

THE IMPACT OF FDI, DOMESTIC INVESTMENT, AND INFLATION ON THE GDP OF INDONESIA'S MANUFACTURING INDUSTRY SECTOR

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Abstract

The manufacturing sector plays a strategic role in Indonesia's economic structure. However, the growth of this sector is closely influenced by investment dynamics both Foreign Direct Investment (FDI) and Domestic Investment (DI) as well as inflation stability, which affects production efficiency and industrial competitiveness. This study aims to examine the effects of FDI in the manufacturing sector, DI in the manufacturing sector, and inflation on manufacturing sector Gross Domestic Product (GDP) in Indonesia over the period 2010–2024. Using a quantitative approach, this research applies multiple linear regression analysis to identify the relationship between investment variables, inflation, and manufacturing sector performance. The results show that, partially, FDI and DI have a positive effect on manufacturing GDP, while inflation has a negative effect. Simultaneously, the three variables significantly influence manufacturing GDP. These findings highlight that increasing investment, both foreign and domestic, is essential for strengthening production capacity and supporting the growth of the manufacturing industry. Meanwhile, maintaining stable and well-managed inflation is necessary to preserve efficiency and enhance the competitiveness of Indonesia's manufacturing sector.

Keywords: Domestic Investment, FDI, GDP, Inflation, Manufacturing Industry

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INTRODUCTION

Indonesia, with a Gross Domestic Product (GDP) reaching IDR 22,139.0 trillion in 2024 (Badan Pusat Statistik [BPS], 2025), is one of the countries with the largest GDP in the world and plays a significant role in the global economy. With a population exceeding 270 million people, Indonesia represents the largest economic force in Southeast Asia and possesses substantial domestic market potential. This condition not only supports national economic stability but also creates opportunities to strengthen Indonesia's position within the global economic system in the future. The large domestic market and national production capacity play a crucial role in maintaining aggregate demand stability and in supporting Indonesia's economic resilience and global competitiveness (Zaki, 2022).

Despite its strong macroeconomic potential, Indonesia's industrial performance—particularly in manufacturing—remains highly dependent on investment dynamics and macroeconomic stability. Uneven investment realization across subsectors and periods, combined with inflationary pressures, may limit the manufacturing sector's ability to expand output and strengthen competitiveness in both domestic and international markets. Therefore, examining the determinants of manufacturing performance remains essential for evidence-based policy formulation.

The manufacturing industry sector is one of the most important contributors to national GDP and plays a key role in employment absorption and in strengthening the national economic structure (Nurhayani, 2022). In 2024, the manufacturing sector accounted for approximately 18.98 percent of Indonesia's total GDP (BPS, 2024), underscoring its strategic position as a driver of value added, job creation, and structural transformation toward a more productive and competitive economic base. Moreover, the development of the industrial sector contributes to innovation and technological progress, both of which are vital for enhancing Indonesia's global competitiveness and sustaining long-term economic growth (Fitri et al., 2025).

Over recent years, the manufacturing sector has consistently maintained its dominance in national GDP contribution. Strengthening the industrial sector has become a strategic agenda in efforts to achieve sustainable economic growth (Eki Indriyanti et al., 2023). Based on BPS (2024), the average contribution of manufacturing to Indonesia's GDP reached approximately 19.03 percent during 2020–2023, confirming its role as a key pillar of the national economy. The positive performance of manufacturing not only reflects increases in output and value added but also generates multiplier effects through employment creation, industrial deepening, and productivity improvements. Accordingly, manufacturing plays an increasingly important role in Indonesia's economic transformation toward a more modern, competitive, and export-oriented structure (Nurhayani, 2022). A comparison of the manufacturing sector's contribution to national GDP with other economic sectors is presented in Figure 1.

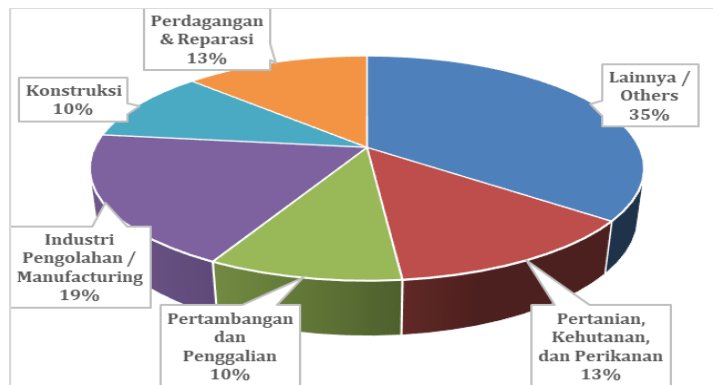


Figure 1. Proportion of the Manufacturing Industry Sector's Contribution to National GDP

Source: Statistics Indonesia (BPS), 2025 (processed by authors).

In addition to its strategic contribution, manufacturing is widely recognized as a capital-intensive sector, as production activities require substantial investment in physical capital, machinery, technology, and supporting infrastructure to enhance efficiency and expand production capacity (Kementerian Perindustrian Republik Indonesia, 2019; Setyanto et al., 2025). Investment therefore constitutes a fundamental driver of manufacturing growth and competitiveness. Increased investment, both Foreign Direct Investment (FDI) and Domestic Investment (DI), can strengthen manufacturing performance through capacity expansion, productivity enhancement, and the upgrading of industrial processes (Lestari, 2021).

The resilience of manufacturing performance has also been reflected in its post-pandemic recovery. According to BPS (2024), manufacturing growth contracted by -2.93 percent in 2020 due to the COVID-19 shock, but subsequently recovered with growth rates of 3.39 percent (2021), 4.89 percent (2022), 4.64 percent (2023), and 4.43 percent (2024). This recovery is broadly consistent with national economic growth, which ranged from 3.70 to 5.31 percent over the same period. Thus, manufacturing has remained a key driver in supporting Indonesia's post-pandemic economic recovery and sustaining growth momentum. A comparison between manufacturing growth and national economic growth is presented in Figure 2 (BPS, 2024).

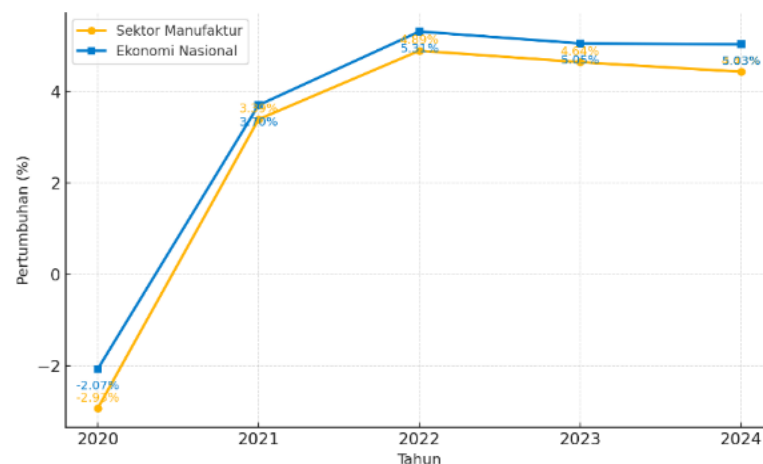


Figure 2. Trends in Manufacturing Growth and National Economic Growth (2020-2024)

Source: Statistics Indonesia (BPS), 2024 (processed by authors)

Investment flows in Indonesia have generally shown positive development, particularly in FDI and DI, alongside improvements in the national business climate. Based on Kementerian Investasi/BKPM (2024), the manufacturing sector remains a primary destination for investment, with major contributions concentrated in the food and beverage, basic metals, and motor vehicle subsectors. Nevertheless, rising investment has not always been accompanied by proportional improvements in manufacturing output, indicating the presence of structural constraints such as dependence on imported raw materials and limited absorption of new technologies. Accordingly, investment optimization should be directed toward strengthening domestic production capabilities and increasing industrial value added so that investment growth translates into stronger manufacturing performance and broader economic impacts.

Over the past decade, Indonesia's manufacturing capital structure has been predominantly supported by domestic investment. According to BPS (2025) in Statistics of Indonesian Manufacturing Industry 2023, DI/PMDN accounts for 86.4 percent of manufacturing capital, while FDI/PMA contributes 13.6 percent. Although the proportion of FDI is relatively smaller, it remains essential due to its potential to support industrial upgrading through capital provision, technology transfer, and international market expansion. This context raises a key empirical question regarding the extent to which FDI and DI influence Indonesia's manufacturing GDP, as highlighted in Suparta and Renaldi (2025), who examine the roles of FDI, economic complexity, and manufacturing value added in driving growth across ASEAN countries.

Beyond investment, macroeconomic stability—particularly inflation—also plays an important role in shaping manufacturing performance. Sukirno (2006) defines inflation as a general and sustained increase in prices that reduces purchasing power. In manufacturing, inflation may raise production costs and weaken consumer demand. Bank Indonesia emphasizes that low and stable inflation is a prerequisite for sustainable economic growth, while high and volatile inflation generates uncertainty that affects consumption, investment, and production decisions (Bank Indonesia, n.d.). When inflation rises, the prices of raw materials and energy tend to increase, thereby putting pressure on cost structures, reducing profit margins, and potentially limiting production expansion. In contrast, stable inflation supports predictability and fosters a conducive business environment for long-term investment decisions.

In Indonesia, inflation has been relatively well controlled over the past decade, averaging below 5 percent annually (BPS, 2024). However, price pressures stemming from exchange rate fluctuations and global energy shocks may still affect manufacturing efficiency and competitiveness. High inflation may also increase operational costs for foreign investors, which can influence business expansion decisions and the realization of new investment (Salfiah, 2025).

Prior empirical studies underscore the importance of both investment and macroeconomic stability for manufacturing performance. Umam (2019) reports that foreign and domestic investment significantly support manufacturing output growth, whereas Rulinawati (2017) finds that inflation exerts a negative effect on industrial growth, indicating that price pressures may constrain production through higher costs and weaker demand. Nevertheless, the direction and magnitude of these relationships remain mixed across settings and periods, and evidence focusing specifically on Indonesia's manufacturing GDP with updated time-series coverage through 2024 remains limited. Therefore, this study examines the effects of Foreign Direct Investment (FDI/PMA), Domestic Investment (DI/PMDN), and inflation on

Indonesia's manufacturing sector GDP over the 2010–2024 period using a multiple linear regression approach. The findings are expected to provide updated empirical evidence on the relative roles of investment and inflation in shaping manufacturing performance and to inform policy measures aimed at strengthening industrial competitiveness and sustaining manufacturing-led growth.

RESEARCH METHODS

Types and Sources of Data

This study employs a quantitative approach using secondary time-series data covering the period 2010–2024. The data are obtained from official publications of Statistics Indonesia (Badan Pusat Statistik/BPS) and the Ministry of Investment/Indonesia Investment Coordinating Board (BKPM). The variables examined include the realization of Foreign Direct Investment (FDI), Domestic Investment (DI/PMDN), annual inflation, and the Gross Domestic Product (GDP) of the manufacturing industry sector.

Research Variables

This study applies multiple linear regression to examine the effects of Foreign Direct Investment (FDI), Domestic Investment (DI), and inflation on manufacturing sector GDP in Indonesia. Following Ghozali (2017), multiple linear regression is used to estimate the influence of two or more independent variables on one dependent variable. The empirical model is estimated using Ordinary Least Squares (OLS) and specified as follows:

$$Y_t = \beta_0 + \beta_1 FDI_t + \beta_2 DI_t + \beta_3 INF_t + \varepsilon_t$$

Where:

1. Manufacturing GDP (Y): the output value of the manufacturing sector in Indonesia, measured in IDR billion.
2. FDI (X1): realization of foreign direct investment in the manufacturing sector, measured in US\$ thousand.
3. DI (X2): realization of domestic investment in the manufacturing sector, measured in IDR million.
4. Inflation (X3): annual inflation rate measured using the Consumer Price Index (CPI), expressed in percent (%).

This method is selected because it is appropriate for explaining functional relationships among economic variables and is widely applied in time-series research. Data were processed using EViews 12. To ensure that the estimated regression model satisfies the Best Linear Unbiased Estimator (BLUE) assumptions, classical diagnostic tests were conducted following Gujarati (2007), including:

- i. A Normality Test using the Kolmogorov–Smirnov method;
- ii. A multicollinearity Test using the Variance Inflation Factor (VIF);
- iii. A Heteroskedasticity Test using the White test; and
- iv. An Autocorrelation Test using the Durbin–Watson statistic.

Hypothesis testing is conducted at a 5% significance level. The diagnostic results indicate that the regression model satisfies the BLUE assumptions and is therefore appropriate for further analysis.

RESULTS AND DISCUSSION

Indonesia's manufacturing industry sector exhibited a generally upward trend over the period 2010–2024, reflecting the sector's strengthening contribution to national economic performance. Based on Statistics Indonesia (BPS) data, manufacturing sector GDP increased from IDR 1,594.30 trillion in 2010 to IDR 4,202.87 trillion in 2024, indicating a substantial expansion in output and value added. This pattern underscores the strategic role of manufacturing as a key pillar of Indonesia's economy, not only in driving production growth but also in supporting employment creation and industrial transformation. However, the growth trajectory is shaped by changes in investment inflows and macroeconomic stability, particularly foreign and domestic investment dynamics and inflation developments. Therefore, Table 1 presents the descriptive development of manufacturing GDP, Foreign Direct Investment (FDI), Domestic Investment (DI/PMDN), and annual inflation, which constitute the main variables examined in this study and provide an initial overview of the relationships tested in the regression model. Table 1 presents the annual data on manufacturing GDP, Foreign Direct Investment (FDI), Domestic Investment (DI/PMDN), and inflation in Indonesia for the period 2010–2024.

Table 1. Manufacturing GDP, FDI-DI Investment, and Inflation in Indonesia (2010–2024)

Year	Manufacturing GDP (IDR Billion)	Manufacturing FDI (US\$ Thousand)	Manufacturing DI (IDR Million)	Inflation (%)
2010	1.594.300,00	3.337.302,1	24.432.161,3	5,13
2011	1.806.100,00	6.789.647,7	38.622.247,5	5,36
2012	1.972.500,00	11.769.951,3	49.927.306,3	4,28
2013	2.152.600,00	15.859.932,3	51.171.126,2	6,41
2014	2.227.584,00	13.020.989,3	59.034.719,5	6,39
2015	2.418.891,70	11.767.998,4	89.048.372,8	6,36
2016	2.545.203,60	16.690.492,9	106.783.689,2	3,53
2017	2.739.711,90	13.159.214,2	99.189.995,8	3,81
2018	2.947.450,80	10.347.635,7	83.644.440,1	3,20
2019	3.119.593,80	9.551.100,9	72.673.420,7	3,03
2020	3.068.041,70	13.202.378,3	82.817.731,1	1,92
2021	3.266.905,50	15.803.739,9	94.698.503,9	1,56
2022	3.591.774,70	24.679.388,6	143.564.398,9	4,21
2023	3.900.061,70	28.689.737,0	171.657.314,3	3,67
2024	4.202.866,90	35.131.300,0	194.293.100,0	2,18

Source: Central Bureau of Statistics (BPS), 2024; Ministry of Investment/BKPM, 2024.

Based on Table 1, Indonesia's manufacturing GDP shows a strong upward trajectory throughout the study period. The output value increased from IDR 1,594.30 trillion in 2010 to IDR 4,202.87 trillion in 2024, indicating a substantial expansion in industrial production and value added over time. Despite a slight contraction in 2020 (IDR 3,068.04 trillion) compared to 2019 (IDR 3,119.59 trillion), the manufacturing sector recovered steadily in the following years and reached its highest level in 2024. This descriptive trend suggests that the manufacturing sector remained resilient and continued to strengthen its role as a major pillar of Indonesia's economic structure, particularly in supporting industrial transformation and national output growth.

Table 1 also indicates that Foreign Direct Investment (FDI) in the manufacturing sector is relatively volatile across years, but exhibits an accelerating upward trend in the later period. Manufacturing FDI increased from US\$ 3,337,302.1 thousand in 2010 to US\$ 35,131,300.0 thousand in 2024, reflecting stronger foreign capital inflows into the manufacturing industry. While FDI rose significantly during the early period (2010–2013), it experienced fluctuations during 2014–2019, before showing a notable rise after 2020. The sharp increase from US\$ 13,202,378.3 thousand in 2020 to US\$ 35,131,300.0 thousand in 2024 suggests renewed investor confidence and the growing attractiveness of Indonesia's manufacturing sector, potentially supported by improvements in investment climate, industrial policy incentives, and expansion in key manufacturing subsectors.

In comparison, Domestic Investment (DI/PMDN) demonstrates a more consistent and sustained growth pattern, confirming its dominant role in financing industrial expansion. As shown in Table 1, domestic investment rose markedly from IDR 24,432,161.3 million in 2010 to IDR 194,293,100.0 million in 2024, indicating a strong and persistent increase in domestic capital formation within the manufacturing sector. This consistent rise implies that domestic investors increasingly contributed to strengthening production capacity and industrial output. Meanwhile, inflation tends to decline and remains relatively stable in recent years, particularly during 2020–2024. Inflation decreased from above 5–6% in the early period to 2.18% in 2024, reflecting improved macroeconomic stability. Such stability is important because controlled inflation supports production efficiency by reducing cost uncertainty and maintaining purchasing power, thereby creating a more favorable environment for both investment expansion and manufacturing sector performance.

Overall, the descriptive trends in Table 1 suggest that manufacturing GDP growth coincides with expanding domestic and foreign investment inflows, while macroeconomic stability—as reflected by relatively controlled inflation—may support industrial performance. Nevertheless, descriptive analysis alone is insufficient to confirm causal relationships. Therefore, the following section applies multiple linear regression to quantitatively examine the effects of FDI, DI/PMDN, and inflation on manufacturing GDP in Indonesia during 2010–2024.

Classical Diagnostic Tests

Prior to regression analysis, this study conducted classical diagnostic tests to ensure that the estimated model satisfies the Best Linear Unbiased Estimator (BLUE) assumptions. The tests include normality, multicollinearity, heteroskedasticity, and autocorrelation tests. To maintain conciseness, the detailed test tables are not presented, and only the key results are reported in the following section.

i. Normality Test

The normality test was conducted using the Kolmogorov–Smirnov method to examine whether the regression residuals follow a normal distribution. The results show a probability value of 0.884620, which is greater than 0.05, indicating that the residuals are normally distributed. Therefore, the normality assumption is satisfied.

ii. Multicollinearity Test

Multicollinearity was assessed using the Variance Inflation Factor (VIF). The model is considered free from multicollinearity when $VIF < 10$. The results indicate VIF values of 8.705894 for FDI, 9.961309 for DI, and 1.453890 for inflation, all of which are below the critical threshold. Thus, the regression model does not suffer from multicollinearity.

iii. Heteroskedasticity Test

The heteroskedasticity test was performed using the White test to evaluate whether the residual variance is constant. The Prob. Obs*R-squared value is 0.7136, which exceeds 0.05, suggesting that heteroskedasticity is not present. Accordingly, the residuals can be considered homoskedastic.

iv. Autocorrelation Test

Autocorrelation was examined using the Durbin-Watson/LM test to detect serial correlation in the residuals. The test results show that the probability value exceeds the 0.05 significance level, indicating no evidence of autocorrelation. Therefore, the residuals are independent across time periods.

Regression Model Estimation Results

The regression model was estimated using EViews 12.0 for the period 2010–2024 to examine the effects of FDI, DI/PMDN, and inflation on Indonesia's manufacturing GDP. The results indicate that the explanatory variables play an important role in explaining changes in manufacturing sector output. The estimated coefficients and their statistical significance are presented in Table 2, while the regression summary statistics are reported in Table 2.

Table 2. Regression Estimation Results (2010–2024)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2,228,800.2133	322,815.9000	6.904245	0.0000
FDI/PMA (X1)	0.0005234	0.0002471	2.211823	0.0490
DI/PMDN (X2)	0.0011565	0.0004600	2.514178	0.0280
Inflation (X3)	-14.4615631	5.262872	-2.740609	0.0190

Source: Data Processed

Table 2 reports the estimated coefficients of the regression model examining the effects of FDI/PMA, DI/PMDN, and inflation on manufacturing GDP in Indonesia during 2010–2024. The results indicate that FDI/PMA ($\beta = 0.0005234$; $p = 0.0490$) and DI/PMDN ($\beta = 0.0011565$; $p = 0.0280$) have positive and statistically significant effects on manufacturing GDP. In contrast, inflation ($\beta = -14.4616$; $p = 0.0190$) shows a negative and significant relationship with manufacturing GDP. Overall, these findings suggest that both foreign and domestic investment contribute to strengthening manufacturing output, while inflationary pressure tends to hamper manufacturing sector performance.

Table 3. Regression Estimation Results

Variabel	Koefisien
Statistik	Nilai
R-squared	0.909273
Adjusted R-squared	0.884529
S.E. of regression	281524.4
Sum squared resid	7.52E+11
Log likelihood	-206.0722
F-statistic	36.74765
Prob(F-statistic)	0.000005
Durbin-Watson stat	1.328582

Source: Data Processed

Table 3 presents the regression model summary statistics. The model shows a strong explanatory power, as indicated by an R-squared of 0.909273 and an Adjusted R-squared of 0.884529, implying that approximately 90.93% of the variation in manufacturing GDP is explained by FDI/PMA, DI/PMDN, and inflation, while the remaining 9.07% is attributable to other factors not included in the model. The overall regression is statistically significant, evidenced by an F-statistic of 36.74765 with $\text{Prob}(F\text{-statistic}) = 0.000005$, confirming that the independent variables jointly have a significant effect on manufacturing GDP. In addition, the standard error of regression (281,524.4) indicates an acceptable level of estimation accuracy. The Durbin-Watson statistic of 1.328582 suggests a moderate tendency toward positive autocorrelation; however, as supported by the diagnostic tests, the model remains appropriate for further interpretation and discussion.

Accordingly, the estimated regression equation is specified as follows:

$$\text{GDP}_t = 2,228,800.2133 + 0.0005234\text{FDI}_t + 0.0011565\text{DI}_t - 14.4616\text{INF}_t + \varepsilon_t$$

The estimated regression results can be interpreted as follows.

1. Effect of Foreign Direct Investment (FDI/PMA) on Manufacturing GDP

The regression estimation indicates that Foreign Direct Investment (FDI/PMA) exerts a positive and statistically significant effect on Indonesia's manufacturing GDP over the period 2010–2024. This result is reflected by the estimated coefficient of 0.0005234 with a probability value of $p = 0.0490$ (significant at the 5% level). The positive coefficient implies that an increase in foreign investment inflows into the manufacturing sector is associated with an improvement in sectoral output, *ceteris paribus*.

From a theoretical perspective, this finding is consistent with the capital accumulation and productivity-enhancement hypothesis, where foreign investment strengthens manufacturing performance not only through additional financing but also through technology transfer, managerial expertise, and access to global production networks, thereby expanding productive capacity and increasing industrial value added. This empirical evidence is also supported by the descriptive trend of the study variables, where manufacturing FDI shows a notable rise particularly after 2020, followed by continued growth in manufacturing GDP.

Moreover, the result is in line with previous studies suggesting that FDI contributes positively to industrial output and economic growth when directed toward productive sectors. In particular, Umam (2019) finds that foreign investment has a positive and significant effect on industrial GRDP in Java, supporting the argument that FDI plays an important role in strengthening industrial output and development. Therefore, this study confirms that foreign investment remains a key driver in supporting the growth and competitiveness of Indonesia's manufacturing sector.

2. Effect of Domestic Investment (DI/PMDN) on Manufacturing GDP

The estimation results show that Domestic Investment (DI/PMDN) has a positive and statistically significant effect on Indonesia's manufacturing GDP during the 2010–2024 period. This relationship is indicated by the estimated coefficient of 0.0011565 with a probability value of $p = 0.0280$, meaning that DI significantly influences manufacturing GDP at the 5% significance level. The positive coefficient suggests that an increase in domestic investment in the manufacturing sector tends to raise sectoral output, *ceteris paribus*.

From a theoretical standpoint, this finding supports the capital formation and

expansion hypothesis, which argues that domestic investment contributes directly to economic growth by strengthening productive capacity through machinery acquisition, industrial infrastructure development, and business expansion. Domestic investment also reflects stronger confidence among local investors in the national economic outlook, which enhances the sustainability of industrial development. Empirically, this pattern is consistent with the descriptive statistics presented earlier, where domestic investment in manufacturing increased substantially from IDR 24.43 trillion in 2010 to IDR 194.29 trillion in 2024, indicating the central role of domestic capital in driving industrial sector growth.

In addition, the positive and significant role of DI is consistent with previous empirical studies. Umam (2019) reports that domestic investment (PMDN) significantly and positively affects industrial GRDP in Java Island during 2010–2017, suggesting that domestic capital deepening strengthens industrial output and sectoral development. Therefore, the present study further confirms that domestic investment remains a critical engine for strengthening manufacturing GDP and sustaining Indonesia's industrial competitiveness.

3. Effect of Inflation (X_3) on Manufacturing GDP

The estimation results indicate that inflation has a negative and statistically significant effect on Indonesia's manufacturing GDP over the 2010–2024 period. This is evidenced by the inflation coefficient of -14.4616 and a probability value of $p = 0.0190$, which confirms significance at the 5% level. The negative sign implies that an increase in inflation tends to reduce manufacturing output, *ceteris paribus*. This finding suggests that inflationary pressures weaken industrial performance primarily by increasing input costs and production expenses, thereby reducing firms' profitability and limiting output expansion.

From a theoretical perspective, this result is consistent with the cost-push inflation mechanism, where increases in general prices—especially for raw materials and energy—lead to rising production costs in manufacturing industries. Moreover, inflation may also reduce purchasing power and suppress demand, which further constrains industrial output. In the context of Indonesia, inflation dynamics are particularly relevant because the manufacturing sector is sensitive to changes in operational costs and price volatility, which can distort production planning and investment decisions.

Empirically, the negative impact of inflation is supported by prior studies. Rulinawati (2017) finds that inflation significantly affects the growth of Indonesia's manufacturing (processing) industry, with results indicating that inflation reduces industrial growth. The study concludes that inflation exerts a negative and statistically significant effect on the processing industry during the 2005–2016 period, emphasizing that higher inflation creates cost pressure and undermines industrial expansion. Therefore, the results of the present study reinforce previous evidence that price stability is a key prerequisite for sustaining manufacturing sector growth and maintaining competitiveness in Indonesia.

Hypothesis Testing Results (t-test)

The partial significance test (t-test) indicates that each independent variable significantly affects manufacturing GDP during the 2010–2024 period. Specifically, Foreign Direct Investment (FDI/PMA) has a positive and statistically significant effect on manufacturing GDP ($t = 2.215345$; $p = 0.0476 < 0.05$), implying that higher foreign investment contributes to increased production capacity and productivity in the manufacturing sector. Likewise, Domestic Investment (DI/PMDN) shows a

positive and significant effect ($t = 3.027993$; $p = 0.0104 < 0.05$), confirming that domestic capital formation plays a crucial role in expanding industrial output and strengthening national value added. In contrast, inflation has a negative and statistically significant effect on manufacturing GDP ($t = -2.451244$; $p = 0.0317 < 0.05$), suggesting that higher inflation tends to weaken industrial performance through rising production costs and reduced competitiveness. Overall, the t-test results confirm that FDI and DI significantly promote manufacturing GDP growth, while inflation exerts a significant adverse effect.

Simultaneous Significance Test (F-test)

To examine the joint (simultaneous) effect of Foreign Direct Investment (FDI/PMA), Domestic Investment (DI/PMDN), and inflation on manufacturing GDP, an F-test was conducted. The results show that the computed F-statistic is 36.74765 with $\text{Prob}(F\text{-statistic}) = 0.000005$, which is far below the 5% significance level ($p < 0.05$). These findings indicate that the regression model is statistically significant overall, meaning that the independent variables jointly have a significant effect on Indonesia's manufacturing sector GDP during the 2010–2024 period.

This result confirms that manufacturing GDP dynamics cannot be explained by a single factor alone; rather, they are shaped by the combined interaction of investment inflows (both foreign and domestic) and macroeconomic stability proxied by inflation. Therefore, the model provides empirical evidence that strengthening investment realization while maintaining inflation stability is crucial to support sustainable growth and competitiveness of Indonesia's manufacturing sector.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is 0.909273, indicating that approximately 90.92% of the variation in manufacturing GDP can be explained by FDI, DI, and inflation included in the model. The remaining 9.08% is attributable to other factors not captured in this study, such as exchange rates, interest rates, labor productivity, energy prices, technological adoption, and global demand conditions. The high R^2 value suggests that the model has strong explanatory power in describing fluctuations in Indonesia's manufacturing GDP over the period 2010–2024.

CONCLUSION

Based on the multiple linear regression analysis using annual time-series data for the period 2010–2024, this study confirms that investment and inflation are important determinants of Indonesia's manufacturing sector performance. The results indicate that Foreign Direct Investment (FDI/PMA) and Domestic Investment (DI/PMDN) contribute positively to the manufacturing sector's GDP, reinforcing the role of capital accumulation in supporting industrial growth.

Empirically, the partial test (t-test) shows that FDI has a positive and statistically significant effect on manufacturing GDP ($t = 2.215345$; Prob. 0.0476), while domestic investment also exerts a positive and significant effect ($t = 3.027993$; Prob. 0.0104). In contrast, inflation has a negative and statistically significant effect ($t = -2.451244$; Prob. 0.0317), indicating that inflationary pressures may weaken

manufacturing performance through rising production costs and reduced efficiency.

The simultaneous test confirms that FDI, DI, and inflation jointly affect manufacturing GDP, as reflected by F-statistic = 36.74765 with Prob(F-statistic) = 0.000005. The model also demonstrates strong explanatory power with $R^2 = 0.909273$, suggesting that approximately 90.92% of the variation in manufacturing GDP can be explained by these three variables, while the remaining variation is influenced by other factors outside the model.

Policy Implications

Based on the empirical findings, this study provides several policy recommendations aimed at strengthening the performance and competitiveness of Indonesia's manufacturing sector through investment enhancement and macroeconomic stability.

1. Foreign Direct Investment (FDI). The government should strengthen the manufacturing investment climate by improving legal certainty, ensuring policy consistency, and accelerating regulatory simplification, so that FDI inflows become more stable and less volatile over time.
2. Domestic Investment (DI). Domestic investment should be reinforced through industrial upgrading, including incentives for automation, production digitalization, and industrial workforce capacity building, to enhance productivity and value added in the manufacturing sector.
3. Inflation (INF). Maintaining low and stable inflation should remain a key macroeconomic priority through stronger monetary-fiscal coordination and improved supply-side measures, particularly raw material and industrial energy availability, as inflationary pressures are shown to weaken manufacturing performance.

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