

THE IMPACT OF REGIONAL GOVERNMENT EXPENDITURE AND INVESTMENT ON ECONOMIC GROWTH IN ACEH PROVINCE

Rahmatul Maula

Politeknik Negeri Lhokseumawe
rahmatul.mola@gmail.com

Diana

Politeknik Negeri Lhokseumawe

Indra Wijaya

Politeknik Negeri Lhokseumawe

ABSTRACT

This study aims to analyze the impact of regional expenditure and investment on economic growth in Aceh Province. The analysis employs a panel data regression method. The study population comprises all 23 regencies and cities in Aceh Province for the 2020–2024 period, with data obtained from Statistics Indonesia (BPS) and the Directorate General of Fiscal Balance (DJPPK). The results indicate that the Fixed Effect Model (FEM) is the most appropriate model, revealing that both regional expenditure and investment have a positive and significant effect on economic growth. This demonstrates that economic growth is driven not only by regional expenditure but also by the level of regional investment, highlighting the close interrelationship between these two variables in fostering economic growth in Aceh Province.

Keywords: Regional Expenditure, Investment, Economic Growth, Aceh.

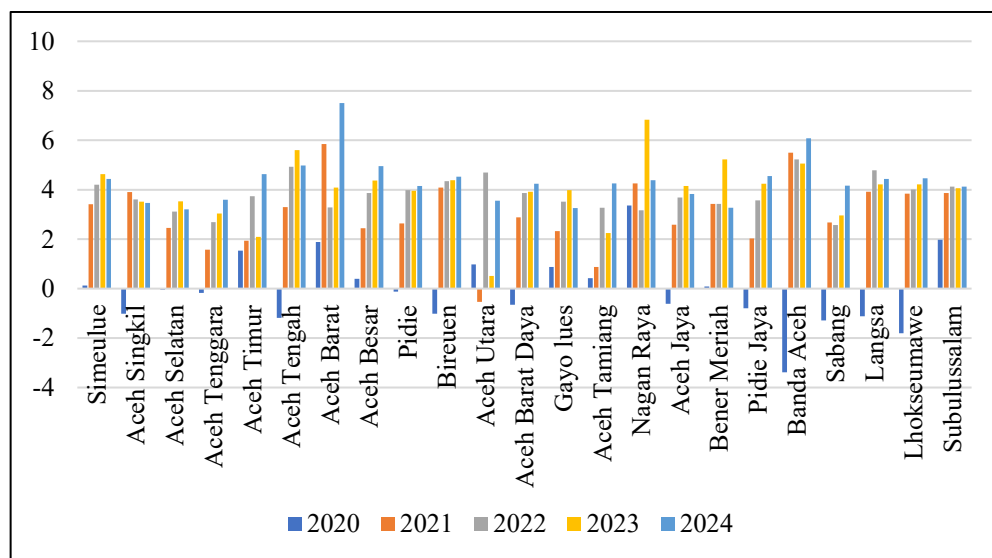
1. Background

Economic development is a process aimed at enhancing public welfare through increased productivity, structural economic changes, equitable income distribution, and the expansion of employment opportunities. Economic growth serves as a key indicator for assessing the success of economic development, reflecting the outcomes of government economic policy implementation. The growth rate acts as a macroeconomic indicator that gauges the extent of a region's development success over a specific period.

In the era of regional autonomy, economic growth has become a crucial indicator for evaluating the success of development implementation in each region. Regional governments possess broader authority to manage resources and formulate development policies tailored to their specific regional characteristics and potential. One significant instrument available to

regional governments for fostering economic development is regional expenditure. According to Law Number 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments, regional expenditure encompasses all disbursements from the Regional General Cash Account that reduce the excess budget balance within a single fiscal period and are non-recoverable.

Gambar 1 Economic Growth of Regencies/Cities in Aceh Province (Percent), 2020–2024



Source: Statistics Indonesia (BPS), 2026

The graph reveals that economic growth rates across the various regions fluctuated from year to year. In 2020, most regions exhibited relatively low growth rates due to the impact of the COVID-19 pandemic, which caused a slowdown in economic activity. However, in the subsequent years—particularly from 2021 to 2024—economic growth in most regions improved. Several areas, such as West Aceh, Nagan Raya, Banda Aceh, and Sabang, began to experience growth and demonstrated higher rates compared to other regions.

Regional government expenditure serves as a fiscal instrument used by local governments to conduct administrative functions, develop infrastructure, provide public services, and empower the community. Theoretically, an increase in regional expenditure is expected to generate a multiplier effect on the local economy. However, a large allocation of regional expenditure does not always translate into increased economic growth if the

funds are not utilized effectively and productively.

In addition to regional expenditure, investment plays a crucial role in driving economic growth. Investment involves the allocation of capital to enhance future production capacity. In this study, investment is proxied by Gross Fixed Capital Formation (GFCF), as this metric reflects the creation of fixed assets used in the production process. Increased investment is expected to expand employment opportunities, boost productivity, and stimulate economic activity, ultimately contributing to economic growth.

Aceh Province possesses significant economic potential supported by natural resources, a strategic geographical location, and various key sectors—such as agriculture, fisheries, trade, mining, and services. This potential serves as a vital asset for driving economic growth and regional development. Consequently, the Aceh Provincial Government continues to strive to optimize development through the effective allocation of regional expenditure and the promotion of increased investment.

The relationship between regional government spending, investment, and economic growth can be explained through Keynesian theory and the Harrod-Domar growth model. According to Keynesian theory, an increase in regional government spending can boost aggregate demand, thereby driving up output and economic growth. Meanwhile, the Harrod-Domar model posits that investment plays a role in capital formation, which enhances production capacity and economic activity.

Najmi et al. (2022) found that government spending has a positive and significant effect on economic growth in Aceh. Conversely, the labor force showed no significant effect, while investment had a negative and significant impact on economic growth. These findings indicate that while government spending drives economic growth, investment has not yet contributed optimally to that growth. Furthermore, another study—involving a more complex set of variables, namely regional government spending, Domestic Direct Investment (PMDN), and Foreign Direct Investment (PMA) in relation to economic growth in Java—demonstrated that regional government spending has a positive and significant impact on economic growth. PMDN and PMA were also found to have a significant effect on economic growth. Collectively, regional government spending, PMDN, and PMA exert a significant influence on economic growth (Saputri & Ananda, 2023).

Empirical evidence from Aceh Province reveals fluctuations in economic growth from year to year. Meanwhile, the government continues to increase regional spending allocations and encourage investment—proxied by

Gross Fixed Capital Formation (GFCF)—in an effort to accelerate economic growth. However, these increases in regional spending and investment have not yet been accompanied by stable economic growth.

3. Research Methodology

This study employs a quantitative approach with an associative research design. This approach is used to analyze the impact of regional government expenditure and investment on economic growth in Aceh Province. The study utilizes panel data, which combines time-series and cross-sectional data. The time-series data covers the observation period from 2020 to 2024 and encompasses all 23 regencies and cities in Aceh Province, resulting in a total of 115 observations.

This study relies on secondary data obtained from official institutions. Data on regional government expenditure were sourced from the Directorate General of Fiscal Balance (DJPK) and Statistics Indonesia (BPS). The independent variables in this study are Regional Government Expenditure (X1) and Investment (X2), while the dependent variable is Economic Growth (Y). Regional government expenditure is measured by the total realized expenditure, and investment is proxied by Gross Fixed Capital Formation (GFCF); both variables were transformed into natural logarithms (Ln) to minimize scale disparities and improve estimation results. Economic growth is measured using the percentage growth rate of Gross Regional Domestic Product (GRDP) at constant prices.

The panel data regression model used in this study is formulated as follows::

$$PE_{it} = \alpha + \beta_1 \ln BD_{it} + \beta_2 \ln INV_{it} + e_{it}$$

Note:

PE_{it}	= Economic growth
A	= Constanta
$\ln BD_{it}$	= Natural logarithm of regional expenditure
$\ln IVT_{it}$	= Natural logarithm of Investment
i	= cross section
t	= time series
$\beta_1 \beta_2 \beta_3$	= Regression Coefficient
e	= error term

The selection of the best model is conducted through several tests: the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test. The

Chow Test is used to determine the best model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Subsequently, the Hausman Test is used to select the best model between the Fixed Effect Model (FEM) and the Random Effect Model (REM). If necessary, the Lagrange Multiplier Test is employed to determine the best model between the Common Effect Model (CEM) and the Random Effect Model (REM).

Hypothesis testing is carried out using the t-test to determine the partial effect of each independent variable on economic growth, the F-test to determine the simultaneous effect of regional expenditure and investment on economic growth, and the coefficient of determination (R^2) to measure the extent to which the independent variables explain the variation in the dependent variable. The significance level used in this study is 5% ($\alpha = 0.05$).

4. Research Results and Discussion

Descriptive statistics are used to provide an overview of the characteristics of the research variables, which consist of regional expenditure, investment, and economic growth. The results of the descriptive statistics are presented in the table.

Table 1 Descriptive Statistics

Statistic	Economy Growth	Regional Expenditure	Investment
Mean	3.013826	2403.243	2815.287
Median	3.570000	2158.000	2826.000
Maximum	7.720000	2763.000	2911.000
Minimum	-3.390000	2075.000	2711.000
Std. Dev.	1.989336	315.6203	58.00375
Observations	115	115	115

Source: Research Results (2026)

Based on Table 1 above, regional expenditure shows a mean value of 2,403.243, with a median of 2,158.000, a maximum of 2,763.000, and a minimum of 2,075.000. Investment shows a mean value of 2,815.287, with a median of 2,826.000, a maximum of 2,911.000, and a minimum of 2,711.000. Meanwhile, economic growth has a mean value of 3.013826, a median of 3.570000, a maximum of 7.720000, and a minimum of -3.390000. This variation arises from the uneven implementation of development programs and investment climates across the regions.

4.2 Panel Data Regression Analysis

The study's regression results, based on the Chow Test and Hausman Test, indicate that panel data regression using the Fixed Effect Model (FEM) is more appropriate than using the Common Effect Model (CEM) or the Random Effect Model (REM).

Table 2 Panel Data Regression Results

Variable	Coefficient t	Std. Error	t-Statistic	Prob.
X1_Belanja Daerah	0.563653	0.203237	2.773376	0.0067
X2_Investasi	33.18443	5.515898	6.016142	0.0000
C	-943.4254	156.1472	-6.041900	0.0000
Fixed Effects (Cross)				
Simeulue	23.18348			
Aceh Singkil	30.07557			
Aceh Selatan	7.861145			
Aceh Tenggara	14.90297			
Aceh Timur	-18.92451			
Aceh Tengah	-4.475906			
Aceh Barat	-18.16612			
Aceh Besar	-4.475906			
Pidie	-13.83338			
Bireuen	-12.56448			
Aceh Utara	-22.63135			
Aceh Barat Daya	-7.506623			
Gayo Lues	18.07378			
Aceh Tamiang	-4.475906			
Nagan Raya	-10.92481			
Aceh Jaya	9.255175			
Bener Meriah	-4.976780			
Pidie Jaya	14.64298			
Kota Banda Aceh	-23.16876			
Kota Sabang	21.71144			
Kota Langsa	1.855810			
Kota Lhokseumawe	-23.40644			
Kota Subulussalam	27.96861			

Effects Specification			
Cross-section fixed (dummy variables)			
Root MSE	1.521809	R-squared	0.384139
Mean dependent var			
var	2.916696	Adjusted R-squared	0.219910
S.D. dependent var	1.947670	S.E. of regression	1.720235
Akaike info criterion			
crit	4.112459	Sum squared resid	266.3288
Schwarz criterion	4.709183	Log likelihood	-211.4664
Hannan-Quinn criter.			
crit.	4.354666	F-statistic	2.339040
Durbin-Watson stat	2.037755	Prob(F-statistic)	0.002108

Source: Research Results (2026)

Based on the table above, the regression equation is as follows: $PE_{it} = -943.4254 + 0.563653 BD_{it} + 33.18443 INV_{it}$. The test results indicate a regional expenditure coefficient of 0.563653, implying that for every 1 billion rupiah increase in regional expenditure within a regency or city, economic growth increases by 0.563653 percent, assuming other variables remain constant. The probability value of 0.0067, which is less than 0.05 ($0.0067 < 0.05$), it demonstrates that this variable has a positive and significant effect on economic growth. Meanwhile, the investment coefficient of 33.18443 indicates that for every 1 billion rupiah increase in investment within a regency or city, economic growth increases by 33.18443 percent, assuming other variables remain constant. The probability value of 0.0000, which is less than 0.05 ($0.0000 < 0.05$), it demonstrates that this variable has a positive and significant effect on economic growth. The R-squared value is 0.384139, or equivalent to 38.41%. This indicates that the variables of regional expenditure (X_2) and investment (X_3) explain 38.41% of the variation in economic growth in Aceh Province, while the remaining 61.59% is explained by variables outside the research model.

Table 3 Negative Intercept Values for Regencies/Cities in Aceh Province

No.	Regency/ City	Intercept (Constant)	Regional Expenditure Coefficient	Investment Coefficient
1	Aceh Timur	-18.92451	0.563653	33.18443

2	Aceh Tengah	-4.475906	0.563653	33.18443
3	Aceh Barat	-18.16612	0.563653	33.18443
4	Aceh Besar	-4.475906	0.563653	33.18443
5	Pidie	-13.83338	0.563653	33.18443
6	Bireuen	-12.56448	0.563653	33.18443
7	Aceh Utara	-22.63135	0.563653	33.18443
8	Aceh Barat Daya	-7.506623	0.563653	33.18443
9	Aceh Tamiang	-4.475906	0.563653	33.18443
10	Nagan Raya	-10.92481	0.563653	33.18443
11	Bener Meriah	-4.976780	0.563653	33.18443
12	Kota Banda Aceh	-23.16876	0.563653	33.18443
13	Kota Lhokseumawe	-23.40644	0.563653	33.18443

Source: Research Results (2026)

The negative constant value in this model indicates that, when regional expenditure and investment variables are held constant, the region's fundamental characteristics tend to result in a relatively lower rate of economic growth compared to regions with a positive constant value. This suggests the presence of factors outside the research model that continue to influence regional economic growth.

Table 4 Positive Intercept Values for Regencies/Cities in Aceh Province

No.	Regency/ City	Intercept (Constant)	Regional Expenditure Coefficient	Investment Coefficient
1	Simeulue	23.18348	0.563653	33.18443
2	Aceh Singkil	30.07557	0.563653	33.18443
3	Aceh Selatan	7.861145	0.563653	33.18443
4	Aceh Tenggara	14.90297	0.563653	33.18443
5	Gayo Lues	18.07378	0.563653	33.18443
6	Aceh Jaya	9.255175	0.563653	33.18443
7	Pidie Jaya	14.64298	0.563653	33.18443
8	Kota Sabang	21.71144	0.563653	33.18443
9	Kota Langsa	1.855810	0.563653	33.18443
10	Kota Subulussalam	27.96861	0.563653	33.18443

Source: Research Results (2026)

The positive constant value in this model indicates that, when regional expenditure and investment variables are held constant, the region's fundamental characteristics tend to foster a relatively higher rate of economic growth compared to regions with a negative constant value. This suggests the presence of factors outside the research model that also contribute to boosting regional economic growth.

4.3 Partial Hypothesis Testing

Partial hypothesis testing in this study employs the t-test to determine whether or not each independent variable exerts an influence on the dependent variable.

Table 5 Partial Test Results (t-test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-943.4254	156.1472	-6.041900	0.0000
Belanja Daerah	0.563653	0.203237	2.773376	0.0067
Investasi	33.18443	5.515898	6.016142	0.0000

Source: Research Results (2026)

Based on the test results, the Regional Expenditure variable has a probability value of 0.0067, which is lower than the significance level of 0.05. This indicates that Regional Expenditure has a positive and significant effect on Economic Growth. The Investment variable (X_2) has a probability value of 0.0000, which is lower than the significance level of 0.05. This indicates that Investment has a positive and significant effect on Economic Growth.

4.4 Simultaneous Hypothesis Testing

Simultaneous testing (F-test) is conducted to determine whether all independent variables collectively influence the dependent variable.

Table 6 Simultaneous Test Results (F-test)

Hannan-Quinn		
criter.	4.354666 F-statistic	2.339040
Durbin-Watson stat	2.037755 Prob(F-statistic)	0.002108

Source: Research Results (2026)

Based on the test results above, the Prob(F-statistic) value is 0.002108, which is lower than the significance level of 0.05. This indicates that H_03 is rejected and H_{a3} is accepted, demonstrating that regional expenditure and

investment simultaneously have a significant effect on economic growth.

4.5 Discussion

Based on the partial hypothesis testing results, the Regional Expenditure variable has a probability value of 0.0067, which is lower than the significance level of 0.05. This indicates that H_{a1} is accepted and H_{01} is rejected; thus, it can be concluded that Regional Expenditure has a positive and significant effect on the economic growth of regencies/cities in Aceh Province.

These results indicate that increases in regional expenditure by regency/city governments can stimulate economic activity and contribute to regional economic growth. The regression coefficient of 0.563653 shows that for every 1 billion rupiah increase in regional expenditure, economic growth increases by 0.563653 percent, assuming other variables remain constant. These findings confirm that regional expenditure is an effective fiscal instrument for driving economic growth in Aceh Province.

Quantitatively, the Regional Expenditure regression coefficient of 0.563653 indicates a positive relationship between regional expenditure and economic growth. This means that when regional expenditure rises, economic growth tends to increase, assuming the investment variable remains constant. The probability value of 0.0067 indicates that the effect is statistically significant, as it is below 0.05. Thus, the research results not only demonstrate a positive relationship but also provide evidence that changes in regional expenditure have a statistically significant impact on the economic growth of regencies/cities in Aceh Province. The t-statistic value of 2.773376 further supports these results, showing that the Regional Expenditure coefficient differs significantly from zero.

The positive impact of regional expenditure on economic growth can be understood through the government's role as an economic agent in increasing public spending. Regional expenditure allocated for infrastructure development, public services, education, and health creates a multiplier effect on the regional economy. When the government increases development spending, it stimulates the production of goods and services, creates jobs, and boosts public income. This aligns with the concept that increased government spending stimulates economic growth by boosting public consumption and investment.

Theoretically, these research results are supported by John Maynard Keynes's Theory of Government Expenditure, which posits that government

spending is a crucial component of aggregate demand. Within the framework of Welfare State Theory, an increase in regional expenditure reflects the government's active role in providing public goods and services, thereby fostering improved welfare and economic growth. Furthermore, fiscal policy theory explains that expansionary fiscal policy—implemented through increased government spending—can stimulate economic growth, particularly during periods of economic slowdown. In the context of regional development, effective and efficient regional spending accelerates the achievement of economic development goals and enhances public welfare.

Additionally, Munawaroh (2023) found in her study in Lampung Province that regional expenditure has a positive and significant impact on economic growth. This result aligns with the findings of Najmi et al. (2022), which demonstrated that government expenditure positively and significantly influences economic growth in Aceh Province. These findings reinforce empirical evidence regarding the strategic role of regional expenditure in fostering economic growth at the regency/city level.

Furthermore, based on the partial hypothesis testing results, the Investment variable yielded a probability value of 0.0000, which is below the 0.05 significance level. This indicates that the alternative hypothesis (H_{a2}) is accepted and the null hypothesis (H_{02}) is rejected; thus, it can be concluded that investment has a positive and significant effect on the economic growth of regencies/cities in Aceh Province.

These results indicate that an increase in investment flowing into a region can stimulate economic activity and contribute to regional economic growth. Quantitatively, the Investment variable has a regression coefficient of 33.18443, demonstrating a positive relationship between investment and economic growth, assuming regional expenditure remains constant. The positive coefficient value indicates that an increase in investment tends to be accompanied by an increase in economic growth.

Meanwhile, a probability value of 0.0000 indicates that the impact of investment on economic growth is statistically significant at the 5 percent significance level. The t-statistic value of 6.016142 further indicates that the influence of investment on economic growth is statistically strong relative to the testing threshold employed. Thus, the research findings provide empirical evidence that investment is a contributing factor to the economic growth of regencies and cities in Aceh Province.

Theoretically, these findings are supported by the Neoclassical Economic Growth Theory proposed by Robert Solow, which posits that

investment is a primary driver of economic growth through increases in capital stock and physical capital accumulation. Within this theoretical framework, economic growth occurs when increased investment leads to expanded production capacity and higher output per capita. Additionally, the Harrod-Domar theory explains the vital role of investment in economic growth through the interrelationship of savings, investment, and output growth. In the context of regional development, investment flowing into regencies and cities stimulates economic growth by creating jobs, raising public income, and developing key economic sectors within the region.

The empirical link between investment and economic growth is further corroborated by various prior studies. Research by Rizky et al. (2016) demonstrated that both Domestic Direct Investment (PMDN) and Foreign Direct Investment (PMA)—whether analyzed individually or simultaneously—exert a positive and significant influence on provincial economic growth in Indonesia. Similarly, a study by Saputri & Ananda (2023) found that PMDN and PMA have a positive and significant impact on economic growth across all provinces in Java. Nurkodri et al. (2023) also established that domestic investment (PMDN) significantly affects the economic growth of regencies and cities in Jambi Province. In his study conducted in Sulawesi, Tajudin (2023) found that both PMDN and PMA have a positive and significant effect on Gross Regional Domestic Product (GRDP) per capita. Based on the results of the simultaneous hypothesis testing, the probability value ($\text{Prob}(F\text{-statistic})$) was found to be 0.002108, which is lower than the significance level of 0.05. This indicates that H_{a3} is accepted and H_{03} is rejected; thus, it can be concluded that Regional Expenditure and Investment simultaneously have a significant effect on the economic growth of Aceh Province. These results indicate that increasing economic growth cannot be achieved through a single factor alone but requires synergy between regional fiscal policy, implemented through Regional Expenditure, and an increase in investment flowing into the region.

The $\text{Prob}(F\text{-statistic})$ value of 0.002108 indicates that the probability of this relationship occurring by chance is very low and falls below the 5 percent significance level. Thus, regional expenditure and investment jointly exert a significant influence on economic growth. Furthermore, the $F\text{-statistic}$ value of 2.339040 demonstrates that the model as a whole is capable of explaining the relationship between the independent and dependent variables. These results show that the economic growth of regencies/cities in Aceh Province is linked not only to regional expenditure or investment in isolation but also to the

combination of these two variables within the research model.

The coefficient of determination (R^2) value of 0.384139 indicates that the two independent variables jointly explain 38.41% of the variation in economic growth, while the remaining 61.59% is explained by variables outside the research model, such as inflation, unemployment rates, human resource quality, and other external factors. This demonstrates that although regional expenditure and investment have a significant influence, other factors also play a role in shaping economic growth in Aceh Province.

The simultaneous influence of regional expenditure and investment on economic growth can be understood through the interplay between fiscal policy and the private sector in driving economic activity. Regional expenditure allocated for infrastructure development—such as roads, bridges, ports, and electricity—creates conditions conducive to investment by lowering logistics costs and enhancing regional accessibility. Conversely, incoming investment boosts public income, which in turn increases regional tax revenues and expands the government's fiscal space to increase development spending.

Keynesian theory posits that government spending and private investment are complementary components of aggregate demand that drive economic growth. Furthermore, within the framework of Welfare State Theory, well-targeted regional spending and investment create conditions that foster improved public welfare and inclusive economic growth. A combination of expansionary fiscal policy and a conducive investment climate generates strong synergy in driving regional economic growth.

The empirical relationship between regional spending, investment, and economic growth is further supported by various prior studies. Research by Rizky et al. (2016) demonstrates that Domestic Direct Investment (PMDN), Foreign Direct Investment (PMA), and capital expenditure simultaneously exert a positive and significant influence on provincial economic growth in Indonesia. Similarly, a study by Nurkodri et al. (2023) found that the General Allocation Fund (DAU), Revenue Sharing Fund (DBH), and domestic investment (PMDN) simultaneously have a significant impact on economic growth in Jambi Province. Saputri & Ananda (2023) also established that regional spending, PMDN, and PMA simultaneously have a positive and significant effect on economic growth in Java. In his study conducted in Sulawesi, Tajudin (2023) found that regional spending, PMDN, and PMA simultaneously exert a significant influence on Gross Regional Domestic Product (GRDP) per capita.

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