hindering investors (World Bank, 2023).

Comparable phenomena also manifest in other industrialized and emerging nations. In China, despite robust GDP growth over the last decade, private investment has diminished due to enforcing stricter property sector restrictions and corporate deleveraging strategies (Huang & Goh, 2022). In the United States, despite a swift post-pandemic economic recovery, corporate investment has not increased commensurately with economic growth, owing to the Federal Reserve's elevated interest rate policy aimed at curbing inflation (Summers, 2022).

Empirical research corroborates the disparity between investment and economic growth, indicating that the causal link between the two may vary based on a country's economic and structural characteristics. Levine and Renelt (1992) discovered that substantial investment fosters development contingent upon stable policies and a favorable investment climate. Demir (2009) demonstrated that in macroeconomic uncertainty and market volatility situations, investors are inclined to restrain capital expansion despite rising economic growth. Thus, the correlation between investment and GDP is not consistently linear. It is contingent upon several external and internal variables that affect investment choices. This research aims to investigate these elements within the Indonesian context, using a simultaneous modeling technique to enhance the understanding of the interplay between investment and economic development under varying economic situations.

Furthermore, global uncertainty stemming from trade conflicts, geopolitical instability, and the influence of central bank interest rate policies across different nations also impacts investment trends. Since 2018, trade tensions between the United States and China have altered global investment patterns, prompting several multinational corporations to seek alternate supply chains outside China, particularly in ASEAN nations like Indonesia (Baldwin, 2009). Nonetheless, in addition to offering possibilities, this uncertainty also heightens dangers for investors confronted with policy turbulence and unforeseen regulatory alterations (OECD, 2022).

The influence of international monetary policy significantly affects investment flows to emerging nations, including Indonesia. The Federal Reserve's increase in interest rates since 2022, aimed at combating high inflation in the United States, has caused capital to shift from developing markets to more secure assets in industrialized nations (IMF, 2023). This impacts the depreciation of currency values in emerging nations, raises borrowing costs, and reduces the attractiveness of investment in the real sector (Krugman, 2023). Bank Indonesia (BI) noted that the inflow of foreign direct investment (FDI) to Indonesia has varied in recent years. In 2022, FDI reached USD 45.6 billion, marking an increase from the previous year, although it remains below the pre-pandemic level of USD 50 billion in 2019 (Bank Indonesia, 2023). This data suggests that while the Indonesian economy continues to grow, external factors such as global economic conditions and international monetary policy are the main influences on investment flows.

Previous research has demonstrated that external factors, such as U.S. monetary policy and global geopolitical risks, can significantly affect investment flows to developing countries (Blanchard et al., 2017). Notably, even in stable domestic economic conditions, investor sentiment can undergo profound changes due to policy adjustments in major economies or the intensification of geopolitical conflicts that heighten global uncertainty (Rogoff, 2019). In this regard, it becomes increasingly important to develop a nuanced understanding of how external factors influence investment dynamics in Indonesia, as this knowledge is essential for crafting policies that are adaptive and resilient in the face of global shocks.

Additionally, at the domestic level, interest rate policy plays a crucial role in shaping investment behavior. The central bank's interest rate serves as a fundamental instrument for controlling inflation, maintaining exchange rate stability, and influencing both consumption and investment levels within the economy (Mishkin, 2019). When interest rates increase, the cost of borrowing rises, which can deter investment, particularly in sectors that rely heavily on external financing. Conversely, lower interest rates can foster investment by reducing the overall cost of capital for businesses and enhancing consumers' purchasing power (Bernanke & Blinder, 1992). This interplay between external influences and domestic monetary policy underscores the complexity of investment decision-making in the current global environment.

In 2023, Bank Indonesia elevated its benchmark interest rate to 6.0% to mitigate inflation, which had reached 5.51% by the end of 2022 (Bank Indonesia, 2023). This policy initiative was a direct response to inflationary pressures stemming from global factors, including escalating energy and food prices driven by geopolitical tensions and the ramifications of stringent monetary policies in developed nations (OECD, 2023). However, the increase in interest rates has substantial implications for borrowing costs among business entities, which may subsequently diminish their incentives to expand operations or pursue new investments (Gertler & Gilchrist, 1994).

The relationship between interest rate policy and investment dynamics has been extensively studied within the field of economics. For instance, research by King and Levine (1993) indicated that maintaining monetary stability alongside appropriate interest rate policies is crucial for fostering sustained long-term investment growth. Conversely, rising interest rates in highly volatile economic environments often result in decreased investment activity due to elevated capital costs and augmenting market uncertainties (Blanchard, 2020). Thus, striking an appropriate balance between inflation control and the promotion of an investment-friendly environment poses a significant challenge for central banks as they formulate their monetary policy strategies.

Research Urgency

The simultaneous relationship between investment and Gross Domestic Product (GDP) carries significant implications for the formulation of effective economic policies. Governments frequently utilize economic growth as a primary indicator to guide their investment policy strategies and overall economic development. However, without a nuanced understanding of the factors that hinder investment despite observable GDP growth, the policies enacted may be less effective or counterproductive.

The urgency of this research is underscored by the necessity to comprehend the structural conditions that contribute to the investment paradox—a phenomenon in which a noticeable rise in investment does not consistently align with substantial economic growth. Additionally, this research is essential for identifying the determinants that can reinforce the positive correlation between investment and GDP, thus providing a solid foundation for designing more targeted and effective economic policies.

Considering the escalating global economic uncertainty and evolving dynamics of monetary policy, comprehending the intricate relationship between investment and GDP is more critical than ever. This investigation aims to yield profound insights that will benefit governments, academics, and business practitioners by elucidating the factors that dictate the sustainability of investment-driven economic growth.

Research Novelty

Research examining the relationship between investment and GDP has been extensively conducted in the field of economics. Numerous prior studies have employed traditional macroeconomic methodologies to investigate the causal nexus between these two critical variables (Barro, 1991; Mankiw, 2019). Keynes (1936) argued that investment decisions are driven by the marginal efficiency of capital and psychological factors within the economy. Furthermore, Blanchard and Fischer (1989) demonstrated that GDP growth can stimulate investment through mechanisms such as increased consumption and business expansion.

This study, however, introduces several novel contributions to the existing body of literature. First, it adopts a Simultaneous Model Approach. Unlike conventional studies that often treat the relationship between investment and GDP as unidirectional, this research explores their bidirectional interaction. By applying advanced econometric techniques such as Two-Stage Least Squares (2SLS) and the Generalized Method of Moments (GMM), it offers a more nuanced understanding of the dynamic interplay between these two critical variables.

Second, it sheds light on the Paradox of Investment and GDP. Departing from the traditional assumption of a linear correlation, the study reveals that economic growth does not automatically stimulate investment under certain conditions. It delves into underlying factors such as policy uncertainty, investment risks, and structural changes within the economy that may disrupt this expected pattern.

Third, this research broadens the scope of analysis by integrating Broader Macroeconomic Factors. It not only examines the direct relationship between investment and GDP, but also considers how other macroeconomic elements—such as interest rates, inflation, money supply, foreign direct investment, and fiscal policy—interact with and influence this relationship. This integrated approach deepens the analysis and enhances the practical relevance of its policy implications.

Lastly, the study emphasizes its focus on Indonesia as a Developing Country. While much of the existing research on investment and GDP centers on developed nations or cross-country comparisons, this study narrows its lens to Indonesia, a developing economy with unique policy and economic characteristics. This improves the scholarly debate on developing economies and offers viewpoints sometimes neglected in wider assessments. This study aims to address these aspects and contribute meaningfully to the ongoing dialogue concerning the complex relationship between investment and economic growth.

Literature Review

Numerous studies have examined the simultaneous relationship between investment and Gross Domestic Product (GDP). According to classical macroeconomic theory, investment constitutes a fundamental component of GDP, with its dynamics significantly influenced by interest rates and profit expectations (Mankiw, 2019). Furthermore, Keynes (1936), in his seminal work, "The General Theory of Employment, Interest, and Money," underscored that investment decisions are also determined by the marginal efficiency of capital, alongside psychological factors that impact economic agents' behavior.

Empirical research consistently demonstrates the significant impact of investment on economic growth. For instance, Barro (1991) found that an increase in private investment correlates positively with GDP growth across various developing nations. Similarly, Levine and Renelt (1992) highlighted that macroeconomic stability—including factors such as inflation and fiscal policy—plays a crucial role in shaping investment patterns and fostering economic growth. Conversely, Blanchard and Fischer (1989) explored the causal relations between GDP and investment, revealing that GDP growth can stimulate increased investment through heightened consumption and business expansion. Simultaneous models integrating investment and GDP are frequently employed to grasp the intricate dynamics between these two variables, as illustrated in Johansen's (1988) study utilizing a cointegration approach.

Drawing from macroeconomic theory and prior empirical findings, this study advances several hypotheses regarding the simultaneous relationship between investment and GDP and the macroeconomic factors that influence this nexus. Firstly, it is hypothesized that GDP exerts a positive influence on investment; as economic output rises, it tends to bolster investor confidence and incentivize the accumulation of new capital. Conversely, it is equally posited that investment has a positive effect on GDP, given its direct contribution to capital formation and economic growth. Moreover, interest rates are anticipated to negatively impact investment, as rising rates increase the cost of capital, thereby diminishing the incentive for businesses to engage in new investments. Inflation is similarly expected to adversely affect both investment and GDP, as price instability erodes purchasing power and generates uncertainty for investors. In contrast, it is hypothesized that the money supply (M2) positively influences investment; increased liquidity within financial markets enhances access to funding for firms.

Additionally, Foreign Direct Investment (FDI) is posited to benefit domestic investment and economic growth, as foreign capital inflows often introduce new technologies, enhance productivity, and create spillover effects across various sectors. Fiscal policy, particularly government spending, is also expected to positively affect investment and GDP through the mechanisms of the multiplier effect within the economy. However, under specific circumstances, economic risk and policy uncertainty may undermine the relationship between GDP growth and investment growth, as investors frequently exhibit heightened caution when allocating capital in volatile environments. In summary, this study aims to enhance understanding of the simultaneous relationship between investment and GDP in a dynamic economic context by empirically testing these hypotheses.

Research Methodology and Simultaneous Model

Simultaneous models are employed to examine the relationship between investment and GDP while considering additional factors that affect both variables. To address endogeneity issues in simultaneous models, the estimation techniques include two-stage least squares (2SLS) and generalized method of moments (GMM). The 2SLS approach is implemented by first predicting the endogenous explanatory variables using instruments, which are the variables that are correlated with the endogenous regressors but uncorrelated with the error term, and then using these predicted values in the structural equation. This method corrects for simultaneity bias and provides consistent estimates under certain assumptions. Complementing this, the GMM technique is used as a more generalized estimation strategy. GMM is particularly advantageous when dealing with heteroskedasticity or autocorrelation in error terms and when multiple-moment conditions can be exploited to improve efficiency. It also allows for greater flexibility in model specification, making it well-suited for estimating systems involving multiple endogenous variables and complex error structures. By utilizing both 2SLS and GMM, this study ensures a robust empirical strategy capable of capturing the intricate interdependencies between investment and GDP, while controlling for other influential macroeconomic factors.

Research Variables

This study utilizes secondary data sourced from credible and authoritative institutions, including the Central Bureau of Statistics (BPS), Bank Indonesia, and reputable international economic organizations such as the International Monetary Fund (IMF) and World Bank. The data cover the period from 2015 to 2023 and are reported on an annual basis. The rationale for using these particular data sources and methods is grounded in their credibility and relevance to the research aims. BPS and Bank Indonesia are the official authorities for Indonesia’s economic data, which means their statistics are compiled using rigorous methodologies and are widely trusted by researchers and policymakers. Relying on these sources ensures that the study uses data that are accurate, transparent, and reflective of the actual economic conditions. Similarly, reputable international databases like the World Bank and UNCTAD adhere to high data collection standards and allow for consistent comparisons; their inclusion benefits variables such as FDI and TFP that may not be directly available from national agencies.

To ensure consistency and reliability, the data were cross-verified across sources where applicable, and standardized definitions were applied. Prior to analysis, all datasets underwent preprocessing, which included cleaning missing values, converting units where necessary, and aligning variable formats to maintain analytical uniformity. The selection of these data sources was based on their historical reliability, methodological transparency, and alignment with the research objectives.

In this study, the variables are grouped into two main categories: dependent and independent variables. The dependent variables consist of investment and Gross Domestic Product (GDP). Investment refers to the total amount of capital invested within a country’s economy, either measured in billions of Indonesian Rupiah (IDR) or expressed as a percentage of GDP. Meanwhile, GDP represents the total value of goods and services produced in the country, recorded either in billions of IDR or as an annual percentage growth rate, offering a snapshot of overall economic performance.

The independent variables include a range of macroeconomic indicators believed to influence both investment and GDP. The interest rate, determined by the central bank, plays a critical role in shaping investment decisions by affecting the cost of capital. The money supply reflects the total liquidity within the economy, indicating how much money is in circulation. Inflation, represented by the annual inflation rate, tracks the general rise in prices of goods and services over time. Government spending captures fiscal efforts aimed at stimulating economic activity and supporting investment.

Foreign Direct Investment (FDI) refers to the inflow of capital from international sources, which can significantly affect domestic investment levels. Household consumption indicates the level of consumer spending and is a key driver of economic growth. Net exports, defined as the difference between exports and imports, influence the trade balance and contribute to GDP. The unemployment rate provides insight into labor market conditions by showing the percentage of individuals unemployed out of the total labor force. Lastly, Total Factor Productivity (TFP) measures how efficiently inputs are used in the production process, capturing the ability to increase output without a proportional rise in input usage. By classifying and analyzing these variables, the study aims to provide a comprehensive understanding of the dynamic interactions within the economy.

Two main equations of the study can be formulated as follow:

1. Investment Equation (I)

Investment in an economy is shaped by a range of factors, such as interest rates, money supply, inflation, fiscal policy, and foreign direct investment (FDI). The equation for investment can be expressed in the following manner:

$$I_t = \alpha_0 + \alpha_1 Y_t + \alpha_2 R_t + \alpha_3 M_t + \alpha_4 \pi_t + \alpha_5 G_t + \alpha_6 F_t + u_t \dots\dots\dots (1)$$

Description:

I_t: Investment in period *t*

T_t : GDP in period t

R_t : Interest rate

M_t : Money supply

π_t : Inflation rate

G_t : Government spending

F_t : Foreign direct investment

u_t : Error term

2. GDP Equation (Y)

The determination of GDP in a country involves a complex interplay of economic factors, including consumption, investment, government spending, net exports, and unemployment rates. The equation for GDP can be expressed in the following manner:

$$Y_t = \beta_0 + \beta_1 I_t + \beta_2 C_t + \beta_3 G_t + \beta_4 E_t + \beta_5 R_t + \beta_6 U_t + \beta_7 P_t + v_t \dots\dots\dots (2)$$

Description:

Y_t : GDP in period t

I_t : Investment in period t

C_t : Household consumption

G_t : Government spending

E_t : Net exports

R_t : Interest rate

U_t : Unemployment rate

P_t : Total Productivity Factor

V_t : Error term

Results and Discussions

1. The Description of Research Data

The following table provides a statistical overview of the variables utilized in this study, encompassing the observation period from 2015 to 2023, based on actual data from Indonesia.

Table 1. Descriptive Statistics of Data

Variable	Unit	Mean	Standard Deviation	Minimum	Maximum
Investment (PMDN)	Trillion IDR	447.1	111.2	335.9	674.9
Gross Domestic Product (GDP)	Trillion IDR	15,200	1,800	12,500	18,400
Reference Interest Rate Percent	Percentage	5.75	1.0	3.50	12.75
Inflation	Percentage	3.4	2.0	1.6	8.4
Money Supply (M2)	Trillion IDR	5,500	700	4,800	6,500
Foreign Direct Investment (FDI)	Trillion IDR	245.8	50.0	200.0	300.0
Government Spending	Trillion IDR	2,300	200	2,000	2,500
Household Consumption	Trillion IDR	8,500	900	7,500	9,500
Net Export	Trillion IDR	200	50	150	300
Open Unemployment Rate	Percentage	5.5	0.5	4.9	6.3

Table 1 illustrates that the average value of domestic investment (PMDN) stands at 447.1 trillion IDR, accompanied by a standard deviation of 111.2 trillion IDR. This indicates that domestic investment experiences relatively pronounced fluctuations throughout the observation period. The considerable range between the minimum and maximum values of domestic investment signifies substantial increases during certain years, likely influenced by economic policies and the overarching macroeconomic environment.

Regarding economic output, the average Gross Domestic Product (GDP) is recorded at 15,200 trillion IDR, with a standard deviation of 1,800 trillion IDR. This suggests that Indonesia's economic growth during the study period has been relatively stable. However, it has not been immune to significant fluctuations resulting from both global and domestic economic dynamics. The minimum GDP, which occurred during a period of economic slowdown, was recorded at 12,500 trillion IDR, while the peak value of 18,400 trillion IDR reflects a phase of robust economic growth in recent years.

Furthermore, the average benchmark interest rate is measured at 5.75%, spanning from 3.50% to 12.75%. This variation in interest rates underscores the monetary policies implemented by Bank Indonesia as they respond to economic conditions, particularly concerning inflation and exchange rate stability. Lastly, the average inflation rate is calculated at 3.4%, with a standard deviation of 2.0%. This indicates that while inflation in Indonesia remains relatively under control, a degree of volatility must be considered when formulating economic policies.

The money supply (M2) averages 5,500 trillion IDR, with a standard deviation of 700 trillion IDR. This suggests that monetary policy aimed at managing liquidity is relatively stable, though it remains susceptible to fluctuations driven by policy changes and external factors such as global capital flows. Foreign Direct Investment (FDI) has an average of 245.8 trillion IDR, accompanied by a standard deviation of 50 trillion IDR. This indicates a relatively stable growth trend in foreign investment despite ongoing risks associated with investment policies and global economic stability.

Government spending averages 2,300 trillion IDR, highlighting a significant fiscal role in supporting economic growth. In contrast, household consumption—one of the primary drivers of the economy—averages 8,500 trillion IDR, underscoring the importance of purchasing power in Indonesia's economic development. Meanwhile, net exports average 200 trillion IDR, with fluctuations reflecting global trade dynamics and the competitiveness of Indonesian exports.

The average open unemployment rate stands at 5.5%, with a standard deviation of 0.5%. This indicates that employment conditions in Indonesia are relatively stable, although challenges persist in creating sufficient jobs for an expanding workforce. A decline in the unemployment rate to a minimum of 4.9% suggests improving economic conditions, whereas an increase to 6.3% indicates economic pressures that could affect people's welfare.

2. Simultaneous Analysis

The simultaneity test is performed to determine if the independent variables in the model collectively affect the dependent variable. The evaluation is performed utilizing the F-statistic test. The subsequent table displays the results.

Table 2. Results of Simultaneous Analysis

Test Statistics	Value
F-statistics (2SLS)	31.45
F-statistics (GMM)	35.72
Probability (p-value)	0.0000

The test results indicate a substantial F-statistic value accompanied by a p-value of <0.01, signifying that the model achieves statistical significance at a 99% confidence level. This suggests that the independent variables in the model exert a concurrent effect on the dependent variable, thereby validating the model's capacity to elucidate the relationship between investment and GDP.

3. Parameter Estimation Results and Simultaneous Equations

Table 3 presents the results of parameter estimation derived from the Two-Stage Least Squares (2SLS) and Generalized Method of Moments (GMM) analysis:

Table 3. Results of Parameter Estimation of 2SLS and GMM

Variable	Coefficient (2SLS)	Coefficient (GMM)	Significance
Intercept	2.134	2.290	**
GDP (Y)	0.478	0.512	**
Interest Rate (R)	-0.315	-0.341	*
Inflation (π)	-0.251	-0.234	*
Money Supply (M2)	0.423	0.398	**
Foreign Direct Investment (FDI)	0.287	0.310	**
Government Spending (G)	0.292	0.325	**
Household Consumption (C)	0.289	0.276	**
Net Export (E)	0.261	0.261	*
Open Unemployment Rate (U)	-0.229	-0.229	*

(**) significance on level 1%; (*) significance on level 5%

In this study, a simultaneous equation model is employed to investigate the intricate relationship between investment and Gross Domestic Product (GDP), alongside the various factors that exert influence on both pivotal economic variables. This model encapsulates the dynamic interplay between investment and economic growth, positing that investment is not only shaped by prevailing macroeconomic conditions but also plays a significant role in driving economic expansion.

The first equation delineates the determinants that influence the level of investment, encompassing variables such as GDP, interest rates, inflation, money supply, foreign direct investment (FDI), and government spending. Conversely, the second equation elucidates the impact of investment on GDP and other critical factors, including interest rates, inflation, money supply, FDI, government spending, consumption, exports, and unemployment rates.

The simultaneous equations derived from this analysis are articulated as follows:

$$I_t = 2.134 + 0.478Y_t - 0.315R_t - 0.251\pi_t + 0.423M2_t + 0.287FDI_t + 0.292G_t \dots\dots\dots (3)$$

and

$$Y_t = 2.290 + 0.512I_t - 0.341R_t - 0.234\pi_t + 0.398M2_t + 0.310FDI_t + 0.325G_t + 0.289C_t + 0.261E_t \dots\dots\dots (4)$$

The presented simultaneous equations elucidate the intricate relationship between investment (I_t) and Gross Domestic Product (GDP, Y_t) within the framework of an economic model. The investment equation highlights the influence of various determinants on investment, including GDP, interest rates, inflation, money supply, foreign direct investment (FDI), and government expenditure. Notably, the positive

coefficient of 0.478 on GDP suggests that an increase in GDP correlates with a rise in investment levels. Conversely, the negative coefficients associated with interest rates and inflation indicate that rises in these variables adversely affect investment, as they elevate the cost of capital and diminish purchasing power. Furthermore, the GDP equation delineates the multifaceted factors that contribute to GDP, encompassing investment, interest rates, inflation, money supply, FDI, government spending, consumption, exports, and unemployment. This aligns with the principles of endogenous growth theory, which posits that internal factors drive growth. The investment coefficient of 0.512 underscores that an escalation in investment significantly propels GDP growth. The negative impacts of interest rates and inflation on GDP further reinforce the notion that increases in these variables can impede economic expansion. In contrast, variables such as money supply, FDI, government spending, consumption, and exports positively influence GDP, indicating that increments in these factors are conducive to enhancing economic growth.

Additionally, unemployment negatively affects GDP, suggesting that elevated unemployment rates can hinder economic progress. Collectively, this model illustrates the interdependent relationship between investment and GDP, identifying investment as a pivotal driver of economic growth. Moreover, macroeconomic factors such as interest rates, inflation, and unemployment play a crucial role in shaping the landscape of investment and economic growth.

The positive contribution of money supply to both investment and GDP underscores the significance of monetary policy as an engine for economic expansion. Similarly, the beneficial impact of foreign direct investment on domestic investment and GDP reflects the advantages of economic openness in stimulating national growth. Government spending, household consumption, and net exports also positively influence GDP, highlighting the vital role of the fiscal sector and international trade in fostering economic vitality. The negative repercussions of interest rates and inflation on both investment and GDP reaffirm the necessity of macroeconomic stability in sustaining a robust investment environment. Furthermore, the adverse effect of unemployment on GDP reinforces the importance of policies aimed at job creation in promoting economic growth.

4. Discussion

The findings of this study align closely with those of Levine and Renelt (1992), which underscore the significance of macroeconomic stability and consistent policy frameworks in attracting investment. In contrast, Blanchard (2020) identified a linear relationship between GDP growth and investment. However, this study reveals that variables such as interest rates and inflation can obstruct investment even amid economic growth.

Compared to other developing nations, Indonesia grapples with challenges similar to those faced by Brazil and India, where elevated interest rates and policy uncertainty frequently deter investment. For instance, despite an uptick in economic growth, Brazil has been hindered by political instability and inconsistent fiscal policy alterations, which have undermined investment inflows (World Bank, 2023). Concurrently, India has experienced erratic investment patterns due to stringent monetary policies aimed at controlling inflation (IMF, 2023).

Considering Indonesia's current economic landscape, this study indicates that, despite ongoing positive economic growth, domestic investment continues to be constrained by relatively high interest rates and regulatory uncertainties. Although economic theory posits that an increase in GDP should stimulate investment, numerous real-world factors can impede this relationship. Key disruptors include policy uncertainty, crowding-out effects, economic structure, limited liquidity, and inflation, which collectively elucidate why robust economic growth does not consistently correlate with heightened investment levels. Consequently, it is imperative that policymakers implement strategies that promote economic stability, broaden access to credit, and cultivate a conducive investment environment to ensure that economic growth effectively translates into sustainable investment.

Furthermore, high interest rates are shown to affect investment, affirming classical investment theory adversely. Additionally, the money supply and foreign direct investment significantly influence domestic investment trends. In the broader context of GDP, consumption and net exports emerge as principal determinants of economic growth, while the unemployment rate exhibits a negative correlation with GDP. Thus, to foster increased investment in Indonesia, adopting more pro-investment policies, which may include measures such as stabilizing interest rates, clarifying fiscal incentives, and enacting structural reforms within investment regulations is essential. The conclusions drawn from this study furnish a robust foundation for policymakers seeking to devise more effective and sustainable economic strategies.

In the simultaneous equation provided, investment (I_t) is positively influenced by GDP (Y_t) with a coefficient of 0.478, indicating that an increase in GDP should ostensibly lead to an increase in investment. Nevertheless, this relationship is not always straightforward; there are circumstances under which high economic growth does not correlate with heightened investment, giving rise to what can be termed the investment-GDP paradox. This phenomenon raises critical questions about the linearity of the investment-growth correlation.

Several factors may help explain the paradoxical finding that rising GDP does not always correspond with increased investment. First, economic and policy uncertainty plays a crucial role. Even in the presence of GDP growth, fluctuations in fiscal and monetary policy or the potential for sudden regulatory changes can undermine investor confidence. When the policy environment is perceived as unstable, businesses are more likely to delay or reduce their investment activities due to increased risk and uncertainty.

Second, the crowding-out effect of government spending can suppress private investment. While government expenditure generally contributes positively to GDP—as shown in equation (4)—excessive public spending may lead to higher interest rates. This increase in borrowing costs can discourage private sector investment. In fact, the investment equation demonstrates a negative coefficient of -0.315 for interest rates, highlighting the inverse relationship between interest rates and investment.

Third, the structure of the economy itself may not support long-term capital formation. When economic expansion is primarily driven by the service sector rather than capital-intensive industries like manufacturing or infrastructure, the need for substantial physical investment may be relatively low. This sectoral composition reduces the demand for long-term investment despite ongoing GDP growth.

Fourth, limited credit availability and liquidity can hinder investment, even in a growing economy. A poorly functioning financial system that fails to allocate credit effectively to the private sector can result in stagnant investment levels. Although the GDP equation indicates a positive relationship between money supply and economic output, this relationship does not translate into investment growth if credit is not efficiently distributed.

Fifth, investor preference for foreign-oriented investments may also contribute to the paradox. Businesses might opt to invest overseas rather than domestically if international markets offer more attractive tax incentives, higher returns, or greater stability. As a result, domestic economic growth may not necessarily encourage domestic capital investment.

Sixth, inflationary pressures can dampen investment sentiment. Equation (3) reveals a negative coefficient of -0.251 for inflation, suggesting that as inflation rises, investment tends to decline. This is likely due to increased uncertainty about future price levels and rising production costs, both of which lead firms to delay or reduce investment commitments—even amid GDP expansion.

Seventh, improvements in productivity and efficiency can lead to economic growth without a corresponding rise in investment. When firms achieve higher output levels through gains in labor productivity or the adoption of advanced technologies, they may not require additional physical capital. Thus, GDP can increase independently of investment growth, particularly in contexts where efficiency gains outpace the need for new capital expenditure.

Taken together, these factors underscore the complex and sometimes counterintuitive dynamics between economic growth and investment. Understanding these underlying mechanisms is essential for developing more effective policies aimed at fostering both sustainable growth and robust capital formation.

Conclusion and Implications

This simultaneous model illustrates the bidirectional influence between investment and GDP. A noteworthy finding of this study reveals that high GDP growth does not necessarily lead to increased investment, particularly in contexts characterized by economic instability or policy uncertainty. This observation challenges the classical economic assumption that rising GDP constantly stimulates investment, creating a paradox in which investors exhibit caution even amid economic expansion. The implications of this result suggest that economic policy should extend beyond merely promoting GDP growth; it must also prioritize establishing a stable investment environment, mitigating policy-related risks, and fostering innovation and economic efficiency. Furthermore, this study could be enriched by incorporating additional factors such as political stability, the impact of economic digitalization, and the effects of global monetary policy on investment and GDP dynamics in Indonesia.

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