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The Effect of Foreign Investment (FDI) and Domestic Investment (PMDN) on Economic Growth in Indonesia Through Infrastructure As an Intervening Variable in 2017-2023

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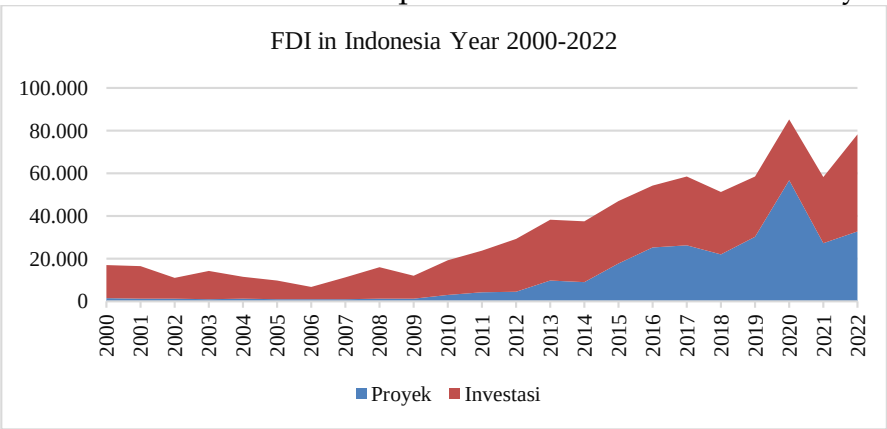
A B S T R A C T

This study aims to analyze the impact of domestic direct investment and infrastructure on the economy in Indonesia. The methodology used is a quantitative approach with time series, using two models, namely Autoregressive Lag. The data used are secondary in time series form from 2006 to 2022, obtained from the via its official website, data collection being via documentation. For data analysis, ARDL and Path Analysis methods are used to evaluate the role of infrastructure as an intervening variable. The results of the analysis show that FDI has a positive and significant influence on the economic growth of Indonesia, while PMDN shows a negative and insignificant influence. Infrastructure has a positive but also insignificant effect on economic growth. Furthermore, infrastructure cannot mitigate the effect of FDI and FDI on economic growth in Indonesia

INTRODUCTION

Economic growth is the goal of all countries, including Indonesia, which is currently still in the category of developing countries with a relatively dense population. Indonesia strives to achieve the goal of economic growth in both national and regional income distribution through increased investment from various sources including foreign capital. The role of foreign investment (FDI) has become one of the important factors in driving a country's economic growth because FDI according to Jamil and Hayati (2020: 3) can encourage increased investment in various economic sectors, with more capital available, companies can increase their production capacity, create new jobs, and develop more sophisticated technology. In addition, foreign investment, can increase capital flows that allow the transfer of capital resources from one country to another.

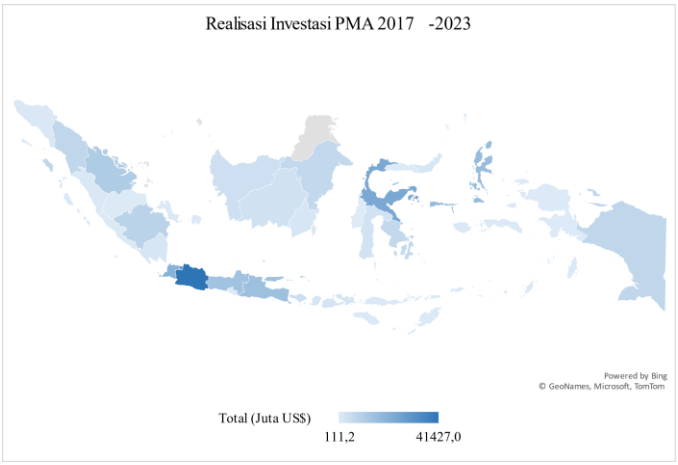


Source: BPS (2023)

Figure 1. Project and Investment FDI Realization 2000-2022 (Million US$)

The data on FDI growth in Indonesia shows that in the last 10 years, Indonesia has become an attractive investment destination for foreign investors, as well as the fact that foreign investment has grown significantly in recent years except in 2020 because it is still recovering after the Covid-19 pandemic.

The next problem, besides referring to previous research, based on data from BPS (2023), it is that there is a significant difference in the amount of FDI investment from each province in 2006-2022 as described in the following graphs.

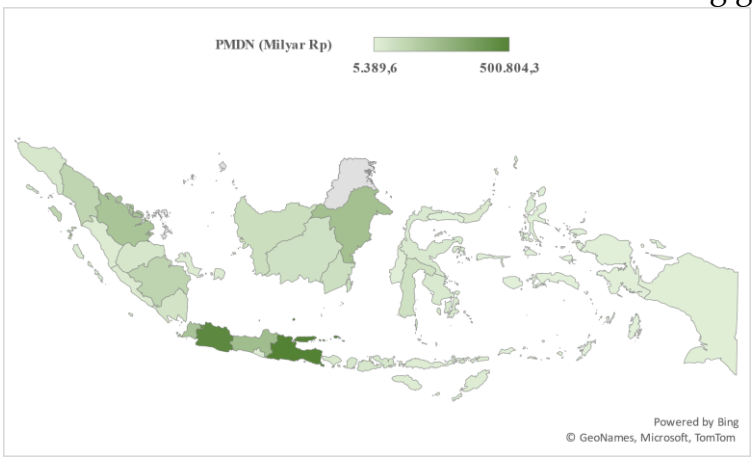


Source: BPS (2023)

Figure 2. FDI Investment Realization by Province (Million US$) Year 2017-2023

In addition to the challenge of limited FDI sectors that have a significant influence on economic growth, the next problem relates to the distribution of FDI which is still dominated by several destination areas including DKI Jakarta, West Java, Banten, and East Java Provinces. Meanwhile, several other provinces that have the lowest FDI and have a large amount of FDI are East Nusa Tenggara, Yogyakarta, Gorontalo, and West Sulawesi.

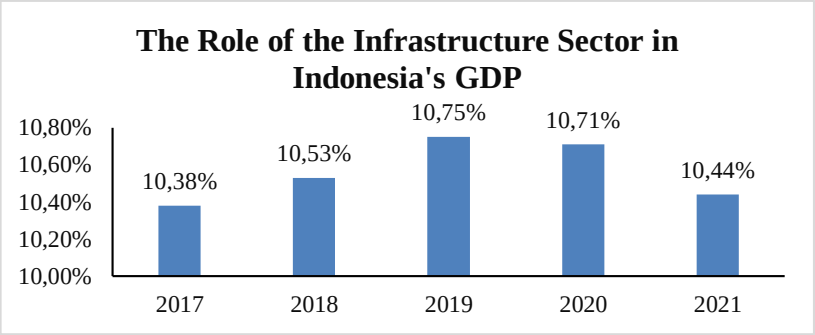
In addition to the phenomenon of equal distribution of FDI (Foreign Investment) which has not been optimally distributed, the next problem is related to Domestic Investment (PMDN), problems regarding PMDN constraints in Indonesia can be seen from the results of the BPS Report (2023) related to the realization of PMDN investment which is described in the following graph.



Source: BPS (2023)

Figure 3. PMDN Investment Realization (Billion Rupiah) 2017-2023 by Province

Referring to this graph, it is known that the distribution of FDI in Indonesia is still far from ideal. This phenomenon can be emphasized by the dominance of FDI in Java, for example, East Java occupies the largest FDI with a total value of 500,804.3 billion rupiahs, in second place is West Java with an FDI of 470,531.2 billion rupiahs, and in third place is Central Java with an FDI value of 437,868.7 billion rupiahs. In addition to PMDN and PMA, another factor that has also increased in Indonesia is the infrastructure aspect, as stated in the report The Ministry of Public Works and Public Housing's 2022 report highlights the importance of the infrastructure sector in boosting Indonesia's Gross Domestic Product (GDP), as shown in the graph provided.



Source: Ministry of PUPR (2022)

Figure 4. Role of Infrastructure Sector to Indonesia's GDP

Although the percentage role of the infrastructure sector to GDP in Indonesia has fluctuated between 2017-2021, in general, the percentage value has increased significantly in 2019 with a percentage value of 10.75%. Based on this description, the increase in *capital* as conveyed in the Solow-Swan theory will then become the initial stage in national economic growth (Solow, 1994). In addition, the efforts to equalize infrastructure development in the regions will be a reinforcing factor in the existence of this capital for economic growth. Based on this urgency, it is necessary to immediately identify and scientifically study the effect of FDI and DDI on economic growth through infrastructure as an intervening variable. The need for identification and scientific studies is the main basis for this study using the latest actual data, namely from 2006 to 2022.

LITERATURE REVIEW

The literature on the effect of foreign direct investment (FDI) and domestic investment (PMDN) on economic growth highlights their critical role in fostering development, particularly in emerging economies like Indonesia. FDI contributes to economic growth by bringing in capital, technology transfer, and managerial expertise, often spurring productivity and competitiveness in local industries. Similarly, PMDN drives economic growth by channeling domestic resources into productive sectors, fostering innovation, and generating employment. Infrastructure development plays a pivotal role as an intervening variable in this relationship, as it enhances the efficiency of investments by reducing costs, improving connectivity, and increasing accessibility to markets. Studies suggest that well-developed infrastructure attracts higher FDI inflows, as investors are more likely to engage in regions with reliable facilities. Moreover, the interplay

between FDI, PMDN, and infrastructure development creates a synergistic effect, where investments stimulate infrastructure improvements, which in turn support sustainable economic growth. Analyzing this dynamic within the context of Indonesia from 2017 to 2023 offers valuable insights into how policy initiatives and investment patterns influence the nation's economic trajectory.

Economic growth signifies the enhancement of an economy's ability to generate goods and services progressively (Jhingan, 2012: 57), which is apparent in a rise in national income or gross domestic product (GDP). In boosting economic development, labor, capital, technology, and natural resources are key players. Productive labor, for example, can increase the output produced, while capital investment, both domestic and foreign, can support infrastructure development and other sectors that trigger economic growth. A description closely linked to the Solow-Swan theory by Solow (1994). This model highlights the significance of investing inphysical assets like machinery, f actories, and infrastructure..The importance of capital in economic growth lies in its contribution to increasing productivity and production capacity. In general, capital can be divided into several aspects, namely physical capital, human capital, financial capital, and knowledge or skill capital (Sholeha, 2020: 3).

Population growth also affects economic growth. Adding labor to the economy can increase production, but too rapid population growth can reduce the level of per capita income. In addition, population growth can bring a variety of talents, creative thinking, and new innovative ideas. The more people in the economy, the greater the opportunity for innovation. The Solow-Swan model recognizes that technology evolves and increases the productivity of labor as well as capital. Technology plays a key role in changing the way of production, increasing productivity, and opening up new opportunities in the economy (Solow, 1994). Technology, particularly the internet, has connected global markets. It provides opportunities for companies to reach customers around the world. International trade supported by technology enables business expansion and increased revenue. Therefore, investment in technology research, development, and adoption should be a priority for countries that want to achieve sustainable economic growth Kristianto (2020: 27).

According to Aida and Ciptawaty (2021: 159), foreign investment in Indonesia can be done in two forms of investment, namely portfolio investment and direct investment, In addition, FDI also makes an important contribution in terms of technology transfer and management skills transfer. When foreign companies make direct investments, they typically introduce cutting-edge technologyand streamlined management practices that are subsequently embra ced by local businesses and workers. This process enhances productivity and efficiency acrocc different industry sevtors.

Not only that, FDI also plays a significant role in creating new jobs, which is one of the main benefits for recipient countries. This job creation is particularly important in developing countries where unemployment remains a major challenge. PMDN is an investment that stays within Indonesia with capital sourced from Indonesia itself or investment from Indonesians. Capital ownership is an important factor in determining a company's status as a PMDN or foreign company (Yanthi and Sutrisna, 2021: 1774). Domestic Investment (PMDN) has enormous urgency for the Indonesian economy. It is key in overcoming unemployment problems and improving people's welfare (Aizar and Wijaya, 2022: 193). Therefore, the government and business actors need to continue to encourage and support PMDN as one of the main pillars of Indonesia's economic development (Wahyudi and Zapila, 2022: 139).

The process of FDI and DDI also affects the infrastructure in Indonesia. The existence of strong and efficient infrastructure is an important determinant of economic growth, productivity, and welfare of a region or country. Good infrastructure can improve connectivity, facilitate access to public services, and create an environment that supports sustainable social and economic development. Infrastructure is classified into two main parts: economic infrastructure and social infrastructure. Economic infrastructure includes everything that supports economic activity. Meanwhile, social infrastructure deals with all aspects that support social activities.

METHODOLOGY

This study employs a quantitative research approach to analyze the effect of foreign direct investment (FDI) and domestic investment (PMDN) on Indonesia's economic growth, with infrastructure serving as an intervening variable. Secondary data is utilized, sourced from official publications such as the Indonesian Central Bureau of Statistics (BPS), the Investment Coordinating Board (BKPM), and World Bank reports, covering the period from 2017 to 2023. The data includes indicators of FDI, PMDN, infrastructure development (e.g., transportation, energy, and communication facilities), and economic growth (measured by GDP growth rates). The analysis is conducted using a path analysis model to determine direct and indirect effects, supported by statistical tools such as SPSS or SmartPLS. Validity and reliability tests are performed to ensure data quality, and classical assumption tests (e.g., multicollinearity, heteroscedasticity, and normality) are conducted to validate the model. The methodological framework aims to uncover the relationship between FDI, PMDN, infrastructure, and economic growth, providing empirical insights into their interconnected dynamics in Indonesia. This research design uses a quantitative approach with *time series* data to analyze the influence of various economic variables over time in depth. The first model used in this study is *Autoregressive Distributed Lag* (ARDL), and the second model used is *Path Analysis*, which serves to examine the role of infrastructure as a mediating variable among FDI, DDI, and economic growth. The use of these two models, ARDL and *Path Analysis* provides a comprehensive approach to analyzing the effect of investment on economic growth through the role of infrastructure, both

in the short and long run. The explanation of the two models is described in the following points:

Autoregressive Distributed Lag (ARDL)

This research data analysis uses quantitative descriptive techniques. This research will use the ARDL (*Autoregressive Distributed Lag*) method. This ARDL analysis method consists of short-term and long-term equations. The short-term equation in this research is:

$GDP_t = c - (1-\alpha 1) + \alpha 1 FDI_{t-i} + \alpha 2 PMDN_{t-i} + \alpha 3 INFRA_{t-i} + \varepsilon_t$

Description:

ecT : Customization level
GDP : Gross Domestic Product (Economic Growth)
FDI : *Foreign Direct Investment*
PMDN : Domestic Investment
INFRA : Infrastructure
α1, α2, α3 : Short-term Parameters
Ɛt : *error term*

While the long-term equations in this study, viz:

$GDP_t = c + \beta_1 FDI_t + \beta_2 PMDN_t + \beta_3 INFRA_t + V_t$

Description:

c : *Constant*
PDB : Gross Domestic Product (Economic Growth)
FDI : Foreign Direct Investment
PMDN : Domestic Investment
INFRA : Infrastructure
$\beta_1, \beta_2, \beta_3$: Capacity for long-term estimation
V_t : error*term* of long-term model

Path Analysis

The equation in this study is described as follows:

Equation I : $Z = P_1X_1 + P_1X_2 + €_1$
Equation II : $Y = P_3X_1 + P_3X_2 + P_2Z + €_2$

Description:

X1 : FDI (Independent Variable)
X2 : PMDN (Independent Variable)
Z : Infrastructure (Intervening Variable)
Y : Economic Growth (Independent Variable)
P : Regression Coefficient Path
€ : Number of variants ($€ = 1 – R^2$)

RESULT

Descriptive Analysis of Variables

Description of Foreign Direct Investment (FDI)

FDI in Indonesia has become one of the main pillars in efforts to increase economic growth and create jobs. FDI is a form of investment made by foreign entities or individuals into a country, in this case, Indonesia, to obtain long-term profits. This foreign investment can be in the form of investment in various economic sectors, such as the manufacturing industry, energy, infrastructure, and technology. The presence of FDI in Indonesia is expected to increase the transfer of technology, knowledge, and open up opportunities for sectors that require improvements in infrastructure and production capacity.

Descriptive of Domestic Investment (PMDN)

Domestic investment (PMDN) is one of the main pillars in the Indonesian economy that plays a major role in driving national economic growth. By involving domestic investment, PMDN makes a major contribution to the development of productive sectors, such as manufacturing, agriculture, and trade, which in turn can accelerate the pace of the economy.

Descriptive Infrastructure

Data on infrastructure was obtained from the Ministry of Finance of the Republic of Indonesia, which provides information on Transfers to Regions and Villages (TKDD). TKDD covers the allocation of funds provided by the central government to local and village governments to fund various infrastructure-related development programs and projects, such as the construction of roads, bridges, clean water facilities, and other public facilities. The realization of physical special allocation funds recorded in TKDD is an important indicator to see the extent to which funds allocated for infrastructure development in the regions can support the improvement of the quality of existing infrastructure.

Descriptive Economic Growth

Indonesia's economic development, evaluated through the growth rate of Gross Regional Domestic Product (GDRP) at constant 2010 prices by province, offers valuable insight into the varying economic performances across different regions. GRDP helps estimate the overall worth of products and services generated in a specific area over a given timeframe, without taking into account chances in price.

Autoregressive Distributed Lag (ARDL)

ARDL method is employed for estimating relationships between variables in econometric models, focusing on both short-run and long-run perspectives.

Level Stationary Test

Table 1. Stationary Test

Variable	Unit Root	Probability	Description
Economic growth (Y)	Level	0,000	Stationary
FDI (X1)	Level	0,000	Stationary
PMDN (X2)	Level	0,000	Stationary
Infrastructure (Z)	Level	0,000	Stationary
Jointly Stationary	Level	0,000	S Stationary

Source: Data Processed (2024)

According to the stationarity test results displayed in the table, it can be inferred that all variables utilized in this study satisfy the stationarity criteria. It's quite evident from the recorded probability value of 0. 000, as it is notably lower than the 5% alpha significance level. Such a probability value indicates that the data does not contain unit roots, which means that the data is not moving. Stationary data is crucial in time series analysis as it guarantess data stability and prevents the occurrence of random fluctuatations over time .

Cointegration Test

The results of the cointegration test using the Bounds Test are outlined in the following table.

Table 2. Cointegration Test

Significance	I(0)	I(1)	Description
F Statistic			15,99185
10%	2,37	3,20	F > I(0) dan I(1): long-run cointegration
5%	2,79	3,67	F > I(0) dan I(1): long-run cointegration
2,5%	3,15	4,08	F > I(0) dan I(1): long-run cointegration
1%	3,65	4,66	F > I(0) dan I(1): long-run cointegration

Source: Data Processed (2024)

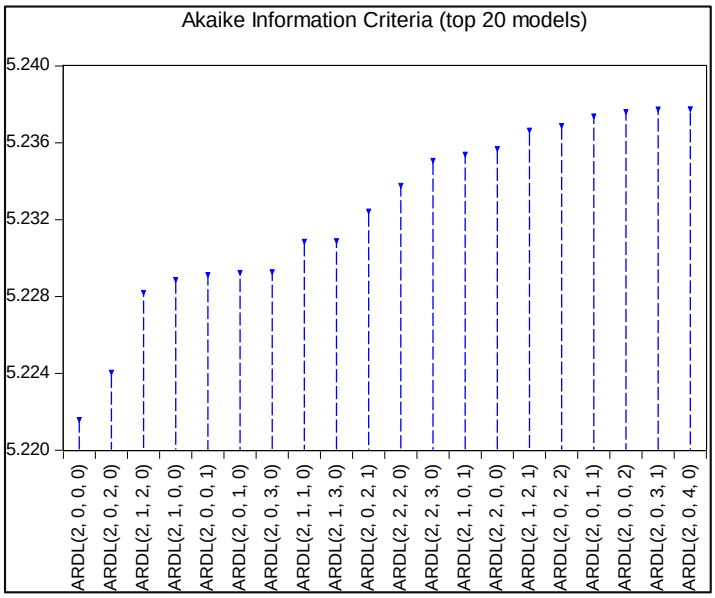
Based on the results above, we can see that the F-statistic value surpasses the designated significance threshold falling between 1% to 10%. Hence, we can infer that the variables in the examined model are cointegrated. Cointegration suggest that even though variables may vary in the short term, there is a stable long-term relationship between them. The presence of cointegration plays a vital role in the time series analysis, indicating that while variables may behave independently in thw short run, they have a tendency to move in sync over the long term.

Determination of Optimum Lag

According to the test results presented in the graph below, it is evident that the optimal lag choice for this ARDL model is ascertained by employing the Akaike Information Criterion (AIC). AIC is a frequently employed technique for choosing the optimal model, ensuring a harmonious blend of model intricacy and data adequacy.. In this case, the AIC results in an ARDL model (2, 0, 0, 0), which indicates that the economic growth variable (Y) has two significant lag periods, while the Foreign

Direct Investment (FDI), Domestic Direct Investment (DDI), and infrastructure (Z) variables each have zero lag. This indicates that in the model analyzed, changes in economic growth are more influenced by events or occurrences two periods earlier.

The results of determining the optimum lag are shown in the following graph.



Source: Data Processed (2024)

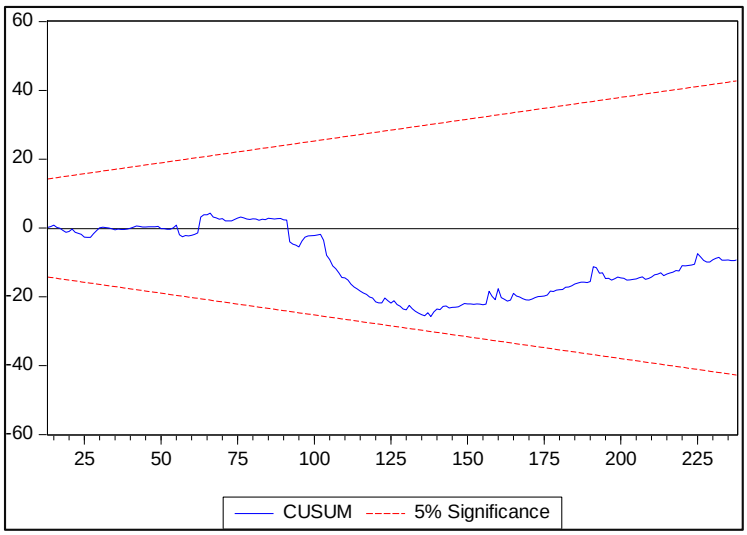
Figure 5. Optimum Lag Testing Results

These **findings** indicate that in the short run, Foreign direct investment (FDI), domestic investment (DDI), and infrastructure do not significantly influence economic growth. This could indicate that these three variables play a more significant role shaping long-term economic growth or require additional time to manifest in the data. The absence of a significant effect in the short term may be due to external factors or economic policies that are just beginning to take effect, or it could also reflect that the relationship between investment and economic growth is not instantaneous but takes some time to develop.

In contrast, the fact that economic growth (Y) has two significant lags suggests that past economic changes have a direct influence on current economic conditions. In this context, it can be understood that factors that occurred in the previous two periods-such as economic policies or market dynamics-have a clear impact on current economic performance. The findings also suggest that while other variables such as FDI, DDI, and infrastructure may not have a direct short-term impact, the long-term influence of these variables remains relevant for economic planning and development policy.

ARDL Stability Test

The results of the CUSUM test are outlined in the following graph.



Source: Data Processed (2024)

Figure 6. CUSUM Test Results

Referring to the CUSUM test results shown above, it can be seen that the residual plot remains within the area marked by the red line, which indicates the 5% significance level. Since the graph does not cross the line, this result indicates that the panel regression coefficients in this study are stable in the long run.

ARDL Estimation Result

The ARDL estimation results are described in the following table.

Table 3. ARDL Estimation Results

Variable	Coefficient	Std, Error	t-Statistic	Prob,*
Y(-1)	0,178	0,059	2,994	0,003
Y(-2)	0,176	0,060	2,949	0,004
Y(-3)	0,141	0,060	2,351	0,020
Y(-4)	0,114	0,059	1,921	0,056
X1	1,430	0,192	7,440	0,000
X2	-0,092	0,017	-5,235	0,000
Z	0,047	0,180	0,260	0,795
C	1,298	0,463	2,804	0,006
R-squared	0,355			
F-statistic	17,736			
Prob*	0,000			

Source: Data Processed (2024)

Based on the analysis of the selected ARDL model, namely ARDL (4, 0, 0, 0), the regression equation can be expressed as follows:

$Y_t = C+Y_{t-1}\cdot \beta_1+Y_{t-2}\cdot\beta_2+Y_{t-3}\cdot\beta_3+Y_{t-4}\cdot\beta_4+X1_t\cdot\beta_5+X_{2t}\cdot\beta_6+Z_t\cdot\beta_7+\epsilon_t$

Description:

Y_t	= Economic growth in period t
C	= Constanta (intercept)
Y_{t-1}, Y_{t-2}, Y_{t-3}, Y_{t-4}	= Economic growth in the previous period (lag 1, lag 2, lag 3, dan lag 4)
$X1_t$	= Foreign Direct Investment (FDI) in period t
$X2_t$	= Domestic Investment (PMDN) in the period t
Z_t	= Infrastructure in periode t
ϵ_t	= Error term (residual)

By replacing the coefficient values according to the analysis results, the ARDL regression equation can be written as:

$Y_t = 1{,}298 + 0{,}178\ Y_{t-1} + 0{,}176\ Y_{t-2} + 0{,}141\ Y_{t-3} + 0{,}114\ Y_{t-4} + 1{,}430\ X1_t - 0{,}092\ X2_t + 0{,}047\ Z_t$

Variable Y (Economic Growth)

The 0. 177928 coefficient for Yt-1 suggests that the economic growth from the previous period positively affects the current economic growth, indicating that a one-unit rise in economic growth last year will lead to an increase of 0. 177928 units in the current economic growth. Additionally, the coefficient of Yt-2, which is 0. 176032, demonstrates a notable positive impact, which indicates that economic growth in the previous two periods contributed a considerable amount to current growth, with changes similar to the previous period. For $Y_{t-3}$and Y_{t-4}, the coefficients of 0.140509 and 0.113987 respectively indicate that although the effect is smaller than the previous two lags, economic growth in the third and fourth periods ago still contributes positively, with t-statistic values of 2.350952 and 1.920840 respectively, where the latter is close to the significance level, suggesting a relevant albeit slightly weaker effect.

Variable X1 (Foreign Direct Investment - PMA)

Variable X1 which represents Foreign Direct Investment (FDI) has a coefficient of 1.430274, indicating that a one-unit increase in FDI will cause economic growth to increase by 1.430274 units. The effect is highly significant with a t-statistic of 7.440328, which indicates that FDI has a very important role in driving economic growth. This reflects that foreign direct investment can be one of the main drivers for economic development in the region analyzed, with a considerable impact on growth.

Variable X2 (Domestic Investment - PMDN)

Meanwhile, the variable X2 which represents Domestic Investment (PMDN) has a coefficient of -0.091599, indicating that every one unit increase in PMDN is negatively correlated with economic growth, reducing growth by 0.091599 units. The t-statistic value of -5.235049 shows a significant and negative effect, indicating that while FDI is expected to contribute positively to economic growth, in this context, it has the opposite effect. This may reflect certain challenges faced by domestic investment that may hinder economic growth.

Variable Z (Infrastructure)

Finally, the infrastructure variable (Z) has a coefficient of 0.046912, but its effect is not significant with a t-statistic of 0.260106. This suggests that infrastructure does not have a strong impact on economic growth in this model. While infrastructure is usually considered an important factor in supporting economic growth, the results of this analysis suggest that in the context of this study, infrastructure may not have been developed enough or not optimally utilized to contribute significantly to economic growth.

Path Analysis

This test determines whether the individual effects are correlated with the independent variables, the results of model selection in this study are described in the following table.

Table 5. Model Selection Results

Equation	Testing	Probability	Decision	Final Result
Equation 1 Z = C + X1 + X2	Chow Test	0,000 ≤ alpha 5%	FEM	REM
	Hausman Test	0,393 > alpha 5%	REM	
	Legrange Multiplier	0,000 ≤ alpha 5%	REM	
Equation 2 Y = C + X1 + X2 + Z	Chow Test	0,014 ≤ alpha 5%	FEM	CEM
	Hausman Tesr	0,058 ≤ alpha 5%	REM	
	Legrange Multiplier	0,297 > alpha 5%	CEM	

Source: Data Processed (2024)

Referring to the model selection results, it is known that in equation 1 (Z=C+X1+X2), the more appropriate approach to use is the *Random Effects Model* (REM), this indicates that variations between observation units can affect the dependent variable Z and that there are unobserved factors that may contribute to these differences, so the REM model is better able to capture these dynamics. in equation 2 expressed as Y=C+X1+X2+Z, the use of the Fixed Effects Model (CEM) is more appropriate. This approach suggests that there are fixed factors that affect economic growth Y and that the relationship between the independent and dependent variables is more stable and does not vary across observation units. So it can be stated that in the context of this analysis, REM provides an advantage in explaining the dynamics of the first model, while CEM provides a better understanding of the relationships in the second model. The selection of an appropriate model is essential to produce valid estimates and to ensure that the interpretation of the analysis results is reliable and provides significant insight into the phenomenon under study.

Hypothesis Test

Hypothesis testing in this research study consists of two tests, namely in equation 1 and equation 2, in each of these equations partial hypothesis testing and simultaneous testing are carried out, the test results are described in the following table.

Table 6. Model Selection Results

Equation	Variable	Coefficient	Std, Error	Prob,
Equation 1 Z = C + X1 + X2	C	1,320	0,096	0,000
	X1	-0,025	0,070	0,722
	X2	0,035	0,006	0,000
F-statistic		30,173		
Prob(F-statistic)		0,000		
R-squared		0,174		
Equation 2 Y = C + X1 + X2 + Z	C	2,147	0,291	0,000
	X1	0,331	0,157	0,037
	X2	-0,024	0,014	0,097
	Z	0,078	0,147	0,596
F-statistic		16,449		
Prob(F-statistic)		0,000		
R-squared		0,204		

Source: Data Processed (2024)

Sobel Test

Sobel tests are very useful in research that focuses on complex causal relationship models, especially when researchers want to explore the mechanisms underlying the relationships between key variables in regression analysis. The results of the Sobel test in this study are described in the following table.

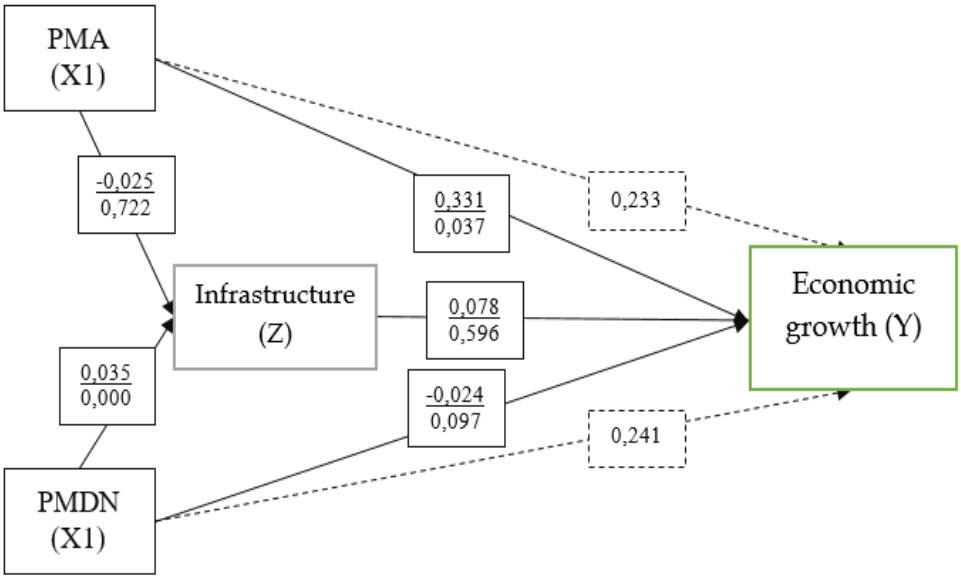
Table 7 Sobel Test Results

Variable Intervening	**Probability**	**Final Result**
X1 (FDI) → Z → Y	0,233 > alpha 5%	Infrastructure (Z) is not able to mediate significantly
X2 (PMDN) → Z → Y	0,241 > alpha 5%	Infrastructure (Z) is not able to mediate significantly

Source: Data Processed (2024)

The intervening model analysis findings indicate that infrastructure (Z) does not significantly mediate the relationship between Foreign Direct Investment (FDI) and economic growth (Y). This outcome is evident in the probability score received, which is 0. 233, surpassing the 5% alpha significance threshold. Based on this probability value, one could infer that infrastructure does not successfully moderate the impact of FDI on economic growth. Although FDI has a direct contribution to the economy, the role of infrastructure in

strengthening this relationship does not prove significant in this analysis. Hence, it is advisable to take into account additional factors apart from infrastructurethat could play a more significant role in enhancing the influence of foreign direct investment on economic development. In analyzing the association between domestic investment (DDI), infrastructure (Z), and economic growth (Y). consistent outcomes were observed. The obtained probability is 0,241, exceeding the 5% alpha level, suggesting that infrastructure's impact on mediating the relationship between FDI and economic frowth is not significant.



Source: Data processed (2024)
Figure 7. Path Analysis Results

Based on Table 10 and Figure 1, it can be shown the indirect effect generated by the presence of the Variable.

1. The regression coefficient of 0.331 indicates that every one-unit increase in Foreign Direct Investment will be followed by an increase of 0.331 units in economic growth. Furthermore, the resulting probability value of 0.037 which is smaller than the 5% alpha significance level confirms that the effect of FDI on Indonesia's economic growth is significant.
2. The regression coefficient of -0.024 indicates that each one-unit increase in Domestic Investment will be followed by a decrease of 0.024 units in economic growth.
3. The regression coefficient of 0. 078 suggests that for each one-unit rise in the infrastructure variable, we can expect a subsequent growth of 0. 078 units in economic development. Nevertheless, while demonstrating a positive correlation, the obtained probability value of 0. 596 exceeds the significance level of 5% alpha. This suggests that the impact of infrastructure on the economic growth of Indonesia is not statistically significant.

4. The findings from examining the influence of infrastructure as a mediator in the relationship between Foreign Direct Investment (FDI) and Economic Growth in Indonesia reveal that infrastructure does not play a substantial role in this connection. The probability value of 0. 233 exceeds the 5% alpha significancelevel, suggesting that there is no statistical evidence to support the idea that infrastructure mediates the relationship between FDI and economic growth. This implies that while foreign direct investment impact s economic growth, it does not do so through infrastructure as a mediator.
5. The analysis results indicate that infrastructure's role as an intervening variable in the impact of Domestic Investment (DDI) on Economic Growth in Indonesia is not significant, suggesting that infrastructure doesn't play a substantial mediator role. With the probability value being 0,241%, exceeding the alpha significance level 5%, that conclusion reached is that infrastructure does not significantly influence the relationship between FDI and economic growth. This suggests that although foreign direct investment influences economic growth, it does not rely on infrastructure as an intermediary.

DISCUSSION

Effect of FDI (X1) on Economic Growth in Indonesia (Y)

The results of the analysis of the effect of Foreign Direct Investment (FDI) on Economic Growth in Indonesia show a regression coefficient of 0.331. This unidirectional relationship is in line with the economic theory that foreign investment often brings technology, knowledge, and business practices that can improve economic efficiency and productivity in the recipient country. In addition, the probability value generated from this analysis is 0.037, which is smaller than the 5% alpha. This indicates that the effect of FDI on economic growth in Indonesia is significant, meaning that there is strong evidence that FDI has a real impact on economic growth. Factors that may support this finding include the positive impact of FDI on job creation, technology transfer, and the strengthening of the industrial and service sectors. Foreign firms entering Indonesia often bring new technology and managerial expertise that can help local firms improve productivity. This is in line with Adika & Rahmawati's (2021: 152) submission that through increased economic activity, new jobs are created, which in turn contributes to increased community income and overall economic growth. Overall, the results of this analysis show that Foreign Direct Investment plays a significant role in driving Indonesia's economic growth, so by strengthening policies that support the entry of FDI and optimizing its impact on the national economy, Indonesia can continue to utilize FDI as one of the main drivers of economic growth. This is in accordance with the submission of Adi & Syahlina (2020: 46) that the important role of FDI in creating jobs, introducing new technologies, and increasing the capacity of national industries must be managed properly to ensure that the benefits generated can be felt by all levels of society.

The Effect of Domestic Investment (PMDN) (X2) on Economic Growth in Indonesia (Y)

The analysis indicates that Domestic Investment (PMDN) **has** a regression coefficient of -0. 024, **demonstrating its** effect on Economic Growth in Indonesia. This value shows that PMDN and economic growth are moving in opposite directions, suggesting a negative relationship. In addition, the resulting probability value is 0.097, which is greater than 5% alpha. This indicates that the effect of FDI on economic growth is not significant, meaning that the relationship that exists between these two variables is not strong enough to be relied upon in decision-making. One possible reason for this negative result is the potential that FDI is often focused on traditional sectors that may not have a significant impact on economic growth. For example, investments in agriculture or small industries may not be as efficient as investments in more advanced sectors such as technology or manufacturing, which are more capable of driving economic growth. In addition, according to Latif (2021: 88), the lack of support from adequate infrastructure and inconsistent policies can also reduce the effectiveness of PMDN in driving economic growth. Overall, the results of this analysis show that although Domestic Investment influences Economic Growth in Indonesia, the influence is negative and insignificant. This is in line with the submission of Adi & Syahlina (2020: 47) that it is important to ensure that FDI can contribute positively to the development of the national economy and improve the overall welfare of the community.

The Effect of Infrastructure (Z) on Economic Growth in Indonesia (Y)

The analysis results show that the impact of infrastructure on economic growth in Indonesia is reflected by a regression coefficient of 0. The value 078 indicate a positive connection between infrastructure and economic advancement. Despite the positive impact shown by the regression coefficient, the resulting probability value of 0. 596 surpasses the 5% alpha threshold.

This indicates that the effect of infrastructure on economic growth is insignificant, meaning that the relationship is not strong enough to be relied upon in policy decision-making. One possible reason for this result is the imbalance between infrastructure development and the development of other economic sectors. Therefore, according to Panjaitan et al. (2019: 48) integration between infrastructure development and broader development policies needs to be considered. Another factor that may affect this result is the effectiveness of using existing infrastructure. Infrastructure that is not optimally used or well-maintained can reduce the potential positive effect on economic growth. For example, damaged roads or inefficient transportation systems can hamper the mobility and distribution of goods, which is in line with the submission of Safitri et al. (2021: 85) that it is important for the government to not only focus on building new infrastructure but also ensure that existing infrastructure is well managed and used effectively to support economic growth.

Infrastructure Capability as Intervening FDI on Economic Growth

The analysis results indicate that the probability value of 0. 233 is higher than the 5% alpha level, suggesting that infrastructure may act as an intervening variable in the relationship between Foreign Direct Investment (FDI) and Economic Growth in Indonesia. This suggest that infrastructure plays a limited role in mediating the connection between FDI and economic development.

This non-significance can be caused by several factors that need to be considered. First, the quality and suitability of existing infrastructure may not be sufficient to support the effectiveness of foreign investment. Therefore, Wahyudi & Zapita (2022: 141) argue that the improvement and enhancement of infrastructure quality is crucial to creating a conducive environment for foreign investment. Second, local and sectoral contexts can also affect the ability of infrastructure as an intervening variable. For example, if FDI is mostly directed to sectors that are less dependent on physical infrastructure, such as the technology or services sectors, then infrastructure may not have a significant role in supporting the effect of FDI on economic growth. Thus, according to Adi & Syahlina (2020: 45) it is important to understand the characteristics of the sectors involved and how the relationship between FDI and economic growth is established.

Infrastructure Capability as Intervening PMDN on Economic Growth

The results of the analysis regarding the ability of infrastructure as an intervening variable in the effect of Domestic Investment (DDI) on Economic Growth in Indonesia show a probability value of 0.241, which is greater than 5% alpha. This non-significance can be caused by various factors that contribute to the lack of effect of infrastructure in mediating the relationship. One of them is that the quality of infrastructure may not be sufficient to effectively support domestic investment. If the investment is in sectors that are less dependent on physical infrastructure, then the role of infrastructure as a mediator will be insignificant. For example, investments in technology or digital services may be less affected by traditional infrastructure. Therefore, according to Yanthi & Sutrisna (2021: 1775), it is important to understand the characteristics of the sectors involved in FDI investment and how the relationship between FDI and economic growth is established.

CONCLUSION AND RECOMMENDATIONS

Having reviewed the findings of the conducted research. From the research explanation and process, it is evident that Foreign Investment (PMA) has a noteworthy impact on economic growth in Indonesia, with a positive influence of 0. 331 and a probability value of 0. 037. Domestic Investment (PMDN) exhibits a slight negative impact of -0. 024 on Indonesia's economic growth, with a probability value of 0. 097. As a result, it is apparent that Domestic Investment (PMDN) holds an insignificant effect on the country's economic growth. The impact of infrastructure on economic growth in Indonesia is determined to be positive, with a modest effect size of 0. 078 and a probability value of 0. 596. Consequently, it can be inferred that the influence of infrastructure on economic growth in Indonesia is deemed insignificant. The infrastructure variable has been found incapable of moderating the impact of Foreign Investment (PMA) and Domestic Investment (PMDN) on economic growth in Indonesia. This is supported by the probability values of 0. 233 and 0. 241. Therefore, it can be inferred that the infrastructure variable does not hold a substantial role as an intervening variable in this research.

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