Factors Affecting Investment in the Provinces of Sumatra Island

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Abstract. This study aims to examine the factors that influence investment in 10 provinces of Sumatra Island. The methodology used is a quantitative method with the approach of Multiple Linear Regression Model. The data used are panel data, namely cross-sectional data from 10 provinces and time series data for 16 years from 2006-2021 with a total of 1,120 samples. The independent variable (X) is gross regional domestic product, economic openness, inflation, labor, minimum wages, and economic growth, while the dependent variable (Y) is investment. The termination coefficient was 0.866, meaning that 86.6% of the variation in the dependent variable was obtained while the remaining 13.4% was caused by other factors. From hypothesis testing, it can be concluded that the independent variables, namely gross regional domestic product, economic openness, inflation, labor, minimum wages, and economic growth both together and individually have a significant effect on investment.

Keywords: GDP; economic openness; inflation; labor; minimum wage; economic growth; investment

1 Introduction

The community's investment activities will continuously increase monetary movement, open positions, public pay, and local area government assistance. The following three essential roles underpin this position: 1) Because investment is one part of total expenditure, an increase in investment will raise total demand, national income, and employment opportunities; (2) Production capacity will rise as a result of an increase in capital goods brought about by investment; (3) Technological advancements always precede investment. [1]

Limited resources for development are the issue in developing nations. As a developing nation, Indonesia needs a lot of money to do national development. According to Gross Fixed Capital Formation (PMTB), foreign direct investment (PMA) and domestic investment (PMDN) are two potential sources of financing. Indonesia's Sumatra Island is the 6th biggest island on the planet. After Java Island, Sumatra Island became a financial growth engine.

Sumatra is an island in the Western Region of Indonesia. This region is made up of ten provinces: Aceh, North Sumatra, West Sumatra, Riau, the Riau Islands, South Sumatra, Bangka Belitung, Jambi, Bengkulu, and Lampung are the locations in Indonesia. The island of Sumatra is in the Western Region. The contribution of the Gross Regional Domestic Product in the Western Region of Indonesia which includes Sumatra, Java and Bali reaches 80 percent of the

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total Gross Domestic Product (GDP) of Indonesia, so Sumatra Island is one of the islands that supports the Indonesian economy.

Investment behavior in Indonesia is not in line with what is expected. This is due to the high investment risk, such as problems regarding legal uncertainty and security to the complexity of the licensing bureaucracy to invest in the regions. The growth of investment can be influenced by a variety of factors, which in turn can influence the economic growth of a nation as a whole and of its regions in particular. In most economic development initiatives, investment is the initial step. The elements of speculation influences the degree of financial development and mirrors the enthusiasm for advancement. Each region aims to create a climate that encourages investment in order to boost the economy. The factors that influence investment in the provinces of Sumatra Island will be investigated in light of the preceding description.

2 Literature Review

Investation

The purpose of purchasing capital goods and production equipment is to replace or, more specifically, to add capital goods to the economy that will be used to produce goods and services in the future. These are called investments. According to the classical theory that investment is an expenditure intended to increase the ability of society to increase production. So investment is an expenditure that will increase the number of means of production in society which in turn will increase income, so that GDP increases.

Gross Regional Domestic Product (GDP)

Regional Economic Growth is measured using Gross Regional Domestic Product (GDP). The totality of all goods and services obtained from all economic activities carried out by the region is called GDP. GDP is the total amount spent on domestically produced goods and services, or the total amount of money earned by all owners of domestic production factors, while GRDP is the total amount spent on domestically produced goods and services. [2]

Economic Openness

Trade openness is an activity in exporting goods and services abroad and importing goods and services from abroad. According to Tadaro and Smith, trade openness is a form of openness in the economy whose activities are carried out together with foreign parties through import activities. Divide the total value of a country's exports and imports by its gross domestic product to get a measure of its openness to international trade. [3]

Inflation

Inflation is a general and continuous increase in the price of goods and services. Inflation occurs due to the increase in the price of goods and the increase occurs continuously. From the definition, it can be understood why inflation is the main focus of macroeconomic analysis. Because the symptoms of inflation indicate the inefficiency of the economy as a whole. If not controlled quickly, inflation will suppress the economy's ability to produce due to weakening demand, especially the demand for people with low and fixed incomes. This has a great political impact, so that there is not a single normal/rational demand that does not care about the problem of inflation. [4]

Labor

The number of inhabitants in a country that is of working age (those between the ages of 15 and 64) and can create labor and products on the off chance that there is an interest for their work and on the off chance that they will take part in these exercises is alluded to as "labor." The workforce is comprised of all willing and able workers. This definition of labor includes those who work for themselves or family members without receiving payment in the form of wages, as well as those who are actually willing and able to work in the sense that they are forced to work because there are no job opportunities.[5]

Minimum wage

The minimum wage that entrepreneurs or players in the industry use to pay employees, employees, or laborers in their workplace is known as the provincial minimum wage or the regional minimum wage. In most cases, wage payments are made in cash. Wages are essentially a payment made by employers to employees in accordance with the approval or applicable laws and regulations for work that has been done or will be done. [6]

Economic growth

According to Kuznets, economic growth is the ability of a nation to provide more types of economic goods to its population over the long term. This ability grows as a result of technological advancements and adjustments to institutional and ideological structures. There are three components to this definition: First, expansion. The steady rise in the number of goods available reveals a nation's economy. Second, the degree of economic growth and the capacity to supply a variety of goods to the populace are both influenced by technological advancement. Thirdly, in order to properly utilize the innovations that result, widespread and effective use of technology necessitates adjustments in the institutional and ideological realms. [7]

3 Research Methods

This study employed the quantitative approach with multiple linear regression as the research method. The research was carried out in ten provinces on the Sumatran island. Panel data are used, which combine cross-sectional data from 10 provinces with time series data from 2006 to 2021. The samples that were observed were 1,120 samples. The independent variables (X) studied are GDP (X1), economic openness (X2), inflation (X3), labor (X4), minimum wage (X5), economic growth rate (X6), while the dependent variable (Y) is Investation. The regression model used in this study can be written as follows : [8]

$$\text{Log } \hat{Y} = \beta_0 + \beta_1 \text{Log } X1_{it} + \beta_2 \text{Log } X2_{it} + \beta_3 \text{Log } X3_{it} + \beta_4 \text{Log } X4_{it} + \beta_5 \text{ Log } X5_{it} + \beta_6 \text{Log } X6_{it} + e_{it} \quad (1)$$

4. Analysis and Discussion

Linear Regression Analysis Results

Table 1. The Influence of GDP, Economic Openness, Inflation, Labor, Wages Minimum, and Economic Growth on Investment in 10 Provinces Sumatra island

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.204764	0.533445	2.258458	0.0253
LOGX1	1.349898	0.041972	32.16208	0.0000
LOGX2	0.105981	0.039936	3.552164	0.0006
LOGX3	-0.034843	0.035859	-2.171642	0.0317
LOGX4	0.282370	0.078508	3.596701	0.0004
LOGX5	-0.056889	0.075558	-2.152910	0.0329
LOGX6	0.071132	0.025137	2.490094	0.0290

R-squared	0.866908	Mean dependent var	2.184476
Adjusted R-squared	0.815611	S.D. dependent var	0.452719
S.E. of regression	0.083954	Sum squared resid	1.078381
F-statistic	745.0884	Durbin-Watson stat	2.109530
Prob(F-statistic)	0.000000		

Source: Data processed Eviews 10

From table 1 the results of data processing, the regression model can be written as follows:

$$\text{Log } \hat{Y} = 1{,}2047 + 1{,}3498 \text{ Log } X1_{it} + 0{,}1059 \text{ Log } X2_{it} - 0{,}0348 \text{ Log } X3_{it} + 0{,}2823 \text{ Log } X4_{it} - 0{,}0568 \text{ Log } X5_{it} + 0{,}0711 \text{ Log } X6_{it} + e_{it}$$

From the multiple regression equation above, it can be interpreted as follows:

a. A constant of 1.2047 indicates that investment (Y) of 1.1961 is required if the variables GDP (X1), economic openness (X2), inflation (X3), labor (X4), minimum wages (X5), and economic growth (X6) are all worth zero.
b. Assuming the other independent variables have a fixed value, the GDP variable (X1) has a coefficient of 1.349, which indicates that investment (Y) will rise by 1.349 units for every one unit increase in GDP (X1).
c. Considering that the other independent variables have a fixed value and the coefficient of the economic openness variable (X2) is 0.1059, this indicates that every one unit increase in economic openness (X2) will result in a 0.1059 unit increase in investment (Y).
d. Assuming the other independent variables have a fixed value, the coefficient of the inflation variable (X3) is -0.0348, which indicates that investment (Y) will increase by 0.0348 units for every one unit decrease in inflation (X3).
e. Under the assumption that the other independent variables have a fixed value, the coefficient of the labor variable (X4) is 0.2823, which indicates that for every one unit increase in labor (X4), investment (Y) will increase by 0.2823 units.
f. The minimum wage variable coefficient (X5) is -0.0568, which indicates that every one unit decrease in the minimum wage (X5) will result in an increase in investment (Y) of 0.0568 units. This is because the other independent variables are assumed to have a fixed value.

g. The economic growth variable (X6) has a coefficient of 0.0711, which means that investment (Y) will rise by 0.0711 units for every one unit increase in economic growth (X6), as long as the other independent variables have a fixed value.

R^2 Test Results (Coefficient of Determination)

According to the results of the R2 Test (Coefficient of Determination) in Table 1, the R2 Square value of 0.866 indicates that variables such as GDP (X1), economic openness (X2), inflation (X3), labor (X4), minimum wage (X5), and economic growth rate (X6) account for 86.6 percent of the variation in investment value, while the remaining 13.4 percent is caused by variables that the model does not account for.

Hypothesis Test Results

Simultaneous hypothesis testing (Test F) in table 1 above the probability value of 0.0000 < 0.05, it means that Ho is rejected and Ha is accepted, meaning that the variable GDP (X1), economic openness (X2), inflation (X3), labor (X4), minimum wage (X5), economic growth rate (X6) together have an effect on investment in 10 provinces of Sumatra Island.

The probability values that were obtained from the t-test will be compared to the significant level, which is 5%, as shown in Table 1. Based on the previous findings, the following can be the explanation: A probability value was obtained from the GDP variable's t-test results of 0.0000 < 0.05, so it can be stated that GDP has a significant and significant effect on the investment value in 10 provinces of Sumatra Island. This means that the large GDP of a region will encourage investors to invest in regions that produce large and increasing Gross Regional Domestic Product as an indicator that economic activity in the area is running productively. This is in line with his research [9]

The economic openness variable's t-test results showed a probability value of 0.0006 0.05, indicating that economic openness has a significant impact on investment value in 10 provinces of Sumatra Island. Economic openness that shows an effect on investment provides the fact that the export and import factors carried out by a region or province greatly support the economic activities of the region, so that economic growth will also increase and will have an impact on increasing gross regional domestic product. Therefore, investment must be encouraged to continue to increase. This is in line with research [10]

The probability of the inflation variable's t-test results being 0.0317 0.05 indicates that inflation has a significant and significant impact on investment value in 10 provinces of Sumatra Island. Inflation which shows an effect on investment illustrates that inflation must be controlled at a reasonable level so that it will not interfere with economic activities, both to ensure that there is no continuous increase in prices, both prices for goods and services and prices of production factors. Theoretically, this inflation is a disturbing factor in economic activity [11]

The probability of the Labor variable's results from the t-test was 0.0004< 0.05, so it can be stated that Labor has a significant and influential effect on the investment value in 10 provinces of Sumatra Island. Labor is an important production factor in economic activities, especially production activities. Therefore, the workforce must have high productivity. Workers who have high productivity are influenced by the quality of the workforce. The quality of this workforce is related to the skills possessed by the workforce. Therefore, the local government must have a manpower development program [12]

A probability value of 0.0329 < 0.05 was obtained by the t-test for the minimum wage variable, indicating that the minimum wage has a significant impact on investment value in 10 provinces of Sumatra Island. Labor wages are closely related to labor income. The level of labor income will determine the welfare of the workforce and their families, therefore the wage level imposed in an area must be able to meet the basic needs of the workforce, so that workers can work safely and at the expected level of productivity. [13]

A probability value of 0.0290 < 0.05 was obtained by the t-test for the variable economic growth, indicating that economic growth has a significant impact on the value of investment in 10 provinces of Sumatra Island.. Economic growth describes the extent to which economic activity in an area can be measured by the level of gross domestic product produced by an area. High economic growth will attract investors to invest because it will be profitable, therefore local governments must continue to improve their economic growth so that investment flows will increase significantly. [14]

5 Conclusion

Based on hypothesis testing and discussion, it can be concluded that the variables of Gross Regional Domestic Product (GDP), Economic Openness, Inflation, Labor, Minimum Wage, and Economic Growth together and individually affect investment in 10 provinces on Sumatra Island.

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