Analysis of the Effect of Regional Original Revenue and Balance Funds on Gross Regional Domestic Product in Lombok Barat Regency in 2010-2022

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Abstract. Economic growth can detail many aspects of an economy. The purpose of this study was to analyze the effect of Regional Original Revenue and Balance Funds on Gross Regional Domestic Product in Lombok Barat Regency. This study uses descriptive research with a quantitative approach. The data collection technique used is literature study and documentation. The data used is secondary data from 2010-2022 obtained from the Central Bureau of Statistics and the Regional Financial and Asset Management Agency (BPAKD) of Lombok Barat Regency. The analysis method used in this research is multiple regression analysis with hypothesis testing using the classical assumption test, followed by a partial t test, a simultaneous f test, and a coefficient of determination ($R^2$) test with a significant level of 5%. The results of the econometric criteria test research in this study did not have classical assumption deviations. Based on partial and simultaneous tests, it shows that Regional Original Revenue and Balance Fund have a positive relationship and have a significant effect on Gross Regional Domestic Product in Lombok Barat Regency. As for the coefficient of determination ($R^2$) value of 98% is influenced by the amount of Regional Original Income and Balance Fund while the rest is influenced by other variables outside the model.

Keywords: Gross Regional Domestic Product, Regional Original Revenue, Balance Fund.

1. Introduction

Economic growth can detail many aspects of an economy [1]. By examining economic growth, we can quantitatively assess the advancement of a country or region’s economic level. Additionally, economic growth serves as an indicator to measure the success of economic development [2]. Economic development is crucial because the development process involves economic growth. Economic growth is expected to enhance the factors of production, thereby stimulating large-scale economic development. Stable economic growth impacts the increasing income of the population, ultimately aiming to improve community welfare [3], [4]. In the local government system, economic growth is indicated by an increase in the production of goods and services, measured by the Gross Regional Domestic Product (GRDP). This economic indicator reflects a region’s economic development performance. The Gross Regional Domestic Product represents the sum of the added value generated by all business sectors within a particular region or the total value of final goods and services produced by all economic units over a specific period [5]. To determine the rate of economic growth, GRDP at constant prices is used, showing the value added of goods and services of all economic units calculated using prices from a specified base year.

Regions with below-average economic growth rates include Lombok Barat, Lombok Tengah, Lombok Timur, and Lombok Utara. These four districts have an average economic growth rate below 4%, compared to the economic growth rate of the NTB province, and are categorized as underdeveloped regions [6]. Lombok Barat Regency, located in West Nusa Tenggara Province, exhibits an economic growth rate below the
provincial average, classifying it as a disadvantaged area. Despite its potential in various sectors, such as agriculture, mining and quarrying, construction, wholesale and retail trade, transportation and warehousing, provision of accommodation and food services, and government administration, defense, and social security, Lombok Barat Regency has not optimally utilized these resources. Consequently, its GRDP remains low compared to other districts/cities in West Nusa Tenggara Province [5].

According to data from the Central Bureau of Statistics, the GRDP of Lombok Barat Regency has experienced fluctuating trends over the past 12 years [7]. The GRDP at constant prices was 7,011.319 trillion rupiahs in 2010, which increased to 10,894.721 trillion rupiahs in 2019. However, it decreased to 10,123.598 trillion rupiahs in 2020, indicating a contraction of -7.08 percent due to the COVID-19 pandemic. In 2021, the GRDP at constant prices increased again to 10,472.207 trillion rupiahs, and in 2022, it further rose to 10,834.218 trillion rupiahs, resulting in an average economic growth rate of 3.76%. This indicates that the economic growth of Lombok Barat Regency remains low.

The economic growth of a region is fundamentally intertwined with the principle of regional autonomy. The central government grants regional autonomy to empower each region to manage its own affairs, including providing services to the community, implementing development initiatives, and fostering social, political, and economic stability, as well as national unity. As a result, regions are required to actively enhance their capabilities and independence by exploring and developing their economic resources to accelerate regional economic growth [8]. To meet community needs, the government aims to increase its financial capacity by boosting Regional Original Revenue (PAD).

According to Naraswari et al. [5], PAD plays a crucial role in regulating and managing regional finances and serves as a benchmark for implementing real, dynamic, and responsible regional autonomy. The size of PAD, as the main source of financing regional development activities, reflects a region’s ability to finance its needs. A greater proportion of regional needs financed by PAD indicates a higher ability of the region to support its activities independently. The increase in PAD, considered as capital, leads to positive externalities and accelerates economic growth [9].

The contribution of PAD to the APBD in Lombok Barat Regency from 2010-2022 has experienced fluctuating trends. This fluctuation is due to the significant and continuous increase in overall APBD revenue, while the contribution from each PAD component remains relatively small. This indicates that the local government of Lombok Barat district heavily relies on assistance from the central and provincial governments. The limited regional capacity to fund development projects results in a high dependence on the central government. This dependence has led to the implementation of a fiscal decentralization policy, which involves delegating authority from the central government to local governments and providing them with funds. These funds, known as Balancing Funds, are allocated to regions to support their needs.

Factors influencing economic growth include revenue, expenditure, and financing. Among these, revenue is a critical indicator of economic growth. Regional revenue comprises PAD, Balancing Funds, and other Legitimate Revenues. To achieve economic growth, regions need funds not only from the State Budget (APBN) but also from regional income sources. According to Putra et al. [10], a component of regional revenue, specifically PAD, has a significant positive effect on Regional Economic Growth. If an increase in PAD can stimulate regional economic growth, it is plausible that the Balancing Fund, which includes the Dana Alokasi Umum (DAU), Dana Alokasi Khusus (DAK), and Dana Bagi Hasil (DBH), also positively impacts the Gross Regional Domestic Product
(GRDP), given that the Balancing Fund’s contribution is typically greater than that of PAD. Researchers aim to investigate further the impact of PAD and Balancing Funds on GRDP, hoping that the Lombok Barat district government can optimize fiscal decentralization through enhanced PAD and effective utilization of Balancing Funds.

2. Methods

The method used in this research is descriptive research with a quantitative approach. Quantitative method is a research method based on the philosophy of positivism, used to research on certain populations, or samples, data collection using research instruments. Data analysis is quantitative / statistical with the aim of examining the hypothesis that has been set [11]. While the descriptive method is a method of examining the status of a human group, an object, a condition, a thought or a class of events in the present. The purpose of this research is to make descriptive descriptions or paintings systematically, factually, and accurately about the facts, characteristics, and relationships between the phenomena studied [12].

This study analyzes the effect of Gross Regional Domestic Product on Regional Original Revenue and Balancing Funds in Lombok Barat Regency with observation years, namely 2010 to 2022. The data collection used in this research is a literature study, namely collecting data by collecting accurate information related to the title and research problems that can be obtained from documents, scientific books, journals, previous research, and from related agencies such as the Central Statistics Agency (BPS), and other sources related to the research topic. The data source used in this research is secondary data. The dependent variable is Gross Regional Domestic Product (Y), while the independent variables consist of Regional Original Revenue (X1) and Balancing Funds (X2).

2.1 Multiple Regression Analysis

The data analysis used to determine whether the independent variable affects the dependent variable in this study will use Multiple Linear Regression Analysis with the help of Eviews 10. The multiple linear regression equation model is as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e \]  \hspace{1cm} (1)

Description:
Y = Gross Regional Domestic Product
X1 = Local Revenue
X2 = Balance Fund
\( \beta_0 \) = Intercept or constant
\( \beta_1, \beta_2 \) = Regression coefficient
e = Error term (confounding error)

2.2 Classical Assumption Test

Testing the model against classical assumptions is carried out to produce the right estimation parameters if it meets the prerequisites of normality, autocorrelation, multicollinearity and heteroscedasticity tests.

a. The normality test aims to test whether the resulting regression model has a normal distribution or not. The normality test used in this study is the normality test Jarque-Bera which can be known by comparing the value of Jarque-Bera and value chi-square table. If the probability value of JB is more than \( \alpha \) (0.05) then the data is declared normally distributed or the JB value is smaller than chi-square table (\( \alpha,10 \)) of 18.31.
b. The multicollinearity test aims to see if there is a high correlation between the independent variables in a multiple linear regression model. The multicollinearity test in this study uses the multicollinearity test. Variance Inflation Factor (VIF). If the value is less than 10 (VIF < 10) then there are no symptoms of multicollinearity.

c. The heteroscedasticity test aims to test whether in a linear regression model there is an inequality of variance from the residuals of one observation to the other residuals. The heteroscedasticity test in this study uses Uji Breusch-Pagan-Godfrey. If Pr Chi-Squared more than α (0.05) then there are no symptoms of heteroscedasticity.

d. The autocorrelation test is intended to test whether the linear regression model has a correlation between confounding errors in period t and confounding errors in period t-1 (previous). The autocorrelation test in this study uses the autocorrelation test Langrange Multiplier (LM-Test) or what is called the Breusch-Godfrey Test. If the probability of Obs*R² is greater than 0.05 then the model does not have autocorrelation.

2.3 Hypothesis Test

Hypothesis testing consists of partial tests (t tests) and simultaneous tests (F tests). Partial test (t test) is used to determine whether each independent variable individually has a significant effect on the dependent variable. Simultaneous test (F test) is used to test the effect of the independent on the dependent variable together. The decision to accept or reject the hypothesis in the t test and F test is made by comparing the processing significance results with the α significance level used of 5% (0.05).

2.4 Coefficient of Determination Analysis (R²)

The coefficient of determination shows the magnitude of the influence between the independent variable on the dependent variable. The value of R² or (R² Squared) ranges from 0 (zero) to 1 (one). A small R² value or close to zero means that the ability of the dependent variable to explain the dependent variable is very limited. Conversely, if the R² value is close to 1 (one), it means that the independent variable provides almost all the information needed to predict the dependent variable [13].

3. Result and Discussion

3.1 Classical Assumption Test Results

a. Normality test

Based on the table of test results above, the calculated Jarque-Bera value is 0.114315 and the X² table (chi square) with df (n-k) = 10 with a significant level (α) of 5%,
the X² table value is 18.31 and the JB probability is 0.944445, it can be concluded that the JB probability value is greater than alpha 5% (0.944> 0.05), meaning that the data in this study are normally distributed.

b. Multicollinearity test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Variance</th>
<th>Uncentered VIF</th>
<th>Centered VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4.80E+10</td>
<td>17.31943</td>
<td>NA</td>
</tr>
<tr>
<td>PAD</td>
<td>2.736130</td>
<td>41.37389</td>
<td>5.212669</td>
</tr>
<tr>
<td>DAPER</td>
<td>0.229049</td>
<td>76.93618</td>
<td>5.212669</td>
</tr>
</tbody>
</table>

Based on the test results above, the tolerance or VIF value is 5.212, meaning that the tolerance value is smaller than 10 (5.212 < 10) so it can be concluded that there are no symptoms or multicollinearity problems in the dependent variable and the independent variable.

c. Heteroscedasticity test

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Obs*R-squared</th>
<th>Scaled explained SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.713943</td>
<td>1.624319</td>
<td>0.830880</td>
</tr>
<tr>
<td>Prob. F(2,10)</td>
<td>Prob. Chi-Square(2)</td>
<td>Prob. Chi-Square(2)</td>
</tr>
<tr>
<td>0.5131</td>
<td>0.4439</td>
<td>0.6600</td>
</tr>
</tbody>
</table>

Based on the test results above, the Prob. Fcount in this study is 0.5131 greater than the 5% alpha level (0.5131> 0.05) so it can be concluded that in the model there is no heteroscedasticity problem.

d. Autocorrelation test

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Obs*R-squared</th>
<th>Prob. F(2,8)</th>
<th>Prob. Chi-Square(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.667102</td>
<td>5.200509</td>
<td>0.1296</td>
<td>0.074</td>
</tr>
</tbody>
</table>

Based on the test results using the Eviews 10 program, the Obs * R² probability value obtained in the Breusch-Godfrey method of 0.074 is greater than alpha 5% (0.074> 0.05), so there are no autocorrelation symptoms in the model.

3.2 Multiple Regression Estimation Results

The multiple regression results are presented in Table 5.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4791592.</td>
<td>219022.3</td>
<td>21.87719</td>
<td>0.0000</td>
</tr>
<tr>
<td>PAD</td>
<td>4.454001</td>
<td>1.654125</td>
<td>2.692663</td>
<td>0.0226</td>
</tr>
<tr>
<td>Daper</td>
<td>3.978652</td>
<td>0.478591</td>
<td>8.313264</td>
<td>0.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.983815</td>
<td>Mean dependent var</td>
<td>9349064.</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.980577</td>
<td>S.D. dependent var</td>
<td>1361569.</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>189755.0</td>
<td>Akaike info criterion</td>
<td>27.34403</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>3.60E+11</td>
<td>Schwarz criterion</td>
<td>27.47440</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-174.7362</td>
<td>Hannan-Quinn criter.</td>
<td>27.31723</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>303.9186</td>
<td>Durbin-Watson stat</td>
<td>2.624652</td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on table 5. above, the results of the multiple regression equation are obtained as follows:

\[ Y = 4791592 + 4,454 \times X1 + 3,978 \times X2 \]

Based on the above equation, it can be explained as follows:

a. The constant value of 4791592 means that if all the independent variables of Regional Original Revenue (PAD) and Balance Fund are assumed to be fixed or unchanged or equal to zero (0), the Gross Regional Domestic Product in Lombok Barat during the observation period 2010-2022 will remain at 4791592 billion rupiah.
b. The coefficient value of Regional Original Revenue has a value of 4.454 with a positive regression relationship direction. If the Regional Original Revenue variable increases by one billion, assuming the Balance Fund variable Ceteris Paribus, then it will increase the Gross Regional Domestic Product by 4.454 billion rupiah.

c. The coefficient value of the Balance Fund has a value of 3.978 with a positive regression relationship direction. If the Balance Fund variable increases by one billion with the assumption that the Regional Original Income variable Ceteris Paribus, then it will increase the Gross Regional Domestic Product by 3.978 billion rupiah.

3.3 Hypothesis Test

The interpretation of the t test results or partial hypothesis testing, with a t table value of 2.22814 where df = 13-3 = 10 (df = n-k) for α = 0.05 is that:

1. Based on the results of the t value of 2.692 > 2.228 t-table or the prob value of t count on Regional Original Income (X1) of 0.022 where the probabilistic value of t count < 5% or (0.022 < 0.05) thus Ho is rejected Ha is accepted which means that there is a significant influence between Regional Original Income on Gross Regional Domestic Product.

2. Based on the results of the t value of 8.313 > 2.228 t-table or the probability value of t count on the Balance Fund (X2) of 0.000 where the probability value of t count < 5% or (0.000 < 0.05) thus Ho is rejected Ha is accepted which means that there is a significant influence between the Balance Fund on Gross Regional Domestic Product.

Interpretation of the results of the F test or simultaneous hypothesis testing to determine whether the independent variables jointly affect or not the dependent variable (Gross Regional Domestic Product) with the F table value at α = 5% ((df; k-1; n-k) (0.05; 2; 10)) is 4.10. The value of Fcount> Ftable (303.918 > 4.10) with a probability of Fcount < 5% (0.00 < 0.05) so it can be concluded that Ha is accepted and Ho is rejected, meaning that together the independent variables, namely Regional Original Income (X1) and Balance Fund (X2) simultaneously have a significant effect on the dependent variable, namely Gross Regional Domestic Product (Y) in Lombok Barat Regency in 2010-2022 with a confidence degree of 95%.

The coefficient of determination or R-Squared (R²) is to determine the extent to which the independent variables, namely Regional Original Revenue and Balance Funds, affect the dependent variable, namely Gross Regional Domestic Product. The coefficient of determination R² above shows that the R² value is 98%, this means that all independent variables in the model, namely Regional Original Revenue and Balance Funds, are able to explain their influence by 98% on the dependent variable Gross Regional Domestic Product and the remaining 2% is explained by other variables that are not included in the model.

3.4 Discussion

3.4.1 The Effect of Regional Original Revenue on Gross Regional Domestic Product in Lombok Barat Regency

Based on the results of this study, it is partially proven that the Regional Original Income variable has a positive and significant effect on Gross Regional Domestic Product. This is indicated based on the calculated t value of 2.692 which is greater than the t-table of 2.228 or the calculated t probability value of 0.022 is less than the real level of 5% (0.02 <0.05). The regression coefficient result of 4.454 shows that the increase in Regional Original Revenue will increase Gross Regional Domestic Product. This means that every additional one rupiah of local revenue will increase the Gross Regional Domestic Product by 4.454 rupiah. If there is an increase in local revenue, it will cause an increase in Gross Regional Domestic Product.
Growing GRDP means the development of the economy, when the economy grows it will have an impact on the growth of local revenue as well. The results of this study are in line with research conducted by Alauddin et al. [14], which show the same results, namely that Regional Original Income both have a positive and significant relationship with Gross Regional Domestic Product.

### 3.4.2 The Effect of Balance Fund on Gross Regional Domestic Product in Lombok Barat Regency

Based on the results of this study partially proves that the Balance Fund variable has a positive and significant effect on Gross Regional Domestic Product. This is indicated based on the tcount value of 8.313 which is greater than the ttable of 2.228 or the tcount probability value of 0.000 is less than the real level of 5% (0.000 <0.05). The result of the regression coefficient of 3.978 shows that the more the Balance Fund increases, the more the Gross Regional Domestic Product will increase. This means that if every increase in the Balance Fund transferred to the regions is one billion, it will increase the Gross Regional Domestic Product by 3.978 billion. In other words, the development of Gross Regional Domestic Product is influenced by the size of the Balance Fund and how the Lombok Barat district manages it properly.

With the transfer of funds from the central government to local governments in an effort to increase capital is important in influencing Gross Regional Domestic Product where revenue will be collected into capital so that the Balance Fund has a quite favorable and significant impact on Gross Regional Domestic Product. This happens because the Balance Fund is maximally utilized to improve services and development which has an impact on encouraging Economic Growth. The results of this study are in line with research conducted by Maria Sisilia and Harsono [15], show the same results, namely the Balance Fund has a positive and significant effect on Gross Regional Domestic Product.

### 3.4.3 The Effect of Regional Original Revenue and Balance Funds on Gross Regional Domestic Product in Lombok Barat Regency

Simultaneously, the independent variables of Regional Original Revenue and Balance Fund have a significant influence on the dependent variable Gross Regional Domestic Product in Lombok Barat Regency by looking at the F-statistic probability value of 0.000 < the real level of 5% (0.05%) and the F-count value of 303.918 is greater than Ftable 4.10 (303.918> 4.10). This shows that all independent variables have a significant effect on Gross Regional Domestic Product in Lombok Barat Regency in 2010-2022. This means that an increase in the amount of Regional Original Revenue and Balance Fund will affect Gross Regional Domestic Product. The magnitude of the influence of the contribution of all independent variables is reflected in the coefficient of determination $R^2$ which amounts to 0.983 (98%), which means that the dependent variable, namely the Gross Regional Domestic Product variable, is 98% influenced by the independent variables, namely Regional Original Revenue and Balance Funds. While the remaining 2% is influenced by other variables outside the model that are not included in this study.

### 4. Conclusion

Based on the results of research and discussion, it can be concluded that Regional Original Revenue and Balance Fund partially have a positive and significant effect on Gross Regional Domestic Product in Lombok Barat district. Regional Original Revenue and Balance Fund simultaneously have a positive and significant effect on Gross Regional Domestic Product in Lombok Barat Regency in 2010-2022. Based on the existing
conclusions, the researcher can provide suggestions as consideration for the future, namely. Based on the results of research conducted on Regional Original Revenue and Balance Funds on Gross Regional Domestic Product in Lombok Barat Regency, it shows the high dependence of local governments on the central government. So to reduce the level of dependence on the central government that can be done is a stimulator to increase revenue, for example by forming a business entity or local company that manages a business system that is possible for the Lombok Barat district government that can be relied on as a new source of income. It is hoped that the Lombok Barat district government in building basic infrastructure facilities and infrastructure must be greatly increased in size, good facilities and infrastructure are needed for the development of the business world which has an impact on Gross Regional Domestic Product which will then increase Economic Growth.

5. Declaration

Author contributions and responsibilities - The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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6. References


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