



The Effect of Investment and Labor on Economic Growth in Banten Province

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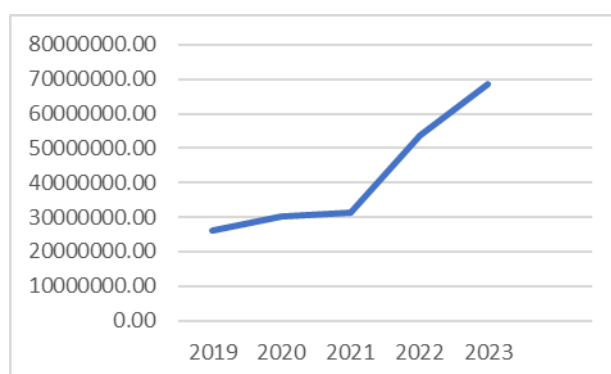
Abstract: This research seeks to assess the effect of investment and labor on economic growth in Banten. The independent variables in this study are investment and labor, while the dependent variable is economic growth, which is proxied by Regional Gross Domestic Product data based on constant prices. The research method used is a quantitative approach with multiple linear regression analysis. The data used is secondary data obtained from the Banten Province Central Statistics Agency (BPS) for the period 2012-2023. The findings reveal that both labor and investment have a positive impact on economic growth in Banten. This can be reflected in the increase of total investment realization in Banten, which reached approximately IDR 103.85 trillion in 2023, consisting of IDR 65.88 trillion from foreign direct investment and IDR 37.97 trillion from domestic investment. Alongside the rise in investment activity, Banten's economic growth rate reached 4.81% in 2023, supported by the expansion of employment opportunities and productive economic sectors.

Keywords: Investment, Labor, Economic Growth

Introduction

The province of Banten is one of Indonesia's strategic provinces, located close to DKI Jakarta and serving as an important industrial area on the island of Java. Since its separation from West Java Province in 2000, Banten has shown rapid economic development, contributing significantly to the national gross domestic products ([Arum & Aminda, 2023](#)). Economics growth served as an key parameter for evaluating the achievement of regional development goals, as it reflects increases in production capacity and community welfare ([Kuznets, 1971](#)).

Regional economics growth was generally influenced by many various factors, among them namely investment and labor ([Mawadda et al., 2025](#)). In classical and neoclassical economic growth theory, capital accumulation and an increase in the labor force are the main determinants of output growth ([Solow, 1956](#)). The growth model proposed by Robert Solow in the Solow Model emphasizes the importance of physical capital accumulation and labor force growth at determining the long-term output level of a region. In the regional context, investment acts as a source of capital formation that can increase production capacity and create a multiplier effect on other sectors ([Mankiw et al., 1992](#)).



Picture 1. Development of investment in Banten Province 2019-2023

Investment in Banten Province originating from domestic and foreign sources during 2019 to 2023 has consistently increased from year to year ([Aisyah & Santosa, 2024](#)). The increase in investment in the manufacturing and infrastructure sectors is believed to be able to drive job creation and increase the economic value added of the region (Keynes, 1936). However, high investment growth does not always automatically lead to optimal economic growth if it is not supported by adequate labor quality and productivity ([Asrinda & Setiawati, 2022](#)).

Labor is a central production factor role in the economic development process ([Anwar, 2017](#)). A large labor force can be a potential for growth if it is absorbed in productive economic activities ([Asrahmaulyana, 2022](#)). Conversely, if it is not optimally absorbed, it can lead to unemployment, which actually hinders growth ([Salsabila & Amri, 2023](#)). Therefore, the attachment between labor and economic growth is not only determined by quantity, but also by the level of participation and productivity ([Becker, 1993](#)). A skilled workforce that meets market needs is a central element in driving knowledge-based economic growth ([Acemoglu & Autor, 2012](#)).

Previous studies have shown investment contributes positively and also significantly to economics growth, while labor also contributes to regional output growth ([Fauzi & Suhaidi, 2022](#)). However, research results in various regions show differences in impact, depending on the economic structure and characteristics of the region ([Setiawati & Imamah, 2023](#)). This raises the need for specific research in Banten Province to evaluate the role of labor and investment in promoting regional economic growth ([Setiawati, 2020](#)).

On this basis, it can be stated this reserch goals is to analyze the individual and combined affect of investment and labour on economiic growth in Banten. The findings of this research are considered likely to contribute in terms of academic knowledge and provide policy recommendations for local governments in improving economic development performance.

Research Method

A quantitative approach is applied in this study by utilizing secondary data obtained in the form of yearly time series data. Data in question were collected from authorized statistical publications issued by the Badan Pusat Statistik (BPS) of Banten during the 2012–

2023 period. The utilization of secondary data in this research is designed to obtain measurable and systematic information related to economic conditions in Banten Province over time. The quantitative approach was selected because it enables the researcher to assess the correlation between variables objectively through statistical measurement and numerical interpretation ([Sugiyono, 2022](#)).

The core objective of this analysis is to investigate and analyze the influence of Investment (X1) and Labour Force (X2) on Economic Growth (Y) in Banten Province. Economic growth in this study is represented by Gross Regional Domestic Product (GRDP), which is commonly used as an indicator to measure regional economic performance and production capacity. Meanwhile, the investment variable consists of realized investment activities originating from both domestic and foreign sources, whereas the labor variable is represented by the number of employed workers in Banten Province.

The data interpretation process technique adopted in this study is multiple linear regression analysis. This method is considered appropriate because it allows the researcher to assess the influence of more than one independent variable on a dependent variable simultaneously ([Creswell & Creswell, 2017](#)). In addition, multiple linear regression can identify the direction and magnitude of the correlation among investment, labor, and economic growth. To assist the accuracy of the analysis, the study also applies several classical assumptions tests, namely the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. These tests are conducted to confirm the data used meets the required statistical assumptions required for producing unbiased and reliable estimation results ([Ghozali, 2021](#)).

Furthermore, the data processing and statistical calculations in this research were carried out using EViews 12 software. The use of EViews facilitates data estimation, hypothesis testing, and interpretation of regression results more effectively and systematically. The model of regression used in this research is arranged as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

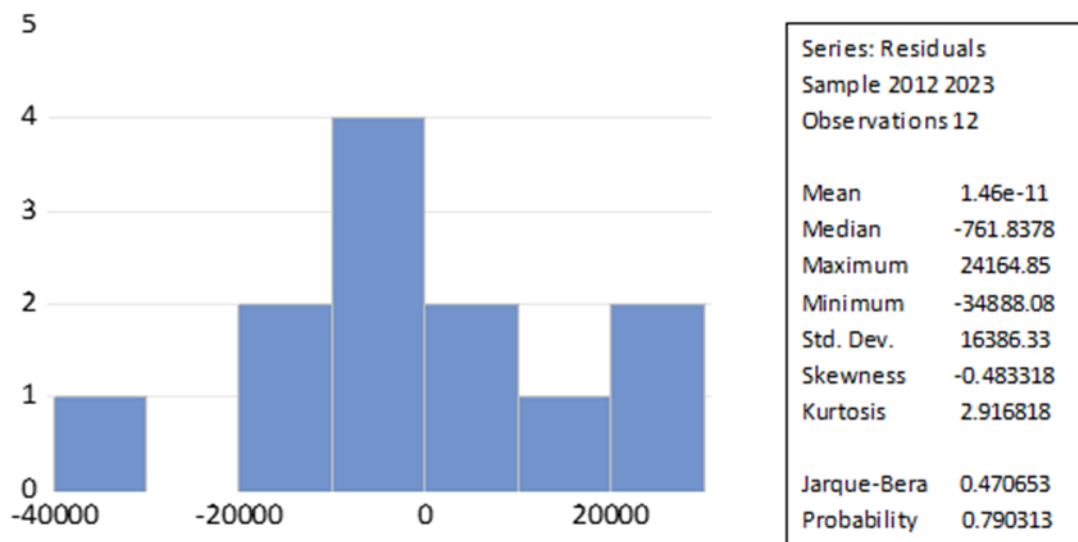
Description:

1. Y = Economic Growth (GRDP)
2. X₁ = Investment
3. X₂ = Labor
4. β₀ = Constant
5. β₁, β₂, = Regression coefficients for each independent variable
6. ε = residual

Result and Discussion

Normality Test

Picture 2. Output Normality Test



Test results shown the estimated Jarque-Bera probability value is 0.790313 ($0.790313 > 0.05$). The findings indicate that data have passed normality test and show a normal distribution pattern.

Multicollinearity Test

Table 1. Output *Multicollinearity Test*

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
X1	2.00E-07	12.00213	1.104545
X2	171.1341	171.9369	1.104545
C	4.27E+09	156.1814	NA

Multicollinearity test shown the VIF value of X1 and X2 is 1,104545. Both independent variables have VIF values are below 10, indicating there is not multicollinearity problems exists in the regression model.

Autocorrelation Test

Table 1.
Autocorrelation Test

F-statistic	0.493880	Prob. F(2,7)	0.6300
Obs*R-squared	1.483909	Prob. Chi-Square(2)	0.4762

It can be seen in the autocorrelation test output that the value of the Chi Square Probability is 0.4762, where $0.4762 > 0.05$. With the available results, the regression model tested passes the autocorrelation test.

Heteroscedasticity Test

Table 2.
Heteroscedasticity Test

F-statistic	4.617219	Prob. F(5,6)	0.0448
Obs*R-squared	9.524590	Prob. Chi-Square(5)	0.0899
Scaled explained SS	5.134755	Prob. Chi-Square(5)	0.3997

Heteroscedasticity test shows that the value of ChiSquare Probabbility is 0.0899, the value is higher than 0.05 ($0.0899 > 0.05$). The result indicating that the data used are free from heteroscedasticity problems.

Determination Coefficient Test (R2)

Table3.
R2 (determination coefficient test)

R-squared	0.934648
Adjusted R-squared	0.920125

The output presented in Tabel 4 above can be understanding as follows. Value of the R-squared resulting from the coefficient of the determnation test is 0.934648 or 93.4648%. The result indicates that economicc growth (Y) can be described by 93.4648% by the independent variabels studied.

F Test (Simultaneous)

Table 4.
Output F Test

F-Statistic	64.35769
Prob (F-Statistic)	0.000005

In Table 5 above, the findings of the Ftest shows that the Prob (F-statistic) values is 0.000012, wich is les than 0.05 ($0.000012 < 0.05$). Therefore, that may be inferred that investment variable (X1) and the labor variable (X2) simulltaneously has a significants influence on economic growth in Banten Province.

t-test (Partial)

Table 5.
Output T Test

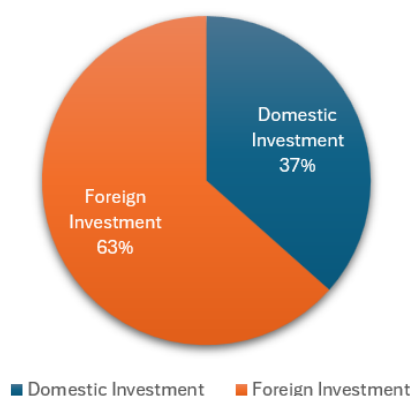
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-291511.7	65355.32	-4.460413	0.0016
X1	0.001232	0.000447	2.755163	0.0223
X2	125.9026	13.08182	9.624237	0.0000

1. Since the significance values of 0.0223 is below 0.05, invesment is shown to exert a positive also statistically significant partial influence on economic growth.
2. Since the significance value of 0.0000 is below 0.05, labour is shown that has a positive and statistically significant partial influence on economiic growths.

The Effect of Investment on Economic Growth

Based on the regression analysis investment is found to have a positive and significant afet on economic growth in Banten during the 2012–2023 observation period. The significance of this relationship is showed by the Prob. values of 0.0223, whereby lower than the predetermined significance level threshold of 0.05. These results imply that increases in investment activity tend to encourage higher levels of regional economic growth. In practical terms, greater investment realization contributes to the expansion of production capacity, business activities, and regional income generation in Banten Province. Investment also serves an important function in supporting industrial development, enhancing infrastructure, and stimulating economics productivity across various sectors. Murti & Sahara (2019) found that Domestic and also foreign investment provide positive contributions to local economic growth in Indonesia especially Banten. The study also explains that investment drives production and regional development (Murti, 2019). Yuliadi (2020) also noted that this study indicates that foregn investment and local investments has a positive and significant affect on Regional Gross Domestic Products (Yuliadi, 2020).

Banten Province Investment Data 2023



The positive contribution of investment to economic growth can also be observed from the actual economic performance of Banten Province in recent years (Yuliana et al., 2019). In 2023, the total realized investment in Banten reached approximately IDR 103.85 trillion, consisting of around IDR 65.88 trillion from foreign investment and IDR 37.97 trillion from domestic investment. The dominance of foreign investment indicates that Banten remains an attractive destination for investors due to its strategic location, industrial concentration, and economic potential (Rusmiati et al., 2026). The increase in investment realization was followed by stronger economic activity, reflected in Banten's economic growth rate of 4.81% in 2023.

Based on the 2023 investment realization data, investment activities in Banten were dominated by foreign investment, which accounted for more than half of the province's total investment value. This condition indicates that Banten remains an attractive destination for foreign investors due to its strategic industrial areas, well-developed infrastructure, and proximity to Jakarta as Indonesia's main economic center.

The dominance of foreign investment contributed significantly to industrial expansion, job creation, and the improvement of productive economic sectors within the province (Kouladoum, 2024). At the same time, domestic investment also played an crucial function in strengthening local economics activities by means of the development of domestic businesses and regional production capacity (Soegoto et al., 2025). The combination of increasing investment realization and labor absorption supported Banten's economic growth, which reached 4.81% in 2023.

The Effect of Labor on Economic Growth

The regression analysis findings reveal that the labor variable positively and significantly influences economics growth in Banten Province during the 2012–2023 period. This is supported by the Prob. values of 0.0000, wich is below the established significances levels of 0.05. The findings indicate that a rise in labor force is associated with higher economic growth. This suggests that the larger the labor force, the greater its contribution to the economic output of Banten Province. In addition, the growth in labor availability enhances production capacity, thereby encouraging an increase in regional economic performance.

Labor is forms part of the important determinants of economic activities in Banten (Sodik & Iskandar, 2007). In 2023, the province recorded around 6.1 million employed individuals, indicating that a substantial share of the productive residents was actively involved in various economic sectors such as manufacturing, trade, transportation, and services. The Labor Force Participation Rate (LFPR) of 64.55% also reflects the relatively strong participation within the labour market among the working age population. In addition, the total workforce stands at 5.5 million people, reflecting the large number of workers capable of driving the economy.

The availability of labor contributes to higher production capacity and supports business operations across industries. As more workers are absorbed into productive sectors, regional output and household income tend to increase, which can stimulate broader economic activity. Although the unemployment rate in Banten remained at 7.52%, the labor sector still showed a positive contribution to regional economic performance through workforce participation and employment expansion.

Conclusion

The outcomes of this research indicate that both investment and labor exert a positive and significant influence on economics growth in Banten during the 2012–2023 period. As indicated by the regression analysis, the investment variable showed a significant values of 0.0223, which is lower than the required level of 0.05, indicating that investment contributes positively to regional economics growth. This outcomes is supported by the realization of investment in Banten in 2023, which reached approximately IDR 103.85 trillion, consisting of IDR 65.88 trillion in Foreign Investment and IDR 37.97 trillion in Domestic Investment. In addition, the labour variables also demonstrated a significant and positive influence on economics growth, as reflected in the employment condition of Banten in 2023, where the number of employed people reached around 6.1 million workers with a Labor Force Participation Rate (LFPR) of 64.55%. These conditions contributed to Banten's economic growth rate of 4.81% in 2023, indicating that increases in investment realization and labour absorption greatly influences in improving regional economic performance.

Based on these findings, the government of Banten is expected to continue improving the investment climate through infrastructure development, business licensing simplification, and policies that encourage both domestic and foreign investment. At the same time, efforts to improve labor quality via education, vocational training, and workforce skill development need to be strengthened to increase productivity and employment opportunities. that is recommended for the future studi to examine additional variables such as government expenditure, technological development, inflation, exports, or human capital so as to deliver broader of the determinants of economic growth. Further studies may also use longer observation periods or comparative analysis across provinces to obtain more comprehensive results.

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