The Effect Of Regional Original Revenue, General Allocation Funds, And Special Allocation Funds On Economic Growth In The North Sulawesi Province

Stanny Sicilia Rawung1, Tiatira C. Poluakan2, Bobby Hamenda3

1Economic Science, Economic and Business, Universitas Negeri Manado, North Sulawesi, Indonesia
2 Economic Science, Economic and Business, Universitas Negeri Manado, North Sulawesi, Indonesia
3 Economic Science, Economic and Business, Universitas Negeri Manado, North Sulawesi, Indonesia

Email: stannyrawung@unima.ac.id

Abstract: The authority received by local governments from the regional autonomy system to collect and distribute funds independently and decide on development interests. Regional autonomy seeks to equalize growth/development per regional interests to increase regional development based on the capabilities of each region. The purpose of this study is to analyze the effects of Regional Original Revenue (PAD), General Allocation Fund (DAU), and Special Allocation Fund (DAK) on economic growth in North Sulawesi Province. To be precise, this study uses a collection of period series information for 2002-2021. Multiple linear regression analysis method was used in this research. The results of the research findings show that: 1) PAD has no substantial influence on economic growth in North Sulawesi Province; 2) DAU has a positive but insignificant impact on economic growth in North Sulawesi Province; 3) DAK has a negative effect on economic growth in North Sulawesi Province; 4) Meanwhile, simultaneously PAD, DAU, and DAK have a positive and substantial effect on economic growth in North Sulawesi Province. In addition to increasing the value of regional income indicators, improving the quality of human resources (HR) as managers of indicators in sustainable regional autonomy policies is an important effort to implement regional autonomy to support regional economic growth.

Keywords: Regional Original Revenue; General Allocation Fund; Special Allocation Fund; Economic Growth

INTRODUCTION

One of the metrics used to measure how fast an economy is growing is economic growth. The continuation of an economic process that increases the productivity level of social activities is believed to be economic growth. The government offers the implementation of regional autonomy as an opportunity to encourage the realization of national development. Thanks to the regional autonomy system, local governments have the power to control taxes and distribute them while setting development priorities independently. In implementing regional autonomy, the regions can regulate and manage their regions according to their regional capabilities, including regional development planning arrangements for the equitable distribution of people's welfare (Kholik, 2020).

North Sulawesi Province in Indonesia is part of several provinces that have had regional autonomy. The regional autonomy system allows local governments to control local finances and resist state intrusion. One of the provinces that consistently strives to increase local revenue each year per the federal government’s rules is North Sulawesi Province. However, the lack of local revenue capability can hamper regional economic development. The
distribution of central government funds through the General Allocation Fund and Special Allocation Fund directly impacts how long regional development can last. Local governments seek to increase local revenue as a result. Therefore, research on how Regional Original Revenue (PAD), General Allocation Fund (DAU), and Special Allocation Fund (DAK) affect the economic development of North Sulawesi Province is needed.

One indication of the current source of regional spending is Regional Original Revenue (PAD). Mardiasmo states, "Regional Original Revenue is revenue obtained from the local tax sector, local levies, the results of regionally owned companies, the results of the management of separated regional assets, and other legitimate Regional Original Revenue." (Mardiasmo, Taxation Revised Edition, 2013) Local governments are encouraged to take more initiative in exploring the regional potential and encouraging economic development in the regions due to increased Regional Original Revenue (PAD) because it is channeled into more funding for local governments and more regional autonomy. Ardiansyah & Widiyaningsih (2014) identify General Allocation Fund (DAU) as an unconditional grant as a kind of cross-government transfer not linked to specific spending initiatives. With General Allocation Fund (DAU), infrastructure disparities in each region are eliminated, and General Allocation Fund is also necessary for equitable economic development. According to Halim's (2014) Special Allocation Fund (DAK) theory, money from the state budget is allocated to specific regions to help fund specific regionally-focused activities that align with national goals.

By prioritizing local government infrastructure, as well as health, education, environment, agriculture, shipping, and fisheries, Special Allocation Fund (DAK) aims to close gaps in community services across regions. It can be concluded from the implementation of North Sulawesi Province's own-source revenue and GDRP that the situation has changed over the past three years. The Indonesian economy, particularly in North Sulawesi Province, was affected by the decline in community activity over the previous three years due to the Corona (Covid-19) epidemic. Compared with previous years, the economy of North Sulawesi Province has shown positive growth. More specifically, from 2016 to 2019, the economy of North Sulawesi Province has always been above the national average at 6%. This state of affairs developed due to a decline in local purchasing power and a decrease in commercial activity for certain tax subjects. Compared to previous years, the GDRP of North Sulawesi Province grew more rapidly over the last three years. Regional economic growth is measured using GDP (Gross Domestic Product). At the same time, a region's GDP measures the value of all products and services produced by all its economic activities (Gross Regional Domestic Product). GDP at constant prices is the metric the government uses to assess regional economic growth. (Jaya & Dwidiandra, 2014) According to the above definition, the purpose of this study is to analyze current issues where Regional Original Revenue (PAD), General Allocation Fund (DAU), and Special Allocation Fund (DAK) affect economic development in North Sulawesi Province partially or simultaneously. This research is also expected to be an assessment and measurement of the implementation of regional income indicators for the ongoing economy. In addition, this research can also be a means of further research development that future researchers can use.

**METHODOLOGY**

This research uses secondary data for analysis and is quantitatively descriptive. Descriptive analysis is a type of analysis that uses existing data to explain and analyze a core problem. Sugiyono's evaluation (2018) states that quantitative data is a positivistic research methodology (factual data). The research data in question is the weight assessed using statistics as a measuring tool and is associated with the burden under study to conclude. North Sulawesi Province is the research location and the number of research years from 2002 to 2021. Secondary data is obtained or collected by someone conducting research using several available sources. The data source of this research comes from several sources, namely, the Central Bureau of Statistics of North Sulawesi Province and other related scientific works.

Furthermore, researchers also carried out literature searches to find understanding that supported the research. References for literature research were obtained from previous related research journals. The analysis of this study was conducted using various linear regression analysis techniques. When all independent variables have known values, the analysis is used to determine how much influence each independent variable has on the dependent variable and estimate the weight of the dependent variable. Eviews 10 and Microsoft Excel 2019 applications were used to process the research data.

The multiple regression model used in this study can be described as follows:

\[ Y = f (X_1, X_2, X_3) \]  

Then, it is converted into an econometric model as follows:

\[ Y = a + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e \]  

Then, it is converted into a log-log model by transforming the values of the tested variables into natural logs to avoid problems with classical assumptions as follows:

\[ \log(Y) = a + \beta_1\log(X_1) + \beta_2\log(X_2) + \beta_3\log(X_3) \]
\% \Delta y = \beta_1 \% \Delta x \quad (4)

Where:

Y : Economic Growth
X_1 : Regional Original Revenue (PAD)
X_2 : General Allocation Fund (DAU)
X_3 : Special Allocation Fund (DAK)
\alpha : Constant/Intercept
\beta : Regression Coefficient
e : Standard Error
\Delta : Variation of Variable Change

Suppose there is still a violation of the regression model against the classical assumption test after the research data is converted into logarithmic form. In that case, the next healing step must be taken is the differentiation method for the regression model. Where the econometric equation of the regression model with differentiation is as follows:

\[ D(\log(Y)) = \alpha + \beta_1 D(\log(X_1)) + \beta_2 D(\log(X_2)) + \beta_3 D(\log(X_3)) \quad (5) \]

But before using the differentiation method on the regression model, conducting a Data Stationary Test on the variables is necessary first.

RESULTS

Secondary data is the data used in this study. This data is a 20-year time series data from 2002-2021. The data was obtained from the Central Bureau of Statistics (BPS) of North Sulawesi Province. The three independent variables used in this study are Regional Original Revenue (PAD), General Allocation Fund (DAU), and Special Allocation Fund (DAK). Meanwhile, the dependent variable used is Economic Growth. In this study, researchers used Gross Domestic Product (GRDP) at constant prices with the base year 2010 to measure economic growth in North Sulawesi Province.

The classical assumption test is a statistical qualification that must be met when conducting multiple linear regression analysis based on OLS (Ordinary Least Square). The classical assumption test is useful in proving that the regression model obtained is the most superior model both regarding estimation accuracy, unbiased, and consistency issues. (Juliandi, Irfan, & Manurung, 2014)

The following summarizes the results of the classical assumption test of the regression model:

1. Normality: Jarque-Bera probability: 0.690065 > 0.05, which means that the normality assumption of the regression model is met (normally distributed).
2. Autocorrelation: Chi-Square probability: 0.0005 < 0.05, which means that there is an autocorrelation problem in the regression model.
3. Heteroscedasticity: Chi-Square probability: 0.2020 > 0.05, which means that the heteroscedasticity problem does not occur in the regression model.
4. Multicollinearity (VIF): The correlation value between the independent variables is > 10, which means that there is a multicollinearity problem in the regression model between the independent variables.

Based on the summary of the test results, it can be seen that regression model 1 does not pass the autocorrelation test and multicollinearity tests. So, the healing step to overcome these problems is to use the differentiation method. However, conducting a stationary data test on each variable is necessary before performing the differentiation method. The following is a summary of the results of the data stationary test on each variable:

<table>
<thead>
<tr>
<th>Table 1. Stationary Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPDRB</td>
</tr>
<tr>
<td>Level</td>
</tr>
<tr>
<td>1st Difference</td>
</tr>
<tr>
<td>2nd Difference</td>
</tr>
</tbody>
</table>

Source: Eviews 10

Based on the table above, it can be seen that the variables used in the study are not stationary at the level. Since this test is conducted at the \( \alpha = 10\% \) confidence level, it is continued at the 1st difference level. At the 1st
difference level, all LPDRB, LPAD, LDAU, and LDAK variables show that the data of the variables are stationary. It means that the data used in this study are stationary at the 1st difference level. After testing the stationary data, the analysis stage continues with testing the classical assumptions of the new regression model using the differentiation method. The following is a summary of the classical assumption test results of regression model 2:

1. Normality: Jarque-Bera probability: 0.864355 > 0.05, which means that the normality assumption of the regression model is met (normally distributed).
2. Autocorrelation: Chi-Square probability: 0.4743 > 0.05, which means there is no autocorrelation problem in the regression model.
3. Heteroscedasticity: Chi-Square probability: 0.0651 > 0.05, which means that the heteroscedasticity problem does not occur in the regression model.
4. Multicollinearity (VIF): The correlation value between independent variables <10 means that there is no multicollinearity problem between the independent variables in the regression model.

Based on the output of the classical assumption test results from the second regression model that has used the differentiation method, it can be seen that the regression model has met the classical assumptions or can be called passing the test. Then the second regression model is declared feasible to use for research continuity. The following is an interpretation of the output results of the first regression model:

$$\log(\hat{PDDB}) = 19,3762 + 0.2856 \log(PAD)*** + 0.1550 \log(DAU) + 0.0143 \log(DAK)$$

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob</th>
<th>n = 20, $R^2 = 0.981496$, $F = 282,8868$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3,947)</td>
<td>(0,0012)</td>
<td></td>
</tr>
<tr>
<td>(1,509)</td>
<td>(0,1507)</td>
<td></td>
</tr>
<tr>
<td>(1,34)</td>
<td>(0,1987)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Eviews 10

However, because this regression model does not pass the classical assumption test, this model is not suitable to continue. Researchers used the second regression model for the continuation of this study. The following is the interpretation of the second regression output results after the differentiation method is used:

$$D(\hat{PDDB}) = 0,042197 + 0,0668 D(LPAD) + 0,0682 D(LDAU) – 0,0037 D(LDAK)$$

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob</th>
<th>N = 20, $R^2 = 0.404194$, $F = 3,391988$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1,4093)</td>
<td>(0,1791)</td>
<td></td>
</tr>
<tr>
<td>(2,0995)</td>
<td>(0,0531)</td>
<td></td>
</tr>
<tr>
<td>(-0,9197)</td>
<td>(0,3723)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Eviews 10

The constant value, determined by the regression model output, is 0.042197. In other words, the value of economic growth is around 0.042197 percent, assuming that the three independent variables of PAD, DAU, and DAK are unchanged or fixed.

The elasticity of the PAD variable, which is 0.0668, indicates that a 1% increase in PAD will increase economic growth by 0.0668%. In addition, the PAD variable has no significant effect on economic growth at the 95 percent confidence level. It is indicated by the t-count estimate of the PAD variable, which is 1.4093 t-table 1.746, and a probability value of 0.1791 > 0.05. Therefore, H01 is approved, while H1 is not approved.

The elasticity of the DAU variable, which is 0.0682, indicates that a 1% increase in DAU will result in a 0.0682% increase in economic growth. In addition, the 95% DAU factor has a favorable but insignificant impact on economic development at the confidence level. It is indicated by the DAU variable estimation t-count, which is calculated as 2.0995 t-table 1.746 and has a probability value of 0.0531 > 0.05. Therefore, H02 is approved, while H2 is not approved.

The elasticity of the DAK variable, -0.0037, indicates that a 1% increase in DAU will result in a 0.0037% decrease in the value of economic growth. In addition, 95% of DAK factors have a negative but substantial impact on economic development at the confidence level. As can be seen, the probability value is 0.3723 > 0.05, and the predicted t-count of the DAK variable is -0.9197 t-table 1.746. Therefore, H03 is approved, but H3 is not.

As determined by the Adjusted R-Squared ($R^2$) value, the value is 0.404194, or 41.42 percent. This figure indicates that the differences in PAD, DAU, and DAK variables account for 41.42 percent of the fluctuations in the economic growth.
growth variable, with the remaining 58.58 percent explained by additional factors not included in the output. The resulting F-count value is $3.391988 > 3.239$ (F-table). While $0.045837 < 0.05$ is the probability value of the F-count. It implies that the independent variables, namely PAD, DAU, and DAK, simultaneously positively and substantially impact economic growth.

**DISCUSSION**

The examination findings show that the PAD variable has a small effect on the development of the gross domestic product of the North Sulawesi region and is not very large. The research findings do not uphold the possibility that the financial improvement of a region is related to its salary or salary level. In contrast to what this objective shows, regional economic growth is faster when the PAD in a region is greater. It suggests that an increase in PAD does not affect economic growth's value. Anwar et al. (2016). The review, which displays that some PAD has no insignificant effect on financial development (GDRP) in Manado City, can be predicted by the examination findings. Suwandika and Yasa's (2015) exploration discoveries further show that PAD no affects the economic development of the Bali Region. The speculation that the more prominent how much PAD is, the more prominent the rate of turnover of economic events is not supported by the discoveries.

The examination findings showed that the DAU variable positively affected North Sulawesi Region's gross domestic product (total national output). The findings of this examination are reliable to the study of Nisa (2017), which found that DAU favorably affects the improvement of the regional economy and urban communities in East Java. According to a study by Putri (2015), DAU does not affect the turnover of financial events. Dewi and Suputra's (2017) study further suggested that DAU does not affect financial development much. The explanation of DAU given to places has not been utilized in an effort that can even out the financial improvement of one district and another is the reason DAU has no significant influence. It is considered that the DAU collected by each region should be utilized for improvement plans, especially for offices and foundations that will encourage economic growth. However, the delivery of DAU to the regions is not in line with the expected reasons as it is used for routine spending.

The consequence of the investigation shows that the DAK variable basically affects North Sulawesi Region's financial development (GDRP). The findings of this examination follow the research of Jannah and Nasir (2018), who found that DAK adversely impacts the financial improvement of the Aceh Region. Yet, it likewise has a significant impact there. Arina et al. research. Starting around 2019, also showed that DAK irreversibly affected the financial development of Manado City. Dewi and; Suputra's study from 2017 also shows that DAK has adverse consequences, which for this situation also has a significant effect on the financial improvement of urban regimes and communities in the Bali Region. The DAK appointed by the focal government may not be ideal enough in terms of thinking in areas related to economic growth, such as industrialism and exchange, administration, and other related parts, which makes them not expand the level of economic creation activities and, thus, affect local economic growth.

The consequence of the examination shows that the three independent factors, PAD, DAU, and DAK, when considered together (over time), strongly influence the reliant variable, which for this situation, is the proportion of financial development in the North Sulawesi Region. The research findings that show that PAD, DAU, and DAK simultaneously significantly affect economic improvement in Malang City are steady with the research of Sicilia and Harsono (2021). Following the investigation of Sinaga et al. (2020), PAD, DAU, and DAK all impressively affect financial improvement in the Sinalungun Rule over time. Arina et al. research. Starting around 2019 likewise demonstrated that PAD, DAU, and DAK cooperated to work on the financial improvement of Manado City fundamentally. The consequences of Siagian's examination from 2018 in the Yogyakarta Region reinforce this exploration. Anwar et al. (2016). A study that discusses DAU, DAK, and PAD variables simultaneously affects the turn of economic events, resulting in comparative discoveries (Gross domestic product).

**CONCLUSION**

In North Sulawesi Province, PAD has little impact and is unimportant for economic development. The findings of this PAD analysis are consistent with Anwar and his colleague's (2016) work. Meanwhile, DAU has a positive but not substantial impact on economic growth in North Sulawesi Province. The findings of this DAU analysis are consistent with the research of Nisa (2017). In contrast, DAK has an adverse but not substantial impact on the economic growth of North Sulawesi Province. The findings of this DAK analysis are consistent with previous research by Jannah & Nasir (2018). However, PAD, DAU, and DAK together (simultaneously) have a favorable and considerable impact on economic development. The analysis findings follow the research of Sicily & Harsono (2021).

The North Sulawesi Provincial Government should implement some strategies to maximize local revenue through taxes, levies, and local wealth management. These strategies include collecting taxpayer information, working with the private sector or non-governmental organizations (NGOs) to manage and collect local taxes, or improving local tax administration. To reduce the degree of disparity in economic activity and public services in each region, the North Sulawesi Provincial Government should maximize the utilization of DAU in the regions instead of increasing the amount of DAU allocation provided. Potential use cases include prioritizing the coverage of APBD costs or optimizing the DAU allocation for infrastructure development. Similar to the DAU, the use of the DAK must be further increased to impact North Sulawesi province's economic development positively. DAK allocations help bridge regional gaps in access to social services, particularly in the infrastructure, health, environment, agriculture,
marine, and fisheries sectors. Regional autonomy is often not implemented optimally due to problems, such as differences in the number and quality of human resources across regions, unequal distribution of natural resources, or the management of regional revenue. Improving the quality level of human resources as managers in a sustainable regional autonomy policy. Of all the things that can be done to optimize the sustainability of regional autonomy, this is the most important thing that can be done to improve the degree of regional autonomy implementation.

REFERENCES


