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DYNAMICS OF THE RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN CENTRAL JAVA PROVINCE

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Abstract

Foreign Direct Investment (FDI) and Economic Growth are two important indicators in regional economic development. Several previous studies have shown that there is a two-way relationship between FDI and Economic Growth, where FDI acts as a source of capital formation and technology transfer that drives economic output, while economic growth reflects market attractiveness for investors. Therefore, this study aims to: 1) identify the causal relationship between FDI and economic growth using the Granger Causality Test; 2) analyze the determinants of FDI and Economic Growth in Central Java in 2020-2024 using the Fixed Effect Model panel data analysis method. The results show a one-way causal relationship from FDI to Economic Growth. In addition, from the Fixed Effect Model panel estimation, it was found that an increase in FDI, Labor and Population can increase economic growth in Central Java. Thus, government policies related to investment should not only focus on increasing the quantity of FDI, but also on the quality of FDI that can drive Economic Growth more optimally and sustainably.

Keywords: FDI, Economic Growth, Granger Causality, Panel Data, Central Java

INTRODUCTION

Investment is one of the main pillars driving economic growth at both the national and regional levels. Through investment, capital formation occurs, playing an important role in increasing production capacity and stimulating economic activity (Muryani et al., 2023). In neoclassical growth theory, Solow (1956) emphasized that capital accumulation through investment flows is one of the three key determinants of long-term economic growth, alongside labor force growth and technological progress. One form of investment that plays a crucial role in promoting economic development is Foreign Direct Investment (FDI), which not only provides external capital inflows but also facilitates technology transfer, job creation, increased production capacity, and industrial modernization (Ismiralda, 2025). On the other hand, the OLI Paradigm proposed by Dunning (1977) argues that strong economic growth itself serves as a major attraction for foreign investors. Therefore, the relationship between FDI and economic growth may be reciprocal and cannot be simply understood as a one-way relationship.

In the regional context, Central Java Province presents an interesting phenomenon. Data from the Ministry of Investment and Downstream Industry (2025) indicate that Central Java is among the top five provinces in Indonesia in terms of Foreign Direct Investment realization, with an investment value of USD 1.601 billion. Furthermore, investment realization in Central Java has shown a consistently increasing trend in recent years, with growth being largely driven by Foreign

Direct Investment rather than Domestic Investment. This upward trend is closely associated with the relocation of manufacturing industries and the development of strategic industrial areas, including the Batang Special Industrial Estate and Kendal Industrial Park. Despite these achievements, Central Java recorded the lowest economic growth rate among the provinces on Java Island, with an average growth rate of only 3.80 percent (BPS, 2024).

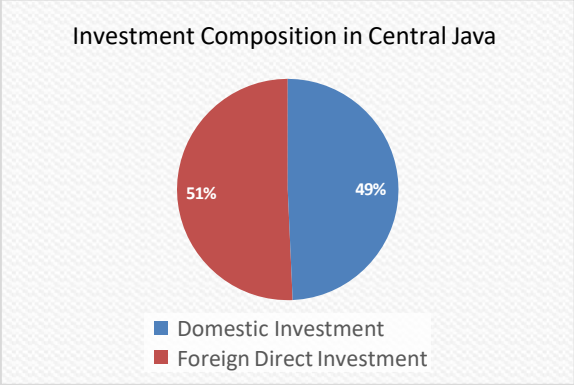


Figure 1. Investment Composition in Central Java

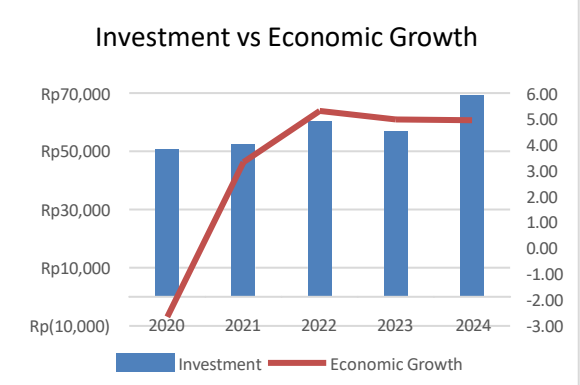


Figure 2. The phenomenon of FDI and economic growth

This condition raises an important question regarding the relationship between FDI and economic growth: does FDI genuinely stimulate economic growth, or does economic growth itself attract FDI inflows? Alternatively, do the two variables influence each other simultaneously?

Several previous studies have examined the relationship between FDI and economic growth. For instance, Halima et al. (2022) developed a simultaneous equation model to analyze the relationship between FDI and GDP in ASEAN countries and found that GDP and FDI mutually influence each other. Similarly, Rahayu et al. (2019) identified a simultaneous relationship between GDP and FDI in five ASEAN countries. Furthermore, Sari and Susilowati (2024) reported a bidirectional relationship between GDP and FDI across 34 provinces in Indonesia. However, most of these studies were conducted at the national or cross-country level, while empirical studies specifically investigating the direction of the relationship between FDI and economic growth at the district/city level in Central Java Province remain limited.

This study aims to: (1) identify the direction of causality between FDI and economic growth across 35 districts and municipalities in Central Java Province during the 2020–2024 period, and (2) analyze the determinants of economic growth using a panel data Fixed Effects Model (FEM). This study contributes to the literature by addressing the limited empirical evidence on the causal relationship between FDI and economic growth at the district/city level in Central Java. Furthermore, the findings demonstrate that the bidirectional relationship between FDI and economic growth observed at the national and cross-country levels does not necessarily apply at the regional level, thereby contributing to a deeper understanding of the FDI–economic growth nexus across different levels of analysis.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

2.1 Foreign Direct Investment and Economic Growth

Solow (1956) argues that investment promotes economic growth through capital accumulation and increased production capacity. On the other hand, the OLI paradigm developed by Dunning (1977) suggests that strong economic growth itself serves as an attraction for foreign investors, thereby creating a reciprocal relationship between FDI and economic growth. Previous studies by Halima et al. (2022), Rahayu et al. (2019), and Sari and Susilowati (2024) consistently found that FDI and GDP influence each other. FDI inflows stimulate production capacity and economic output, while higher economic growth attracts greater FDI inflows. Based on the theoretical framework and empirical evidence, the following hypothesis is proposed:

H1: There is a causal relationship between FDI and economic growth.

2.2 Economic Growth Equation

According to Solow's growth theory (1956), FDI plays an important role in accelerating economic growth through capital formation and increased production capacity. Ismiralda (2025) explains that FDI contributes to economic growth by providing external capital, creating employment opportunities, facilitating technology transfer, and promoting industrial modernization. Empirical studies by Jiaying et al. (2025), Rahayu et al. (2019), and Mwakabungu and Kauangal (2023) consistently demonstrate that FDI has a significant effect on economic growth. Therefore, the following hypothesis is proposed:

H2: FDI has a significant effect on economic growth.

Human Capital Theory proposed by Becker (1993) explains that labor is a productive asset whose value can be enhanced through investments in education and training. Therefore, improvements in both the quality and quantity of labor are expected to increase production capacity, which in turn promotes economic growth. In Solow's (1956) production function, an increase in the labor force directly contributes to higher output of goods and services. Jiaying et al. (2025) found that labor has a significant effect on economic growth in both the short and long run, indicating that labor availability is one of the key drivers of economic output. Based on the theoretical and empirical evidence, the following hypothesis is proposed:

H3: Labor has a significant effect on economic growth.

Wagner's Law (1883) states that government expenditure tends to increase alongside economic development, particularly in the provision of infrastructure and public services. Keynes further emphasized the multiplier effect of government spending, whereby productive public expenditure generates a greater increase in output through the economic activities it stimulates. Empirical studies by Simanjuntak et al. (2025) and Winarni et al. (2020) consistently found that government capital expenditure has a significant effect on economic growth. Therefore, the following hypothesis is proposed:

H4: Capital expenditure has a significant effect on economic growth.

Malthusian Population Theory (1798) argues that population growth that is not accompanied by productivity improvements may place pressure on economic development. However, from a modern economic perspective, a large population also reflects abundant labor availability and a larger domestic market, thereby stimulating aggregate demand and expanding economic output. Tumaleno and Riazis (2022) found that population size has a significant effect on economic growth. Therefore, the following hypothesis is proposed:

H5: Population has a significant effect on economic growth.

RESEARCH METHODS

3.1 Research Design

This study employs a quantitative approach with an explanatory research design to identify and analyze the direction of the causal relationship between Foreign Direct Investment (FDI) and economic growth in Central Java Province, as well as to test the hypotheses developed based on theoretical foundations and previous empirical studies. The object of this study is the dynamic relationship between FDI and economic growth across all districts and municipalities in Central Java Province during the 2020–2024 period. The study utilizes panel data, combining cross-sectional data from 35 districts and municipalities in Central Java Province with time-series data covering the period from 2020 to 2024. The data were obtained from Statistics Indonesia (BPS) of Central Java Province, the Ministry of Investment and Downstream Industry/Indonesia Investment Coordinating Board (BKPM), and the Investment and One-Stop Integrated Service Agency (DPMPTSP) of Central

Java Province. These data are available in the form of regional statistical publications and annual investment realization reports.

3.2 Model Specification

This study initially employs a simultaneous equation model consisting of two interrelated structural equations. The first equation specifies Economic Growth as the endogenous variable, which is influenced by Foreign Direct Investment (FDI), Labor, Capital Expenditure, and Population. The second equation specifies FDI as the endogenous variable, which is influenced by Economic Growth, Minimum Wage, and Infrastructure. Mathematically, the system of simultaneous equations can be expressed as follows:

$$PE_{it} = \alpha_0 + \alpha_1 FDI_{it} + \alpha_2 TK_{it} + \alpha_3 BM_{it} + \alpha_4 JP_{it} + \in_{1it} \quad (1)$$

$$FDI_{it} = \beta_0 + \beta_1 PE_{it} - \beta_2 UMK_{it} + \beta_3 INF_{it} + \in_{2it} \quad (2)$$

Description:

PE	= Economic Growth (GRDP, rupiah)
PMA	= Realized Foreign Direct Investment (billion rupiah)
TK	= Number of Workers (persons)
BM	= Local Government Capital Expenditure (thousand rupiah)
JP	= Population (persons)
UMK	= Regency/City Minimum Wage (rupiah/month)
INF	= Length of Roads in Good Condition (km)
α_0, β_0	= Constant of each equation
$\alpha_0 \ldots \alpha_4, \beta_0 \ldots \beta_4$	= Parameter coefficient of each variable
i	= Regency/City
t	= Time period

3.3 Analytical Techniques

The analytical procedure in this study consists of several stages, as follows:

1. Panel Data Model Selection

   Panel data analysis was conducted using three alternative estimation approaches: the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM). The most appropriate model was selected through a series of specification tests, namely the Chow Test to choose between CEM and FEM, the Hausman Test to choose between FEM and REM, and the Lagrange Multiplier (LM) Test to choose between CEM and REM (Gujarati & Porter, 2015).

2. Simultaneous Equation Identification

   Before estimation, model identification was performed to ensure that each equation in the system could be validly estimated. Identification was assessed using both the order condition and the rank condition (Gujarati & Porter, 2015). The order condition was evaluated using the criterion (K-k)\(m-1), where (K) represents the total number of exogenous variables in the system, (k) denotes the number of exogenous variables included in a particular equation, and (m) represents the number of endogenous variables in that equation. The rank condition was satisfied when the coefficient matrix had a rank of at least (m-1).

3. Endogeneity Test

   An endogeneity test was conducted to determine whether a causal relationship exists between Foreign Direct Investment (FDI) and Economic Growth. The hypotheses were formulated as follows: (H_o): no causal relationship exists; (H_1): a causal relationship exists.

If the p-value was less than 0.10, the null hypothesis was rejected, indicating the presence of causality within the system.

The results of the endogeneity test determined the subsequent analytical procedure. If bidirectional causality was identified, both the Economic Growth equation and the FDI equation were estimated. If only a unidirectional relationship from FDI to Economic Growth was found, further analysis focused solely on the Economic Growth equation. Conversely, if causality ran only from Economic Growth to FDI, only the FDI equation was analyzed.

4. Classical Assumption Tests

Classical assumption tests were performed to ensure the validity of the estimated model. These tests included: (1) the Jarque–Bera test for normality, where a p-value of at least 0.05 indicates normally distributed residuals; (2) the Variance Inflation Factor (VIF) test for multicollinearity, where a VIF value of 10 or below indicates the absence of serious multicollinearity among explanatory variables; (3) the Modified Wald Test for heteroskedasticity, where a p-value of at least 0.05 indicates homoskedastic residuals; and (4) the Wooldridge Test for autocorrelation in panel data, where a p-value of at least 0.05 indicates the absence of serial correlation.

5. Statistical Significance Tests

Statistical significance was evaluated using the coefficient of determination (R^2), the F-test, and the t-test. The coefficient of determination (R^2) measures the proportion of variation in the endogenous variable explained by the exogenous variables included in the model, with values closer to one indicating greater explanatory power. The F-test was employed to assess the joint significance of all explanatory variables, with a p-value below 0.05 indicating a statistically significant collective effect. The t-test was used to evaluate the individual significance of each explanatory variable, where a p-value below 0.05 indicates a statistically significant partial effect.

Consistent with the conditional hypothesis structure adopted in this study, the (R^2), F-test, and t-test were applied only to the equation that was found to exhibit a causal relationship based on the results of the endogeneity test.

RESULTS AND DISCUSSION

4.1 Data Analysis

1. Data Panel Approach

Table 1. Hausman Test

Equation Model	P-value	Results
PE	0,0002	Fixed Effect Model
FDI	0,0010	Fixed Effect Model

Source: Analysis Results

Based on Table 1, the p-values obtained from both equations are below 0.05. Therefore, the Fixed Effects Model (FEM) was selected as the most appropriate estimation approach for both the Economic Growth equation and the FDI equation.

2. Endogeneity Identification

Table 2. Endogenity Test

Variable	Coefficient	P-value
Resid PE	6546347	0,951
Resid PMA	-2210291	0,0000

Source: Analysis Results

The endogeneity test results indicate that no simultaneous relationship exists between Economic Growth and FDI. Instead, the findings reveal a unidirectional causal relationship running from FDI to Economic Growth.

Table 3. Granger Causality Test

Variable	P-value	Decision
PE → FDI	0,949	failed to reject $\mathbf{H_0}$
FDI → PE	0,099	reject $\mathbf{H_0}$

Source: Analysis Results

To strengthen the endogeneity test results, a Granger causality test was conducted as an additional confirmation to identify the direction of the relationship. The results of the Granger causality test indicate that FDI has a statistically significant effect on Economic Growth. These findings are consistent with the results of the endogeneity test and further reinforce the conclusion that the relationship between FDI and Economic Growth in Central Java Province is unidirectional. Specifically, FDI influences Economic Growth, whereas Economic Growth does not significantly affect FDI.

3. Statistical Significance Tests

Table 4. Significance Test

Variable	Coefficient	P-value
C	30143,91	0,000
PMA	0,0008581	0,006
TK	0,1273815	0,000
BM	0,0000136	0,246
JP	0,0028986	0,021

$\boldsymbol{R^2}$ = 0, 97832709
F-Statistic = 6,85
Prob (F-Statistic) = 0,0004
Source: Analysis Results

$$PE_{it} = 30143{,}91 + 0{,}0008581PMA_{it} + 0{,}1273815TK_{it} + 0{,}0000136BM_{it} + 0{,}0028986JP_{it} + \in_{it}$$

Based on the regression equation presented above, the results of the t-test can be interpreted as follows:

1. FDI has a positive and statistically significant effect on Economic Growth, as indicated by a coefficient of 0.0008581 and a p-value of 0.006 (< 0.05). This finding suggests that higher FDI inflows contribute to increased economic growth in Central Java Province. The result supports Solow's growth theory, which emphasizes the role of capital accumulation in promoting economic expansion.
2. Labor also exhibits a positive and significant effect on Economic Growth, with a coefficient of 0.1273815 and a p-value below 0.001. This result indicates that labor availability remains an important driver of regional economic growth by enhancing production capacity and economic output.
3. Capital Expenditure has a positive coefficient (0.0000136), indicating a positive relationship with Economic Growth. However, its effect is not statistically significant (p-value = 0.246 > 0.05). This suggests that government capital expenditure during the observation period did not significantly contribute to economic growth in Central Java.
4. Population has a positive and statistically significant effect on Economic Growth, as reflected by a coefficient of 0.0028986 and a p-value of 0.021 (< 0.05). This finding indicates that a larger population contributes to economic growth through an expanded labor force and a larger domestic market.

The coefficient of determination (R^2) is 0.9783, indicating that approximately 97.8 percent of the variation in Economic Growth can be explained by FDI, Labor, Capital Expenditure, and Population. The remaining 2.2 percent is explained by other factors not included in the model. Furthermore, the F-statistic is significant (p-value = 0.0004 < 0.05), indicating that all explanatory variables jointly have a significant effect on Economic Growth.

4.2 Discussion

1. Identifying the Relationship between Foreign Direct Investment (FDI) and Economic Growth

The results of the endogeneity test, which were further confirmed by the Granger causality test, indicate that no endogeneity problem exists between Foreign Direct Investment (FDI) and Economic Growth. These findings suggest that the relationship between FDI and Economic Growth across districts and municipalities in Central Java Province is unidirectional rather than reciprocal.

Furthermore, the absence of a significant effect of Economic Growth on FDI indicates that economic growth at the district and municipal levels is not sufficiently strong to serve as a primary signal for attracting foreign investors. This finding differs from those of Halima et al. (2022), Rahayu et al. (2019), and Sari and Susilowati (2024), who reported a simultaneous relationship between FDI and Economic Growth. This discrepancy suggests that findings obtained at the national and cross-country levels do not necessarily apply to the regional context. At the district and municipal levels, foreign investors' decisions are likely influenced more by location-specific factors, such as the availability of industrial estates, transportation infrastructure, and the quality of human capital (Sodik et al., 2019). In addition, the degree of economic openness and the quality of local institutions—including government effectiveness and the ease of obtaining business permits—may play a more important role in attracting foreign capital than economic growth alone (Fu et al., 2018). The findings of this study are consistent with those of Ramly (2022), who found a undirectional relationship between FDI and Economic Growth, whereby increases in FDI generate positive effects on Economic Growth.

2. The Effect of Foreign Direct Investment (FDI) on Economic Growth

The estimation results indicate that Foreign Direct Investment (FDI) has a significant effect on Economic Growth, thereby supporting the proposed hypothesis. This finding suggests that increases in foreign capital inflows contribute significantly to regional economic growth. The result is consistent with Solow's (1956) neoclassical growth theory, which states that economic output, represented by (Y=f(K,L,A)), is determined by capital accumulation (K), labor (L), and technological progress (A). In this context, FDI serves as a source of external capital accumulation that increases the stock of physical capital in the host region, promotes productive capacity expansion, generates employment opportunities, and facilitates the transfer of technology and managerial knowledge. Collectively, these mechanisms contribute to higher regional economic output.

In Central Java, FDI inflows into strategic industrial areas, such as Kendal Industrial Park and the Batang Special Economic Zone, have stimulated production activities and increased local employment, thereby contributing to regional economic growth (Kesumadianty, 2025). However, the impact of FDI on Economic Growth is not instantaneous. Rather, it requires time for capital accumulation and technology transfer to be effectively absorbed and reflected in aggregate economic output. This finding is consistent with Dinh et al. (2019), who found that FDI exerts a negative effect in the short run but a positive and significant effect in the long run. This occurs because foreign investment requires time to

build productive capacity, establish linkages with domestic sectors, and generate technology spillovers that can be utilized throughout the economy.

3. The Effect of Labor on Economic Growth

Labor is one of the primary factors of production in promoting economic growth. According to Solow's neoclassical growth theory, represented by the production function (Y=f(K,L,A)), an increase in labor input (L) employed in the production process contributes to higher output (Y) and, consequently, economic growth. The Fixed Effect Model estimation results indicate that Labor has a significant effect on Economic Growth. This finding suggests that greater labor absorption in Central Java Province enhances production activities and increases regional economic value added.

According to Statistics Indonesia (BPS, 2024), the manufacturing sector contributed the largest share to Central Java's Gross Regional Domestic Product (GRDP), accounting for 33.84%, followed by agriculture, forestry, and fisheries at 13.51%, and the trade sector at 12.07%. At the same time, these sectors were also the largest employers in the province, absorbing 18.87%, 28.64%, and 19.31% of the workforce, respectively. This evidence indicates that labor-intensive sectors play a crucial role in supporting regional economic performance. Consistent with the findings of Dewanto and Nihayah (2025), productive labor absorption in leading sectors within the Petanglong and Purwomanggung regions has been identified as one of the key drivers of regional economic expansion. Furthermore, increased labor absorption raises household income, a substantial portion of which is spent on the consumption of goods and services. This process stimulates aggregate demand and encourages producers to expand their production capacity. Such a mechanism is supported by BPS (2024) data showing that household consumption accounted for 61.29% of Central Java's GRDP. Therefore, labor contributes to economic growth not only through its direct role in production but also through its indirect effect on aggregate demand. This finding is consistent with Firmansyah and Dewi (2020), who concluded that improvements in labor productivity can strengthen overall economic activity.

4. The Effect of Capital Expenditure on Economic Growth

The estimation results indicate that Capital Expenditure does not have a significant effect on Economic Growth. This finding suggests that capital expenditure has not been able to generate a direct impact on economic output expansion. The result contrasts with Keynesian theory, which emphasizes the multiplier effect of government spending, as well as Wagner's Law (1883), which argues that government expenditure serves as a catalyst for regional development. However, in practice, capital expenditure does not always translate into significant improvements in regional economic growth.

The insignificant effect of capital expenditure may be attributed to its relatively small share within the regional government expenditure structure. Data from the Directorate General of Fiscal Balance (DJPK) indicate that capital expenditure in local governments across Central Java accounted for only around 6% of total regional expenditure. Furthermore, a substantial portion of capital expenditure was allocated to equipment procurement and building construction, whose economic benefits generally require a considerable period before contributing to community welfare and economic expansion (Rarun et al., 2019). In addition, the utilization of assets, particularly equipment and machinery, has often been suboptimal due to poor management practices, resulting in underutilized or idle assets that fail to generate meaningful contributions to regional economic growth. Similar conditions have been observed at the provincial level. The Regional Research and Innovation Agency (BRIDA) of Central Java Province (2025) reported that a large proportion of regional assets had not been utilized effectively. Specifically, 41% of the 22 government agencies responsible for asset management were classified as ineffective in asset utilization, while 240 land and

building assets owned by the provincial government were not being used to support governmental functions. Consequently, the economic benefits of capital expenditure may not have materialized during the study period. This finding is consistent with previous studies by Handayani (2020), Rahmanda et al. (2025), and Priambodo (2014), which also found that capital expenditure does not significantly affect regional economic growth.

5. The Effect of Population on Economic Growth

The estimation results indicate that Population has a significant effect on Economic Growth. This finding suggests that population growth contributes to economic activity through an expanding labor force and increased productive capacity. In this context, population growth serves as a source of productive labor that contributes to higher economic output. As more individuals participate in economic activities, the production capacity of various sectors increases, thereby stimulating regional economic growth. This finding is consistent with Rahmawati (2025), who argues that population growth enlarges the labor force base that supports production and distribution activities within the economy.

In addition to serving as a source of labor, population growth also expands the consumer market. Data on Gross Regional Domestic Product (GRDP) by expenditure in Central Java indicate that household consumption consistently represented the largest component of GRDP throughout the study period. An increasing population generates greater demand for goods and services, encouraging producers to expand production capacity across various economic sectors. This process ultimately contributes to higher GRDP and stronger economic growth (Azulaidin, 2021). The findings are consistent with Malthusian population theory (1798), which suggests that a large population can promote economic growth when supported by adequate human capital quality and employment opportunities that enable productive economic participation.

CONCLUSION

5.1 Conclusion

Several conclusions can be drawn from this study:

1. No endogeneity problem was detected between Foreign Direct Investment (FDI) and Economic Growth in Central Java Province based on the endogeneity test and Granger causality test results. Therefore, the model was estimated using the Ordinary Least Squares (OLS) regression approach. The findings reveal a unidirectional relationship in which FDI has a positive effect on Economic Growth. This indicates that FDI inflows into Central Java are primarily driven by location-specific factors, such as the availability of industrial zones and labor productivity, rather than by market-seeking motives reflected in regional economic growth.
2. Labor and Population were found to have positive and significant effects on Economic Growth, suggesting that the availability of a productive workforce and the size of the domestic market are important determinants of regional economic performance. In contrast, Capital Expenditure does not have a significant effect on Economic Growth, indicating that the allocation of capital expenditure has not yet been sufficiently effective in generating measurable economic growth during the study period.

5.2 Implications

The findings of this study provide several important policy implications.

1. Improving the quality and productivity of FDI. Governments should direct investment policies not only toward increasing FDI realization but also toward investments that create added value, absorb labor, strengthen linkages with local economic sectors, and promote technology and knowledge transfer.

2. Improving labor quality. Governments should strengthen vocational education and competency-based training and align them with industry needs to enhance labor productivity and support economic growth.
3. Productive management of demographic potential. Population growth should be accompanied by expanded employment opportunities, the development of labor-intensive sectors, and the strengthening of MSMEs so that population growth can serve as a source of labor and a market that supports economic expansion.
4. Optimizing capital expenditure. Given that capital expenditure has not shown a significant effect on economic growth, governments should improve the effectiveness of its allocation by prioritizing infrastructure development with a high multiplier effect and ensuring its productive utilization.

5.3 Research Limitations

This study has several limitations that should be acknowledged. First, although the study covers the period from 2020 to 2024, the impacts of the COVID-19 pandemic and other global external shocks were not explicitly incorporated into the model. Second, the infrastructure variable employed in this study may not fully capture the overall quality and availability of regional infrastructure. Third, the capital expenditure variable does not comprehensively represent government spending financed through central government transfers and other public expenditure programs. In addition, several factors that may influence both Foreign Direct Investment (FDI) and Economic Growth, such as trade openness, inflation, interest rates, institutional quality, and global economic conditions, were not included in the model. Furthermore, the absence of a simultaneous relationship between FDI and Economic Growth may partly be attributed to the relatively short observation period, which may not be sufficient to capture the long-term dynamics of bidirectional interactions between the two variables. Therefore, future studies are encouraged to employ more comprehensive indicators, extend the observation period, and incorporate additional relevant variables in order to provide a more comprehensive understanding of the relationship between FDI and Economic Growth.

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