

The Influence of Foreign Direct Investment (FDI) and Domestic Direct Investment (DDI) On Economic Growth in Deli Serdang Regency 2015-2024

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ABSTRACT

This study is entitled "The Effect of Foreign Direct Investment (PMA) and Domestic Direct Investment on Economic Growth in Deli Serdang Regency". The purpose of this study is to determine and analyze the effect of Foreign Direct Investment (PMA) and Domestic Direct Investment (PMDN) on Economic Growth in Deli Serdang Regency. The technique used in this study uses multiple regression analysis method. The data used in this study is annual data (10 years) published in the Central Statistics Agency of Deli Serdang Regency. The results of the study indicate that the independent variable or Foreign Direct Investment (PMA) has a positive but not significant effect on economic growth, while Domestic Direct Investment (PMDN) has a positive and significant effect on economic growth.

Keywords: Foreign Direct Investment, Domestic Direct Investment, Economic Growth, Deli Serdang Regency

ABSTRAK

Penelitian ini diberi judul "Pengaruh Penanaman Modal Asing (PMA) dan Penanaman Modal Dalam Negeri Terhadap Pertumbuhan Ekonomi Di Kabupaten Deli Serdang". Tujuan dari penelitian ini adalah untuk mengetahui dan menganalisis pengaruh Penanaman Modal Asing (PMA) dan penanaman modal dalam negeri (PMDN) terhadap Pertumbuhan Ekonomi di Kabupaten Deli Serdang. Teknik yang digunakan dalam penelitian ini menggunakan metode analisis regresi berganda, Data yang digunakan dalam penelitian ini adalah data tahunan (10 tahun) yang dipublikasikan di Badan Pusat Statistik Kabupaten Deli Serdang. Hasil penelitian menunjukkan bahwa variabel bebas atau Penanaman Modal Asing (PMA) berpengaruh positif namun tidak signifikan terhadap pertumbuhan ekonomi, sedangkan Penanaman Modal Dalam Negeri (PMDN) berpengaruh positif dan signifikan terhadap pertumbuhan ekonomi

Kata Kunci: Penanaman Modal Asing (PMA), Penanaman Modal Dalam Negeri (PMDN), Pertumbuhan Ekonomi, Kabupaten Deli Serdang

INTRODUCTION

Development is essentially a multidimensional process encompassing changes in social structure, changes in societal attitudes, and changes in national institutions. Development also encompasses changes in the level of economic growth. In macroeconomic analysis, a country's economic growth is measured by the development of real national income achieved by a country/region. One example is Deli Serdang Regency, one of the regional governments that continues to increase regional potential to accelerate its economic growth (Sukirno, 2004).

One of the most important benchmarks for determining the success of economic development is economic growth, which reflects the tangible impact of implemented development policies. Economic growth is closely related to a region's ability to create added value from the production of goods and services generated by economic activities within a given period (Hidayat, 2020).

Economic development is absolutely necessary for a country to improve the standard of living and welfare of its people, by developing all areas of activity within a country. To improve public welfare, increased economic growth and equitable income distribution are necessary. Economic growth can occur when several factors exist within the economy, including investment, human resources, natural resources, technology, efficiency, and population growth, as measured by the growth of Gross Regional Domestic Product (Sukirno, 2005).

Gross Regional Domestic Product (GRDP) is an indicator commonly used to measure a region's economic growth. Gross Regional Domestic Product (GRDP) describes the region's ability to generate the total added value of goods and services produced or generated in a particular region within a specific time period, regardless of ownership (Hidayat, 2020). A region's economic growth is derived from the increase in GRDP at current prices or constant prices. GRDP at current prices, also known as nominal GRDP, is compiled based on prices prevailing during the calculation period and aims to assess the structure of the economy. Meanwhile, GRDP at constant prices is compiled based on prices in the base year and aims to measure economic growth in a particular region over a specific period (BPS- Statistics Indonesia, 2021).

Table 1.1
Average Economic Growth Regency/City
North Sumatra 2015 - 2024
In Percentage (%)

Regency/City	Economic Growth				Average
	2020	2021	2022	2023	
Mandailing Natal	3,20	4,34	4,93	4,93	4.35
Tapanuli Selatan	3,24	4,78	5,31	5,31	4.66
Tapanuli Tengah	2,56	4,18	4,23	4,23	3.8
Tapanuli Utara	3,54	4,25	4,75	4,75	4.32
Toba	2,92	4,24	4,93	4,93	4.25
Labuhanbatu	3,85	4,80	5,03	5,03	4.68
Asahan	3,73	4,66	4,87	4,87	4.53
Deli Serdang	2,23	4,70	5,34	5,34	4.40
Medan	2,62	4,71	5,04	5,04	4.35

Source : BPS- Statistics North Sumatra 2024

Based on the table above, it can be seen that Deli Serdang's economic growth only provided a growth rate of 4.40% in observations from the average of the last four years. This number shows that the average economic growth of Deli Serdang is only above the average economic growth of Central Tapanuli and Toba districts, namely 3.8% and 4.25%. The highest average economic growth rate is Labuhanbatu district, which is 4.68% followed by South Tapanuli, Asahan, Mandailing Natal, and Medan city at 4.46%, 4.53%, 4.35% and 4.35%, respectively.

Based on data in Table 1.1, Deli Serdang Regency's economic growth can be said to lag behind the four regencies/ cities in North Sumatra Province, ranking fourth after Asahan. This raises the question of why Deli Serdang Regency's economic growth is considered low compared to the nine regencies/ cities in North Sumatra, even though Deli Serdang Regency is part of the Strategic Development Area (WPS) in North Sumatra Province.

With the commencement of the Binjai-Medan-Tebing Tinggi toll road, it is predicted to have a positive impact on economic growth by increasing investment in industrial areas in the Mebidangro area. The government's efforts to improve the quality of adequate infrastructure also support the potential for continued strong domestic demand for investment. The timely implementation of infrastructure projects creates a positive perception of an improving investment climate in Deli Serdang Regency (General Policy of the 2019 Regional Budget).

In macroeconomic theory, from an expenditure perspective, gross regional income is the sum of various variables, including investment. Investment is the investment of capital in a company to add to existing capital goods and production equipment to increase production (Agus, 2014). Investment itself consists of two parts: government investment and private investment. Government investment is the placement of funds/capital originating from the government. Meanwhile, private investment is the placement of funds/capital originating from private companies. Private investment is also divided into two categories: Domestic Investment (PMDN) and Foreign Investment (PMA) (Hidayat, 2020).

High levels of investment, both local and foreign, in a country are indicators of a sound economic system, supported by sufficient resources, both natural and human. This situation will attract investors, which will undoubtedly have positive impacts not only on the country itself but also on each region within the country. For example, it will open up job opportunities, increase regional income, and accelerate development progress at the central and regional levels (Pujoalwanto, 2004).

Tabel 1.2
Realized Value of Foreign Investment (PMA)
Regency of Deli Serdang 2015 – 2024
Billion (RP)

Year	Foreign Investment (PMA)	
		Rp.1.375
2015	Rp.1.284	Rp.199
2016	Rp.5.630	Rp.1.504
2017	Rp.5.715	Rp.1.518

2018	Rp.2.600	Rp.2.165
2019	Rp.462	Rp.1.726
2020	Rp.1.569	Rp.2.704
2021	Rp.877	Rp.2.718
2022	Rp.1.192	Rp.2.636
2023	Rp.1.777	Rp.4.663
2024	Rp.2.225	Rp.1.375

Source : DPMPTSP Regency of Deli Serdang 2015-2024

Based on Table 1.2, it can be seen that foreign investment in Deli Serdang Regency fluctuated from 2015 to 2024, but the lowest foreign investment occurred in 2019 with a value of Rp. 462, then PMA increased in 2020 by Rp. 1,569 and decreased in 2021 and 2022, respectively by Rp. 877 and Rp. 1,192, while in 2023 to 2024 it increased by Rp. 1,777 and Rp. 2,225 billion, respectively. Then, the value of PMDN fluctuated, the lowest value occurred in 2016 with a value reaching Rp. 199, then PMDN experienced an increase in 2019 with a value reaching Rp. 2,165 and experienced a decrease in 2020 with a value of Rp. 1,726, then increased again in 2024 with an increase of Rp. 4,663.

From the analysis above, it can be concluded that PMA and PMDN in Deli Serdang Regency have fluctuated from year to year. The rise and fall of domestic investment is caused by the emergence of the Covid-19 outbreak, the impact of the global crisis and the trade war between the United States and China as well as conflicts in Middle Eastern countries which also have a negative impact on foreign investors, where PMA and PMDN in Deli Serdang Regency are dominated especially in various manufacturing industry sectors, trade and services sectors, as well as construction and infrastructure sectors

Economic growth is a form of increase in an economy's ability to produce goods and services. Economic growth is also the process of continuously changing a country's economic conditions toward a better state over a certain period. There are three components needed for a country's economic growth, namely:

- a. Inventory of goods continues to increase
- b. Technological progress is a factor that determines the degree of growth in adapting various goods to the population.
- c. The use of technology is quite extensive and efficient in adapting institutional and ideological fields to obtain new innovations.

Economic growth is also a long-term process of increasing income. A benchmark for economic growth is a quantitative measure that describes the development of an economy in a given year compared to the previous year. With economic growth, there will be development in economic activities which will result in goods and services being produced in society so that it can increase the welfare of society. Economic problems will be considered long-term macroeconomic issues. Over the long term, a country's capacity to produce goods or services increases. This increase in goods and services will stimulate the capacity of production factors, which will continue to increase.

Economic growth varies from state to state. This is due to the varying conditions in each region. These regional differences are a major challenge for developing countries: the trade-off between high economic growth and income equality. This is crucial for national development, yet difficult to achieve. Michael Todaro (2006) states that economic growth is the long-term increase in a country's ability to provide a variety of economic goods to meet the needs of its population. Economic growth theories are classified into three schools of thought: classical, neoclassical, and modern.

Investment, or what is commonly called capital investment or capital formation, is the second component that determines the level of aggregate expenditure. According to (Murni, 2016) investment can be interpreted as expenditures made by the community, especially entrepreneurs, and can also be made by the government to purchase capital goods, production equipment, the aim of which is to replace and especially to add capital goods in the economy which will be used to increase production in the future. Capital investment can be defined as an expenditure to acquire wealth or other assets to generate income, or to obtain profits in the future.

1) Harrod and Domar's Theory

Harrod and Domar assign a key role to investment in the process of economic growth, particularly regarding its dual nature. First, investment creates income, and second, it expands the economy's productive capacity by increasing the capital stock. The first characteristic can be described as the demand effect, and the second as the supply effect of investment. Therefore, as long as net investment continues, real income and output will continue to rise (Jhingan, 2016).

2) Domar Model

Domar built his model with the assumption that investment on the one hand generates income and on the other hand increases productive capacity, where the increase in production capacity can be explained from the supply side.

3) Harrod Model

According to Harrod and Domar (Frisdiantara and Mukhlis, 2018) capital formation is an important factor that determines economic growth, this capital formation can be obtained from the accumulation of savings made by the population so that it is useful for investment activities.

4) Solow's Theory

The Solow model shows that the savings rate is a crucial determinant of the steady-state capital stock. A high savings rate indicates a large capital stock and a high level of output. A low savings rate indicates a small capital stock and a low level of output. This means that if a country allocates a large portion of its income to savings and investment, it will have a high steady-state capital stock and income. If a country saves and invests only a small portion of its income, its steady-state capital stock and income will be low (Mankiw, 2017).

5) The Relationship Between Investment and Economic Growth

According to Harrod and Domar (Frisdiantara and Mukhlis, 2018), capital formation is a crucial factor in determining economic growth. This capital formation can be obtained from the accumulation of savings by the population, thus benefiting investment activities. Increased investment will increase production

capacity, which ultimately leads to the creation of new jobs, which in turn will drive economic growth.

Investment can be used as a benchmark for the success of economic development and indirectly impacts economic growth. Increasing investment in a region will also increase its economic growth. Investment is the driving force behind a region's economic growth, and therefore, investment is expected to increase annually.

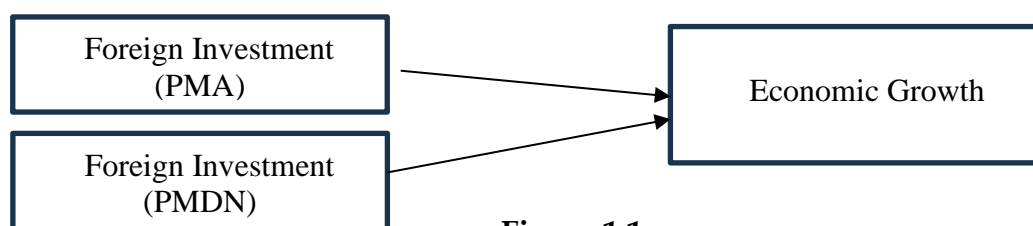


Figure 1.1
Conceptual Framework

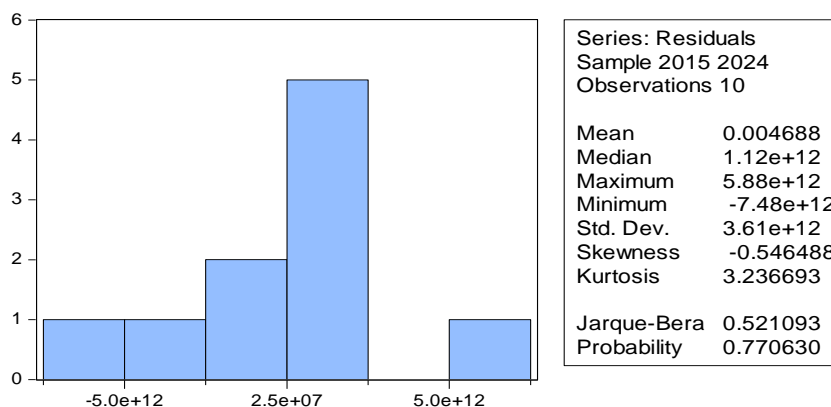
METHODS

This study uses a quantitative method. Several research variables will be analyzed first, and this type of research uses quantitative research and the type of data used is time series data. This study uses a 10-year time series from 2015 to 2024, and the data source is the Central Statistics Agency (BPS) of Deli Serdang Regency. To analyze the data, several processes were used. First, before starting the analysis, the regression model was tested using the classical assumption test. The results showed that the data were normally distributed and did not show any symptoms. If this were the case, the analysis results might be biased (Basuki and Prawoto 2017). After conducting the classical assumption test, the next stage is to conduct a simple linear regression analysis test.

RESULTS AND DISCUSSION

a. Classical assumption tests

1) Normality Test



Gambar 4.1 Normality Test Histogram Graph

In this study, the Jarque-Bera test was used to more accurately test normally distributed data in the regression model. Based on the histogram graph in Figure 4.1 above, it can be seen that the probability value is > 0.05 , namely 0.776. This indicates that the data is normally distributed and the regression model meets the assumption of normality.

2) Autocorrelation Test

The number of samples (T) and the number of variables (k) used in the study. In this study, the number of samples was 10, using 3 variables and a significance level of 5%.

Table 4.1
Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.738105	Prob. F(2,5)	0.5237
Obs*R-squared	2.279436	Prob. Chi-Square(2)	0.3199

Test Equation:
 Dependent Variable: RESID
 Method: Least Squares
 Date: 05/18/26 Time: 18:10
 Sample: 2015 2024
 Included observations: 10
 Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.63E+12	5.89E+12	-0.786063	0.4674
PMA	-0.480993	1.091194	-0.440795	0.6778
PMDN	2.713382	2.667700	1.017124	0.3558
RESID(-1)	-1.144947	0.964411	-1.187199	0.2885
RESID(-2)	-0.538599	0.800011	-0.673239	0.5307

R-squared	0.227944	Mean dependent var	0.004688
Adjusted R-squared	-0.389701	S.D. dependent var	3.61E+12
S.E. of regression	4.25E+12	Akaike info criterion	61.30110
Sum squared resid	9.04E+25	Schwarz criterion	61.45239
Log likelihood	-301.5055	Hannan-Quinn criter.	61.13513
F-statistic	0.369053	Durbin-Watson stat	2.007088
Prob(F-statistic)	0.822211		

Source: Results of Processing with EViews 8.0

Based on the results of the criteria obtained, it shows that the value of the Chi Square Prob (2) which is the p value of the Breusch-Godfrey Serial Correlation LM test is $0.3199 >$ the probability value of 0.05. This shows that the estimate is not significant. Thus, according to the serial correlation test (LM test), there is no autocorrelation in the estimation results.

Multicollinearity Test

Tabel 4.2
Hasil Uji Multikolinieritas

Variance Inflation Factors
 Date: 05/18/26 Time: 18:03
 Sample: 2015 2024
 Included observations: 10

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.87E+25	11.16680	NA
PMA	0.700574	3.593297	1.311730
PMDN	1.744430	6.006136	1.311730

Sumber: Hasil pengolahan dengan *EViews* 8.0

Table 4.2 shows that the Centered VIF value for both X1 and X2 is 1.311730, where this value is less than 10, so it can be stated that there is no multicollinearity problem in the prediction model.

Heteroscedasticity Test

Table 4.3
Breusch Pagan Godfrey Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.385504	Prob. F(2,7)	0.6937
Obs*R-squared	0.992160	Prob. Chi-Square(2)	0.6089
Scaled explained SS	0.543693	Prob. Chi-Square(2)	0.7620

Source: Results of Processing with *EViews* 8.0

From the results of processing with the Breusch Pagan Godfrey test, it can be seen that the probability result (chi-square) on Obs*R-Squared is 0.6089 or greater than $\alpha = (0.05)$. If the Probability value (chi-square) > 0.05 then there is no heteroscedasticity problem, but if the Probability value (chi-square) < 0.05 then there is a heteroscedasticity problem.

Linearity Test

Table 4.4
Ramsey Test

Ramsey RESET Test
 Equation: UNTITLED
 Specification: PDB C PMA PMDN
 Omitted Variables: Squares of fitted values

	Value	df	Probabilit y
t-statistic	0.451603	6	0.6674
F-statistic	0.203945	(1, 6)	0.6674
Likelihood ratio	0.334260	1	0.5632

Source: Results of Processing with EViews 8.0

Based on the results of the Ramsey Reset Test, the p value shown in the probability column of the F-statistics row is 0.6674 (Likelihood Ratio), meaning it is greater than the alpha level of 0.05 so it can be concluded that the independent variable is linear with the dependent variable.

b. Simple linear regression tests

The results of the simple linear regression test can be seen in the following table:

Table 4.5
Simple linear regression tests

Dependent Variable: PDB
 Method: Least Squares
 Date: 05/18/26 Time: 18:13
 Sample: 2015 2024
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.79E+13	4.32E+12	13.40218	0.0000
PMA	0.120668	0.837003	0.144167	0.8894
PMDN	5.915677	1.320769	4.478965	0.0029
R-squared	0.784723	Mean dependent var		7.07E+13
Adjusted R-squared	0.723215	S.D. dependent var		7.77E+12
S.E. of regression	4.09E+12	Akaike info criterion		61.15979
Sum squared resid	1.17E+26	Schwarz criterion		61.25057
Log likelihood	-302.7990	Hannan-Quinn criter.		61.06021
F-statistic	12.75811	Durbin-Watson stat		1.957357
Prob(F-statistic)	0.004629			

Source: Results of Processing with EViews 8.0

Based on the results of data analysis carried out using the Eviews 8 application program, the following multiple linear regression equation was obtained.

$$Y = a + b_1 X_1 + b_2 X_2 + e$$

The results of the regression test can be interpreted as follows:

- 1) The coefficient of determination (R²) is 0.784723. This means that foreign investment (PMA) and domestic investment (PMDN) can explain 78.47% of

economic growth. The remainder can be explained by other variables. The PMA coefficient is negative, namely -1.706, meaning that there is a negative influence between PMA and GRDP, which shows that if the value of foreign investment (X) increases by one thousand US\$, then the value of economic growth (Y) will experience a decrease of 1.706 billion, assuming that other independent variables are constant.

- 2) The coefficients of PMA and PMDN are positive, namely 0.120 and 5.915 respectively, meaning that there is a positive influence between PMA and PMDN with GRDP, which shows that if the value of foreign investment (X1) increases by one thousand US\$, then the value of economic growth (Y) will increase by 0.120 billion with the assumption that other independent variables are constant, likewise with PMDN, if the value of domestic investment (X2) increases by one million, then the value of economic growth (Y) will increase by 5.915 million with the assumption that other independent variables are constant.
- 3) The t-statistic value of the variable is 0.144167 with a probability value of 0.8894, this shows that the foreign investment (PMA) variable does not significantly affect the economic growth variable at a significance level of 5% and the t-statistic value of the variable is 4.4789650 with a probability value of 0.0029, this shows that the domestic investment (PMDN) variable significantly affects the economic growth variable at a significance level of 5%.

CONCLUSION

The probability value is the estimated level of the Foreign Direct Investment (PMA) variable on Economic Growth is $0.8894 > 0.05$. This means that PMA has a positive but insignificant effect on Economic Growth. Thus, the hypothesis stating that PMA has an effect on Economic Growth is rejected or not proven. While the probability value is the estimated level of the Domestic Direct Investment (PMDN) variable on Economic Growth is $0.0029 < 0.05$. This means that PMDN has a positive and significant effect on Economic Growth. Thus, the hypothesis stating that PMDN has an effect on Economic Growth is accepted or proven. The relationship between FDI and Economic Growth is in line with research by Hapsari (2016), where FDI is unable to increase economic growth. This is because FDI only fills the funding needs of less strategic sectors. To increase provincial economic growth evenly, the government needs to increase investment incentives to attract foreign investors to invest in less strategic sectors by seeking other incentives for domestic investors to retain, so that local governments will take the initiative to further explore regional potential and increase economic growth. The results of this study are in line with research conducted by Wang and Wang (2015) regarding the impact of acquisitions by foreign parties, FDI has not been proven to improve the economy in each provincial region. Therefore, the government needs to retain foreign investors but only to encourage investment in sectors that are not yet capable of being processed by domestic parties. Research conducted by Bambang Muqsyithu Wihda and Dwisetia Poerwono on the Analysis of the Influence of Domestic Investment (PMDN), Foreign

Investment (PMA), Government Expenditure and Labor on Economic Growth in D.I. Yogyakarta, the results of the research are that domestic investment, foreign investment and economic growth in D.I. Yogyakarta. Have a positive and significant influence. Research conducted by Febriana Rizki Syaharani, on the Influence of Domestic Investment, Foreign Investment, and Foreign Debt on Economic Growth in Indonesia with a multiple linear regression approach. The results obtained from this study Simultaneously, PMDN, PMA, and foreign debt have a positive effect on economic growth. Partially, the regression results at the real level ($\alpha = 5\%$) PMDN have a significant effect on economic growth with the value of PMA also having a significant effect on economic growth. Meanwhile, foreign debt has a significant effect on economic growth. Research conducted by Sri Nurcahayani on the Effect of Foreign Investment and Domestic Investment on Economic Growth in South Bangka Regency, the results of data analysis can be concluded as follows: Foreign Investment (PMA) has a significant effect on Economic Growth Domestic Investment (PMDN) has a significant effect on Economic Growth, PMA and PMDN variables together have a significant effect on Economic Growth.

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