

The Influence of Investment, Net Exports, and Labor on GRDP in the Manufacturing Industry Sector in Kalimantan

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Abstract

This study aims to determine the Effect of Investment (PMA), (PMDN), Net Exports, and Labor Partially and Simultaneously on GRDP of the Manufacturing Industry Sector in Kalimantan. The instrument used in this study is secondary data, collected from 2017 to 2024, with 40 data points. This study uses panel data regression analysis, which combines time-series and cross-sectional data. The Research Results partially indicate that the PMA, Net Exports, and Labor Variables do not have a significant effect. In contrast, PMDN does have a substantial effect on GRDP of the Manufacturing Industry Sector in Kalimantan during 2017-2024. While simultaneously showing that the PMA, PMDN, Net Exports, and Labor Variables have a significant effect on GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.

Keywords: GRDP, Processing Industry, PMA, PMDN, Net Exports, Labor, Panel Data, Kalimantan.

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INTRODUCTION

In developing countries, the industrial sector also plays an increasingly important role. The increasing contribution of the industrial sector leads to a gradual or rapid shift in the country's economic structure from agriculture to industry. The transition from agriculture to industry marks the economic transformation in developing countries. However, if the agricultural sector does not develop, the industrial sector will not develop either, and vice versa: if the industrial sector does not develop, the agricultural sector will not develop (Makmun & Yasin, 2003).

The island of Kalimantan consists of five provinces: East Kalimantan, West Kalimantan, South Kalimantan, Central Kalimantan, and North Kalimantan, each with its own distinct sector contributing to regional economic growth. The manufacturing sector in Kalimantan has experienced dynamic developments that warrant deeper study. Given the economic situation in Kalimantan, this sector holds a strategic position as a driver of economic growth and an employer of labor. However, the manufacturing industry's contribution to Kalimantan's GRDP remains suboptimal, given the region's natural resource potential. This phenomenon is interesting considering that Kalimantan boasts abundant natural resources as industrial raw

materials, yet the resulting added value remains relatively low, as most commodities are exported in raw or semi-finished form.

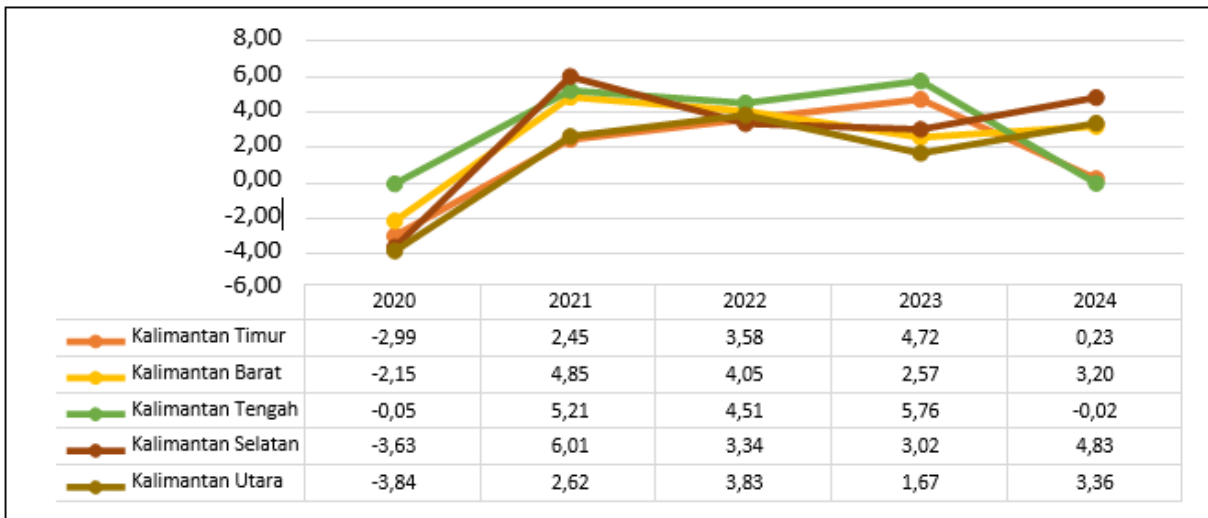


Figure 1. Development of GRDP in the Manufacturing Industry Sector in Kalimantan

Source: Central Statistics Agency of the Province

Based on data on GRDP growth in the manufacturing sector in Kalimantan from 2020 to 2024, Central Kalimantan recorded the highest average growth rate of 3.08%. This indicates that the province's manufacturing sector is developing more stably and robustly than other regions. Meanwhile, North Kalimantan recorded the lowest average growth rate at 1.73%, indicating that the manufacturing sector in that region remains relatively slow. This fluctuation demonstrates that the manufacturing sector in Kalimantan remains vulnerable to external shocks and needs to be strengthened through a range of strategic policies.

Strengthening the manufacturing sector is closely correlated with efforts to increase investment, which is key to technological modernization, infrastructure development, and expanding production capacity. Investment provides communities with opportunities to improve the economy and create jobs, thereby increasing prosperity (Sukirno, 2013). The development of foreign direct investment (FDI) and domestic direct investment (PMDN) can be seen in the following graph:

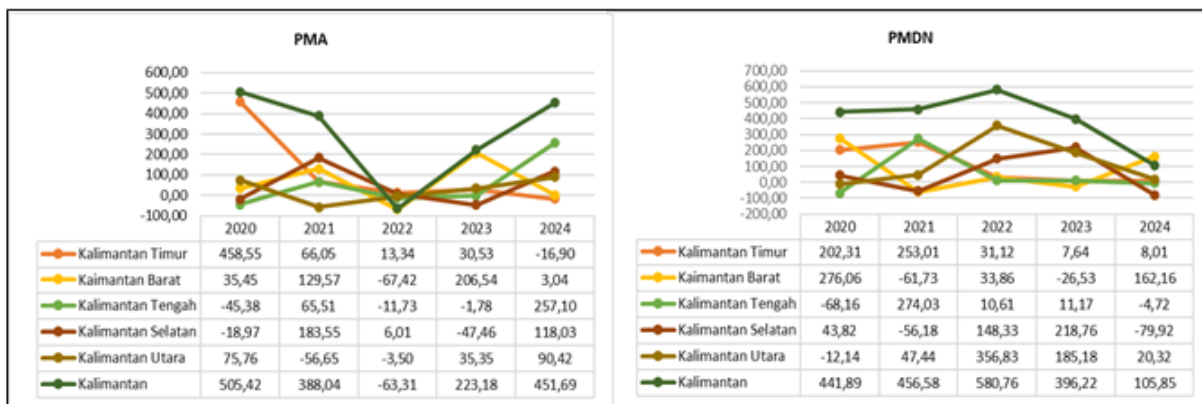


Figure 2. Realization of PMA and PMDN Investment in the Manufacturing Industry Sector in Kalimantan

Source: Investment Coordinating Board (Processed)

Investment realization in the manufacturing sector in Kalimantan fluctuated sharply during 2020–2024. The highest level of FDI occurred in 2020, followed by another increase in 2024, with Central Kalimantan leading the way. Meanwhile, domestic investment peaked in 2022 but declined drastically in 2024. South and North Kalimantan were the main contributors of domestic investment in several years. Investment stability in Kalimantan's manufacturing sector remains a challenge, as demonstrated by data (Figure 2), which demonstrates the sector's vulnerability to various external influences, ranging from global conditions to national policies.

The unstable investment climate in the manufacturing sector directly affects international trade performance in Kalimantan, as production capacity and the competitiveness of processed products are highly dependent on the level and quality of incoming investment. This is particularly true for net exports, which reflect the region's ability to generate a trade surplus. Positive net exports not only contribute directly to economic growth but also serve as an indicator of the competitiveness of processed products in the global market. The following graph shows the development of net exports.

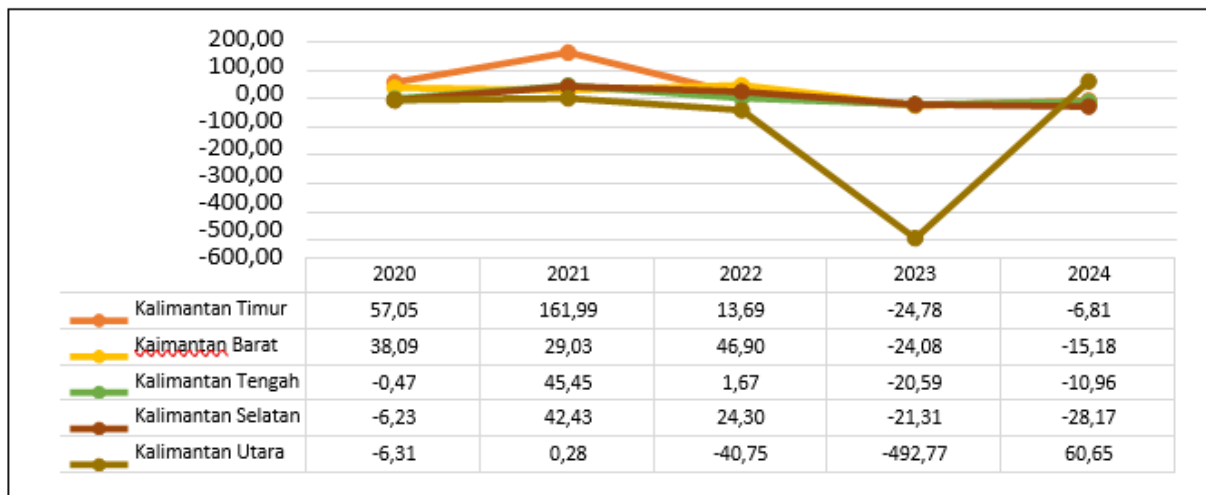


Figure 3. Development of Net Exports of the Manufacturing Industry in Kalimantan

Source: Ministry of Trade (Processed)

Net export growth in the five provinces of Kalimantan fluctuated significantly from 2020 to 2024. Most provinces experienced a sharp decline in 2023, followed by recovery or stabilization in 2024. East and South Kalimantan recorded declines after high growth, while West and Central Kalimantan tended to be more stable but were also affected by the 2023 decline. North Kalimantan showed the most extreme changes, with a drastic decline in 2023 followed by a significant surge in 2024. These fluctuations reflect the instability of the export sector, driven by external factors such as commodity prices and reliance on raw material imports. This indicates the need for export product diversification and strengthening the local processing industry sector to achieve sustainable economic stability.

Uncertain export conditions affect the workforce, as changes in export volume and manufacturing activity directly influence job absorption dynamics and potential job losses. The availability of a workforce of adequate quality and quantity will support the expansion of production activities and increased productivity. Population and workforce growth are traditionally considered positive factors driving economic growth (Todaro & Smith, 2004).

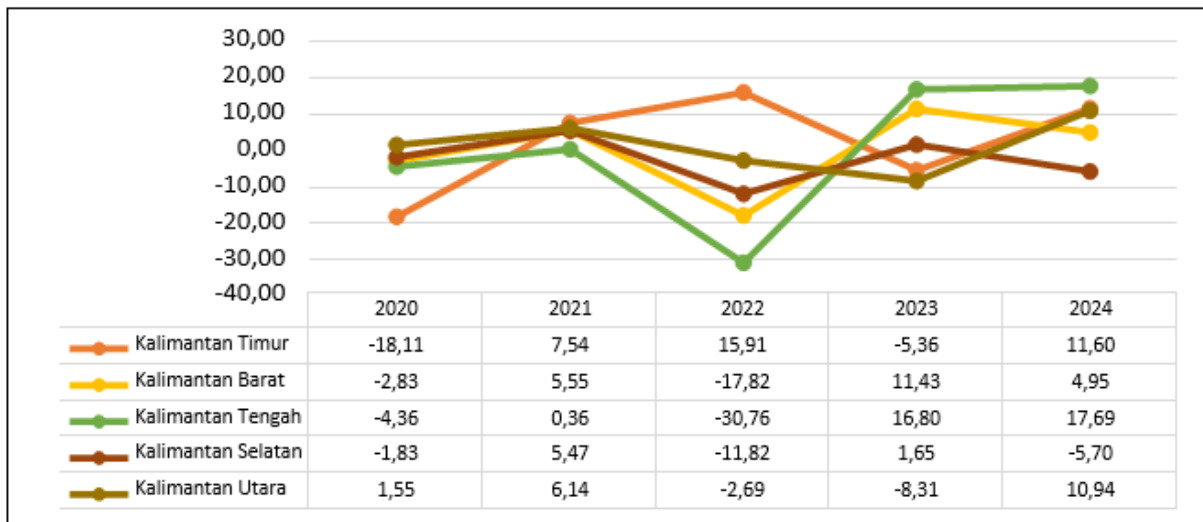


Figure 4. Development of the Workforce in the Manufacturing Industry Sector in Kalimantan

Source: Ministry of Manpower (Processed)

Based on Figure 4, labor growth in the manufacturing sector in Kalimantan experienced instability post-pandemic, but most provinces began to show recovery in 2024, particularly Central and East Kalimantan. Central Kalimantan experienced the lowest decline in growth of -30.76% in 2022, then rebounded to the highest in 2024, followed by East Kalimantan. The lack of a qualified workforce, with the majority still dominated by high school graduates and below, also poses a challenge to the manufacturing sector in North Kalimantan. Inadequate levels of education and skills in the workforce are among the factors inhibiting the sector's growth (BPS Kaltara, 2024).

Several studies by Wirajaya (2022) found that partial exports, investment, and labor have a positive and significant effect on the GRDP of the agricultural sector. This research also aligns with Purwanggono (2015), who stated that net exports, labor, and investment have a positive effect on Indonesia's economic growth. There are differences in the results of research by Asrinda & Setiawati (2022), which indicate that investment (FDI) has no significant effect, net exports have a significant effect, and labor has no significant effect on economic growth in Indonesia. In Khasanah's (2023) research, investment has a partial positive and significant effect on economic growth, while net exports have a partial negative and insignificant effect. Based on the research above, there is an inconsistency in the results of existing studies: some produce significant results, while others produce insignificant results. Therefore, the differences in the results of this study are what interest the researcher in this topic. The update that differentiates it from previous research lies in the variables that focus on the agricultural sector and different regions.

Based on the description above, the formulation of the problem in this research is based on background behind problems that have been explained above, then problems to be solved in the thesis proposal This is : (1) Influence Investment (PMA), (PMDN), Net Exports and Labor In a way Partial On the GRDP of the Manufacturing Industry Sector in Kalimantan; (2) Influence Investment (PMA), (PMDN), Net Exports and Labor In a way Simultan on the GRDP of the Manufacturing Industry Sector in Kalimantan.

Problems in the study. This was completed with a multiple regression method. For the answer, it is known that the influence of Investment (PMA), (PMDN), Net Exports, and Labor on the GRDP of the Manufacturing Industry Sector in Kalimantan, both partially and simultaneously.

METHODOLOGY

This study uses a quantitative, panel design to analyze the effects of investment (PMA and PMDN), net exports, and labor on Gross Regional Domestic Product (GRDP) in the manufacturing sector in Kalimantan. Panel studies were chosen for their ability to control unobserved individual (provincial) heterogeneity while capturing dynamics over time, yielding more efficient and unbiased estimates than conventional time-series or cross-section models (Baltagi, 2021). This research design is causal-comparative, aiming to examine the relationship between variables using historical data from 2017–2024.

This study focuses on analyzing the manufacturing industry sector as a major contributor to regional economic growth. The observation unit covers five provinces in Kalimantan (West, Central, South, East, and North Kalimantan) and is analyzed longitudinally over eight years. Causal relationships are modeled using the panel data regression equation:

$$Y_{it} = a + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \varepsilon_{it}$$

Y	= GRDP of the processing industry,
X1	= Foreign Investment
X2	= Domestic Investment
X3	= the difference between export value and imports.
X4	= number of workers absorbed.
α, β	= Regression coefficient
ε	= error term

The study population covers all provinces on the island of Kalimantan. Given the small sample size (N=5), a census was conducted to ensure comprehensive data representation. The observation period was set from 2017–2024 based on the availability of consistent secondary data from relevant agencies. Therefore, the study sample is a balanced panel data consisting of 40 observation units (5 provinces × 8 years). This period was determined considering the completeness of data after the expansion of North Kalimantan Province and an effort to capture post-2015 economic dynamics.

The data used were sourced from secondary sources from official government institutions. Data collection was conducted through *documentary analysis* of statistical publications and institutional reports. The research instrument was developed by constructing a panel data matrix based on the following operational variables:

- GRDP of the Processing Industry (Y) is the GRDP (Gross Regional Domestic Product) of the Processing Industry Sector in the form of gross added value from all processing/manufacturing industry activities in Kalimantan, expressed in Rupiah.
- PMA (X_1) is the amount of capital invested by the private sector in the secondary sector or processing industry in Kalimantan province, expressed in Rupiah.

- PMDN (X_2) is the realization of domestic investment in the secondary sector or processing industry in Kalimantan, expressed in Rupiah.
- Net Exports (X_3) is the result of subtracting the number of exports and the number of imports of the processing industry sector in Kalimantan, expressed in Rupiah.
- Labor (X_4) is the number of workers absorbed in the processing industry sector in Kalimantan, expressed in units of people.

Data analysis using panel data regression with EViews 12 software. The analysis procedure follows systematic stages:

- Estimation Model Selection is carried out through three tests: Chow test (CEM vs FEM), Hausman test (FEM vs REM), and Lagrange Multiplier (CEM vs REM) to determine the best specification (Gujarati & Porter, 2009).
- Classical Assumption Tests include residual normality tests (Jarque-Bera), multicollinearity (correlation matrix and VIF), heteroscedasticity (Glejser test), and autocorrelation (Durbin-Watson).
- Hypothesis testing uses the t-test (partial) and F-test (simultaneous) at a significance level of $\alpha=5\%$, as well as the coefficient of determination (R^2) to measure the strength of the model.

The interpretation of the results is supported by descriptive analysis and discussion that links the empirical findings to economic theory and the policy context in Kalimantan. This study uses EViews 12, a software package specifically designed for econometric analysis, including panel model estimation using various approaches (pooled, fixed effects, and random effects). The tool's strength lies in its ability to calculate comprehensive model specification tests and diagnostics. The research material consists of secondary datasets that have been cleaned and adjusted to ensure uniform units (billions of rupiah) and consistent reporting periods. Data source transparency is ensured by including links to official publications for each variable.

RESULTS AND DISCUSSION

Results

Panel Data Regression Model Selection

Chow Test

To determine whether the Fixed Effect Model or the Common Effect Model is better, the Chow test is used. If the probability value $\alpha < 0.05$, then the model used is the Fixed Effect Model, and if the probability value $\alpha > 0.05$, then the model used is the Common Effect Model.

Table 1. Chow Test Results

Effects Test	Statistics	df	Prob.
Cross-section F	1842.917844	(4.31)	0.0000
Cross-section Chi-square	219.024360	4	0.0000

Source: E-Views 12, Processed Data

Based on the results of the Chow test above, which show a p-value of less than 0.05 ($0.0000 < 0.05$), the selected model is the Fixed Effect Model, and the Hausman Test will proceed.

Hausman test

The Hausman test is used to select the best model by comparing two models: the Fixed Effect Model and the Random Effect Model. If the probability value $\alpha < 0.05$, the model used is the Fixed Effect Model; if $\alpha > 0.05$, the model is the Random Effect Model.

Table 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob.
Random cross-section	7371.671375	4	0.0000

Source: E-Views 12, Processed Data

Based on the Hausman test results above, which show that the p-value is 0.0000 < 0.05, the selected model is the Fixed Effect Model.

Classical Assumption Test

Normality Test

To test whether the data are normally distributed, the researcher uses the Jarque-Bera (JB) test.

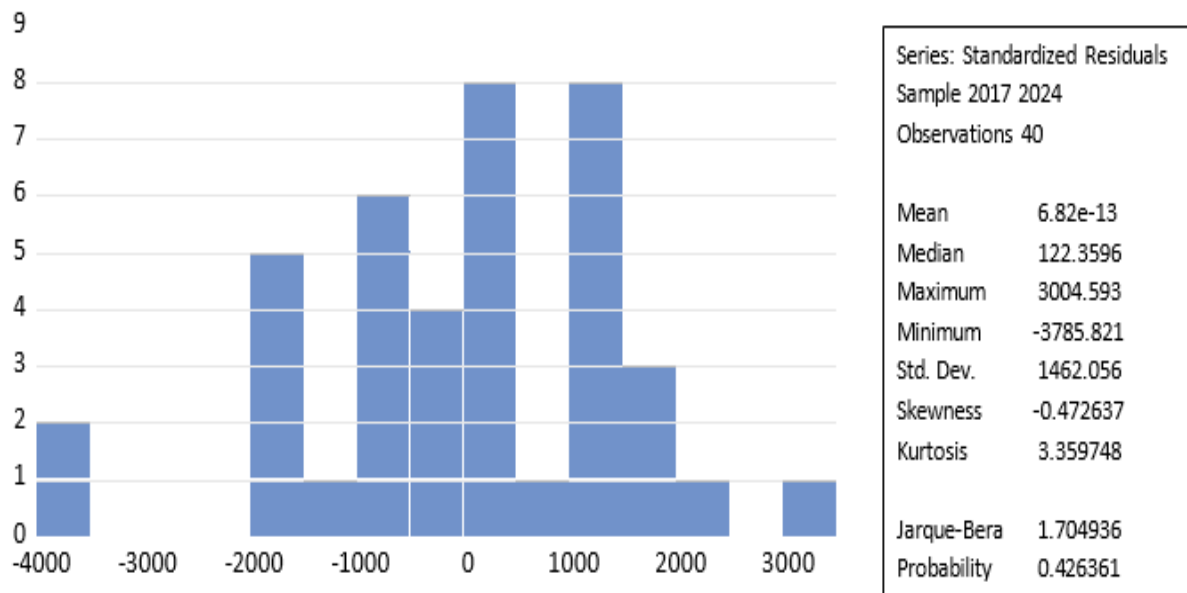


Figure 5. Normality Test Results

Normality testing can be performed by comparing the probability and the Jarque-Bera values with α (0.05). If the probability and the Jarque-Bera values are > α (0.05), the data are usually distributed. If the Jarque-Bera probability value is < α (0.05), the data are not normally distributed. Based on Figure 4.5, the Jarque-Bera statistic is 1.704936 > 0.05, and the p-value is 0.426361 > 0.05; therefore, the data are typically distributed.

Multicollinearity Test

Multicollinearity testing is used to detect strong correlations among independent variables in a regression model. Multicollinearity testing is also necessary when a regression model includes more than one independent variable.

Table 3. Multicollinearity Test Results

	X ₁	X ₂	X ₃	X ₄
X ₁	1.000000	0.355939	0.013650	-0.211718
X ₂	0.355939	1.000000	0.793124	0.244787
X ₃	0.013650	0.793124	1.000000	0.607896
X ₄	-0.211718	0.244787	0.607896	1.000000

Sumber: E-Views 12, Data Diolah

Table 3 shows that the correlation coefficients for each independent variable are smaller than 0.85. Where the correlation coefficient of X₁ and X₂ is 0.355939 < 0.85; X₁ and X₃ is 0.013650 < 0.85; X₁ and X₄ is -0.211718 < 0.85; X₂ and X₃ is 0.793124 < 0.85; X₂ and X₄ is 0.244787 < 0.85; X₃ and X₄ is 0.607896 < 0.85; it can be concluded that there is no multicollinearity in this study.

Heteroscedasticity Test

The heteroscedasticity test assesses whether the variance of the residuals differs across observations. The heteroscedasticity test in this study uses the Glejser method. If sig > 0.05, there is no evidence of heteroscedasticity.

Table 4. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	794.1237	496.9457	1.598009	0.1202
X1	-5,940	1,350	-0.438984	0.6637
X2	3,230	2,000	1.609449	0.1177
X3	-3,700	7,720	-0.479259	0.6351
X4	-0.004176	0.004566	-0.914644	0.3674

Source: E-Views 12, Processed Data

Based on the test results above, the p-value is > 0.05, indicating that none of the independent variables exhibit heteroscedasticity and that the heteroscedasticity test is not significant.

Panel Data Regression Equation Test Results

The quantitative data analysis process in this study involved the use of E-Views 12 econometric software; the calculation results obtained are as follows:

Table 5. Results of Panel Data Regression Equation Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29369.65	3338.632	8.796911	0.0000
X1	7.415	9.090	0.815740	0.4209
X2	3.117	1.350	2.314377	0.0274
X3	-6.051	5.190	-0.116615	0.9079
X4	0.012	0.030	0.420374	0.6771

Source: E-Views 12, Processed Data

Panel Data Regression Equation

$$Y = 29369.65 + 7.415X_1 + 3.117X_2 - 6.051X_3 + 0.012X_4$$

With the following explanation:

- The constant value of 29369.65 means that without the investment variables of PMA (X₁), PMDN (X₂), Net Exports (X₃), and Labor (X₄), the GRDP variable of the Manufacturing Industry (Y) will experience an increase of 29369.65 billion Rupiah.

- The beta coefficient value for the PMA variable (X1) is 7.4155. If PMA (X1) increases, the GRDP variable for the Processing Industry (Y) will increase by 7.4155 billion Rupiah.
- The beta coefficient value for the PMDN variable (X2) is 3.1174. If PMDN (X2) increases, the GRDP variable for the Processing Industry (Y) will increase by 3.1174 billion Rupiah.
- The beta coefficient value for the Net Export variable (X3) is 6.0519. If Net Export (X3) increases, the GRDP variable for the Processing Industry (Y) will increase by 6.0519 billion Rupiah.
- The beta coefficient value for the Labor variable (X4) is 0.0128. If the Labor (X4) increases, the GRDP variable for the Processing Industry (Y) will increase by 0.0128 billion Rupiah.

Hypothesis Testing

t-Statistic Test (Partial Test)

To determine the level of significance between the variables PMA, PMDN, Net Exports, and Labor, and whether they partially or individually influence the GRDP of the Manufacturing Industry Sector in Kalimantan, a t-test was conducted. The decision-making requirements are as follows:

By comparing the calculated t-value with the t-table:

- If the t-table > t-count, then H0 is rejected and Ha is accepted, meaning that variable X has no partial effect on variable Y.
- If the t-table < t-count then H0 is rejected and Ha is accepted, meaning that variable X partially influences variable Y.

By comparing the significant probability figures t :

- If the significant probability value $t > 0.05$, then H0 is accepted and Ha is rejected or has no effect.
- If the probability value is significant $t < 0.05$ then H0 is accepted, and Ha is rejected or has an effect.

Table 6. T-Test Results (Partial Test)

Variable	t-Statistic	Prob.
C	8.796911	0.0000
X1	0.815740	0.4209
X2	2.314377	0.0274
X3	-0.116615	0.9079
X4	0.420374	0.6771

Source: E-Views 12, Processed

Based on Table 6, partial test results have been obtained with the following interpretation:

- The results of the t-test on the PMA variable (X1) obtained a t-count value of 0.815740 > t-table of 2.0243 and a prob. value of 0.4209 > 0.05, so the PMA variable (X1) has a positive and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.
- The results of the t-test on the PMDN variable (X2) obtained a t-count value of 2.314377 > t-table of 2.0243 and a prob. value of 0.0274 < 0.05, so the PMDN

variable (X2) has a positive and significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.

- The results of the Net Export t-test (X3) obtained a t-count value of $-0.116615 < t\text{-table of } 2.0243$ and a probability value of $0.9079 > 0.05$, so the Net Export variable (X3) has a negative and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.
- The results of the Labor t-test (X4) obtained a t-count value of $0.420374 > t\text{-table of } 2.0243$ and a prob. value of $0.6771 > 0.05$, so the Labor variable (X4) has a positive and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.

F-Statistic Test (Simultaneous Test)

The Simultaneous Test, or F-Test, is used to determine whether the independent variables jointly influence the dependent variable. The basis for this decision is as follows:

Table 7. F-Test Results (Simultaneous Test)

F-statistic	2119.052
Prob(F-statistic)	0.000000

Source: E-Views 12, Processed

Based on the results of the simultaneous test in Table 7 with the calculated f-value of $2119.052 > \text{the f-table value of } 2.641$ and a significant value of $0.000000 < 0.05$, it means that the variables of PMA, PMDN, Net Exports, and Labor have a significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.

Coefficient of Determination (R2)

The coefficient of determination measures the extent to which the independent variable model explains the variation in the dependent variable. A coefficient of determination value close to 1 indicates that the independent variables provide almost all the information needed to explain the variation in the dependent variable. A determination value of 0 indicates that the independent variables provide little information needed to explain the variation in the dependent variable.

Table 8. Results of the Determination Coefficient (R2) Test

R - squared	0.998175
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Source: E-Views 12, Processed

The coefficient of determination test yielded a value of 0.998175 , or 99%. This value indicates that the independent variables, consisting of PMA, PMDN, Net Exports, and Labor, can explain 99% of the GRDP in the Manufacturing Industry Sector in Kalimantan. The remaining 1% is influenced by other variables not included in this study.

Discussion

The Impact of Foreign Direct Investment (PMA) on the GRDP of the Manufacturing Industry Sector in Kalimantan 2017-2024

Based on the panel data regression analysis, the calculated t-value (0.815740) was greater than the t-table value (2.0243), and the probability value (0.4209) was greater than 0.05 , indicating that FDI did not significantly influence the GRDP of the Manufacturing Industry Sector in Kalimantan. The Harrod-Domar investment theory

explains this: the more straightforward the investment process, the more investment is undertaken, and the higher the country's income. The results of this study are in line with previous research conducted by Dani Asrinda and Ririt Iriani Sri Setiawati (2023) with the research title "The Effect of Foreign Investment, Net Exports and Labor on Indonesia's Economic Growth," which states that the Foreign Investment (PMA) variable partially has a positive and insignificant effect on economic growth.

The Impact of Domestic Direct Investment (PMDN) on the GRDP of the Manufacturing Industry Sector in Kalimantan 2017-2024

Based on the results of the panel data regression analysis, the calculated t-value (2.314377) was > the t-table value (2.0243), and the prob. value was $0.0274 < 0.05$. The PMDN variable, PMDN, has a positive and significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan. These results indicate that any increase in PMDN investment will significantly encourage GRDP growth in the manufacturing industry sector in the Kalimantan region. This finding confirms the strategic role of domestic investment as a driving force of regional economic growth, especially in developing Kalimantan's manufacturing sector.

Essentially, local government policies, the availability of natural resources, the quality of the workforce, and other factors can influence investment levels in a region. A region with a high enough income or GRDP will attract more investors because investment is part of the demand for products and services, which can help develop or increase production capacity or future income, thereby increasing GRDP. The results of this study are in line with previous research conducted by Nurilmih, Junaidin Zakaria, and Dahlia Baharuddin (2023) with the research title "The Effect of Foreign Investment, Domestic Investment, and Capital Expenditure on the Processing Industry and Gross Regional Domestic Product in South Sulawesi Province" which states that PMDN investment has a positive and significant effect on the processing industry in South Sulawesi Province.

The Impact of Net Exports on GRDP of the Manufacturing Industry Sector in Kalimantan 2017-2024

Based on the results of the panel data regression analysis test, a t-count value of $-0.116615 < t\text{-table of } 2.0243$ and a probability value of $0.9079 > 0.05$ have been obtained, so the Net Export variable has a negative and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024. The GRDP of the Manufacturing Industry Sector tends to decrease, although this effect is not statistically significant. In other words, every one billion Rupiah increase in Net Exports will reduce the GRDP of the Manufacturing Industry Sector by 0.116615 billion Rupiah, ceteris paribus (assuming other variables are constant). The small effect of Net Exports on the GRDP of the manufacturing industry may be due to several provinces in Kalimantan not fully realizing their regional potential and remaining dependent on imported commodities, resulting in negative Net Exports. This is because imports in the manufacturing sector in Kalimantan have increased rapidly, while exports have increased but more slowly. This is also due to Kalimantan's economic structure, which is still dominated by the primary sector, with primary exports consisting of unprocessed commodities such as coal, palm oil, and forest products. Furthermore, the processing industry in Kalimantan is more oriented towards meeting domestic

market needs than exports, making its performance less sensitive to changes in net export value.

The results of this study are in line with previous research conducted by Yahya Yakaria Pangestin, Aris Soelistyo, and Muhammad Sri Wahyudi Suliswanto (2021) entitled "Analysis of the Effect of Investment, Net Exports and Government Expenditure on Indonesia's Economic Growth," which stated that net exports have a positive and insignificant effect on Indonesia's economic growth.

The Influence of Labor on GRDP in the Manufacturing Industry Sector in Kalimantan 2017-2024

Based on the panel data regression results, the calculated t-value was 0.420374, which was greater than the t-table value of 2.0243. The probability value was 0.6771, which was greater than 0.05, indicating that the Labor variable had a positive, insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan during 2017-2024. The insignificance of the labor variable may be due to the labor force's lower productivity relative to the machine technology used. The positive relationship between labor and GRDP in the manufacturing sector is consistent with economic theory, which holds that labor is a crucial factor of production. However, this insignificant effect can be explained by several contextual factors in Kalimantan. For example, the manufacturing sector in Kalimantan is likely still capital-intensive rather than labor-intensive, so output growth is more influenced by investment in technology and equipment than by additional workers. Furthermore, labor quality and productivity may be more important than quantity, as this analysis does not reflect. Furthermore, the characteristics of the manufacturing industry in Kalimantan, which is likely still dominated by natural resource processing with a relatively low level of technological complexity, may prevent additional labor from significantly increasing added value.

The quality and skills of that workforce must also match an abundant labor force. Labor quality encompasses skills, knowledge, and discipline. Rapid technological advances can be practical when used by a skilled, trained workforce. Improved education, health, and work discipline can make employees more productive. Therefore, a well-trained workforce and high work discipline are crucial for driving a country's economic growth. The results of this study are in line with previous research conducted by Dani Asrinda and Ririt Iriani Sri Setiawati (2022) entitled "The Effect of Foreign Investment, Net Exports and Labor on Indonesia's Economic Growth" which states that the labor variable (X3) does not have a significant effect on economic growth (Y) in Indonesia and in the study of Fauzi Hidayat (2011) also states that the labor variable individually does not have a significant effect on the growth of GRDP in the Manufacturing Industry Sector in Bekasi Regency.

The Influence of Foreign Direct Investment (PMA), Domestic Direct Investment (PMDN), Net Exports, and Labor on the GRDP of the Manufacturing Industry Sector in Kalimantan 2017-2024

Based on the results of the simultaneous test, the variables PMA, PMDN, Net Exports, and Labor have a significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan during 2017-2024. This can be proven by the calculated f-value of 2119.052 > the f-table value of 2.641 and a significant p-value of 0.000000 < 0.05; thus, the four independent variables are concluded to have a significant effect on

the GRDP of the Manufacturing Industry Sector in Kalimantan. These results indicate that the variables PMA, PMDN, Net Exports, and Labor together can serve as valid indicators of changes in the GRDP of the manufacturing industry sector.

CONCLUSION

Referring to the research results and analysis that have been presented, the following conclusions can be drawn:

- From the results of the t-test (Partial Test), the PMA variable shows a calculated t value of 0.815740, and the t-table 2.0243 with a significance value of 0.05, resulting in a Prob. Since the value of 0.4209 is greater than 0.05, the PMA variable has a positive and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan. The PMDN variable shows a calculated t value of 2.314377 and a t table value of 2.0243 with a significance value of 0.05, getting a Prob. The value of 0.0274 is smaller than 0.05; then the PMDN variable has a positive and significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan. The Net Export Variable shows a calculated t value of -0.116615 and a t table value of 2.0243 with a significance value of 0.05, getting a Prob. Value. 0.09079 is greater than 0.05, then the Net Export variable has a negative and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan, and the Labor Variable shows a calculated t value of 0.420374 and a t table of 0.0243 with a significance value of 0.05, getting a Prob. Since the value of 0.6771 is greater than 0.05, the Labor variable has a positive and insignificant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan during 2017-2024.
- From the results of the F test (Simultaneous Test) shows that PMA, PMDN, Net Exports and Labor show a calculated F value of 2119.052 and F table 2.641 with a significance level of 0.05 stated with a significance level of 0.000000 less than 0.05, it can be explained that the independent variables simultaneously have a significant effect on the GRDP of the Manufacturing Industry Sector in Kalimantan in 2017-2024.
- The results of this study show the results of the Determination Coefficient (R²) of 0.998175, where this value indicates that the independent variables consisting of PMA, PMDN, Net Exports, and Labor can explain their influence on the GRDP variable of the Manufacturing Industry Sector in Kalimantan by 99%. In comparison, the remaining 1% is influenced by other variables not included in this study.

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