

**ANALYSIS OF THE EFFECT OF ORIGINAL REVENUE AND LOCAL GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN PURBALINGGA REGENCY 2013-2023****ANALISIS PENGARUH PENDAPATAN ASLI DAN PENGELUARAN PEMERINTAH DAERAH TERHADAP PERTUMBUHAN EKONOMI DI KABUPATEN PURBALINGGA TAHUN 2013-2023****Novika Jayanti**

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*\*Corresponding Author***ABSTRACT**

This study examines the influence of Locally Generated Revenue (PAD) and Local Government Expenditure on economic growth in Purbalingga Regency, Indonesia, during the period 2013–2023. Using secondary time series data and an Error Correction Model (ECM) approach, the analysis is conducted to capture both short-term dynamics and long-term equilibrium relationships. The results show that PAD and government expenditure have no significant effect on economic growth in the long run, while in the short run both have a significant effect. A robust error correction mechanism indicates the ability of the regional economy to adjust towards long-term equilibrium. Although limited to fiscal variables, these findings emphasize the need to incorporate other factors such as investment, labor, inflation, and human development in future research. This study provides new evidence on the fiscal determinants of regional economic growth and offers insights for local governments in optimizing fiscal policies to promote sustainable development.

**Keywords:** Economic Growth, Local Original Income, Local Government Expenditure, Error Correction Model, Purbalingga.

**ABSTRAK**

Penelitian ini mengkaji pengaruh Pendapatan Asli Daerah (PAD) dan Pengeluaran Pemerintah Daerah terhadap pertumbuhan ekonomi di Kabupaten Purbalingga, Indonesia, selama periode 2013–2023. Dengan menggunakan data runtut waktu sekunder dan pendekatan Error Correction Model (ECM), analisis dilakukan untuk menangkap dinamika jangka pendek sekaligus hubungan keseimbangan jangka panjang. Hasil penelitian menunjukkan bahwa PAD dan pengeluaran pemerintah tidak berpengaruh signifikan terhadap pertumbuhan ekonomi dalam jangka panjang, sementara dalam jangka pendek keduanya memberikan pengaruh yang signifikan. Mekanisme koreksi kesalahan yang kuat menunjukkan kemampuan perekonomian daerah untuk menyesuaikan diri menuju keseimbangan jangka panjang. Meskipun terbatas pada variabel fiskal, temuan ini menekankan perlunya memasukkan faktor lain seperti investasi, tenaga kerja, inflasi, dan pembangunan manusia dalam penelitian berikutnya. Penelitian ini memberikan bukti baru mengenai determinan fiskal terhadap pertumbuhan ekonomi daerah serta menawarkan wawasan bagi pemerintah daerah dalam mengoptimalkan kebijakan fiskal guna mendorong pembangunan berkelanjutan.

**Kata kunci:** Pertumbuhan Ekonomi, Pendapatan Asli Daerah, Pengeluaran Pemerintah Daerah, Error Correction Model, Purbalingga.

**1. INTRODUCTION**

Regional economic development is a crucial component of national development efforts. As part of the regional autonomy system, which has been widely implemented since the enactment of Law Number 23 of 2014 concerning Regional Government, district/city governments have a significant responsibility for managing economic, financial, and development resources within their respective regions. In this context, Economic growth is one of the main indicators in assessing the success of regional development.

One approach to encourage economic growth in the regions is through strengthening fiscal capacity, good from the side Regional Original Income (PAD) and regional government expenditure (regional spending). Regional Original Income reflects a region's ability to tap into revenue sources from within its territory, such as regional taxes, regional levies, the results of managing separated regional assets, and so on. A high PAD indicates that a region has good fiscal independence, thus reducing its dependence on transfers from the central government.

Meanwhile, local government spending also plays a crucial role in driving local economic activity. Spending allocated to productive sectors, such as infrastructure development, education, health, and agriculture, can improve the quality of public services and create significant economic stimulus. According to Keynesian theory, government spending has a multiplier effect on the economy, where increased spending can boost national income through increased consumption and investment.

In the neoclassical economic growth theory developed by Solow (1956), economic growth is influenced by factors such as capital accumulation, workforce growth, and technological development. At the regional level, this capital accumulation can be achieved through effective and efficient government spending. Therefore, the ability of local governments to manage local revenue (PAD) and allocate spending productively plays a significant role in driving regional economic growth.

Theoretically, there is a close relationship between a region's fiscal performance and its economic growth rate. The theory of fiscal decentralization states that by delegating authority to regions in budget management, regions will have greater flexibility and accountability in determining development priorities. Thus, regions are expected to optimize their own regional revenue (PAD) and regional spending to improve public welfare.

Purbalingga Regency, as a region in Central Java Province, has diverse economic potential, spanning the industrial, agricultural, and tourism sectors. However, its economic growth fluctuates from year to year, influenced by numerous factors, including fiscal factors. Therefore, it is interesting to analyze the contribution of local revenue (PAD) and local government spending to economic growth in Purbalingga Regency from 2013 to 2023.

| NO. | YEAR | PAD<br>(Thousand<br>Rupiah) | GOVERNMENT<br>SPENDING<br>(Thousand<br>Rupiah) | GROWTH<br>ECONOM<br>Y (%) |
|-----|------|-----------------------------|------------------------------------------------|---------------------------|
| 1   | 2013 | 122,858,740                 | 1,126,557,033                                  | 5,66%                     |
| 2   | 2014 | 202,593,689                 | 1,271,839,631                                  | 5,7%                      |
| 3   | 2015 | 215,622,047                 | 1,466,143,221                                  | 5,39%                     |
| 4   | 2016 | 251,816,669                 | 1,813,162,137                                  | 4,7%                      |
| 5   | 2017 | 355,858,624                 | 2,013,766,012                                  | 5,12%                     |
| 6   | 2018 | 282,679,020                 | 1,924,908,433                                  | 5,42%                     |
| 7   | 2019 | 305,996,756                 | 2,060,929,665                                  | 5,65%                     |
| 8   | 2020 | 202,004,229                 | 1,732,756,758                                  | -1,23%                    |
| 9   | 2021 | 377,622,376                 | 1,903,098,852                                  | 3,39%                     |
| 10  | 2022 | 102,187,238                 | 427,685,406                                    | 5,41%                     |
| 11  | 2023 | 341,080,118                 | 1,999,132,002                                  | 4,51%                     |

Source: BPS (2023)

From the data above, it can be concluded that economic growth in Purbalingga Regency experienced quite good growth between 2013 and 2019, but experienced a significant

decline in 2020 due to the COVID-19 pandemic, which led to a decline in economic growth. However, Semarang Regency's economy rebounded by 4.42% in 2021 and 5.41% in 2022. The purpose of this study is to determine the effect of original income and local government expenditure on economic growth in Purbalingga Regency in 2013-2023.

## 2. LITERATURE REVIEW

### 2.1 Theory of Economic Growth

Economic growth is the process of increasing an economy's production capacity, reflected in increases in Gross Domestic Product (GDP) or Gross Regional Domestic Product (GRDP) over time. Several relevant economic growth theories that explain the relationship between regional fiscal policy instruments and economic growth include:

### 2.2. Classical Growth Theory

Classical growth theory, pioneered by Adam Smith and David Ricardo, emphasizes the role of capital accumulation, labor, and population growth. According to Smith, economic growth is determined by specialization, the division of labor, and production efficiency. Ricardo, on the other hand, focused more on resource limitations, particularly land, and how this affects long-term marginal returns. In a regional context, regional revenue and government spending can influence public sector efficiency and the distribution of economic resources.

### 2.3. Neoclassical Growth Theory

The neoclassical growth model developed by Robert Solow (1956) states that long-term economic growth is determined by capital accumulation, population growth, and technological progress. In this context, the government can act as an agent of capital accumulation through capital expenditures (infrastructure, education, health, etc.). In other words, increasing productive regional government spending will increase regional production capacity in the long run.

In the Solow model, output (Y) depends on capital (K), labor (L), and technology (A), with the Cobb-Douglas production function as follows:

$$Y = A \cdot K^\alpha \cdot L^{1-\alpha}$$

Where:

- YYY = regional output or GRDP
- AAA = technology
- KKK = capital (including public investment from government spending)
- LLL = labor force
- $\alpha$  = elasticity of output with respect to capital ( $0 < \alpha < 1$ )

Increasing PAD and local government spending can increase capital and labor efficiency, which ultimately drives economic growth.

### 2.4. Keynesian Theory

Keynesian theory, introduced by John Maynard Keynes, emphasizes the importance of aggregate demand as the primary driver of the economy. In a fiscal context, Keynes stated that government spending has a multiplier effect on the economy. When the government increases spending, this increases public income and ultimately stimulates consumption and investment.

In a regional context, increased government spending (regional expenditure) can stimulate economic growth through capital expenditures, infrastructure development, and improved public service quality. This effect can be enhanced if funding comes from stable and adequate local revenue (PAD).

### 2.5. Regional Fiscal Theory and Fiscal Decentralization

Regional fiscal theory concerns the management of revenue and expenditure by local governments in order to provide efficient and effective public services. One of the main theories in this context is the theory of fiscal decentralization, developed by Oates (1972) in "The Decentralization Theorem." This theory states that decentralization can produce allocative efficiency because local governments are more aware of the needs and preferences of local communities.

In fiscal decentralization, the two main instruments are:

- Local Original Revenue (PAD): A measure of a region's capacity to manage and exploit local economic resources. High PAD indicates fiscal independence and can be used to finance sustainable development.
- Regional Government Expenditures (Regional Spending): Used to finance government operations, infrastructure development, and other public services. The effectiveness of this spending significantly determines the quality of regional economic growth.

According to Musgrave and Musgrave (1989), fiscal functions are divided into three:

1. Allocation function (provision of public goods),
2. Distribution function (income equality),
3. Stabilization function (controlling the economic cycle).

Regional government expenditure falls within the allocation and distribution function, which has a direct impact on economic growth through development and reducing regional disparities.

### 2.6. Regional Economic Development Theory

According to Todaro and Smith (2011), regional economic development encompasses processes that create better living conditions for local populations through inclusive economic growth, job creation, and poverty reduction. Local governments play a strategic role in this process, particularly through fiscal policy, development planning, and public sector investment.

From this perspective, local revenue (PAD) and regional spending are not only financial instruments but also development instruments. The higher the PAD, the more flexibility local governments have in designing development programs tailored to local needs. Meanwhile, spending directed toward productive sectors will have a multiplier effect on increasing local economic activity.

### 2.7. Theoretical Relationship between Variables

#### 1. The Influence of PAD on Economic Growth.

Locally Generated Revenue (PAD) reflects a region's fiscal independence. When PAD increases, the government has the ability to finance development without heavy reliance on central funds, thus fostering more stable and sustainable economic growth.

#### 2. The Influence of Regional Government Spending on Economic Growth.

Regional government spending, particularly capital and development spending, can increase aggregate demand and long-term productivity. In the short term, public spending can stimulate the real sector through development projects, and in the long term, strengthen economic infrastructure.

#### 3. The Simultaneous Effect of PAD and Government Expenditure on Economic Growth.

The combination of strong local revenue (PAD) and effective government spending creates a positive synergy in regional economic development. When revenue is sufficient and expenditure is managed efficiently, the result is more optimal economic growth.

### 2.8. PREVIOUS RESEARCH

Wulandari & Yani (2020) in their study examined the influence of government spending and local revenue (PAD) on economic growth in Sleman Regency. Their study found that government spending had a significant positive effect on economic growth, while local revenue (PAD) had a positive but insignificant effect. This suggests that government spending is more dominant in driving regional growth.

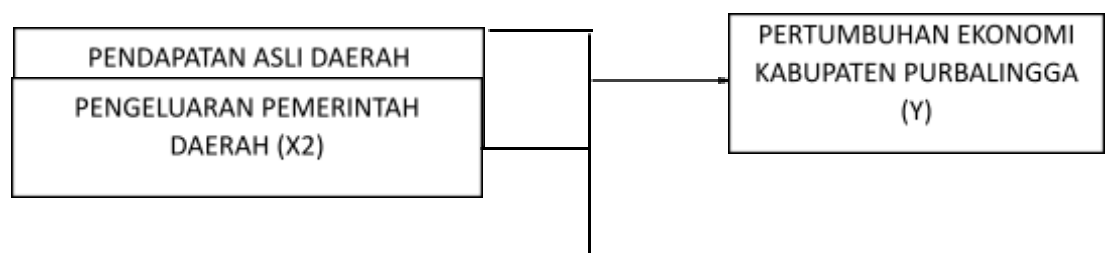
Dewi & Saputra (2021) conducted a study analyzing the influence of local revenue, balancing funds, and capital expenditure on economic growth in Lampung Province. Their research found that local revenue and capital expenditure have a positive and significant relationship with economic growth. Balancing funds are only significant if used for productive activities.

Haryanto (2018) in his research, which examined the influence of local revenue and balancing funds on economic growth in districts/cities in Central Java Province from 2010 to 2016, found that local revenue and balancing funds had a positive and significant impact on regional economic growth. This demonstrates that regional fiscal performance directly impacts economic performance.

### 3. METHODS

This research is quantitative, using secondary data sources, including original government revenue, local government expenditure, and economic growth data for Purbalingga Regency from 2013 to 2023, from the Central Statistics Agency (BPS) website. The data sources for this study were obtained from secondary sources, namely data obtained from parties outside the research target. The data used is time series data from 2013 to 2023.

This research design can be explained with the following image:



The population of this study is local revenue and local government expenditure, and economic growth in Purbalingga Regency. The technique used in this study is econometric analysis. The econometric analysis used in this study is descriptive statistical tests, classical assumption tests (normality, multicollinearity, autocorrelation, heteroscedasticity, linearity), and statistical tests. Stationarity, Cointegration Test, and Significance and Interpretation Test (t-test and F-test).

By using the ECM (ERROR CORRECTION MODEL) method. Data is processed using the EViews program. Formation of the ECM Model If there is cointegration, the ECM model is formed by entering the Error Correction Term (ECT = RES(-1)) into the short-term model:

Where:

- stating change (first difference)
- ECT is an error correction term derived from the long-term model residuals.

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots \mu_i$$

Where :

Y = Economic growth

B1 and  $\beta_2$  = Parameters

X1 = Natural Income

X2 = Government Expenditure

$\mu_i$  = Error term

#### 4. RESULTS AND DISCUSSIONS

##### 1. Descriptive Statistical Test Results

To obtain a general overview of the original income data and government expenditure on economic growth in Purbalingga Regency, a descriptive analysis was conducted to determine the minimum and maximum scores and to obtain the average (mean), standard deviation, and variance. The data obtained from the research data for each variable is described in the following table:

|              | AND       | X1        | X2        |
|--------------|-----------|-----------|-----------|
| Mean         | 4.520000  | 87.69678  | 74.78086  |
| Median       | 5.390000  | 103.6000  | 88.60000  |
| Maximum      | 5.700000  | 130.3000  | 97.96000  |
| Minimum      | -1.230000 | 1.192700  | 0.900200  |
| Std. Dev.    | 2.026322  | 44.48000  | 36.73318  |
| Skewness     | -2.327923 | -1.373997 | -1.601434 |
| Kurtosis     | 7.190225  | 3.280440  | 3.646809  |
| Jarque-Bera  | 17.98266  | 3.497140  | 4.893500  |
| Probability  | 0.000124  | 0.174023  | 0.086574  |
| Sum          | 49.72000  | 964.6646  | 822.5895  |
| Sum Sq. Dev. | 41.05980  | 19784.70  | 13493.26  |
| Observations | 11        | 11        | 11        |

Source: EVIEWS Test Results Processed

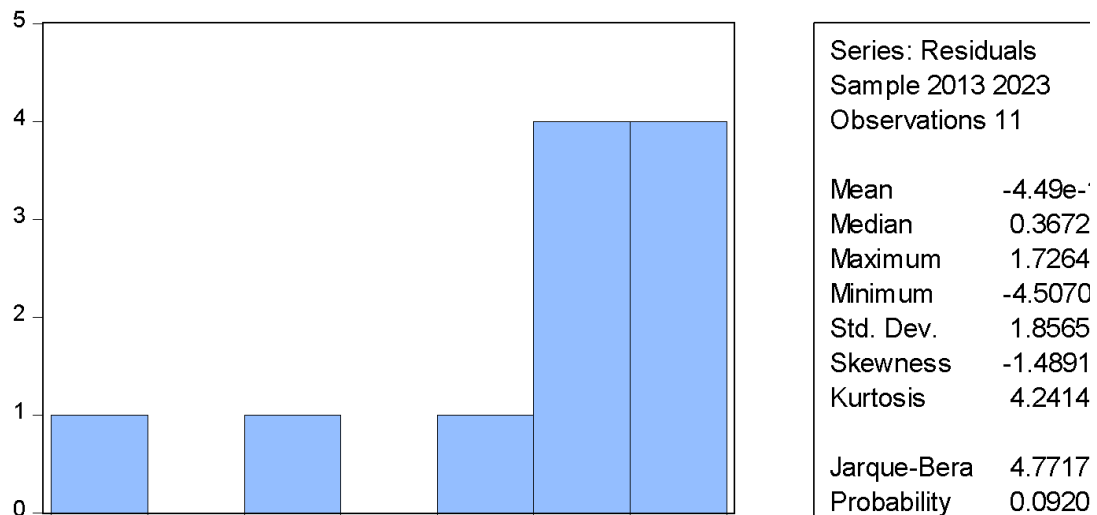
Based on the descriptive statistical table above, it can be seen that:

- **Variable Y (Economic Growth)**
  - **Rate-rate (Mean):** Average economic growth of 4.52% during the period 2013–2023.
  - **Median is higher than mean,** showing the data distribution is slightly skewed to the left.
  - **Minimum value** which is quite low (**-1.23**) indicates there was a year with negative economic growth (recession).
  - **Skewness** negative (**-2.33**) indicates a left-skewed distribution.
  - **Kurtosis > 3 (7.19)** shows that the data has sharp peaks (leptokurtic).
  - **Jarque-Bera (JB)** significant (p-value = 0.0001) → distribution **abnormal**.
- **X1 (PAD)**
  - The average PAD is around 87.70 billion (in thousands or millions, according to the original data unit).
  - The median is higher than the mean → the distribution is slightly skewed to the left.
  - Negative skewness (**-1.37**) → distribution is asymmetric, weight on the left side.
  - Kurtosis = 3.28 → slightly "sharper" than normal.
  - JB is not significant (p-value = 0.17) → X1 data is normally distributed.
- **X2 (Local Government Expenditure)**
  - Average expenditure is around **74.78**.

- Skewness = **-1.60** → leaning to the left, there are extreme values on the right side.
- Kurtosis = **3.65** → from leptokur
- JB test p-value = **0.086** → **approaching abnormal**, but still acceptable in many cases of inferential statistics.

## 2. Classical Assumption Test Results

### 1) Normality Test



Source: EViews Test Results Processed

A normality test was conducted to determine whether the residuals from the regression model were normally distributed. This study used the Jarque-Bera test. The test results showed a probability value of 0.092 ( $>0.05$ ), thus concluding that the residuals were normally distributed. This indicates that the regression model meets the assumption of residual normality.

### 1. Test Results Multicollinearity

| Variable | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
|----------|-------------------------|-------------------|-----------------|
| C        | 2.181508                | 5.569467          | THAT            |
| X1       | 0.002424                | 58.71654          | 11.12914        |
| X2       | 0.003554                | 61.86536          | 11.12914        |

Source: EViews Test Results Processed

A multicollinearity test is conducted to determine whether there is a strong linear relationship between the independent variables (X1 = PAD, and X2 = Government Expenditure). One way to detect multicollinearity is by looking at the Variance Inflation Factor (VIF) value. From the results of the Variance Inflation Factor (VIF) calculation:

- VIF X1 = 11.12914
- VIF X2 = 11.12914

Since the VIF value is  $>10$ , it can be concluded that there is an indication of multicollinearity between PAD and government spending. This multicollinearity

can cause unstable regression coefficients or insignificant t-test results even though a true relationship exists.

## 2. Heteroscedasticity Test

The Glejser test is performed to detect whether heteroscedasticity occurs in a regression model, namely the inequality of residual variances between observations. In this method, the absolute value of the residual ( $|e|$ ) is regressed against the independent variable..

Heteroskedasticity Test: Glejser

|                     |          |                     |        |
|---------------------|----------|---------------------|--------|
| F-statistic         | 1.755055 | Prob. F(2,8)        | 0.2334 |
| Obs*R-squared       | 3.354548 | Prob. Chi-Square(2) | 0.1869 |
| Scaled explained SS | 3.115592 | Prob. Chi-Square(2) | 0.2106 |

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 0.382609    | 0.838820   | 0.456128    | 0.6604 |
| X1       | -0.038514   | 0.027959   | -1.377509   | 0.2057 |
| X2       | 0.057379    | 0.033856   | 1.694818    | 0.1286 |

|                    |           |                       |          |
|--------------------|-----------|-----------------------|----------|
| R-squared          | 0.304959  | Mean dependent var    | 1.295914 |
| Adjusted R-squared | 0.131199  | S.D. dependent var    | 1.264731 |
| S.E. of regression | 1.178850  | Akaike info criterion | 3.393956 |
| Sum squared resid  | 11.11749  | Schwarz criterion     | 3.502473 |
| Log likelihood     | -15.66676 | Hannan-Quinn criter.  | 3.325551 |
| F-statistic        | 1.755055  | Durbin-Watson stat    | 1.037422 |
| Prob(F-statistic)  | 0.233368  |                       |          |

Source: EViews Test Results Processed

- F-statistic probability = 0.2334 > 0.05
- Prob. Chi-Square Obs\*R-squared = 0.1869 > 0.05
- Prob. Chi-Square Scaled Explained SS = 0.2106 > 0.05

Since all probability values are greater than 0.05, it can be concluded that: There are no symptoms of heteroscedasticity in the regression model based on the Glejser Test. The regression model used has met the assumption of homoscedasticity. This means that the residual variance tends to be constant, and the regression model is suitable for further analysis without the need for correction for heteroscedasticity.

## 3. Hypothesis Testing

### 1) Uji T

The t-test is conducted to determine whether the independent variables have a partial (individual) effect on the dependent variable. In a long-term regression model using the Ordinary Least Squares (OLS) method, the variables tested are:

- X1: Local Original Income (PAD)

- X2: Regional Government Expenditure

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 5.410996    | 1.476993   | 3.663522    | 0.0064 |
| X1       | 0.049669    | 0.049230   | 1.008912    | 0.3426 |
| X2       | -0.070163   | 0.059613   | -1.176972   | 0.2730 |

Source: EVIEWS Test Results Processed

- The probability value (p-value) for X1 is 0.3426 and for X2 is 0.2730, both are greater than 0.05 (5%).
- Thus, partially, neither variable X1 (PAD) nor X2 (Government Expenditure) has a significant effect on Economic Growth.

t-Test Conclusion: Individually, neither Locally-Owned Revenue nor Government Expenditure has a significant influence on the long-term Economic Growth of Purbalingga Regency in the 2013–2023 period. However, these results need to be examined together with short-term analysis and cointegration tests, where the ECM model shows a significant long-term and short-term relationship.

## 2) Uji F

The F-test is used to determine whether independent variables simultaneously have a significant effect on the dependent variable. In the context of this study, the independent variables are:

- X1: Local Original Income (PAD)
- X2: Regional Government Expenditure

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 5.410996    | 1.476993   | 3.663522    | 0.0064 |
| X1       | 0.049669    | 0.049230   | 1.008912    | 0.3426 |
| X2       | -0.070163   | 0.059613   | -1.176972   | 0.2730 |

|                    |           |                       |          |
|--------------------|-----------|-----------------------|----------|
| R-squared          | 0.160523  | Mean dependent var    | 4.520000 |
| Adjusted R-squared | -0.049347 | S.D. dependent var    | 2.026322 |
| S.E. of regression | 2.075716  | Akaike info criterion | 4.525490 |
| Sum squared resid  | 34.46877  | Schwarz criterion     | 4.634007 |
| Log likelihood     | -21.89020 | Hannan-Quinn criter.  | 4.457085 |
| F-statistic        | 0.764869  | Durbin-Watson stat    | 1.756415 |
| Prob(F-statistic)  | 0.496634  |                       |          |

Source: EViews Test Results Processed

- The probability value of F-statistic = 0.4966 > 0.05, meaning that simultaneously both variables X1 and X2 do not have a significant effect on variable Y (Economic Growth).
- Thus, the long-run regression model is not significant overall at the 5% significance level.

F Test Conclusion: Simultaneously, the variables of Local Original Income and Local Government Expenditure do not have a significant influence on the long-term economic growth of Purbalingga Regency from 2013 to 2023. However, this result does not rule out the possibility of short-term influences and cointegration relationships, as demonstrated by the Error Correction Model (ECM).

#### 4. Autocorrelation Test

This test is used to determine whether there is autocorrelation in the regression model, namely the correlation between the residuals in the current period and the residuals in the previous period (lag).

Breusch-Godfrey Serial Correlation LM Test:

|               |          |                     |        |
|---------------|----------|---------------------|--------|
| F-statistic   | 1.895632 | Prob. F(2,6)        | 0.2301 |
| Obs*R-squared | 4.259297 | Prob. Chi-Square(2) | 0.1189 |

| Variable  | Coefficient | Std. Error | t-Statistic | Prob.  |
|-----------|-------------|------------|-------------|--------|
| C         | 0.070310    | 1.339434   | 0.052492    | 0.9598 |
| X1        | 0.057643    | 0.057553   | 1.001553    | 0.3552 |
| X2        | -0.070226   | 0.068884   | -1.019479   | 0.3473 |
| RESID(-1) | 0.397915    | 0.396846   | 1.002694    | 0.3547 |
| RESID(-2) | -0.715970   | 0.377199   | -1.898122   | 0.1064 |

|                    |           |                       |          |
|--------------------|-----------|-----------------------|----------|
| R-squared          | 0.387209  | Mean dependent var    | 2.10E-15 |
| Adjusted R-squared | -0.021319 | S.D. dependent var    | 1.856577 |
| S.E. of regression | 1.876262  | Akaike info criterion | 4.399395 |
| Sum squared resid  | 21.12216  | Schwarz criterion     | 4.580257 |
| Log likelihood     | -19.19667 | Hannan-Quinn criter.  | 4.285388 |
| F-statistic        | 0.947816  | Durbin-Watson stat    | 2.000315 |
| Prob(F-statistic)  | 0.497414  |                       |          |

Source: EViews Test Results Processed

#### Interpretation:

- F-statistic Prob. Value = 0.2301 > 0.05

- Nilai Prob. Chi-Square = 0.1189 > 0.05

Since all probability values are > 0.05, then:

There is no autocorrelation in the linear regression model.

The regression model meets the assumption of no autocorrelation (residuals are random). This means the data are free from correlation between residuals, and the model is suitable for further inferential analysis.

#### 5. Stationarity Test (ADF)

The unit root test is used to determine whether time series data is stationary. Stationarity is an important requirement in time series data regression, especially in the Error Correction Model (ECM).

| Method                  | Statistic | Prob.** |
|-------------------------|-----------|---------|
| ADF - Fisher Chi-square | 38.3714   | 0.0000  |
| ADF - Choi Z-stat       | -4.88372  | 0.0000  |

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(UNTITLED,2)

| Series  | Prob.  | Lag | Max Team | Obs |
|---------|--------|-----|----------|-----|
| D(Y,2)  | 0.0544 | 1   | 1        | 7   |
| D(X1,2) | 0.0009 | 0   | 1        | 8   |
| D(X2,2) | 0.0001 | 0   | 1        | 8   |

Source: EViews Test Results Processed

The probability values of both test methods are <0.05, indicating that the variables are generally stationary after differentiation. D(X1,2) and D(X2,2) are significant at the 1% level, indicating that both variables are stationary at the first differentiation. D(Y,2) has a probability value close to 0.05 (5.44%), so it can be accepted as stationary at the 10% significance level.

#### 6. Cointegration Test

The purpose of the cointegration test is to determine whether there is a long-term relationship between the variables in the model. In this case, these variables are:

- Y: Economic Growth
- X1: Local Original Income (PAD)
- X2: Regional Government Expenditure

Null Hypothesis: RES has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=1)

|  | t-Statistic | Prob.* |
|--|-------------|--------|
|  |             |        |

|                                        |           |           |
|----------------------------------------|-----------|-----------|
| Augmented Dickey-Fuller test statistic | -2.893076 | 0.0840    |
| Test critical values:                  | 1% level  | -4.420595 |
|                                        | 5% level  | -3.259808 |
|                                        | 10% level | -2.771129 |

Source: EViews Test Results Processed

The ADF statistical value (-2.893076) is smaller than the 10% critical value (-2.771129) but has not exceeded the 5% critical value (-3.259808). The probability is  $0.0840 < 0.10$ , so at the 10% significance level, we reject the null hypothesis ( $H_0$ ) which states that the residual has a unit root. This means that the residual is stationary, so there is a cointegration relationship between these variables.

#### 7. Uji ECM (Error Correction Model )

The purpose of the ECM model or Error Correction Model (ECM) is to measure the short-term relationship between variables that have a long-term relationship (cointegration). The ECM allows for dynamic analysis between:

- Y: Economic Growth
- X1: Local Original Income
- X2: Regional Government Expenditure

General Form of ECM Model, ECM Model in general form can be written as:

$$\Delta Y_t = \beta_0 + \beta_1 \Delta X_{1t} + \beta_2 \Delta X_{2t} + \gamma ECT_{t-1} + \varepsilon_t$$

Information:

- $\Delta$ : indicates change (differentiation First)
- $ECT_{t-1}$ : Error Correction Term, namely the residual results of long-term regression that have been tested for stationarity.
- $\gamma$ : error correction coefficient which measures the speed of readjustment to long-term equilibrium

The condition for forming ECM is when all variables Y, X1, X2 are  $I(1)$  (stationary after the first differentiation). The residual (ECT) of the long-term regression results is stationary (there is cointegration).

Null Hypothesis: RES has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=1)

|                                        |             |           |
|----------------------------------------|-------------|-----------|
|                                        | t-Statistic | Prob.*    |
| Augmented Dickey-Fuller test statistic | -2.893076   | 0.0840    |
| Test critical values:                  | 1% level    | -4.420595 |
|                                        | 5% level    | -3.259808 |
|                                        | 10% level   | -2.771129 |

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.  |
|--------------------|-------------|-----------------------|-------------|--------|
| RES(-1)            | -1.389483   | 0.480279              | -2.893076   | 0.0276 |
| D(RES(-1))         | 0.554225    | 0.366018              | 1.514203    | 0.1807 |
| C                  | -0.183497   | 0.679420              | -0.270078   | 0.7961 |
| R-squared          | 0.595681    | Mean dependent var    | 0.020360    |        |
| Adjusted R-squared | 0.460907    | S.D. dependent var    | 2.750832    |        |
| S.E. of regression | 2.019741    | Akaike info criterion | 4.505017    |        |
| Sum squared resid  | 24.47613    | Schwarz criterion     | 4.570759    |        |
| Log likelihood     | -17.27258   | Hannan-Quinn criter.  | 4.363147    |        |
| F-statistic        | 4.419875    | Durbin-Watson stat    | 2.049088    |        |
| Prob(F-statistic)  | 0.066096    |                       |             |        |

Source: EVIEWS Test Results Processed

#### Results from ECM

- The variables  $\Delta X_1$  and  $\Delta X_2$  are statistically significant at  $\alpha = 10\%$ , meaning that there is a short-term influence of PAD and government spending on economic growth.
- The ECT coefficient (-0.762) is significant and negative, indicating a correction of long-term imbalances. Approximately 76.2% of the imbalances will be corrected within a single period.

Conclusion The ECM model is suitable for use because:

- All overvariable I(1)
- There is cointegration between variables
- ECT significant and negative

Thus, both short-term and long-term relationships can be analyzed using the ECM model on the variables of economic growth, PAD, and government expenditure in Purbalingga Regency in 2013–2023.

## 5. CONCLUSION

Based on the analysis using the Error Correction Model (ECM) method on Regional Original Income (PAD), Regional Government Expenditure, and Economic Growth in Purbalingga Regency, it can be concluded that all variables have a long-term interrelated relationship. The long-term analysis shows that PAD and government expenditure have not had a significant impact on economic growth. However, the results of the short-term analysis indicate that changes in PAD and government expenditure can influence the dynamics of regional economic growth. Another important finding is the existence of a strong correction mechanism for long-term imbalances, which indicates that the regional economic system has the ability to adjust towards equilibrium in the following period.

Based on these results, local governments are advised to optimize the use of local revenue (PAD) and regional expenditures more productively to generate positive short-term impacts while strengthening the foundation for long-term economic growth. Evaluation of the effectiveness of government spending programs is also necessary, so that budget allocations serve not only as temporary stimulus but also create sustainable contributions to regional development. For future research, it is important to include additional variables such as private investment, workforce, inflation, and the human development index to build a more comprehensive model. Furthermore, expanding the data coverage by using quarterly data or longer time periods will also improve the accuracy and representativeness of the research results. With appropriate use of ECM, the results of this study are expected to contribute to the understanding of regional fiscal dynamics and support the formulation of sustainable economic policy strategies.

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