ANALYSIS OF LOCAL REVENUE, REVENUE SHARING, AND GENERAL ALLOCATIONS FUNDS ON CAPITAL EXPENDITURE IN NORTH SUMATRA

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ABSTRACT
This study aims to analyze how factors affect on capital expenditures in the Regency / City of North Sumatra. Local own-source revenue, revenue-sharing funds, and general allocation funds are to be independent variables while capital expenditure is the dependent variable. This study uses panel data obtained from the Indonesian Ministry of Finance in 2022-2023. The analysis method in this study uses panel data regression with the Fixed Effect Model (FEM) approach. The results showed that simultaneously the variables of local revenue, revenue-sharing funds, and general allocation funds had a significant influence on capital expenditure. Based on partial testing, only the revenue-sharing variable has significant negative effect on capital expenditure. These results imply that more effective strategies in the use of revenue-sharing funds need to be developed, such as increasing transparency and adjusting fund allocation policies in supporting capital expenditures. The results of this study can assist governments in planning budgets more effectively, identifying the most influential financial resources, and adjusting spending strategies to maximize the efficient use of funds. Translated with www.DeepL.com/Translator (free version)

Keywords: Local own-source Revenue, Revenue-Sharing Fund, General Allocation Fund, Capital Expenditure

INTRODUCTION
Regional capital expenditure is a component of the Regional Budget (APBD) allocated to finance the acquisition of fixed assets and other assets that provide benefits for more than one budget period. Investment in the form of capital expenditure is believed to encourage regional economic growth by providing adequate infrastructure and public facilities. On the other hand, an increase in capital expenditure also has the potential to cause fiscal sustainability problems if it is not balanced with effective and efficient financial management (Naz’aïna, 2013). Several empirical studies reveal that capital expenditure can have a positive multiplier effect on the regional economy through increased productivity and competitiveness (Amrozi, 2016; Saputra et al., 2021). However, on the other hand, some studies highlight that an increase in capital expenditure must be accompanied by careful planning and strict supervision to avoid waste and inefficiency (Mundiroh, 2019). Therefore, there is a need for research that examines government capital expenditure. Local revenue, revenue-sharing funds, and general allocation funds influence capital expenditure.

Local own-source revenue (PAD) plays a crucial role in realizing fiscal independence for
local governments in the era of decentralization (Lewis & Smoke, 2015). PAD is a source of revenue sourced from regional economic potential, including local taxes, local levies, the results of the management of separated regional assets, and other revenues. Increasing PAD reduces dependence on transfers from the central government and increases local governments’ accountability in managing public finances (Bahl, 2015).

Efforts to optimize PAD face challenges such as a limited tax and levy base, low local tax administration capacity, and a lack of incentives for local governments to increase their revenue (Rita et al., 2019). In addition, there are significant disparities in the ability to generate own-source revenue among regions in Indonesia, especially between urban and rural areas (Maula et al., 2023).

Revenue-sharing funds are one of the sources of regional income that comes from tax revenues and natural resources (Mahendra, 2018). To support the implementation of regional autonomy, revenue-sharing funds are expected to be the main support in financing regional expenditures, including capital expenditures (Maula et al., 2023). Regional capital expenditure itself has an important role in providing infrastructure and public facilities needed to encourage regional economic growth (Mahaendrayasa & Budhi, 2021).

The general allocation fund (DAU) is one component of the balancing fund allocated from the State Budget (APBN) to each local government in Indonesia. The main purpose of allocating DAU is to reduce fiscal imbalances between the central government and local governments and to ensure the achievement of minimum public service standards throughout the country. Thus, DAU is a significant source of funding for the regions in financing regional expenditure needs, including capital expenditure for infrastructure development and public facilities.

Based on the phenomenon that has been described, this study aims to analyze local revenue, revenue-sharing funds, and general allocation funds on capital expenditure in the province of Bali. The results of this research can provide an overview of the results of the analysis to maximize government capital expenditures to build public facilities for the public to improve or provide a way out if a problem occurs at the location of the object of research.

LITERATURE REVIEW

Stewardship Theory

Stewardship theory has psychological and sociological underpinnings and is intended to explain situations in which managers serve as stewards on behalf of owners (Chrisman, 2019; Contrafatto, 2014; Segal & Lehrer, 2012). According to stewardship theory, managers will act under their common interests. When the steward’s and the owner’s interests differ, the steward will try to cooperate rather than oppose it. The steward believes that the common interest and acting under the owner’s behavior is a rational consideration because the steward is more concerned with achieving organizational goals.

Meanwhile, several studies using stewardship theory have indicated strong corporate performance. Stewardship theory proposes a substantial correlation between organizational effectiveness and owner pleasure (Murtaza et al., 2021). Stewards will protect and maximize organizational wealth in tandem with firm performance, optimizing the utility function. A fundamental premise of stewardship is that managers connect their aims with the owner’s. This is not to say that stewards lack basic human needs.

Relationship between local revenue and regional expenditure

Local Original Revenue (PAD) is sourced from the results of local taxes, the results of regional levies, the results of the management
of separated local assets and other legitimate local original income which aims to provide flexibility to the regions to explore funding in the implementation of regional autonomy as a manifestation of the principle of decentralization (Himawan et al., 2024). Local tax is one of the most important posts in the receipt of local revenue (PAD) and is expected to be a source of financing for the administration of government and regional development to improve and equalize the welfare of the community (Widiani et al., 2023).

Local own-source Revenue can be increased if the local government taps on the area’s potential, such as agricultural and marine products. Tourism is the major contributor to Regional Original Revenue (PAD), as it attracts tourists to the area. Capital expenditure is defined as budget expenditure to acquire fixed assets and other assets that provide benefits for more than one accounting period. Capital expenditure is important to improve and expand regional infrastructure and facilities so that the managed area can become a better and more advanced area in regional development. (Widodo, 2023). Through the description above, it can be concluded that local revenue (PAD) influences capital expenditure (BM). So it can be concluded that local revenue influences capital expenditure

H1: Local own-source revenue (PAD) influences capital expenditure

Relationship of Revenue-Sharing Fund on Capital Expenditure

Revenue-sharing funds (DBH) are funds sourced from APBN revenues that are allocated to regions by taking into account the potential of producing regions based on a certain percentage to fund regional needs in the context of implementing decentralization (Law No. 33 of 2004 concerning Financial Balance between the Central Government and Regional Governments). Revenue-sharing funds (DBH) function more as a fiscal balancer between the center and regions from taxes and natural resources (SDA) that are shared, including as a correction for the exploitation of SDA so far. DBH is one source of financing that is useful in supporting its public sector activities. Regions that have high natural resource wealth and tax income will have a high portion of revenue.

The relationship between revenue sharing and regional capital expenditure has been a research topic that has attracted the interest of academics in the last decade. Several empirical studies have been undertaken to examine the influence of revenue-sharing funds on regional capital spending while considering numerous other variables such as local own-source revenue, balancing funds, and regional characteristics (Hairiyah et al., 2018; Permana & Rahardjo, 2013). The results of these studies can provide useful empirical evidence for policymakers in optimizing the allocation of capital expenditure following the availability of funding sources.

H2: Revenue-sharing funds (DBH) influence capital expenditure

Relationship of General Allocation Fund on Capital Expenditure

According to Law No. 33 of 2004, the General Allocation funds is sum allocated by the central government to regions as part of the implementation of decentralization. The General Allocation Fund is the consequence of a decentralization initiative that transfers monies from the State Budget (APBN) to the Regional Budget (APBD) via the balancing fund. The General Allocation Fund can be used by local governments to fund community service facilities that were was allocated through development expenditures.(Permana & Rahardjo, 2013). General Allocation funds are a component of the Balance Fund, which aims to deliver public services while also equalizing regional financial capability as part of the decentralization process.

Several empirical studies have found that DAU has a positive and significant influence on
regional capital expenditure (Kurniawan & Arifin, 2024). However, some studies show different results, where DAU has no significant effect on capital expenditure. This difference in results can be caused by other factors such as regional characteristics, development priorities, and regional financial performance. This means that the general allocation fund influences capital expenditure.

H3: General allocation funds (DAU) affect capital expenditure

**Frameworks**

Based on the description of the relationship between the independent and the dependent variable above, the research framework can be illustrated according to the figure below.

![Conceptual Framework](image)

**Figure 1. Conceptual Framework**

**RESEARCH METHOD**

**a. Data**

This research data uses secondary data for districts/cities of North Sumatra 2022-2023. Panel data is the right choice because of the combination of cross-section and time series. Sources of this research data is taken from the government’s APBD realization report and the Director General of Balance of the Ministry of Finance.

**b. Variable Operationalization**

This study uses capital expenditure as the dependent variable and local revenue, revenue-sharing funds, and general allocation funds as independent variables. The proxy for capital expenditure uses direct government expenditure that is directly incurred to finance investment activities. Local own-source revenue uses the results of local taxes, local levies, the results of the management of separated local assets, and other legal local revenues. Revenue-sharing funds use tax and non-tax revenue sharing. The general allocation fund uses regional revenue, industrial index, natural resource index, human resource index. As for more details can be seen in the following table. Translated with www.DeepL.com/Translator (free version)

<table>
<thead>
<tr>
<th>Variable Operational Variabele</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital expenditure (BM)</td>
<td>the Ministry of Finance</td>
</tr>
<tr>
<td>Local Revenue (PAD)</td>
<td>The legal total revenue government</td>
</tr>
<tr>
<td>Revenue-sharing fund (DBH)</td>
<td>Tax and non-tax revenue share</td>
</tr>
<tr>
<td>General allocation funds (DAU)</td>
<td>funds used for decentralized activities</td>
</tr>
</tbody>
</table>

**Table 1**

**c. Data Analysis Technique**

**1. Model Testing**

Model testing is carried out to determine which model is selected between the Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). First, conduct a Chow test to compare the Common Effect Model and the Fixed Effect Model. If the prob value. Cross-section F is below 5% then the selected model is FEM. Conversely, if the prob. If the cross-section is above 5% then the selected model is REM. Second, the Hausman test to compare the Fixed Effect
Model (FEM) and the Random Effect Model (REM). If the prob value. Cross-section random is below 5% then the model is selected Fixed Effect Model (FEM). Conversely, if prob. Cross-section random more than 5% then the selected model is the Random Effect Model (REM).

2. Panel Data Regression
This method is used to test the panel data regression hypothesis. It is intended to test PAD, DBH, and DAU on capital expenditure. The panel data multiple linear regression model can be substituted in the following estimation equation.

\[ B\text{Mit} = \epsilon + \beta_1PAD + \beta_2DBH + \beta_3DAU + \epsilon \]

Description:
BM: Capital Expenditure
PAD: Local revenue
DBH: Revenue-sharing funds
DAU: General Allocation Funds
C: constanta
\( \beta \): regression coefficient
\( \epsilon \): error

3. Classic Assumption Test
The classic assumption test on panel data consists of 3 tests, namely normality test, heteroscedasticity test and multicollinearity test. A normality test is used to see how research data is normally distributed by looking at the Jarque-Bera value. A heteroscedasticity test is used to test whether this model has residual inequality using residual images. The multicollinearity test is used to determine whether there is a high or perfect correlation value between the independent variables or not in the regression model. Translated with www.DeepL.com/Translator (free version)

RESULT AND DISCUSSION
a. Result

1. Model Testing Result
To determine which model is chosen, it must be tested using the Chow and Hausman tests. The results can be summarized in the following table.

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>36,473646</td>
<td>0,0000</td>
</tr>
</tbody>
</table>

Table 2 shows that the prob. cross-section F value is below 0.05, meaning that the selected model is the Fixed Effect Model (FEM). After the Chow test is carried out, then next conduct the Hausman test to compare between the Fixed Effect Model (FEM) and the Random Effect Model (REM). The Hausman test results can be seen in the following table.

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>4,71484</td>
<td>0,0000</td>
</tr>
<tr>
<td>Cross-section Chi-Square</td>
<td>118,576648</td>
<td>0,0000</td>
</tr>
</tbody>
</table>

Table 3 shows that the cross-section random prob value is 0.000 or smaller than 0.05, so the model selected for this study uses the Fixed Effect Model (FEM). The Fixed Effect Model (FEM) regression is as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>591,5920</td>
<td>0,0012</td>
</tr>
<tr>
<td>PAD</td>
<td>-0,195359</td>
<td>0,5206</td>
</tr>
<tr>
<td>DBH</td>
<td>-0,785348</td>
<td>0,0037</td>
</tr>
<tr>
<td>DAU</td>
<td>-0,416497</td>
<td>0,2149</td>
</tr>
<tr>
<td>R Squared</td>
<td>0,983716</td>
<td></td>
</tr>
<tr>
<td>Adjusted R Squared</td>
<td>0,964714</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>51,778869</td>
<td></td>
</tr>
<tr>
<td>Prob (F-statistic)</td>
<td>0,000000</td>
<td></td>
</tr>
</tbody>
</table>

Sumber: data diolah, 2024
Table 4 explains that the coefficient values of PAD, DBH and DAU are -0.195359, -0.785348, and -0.416497 respectively. So the equation in the estimation is as follows.

\[ BM_{it} = 591.5920 - 0.195359 \text{PAD} - 0.785348 \text{DBH} - 0.416497 \text{DAU} + \epsilon \]

From the equation, it can be concluded that the coefficient values of the three variables are negative. This means that if the variable is 0, it can strengthen Capital Expenditure by 591.5920

2. **Classic Assumption Test**

The standard assumption test for panel data regression includes three tests they were normality, heteroscedasticity, and multicollinearity test. The results of the heteroscedasticity test can be seen in the table below.

![Picture 1](Heteroskedasticity Test Result)

**Sources:** data processed, 2024

Figure 1 shows that the residual graph above can be seen not crossing the boundaries (500 and -500), meaning that the residuals are the same. Therefore, there are no symptoms of heteroscedasticity or pass the heteroscedasticity test. Next, do the Multicollinearity test after passing the heteroscedasticity test. The results can be seen in the table below.

**Table 5 Multicollinearity Test Result**

<table>
<thead>
<tr>
<th></th>
<th>PAD</th>
<th>DBH</th>
<th>DAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD</td>
<td>1.000</td>
<td>0.5447</td>
<td>0.7807</td>
</tr>
<tr>
<td>DBH</td>
<td>0.5447</td>
<td>1.000</td>
<td>0.5586</td>
</tr>
<tr>
<td>DAU</td>
<td>0.7807</td>
<td>0.5586</td>
<td>1.000</td>
</tr>
</tbody>
</table>

**Sources:** data processed, 2024

Table 5 shows that the correlation coefficient between PAD and DBH is 0.544707 < 0.85. PAD and DAU of 0.780729 < 0.85. DAU and DBH amounted to 0.558676 < 0.85. So it can be concluded that it is free of multicollinearity or passes the multicollinearity test.

3. **Partial Test**

A partial test (t) is carried out to determine the partial influence between the independent variable on the dependent variable. The results can be seen in the following table.

**Table 6 Partial Test Result**

<table>
<thead>
<tr>
<th>Variabel</th>
<th>t-Statistik</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.213396</td>
<td>0.0012</td>
</tr>
<tr>
<td>PAD</td>
<td>-0.650077</td>
<td>0.5206</td>
</tr>
<tr>
<td>DBH</td>
<td>-3.152766</td>
<td>0.0037</td>
</tr>
<tr>
<td>DAU</td>
<td>-1.966261</td>
<td>0.2149</td>
</tr>
</tbody>
</table>

**Sources:** data processed, 2024

Table 6 shows that the Revenue Sharing Fund (DBH) has a significant negative effect as evidenced by the t-statistic value of -3.152766 and probability of 0.0037. Meanwhile, Regional Original Revenue (PAD) and General Allocation Fund (DAU) do not have the same and negative influence on Capital Expenditure (BM) with t-statistic values of -0.650077 and -1.966261 with probability values above 5%.
4. Simultaneous Test
The F test was conducted to determine whether the three variables of PAD, DBH and DAU had a simultaneous or joint influence on Capital Expenditure. The regression results show that the F-statistic value is 51.778869 and the Prob (F-Statistic) is 0.0000. So it can be concluded that the three variables have a significant effect on capital expenditure.

5. Determination Test ($R^2$)
The determination test was used for determine how much influence the three variables have on capital expenditure. The regression results show that the Adjusted R Squared value is 0.964714 or 96.47% and the rest is influenced by factors other than the three variables in this study.

b. Discussion
1. The Effect of Local Revenue on Capital Expenditure
Based on the regression analysis results, local own-source revenue (PAD) has a negative and insignificant effect on capital expenditure (BM) in the Regency / City of North Sumatra with a probability value of 0.5206 where the value is greater than 0.05 or 5%. The coefficient value of regional own-source revenue (PAD) of -0.19 means that if other variables are constant and PAD has increased by 1%, capital expenditure (BM) will decrease by 19%. Vice versa, if the PAD value decreases by 1%, the BM value will increase by 19% assuming other variables are constant. The results of this study are in line with the findings of other studies which show that PAD does not affect capital expenditure (Nasrullah et al., 2021; Purnasari et al., 2022).

Regional Original Revenue (PAD) is income obtained by a region, derived from various sources such as taxes, levies, income from separately managed regional assets, and other sources of PAD (Aji et al., 2018). Regions with adequate infrastructure and productivity levels affect increasing local revenue. This study shows that the regions studied get very little PAD so that they do not contribute to the use of regional capital expenditures. Therefore, the government is expected to optimize regional resources to the maximum so as to increase the level of revenue which can then increase capital expenditure in North Sumatra.

2. The Effect of Revenue Sharing Fund on Capital Expenditure
The results of the regression analysis above, revenue sharing (DBH) has a significant negative effect on capital expenditure (BM) in the Regency / City of North Sumatra with a probability value of 0.0037 that is greater than 0.05. The coefficient value of DBH is -0.78, meaning that if the value of other variables is constant and DBH increases by 1%, the value of BM will decrease by 78%. Vice versa, if the value of other variables is constant and DBH decreases by 1%, the BM value will increase by 78%. The results of previous research show that revenue-sharing funds have a negative influence on capital expenditure. (Kipli, 2023; Tiyas & Wuryani, 2022). DBH is one of the elements that affect capital expenditure, and its existence is expected to increase the regional development budget. (Ketrin & Sasongko, 2022).

Revenue-sharing funds are part of the revenue received by a region from the central government based on profit sharing from natural resources or certain taxes. From this study, revenue-sharing funds do not affect the level of capital expenditure, one of the reasons is that the DBH received in the Regency / City of North Sumatra is small so to make capital expenditures the local government chooses to use other funds.
3. The Effect of General Allocation Fund on Capital Expenditure

The results of the analysis show that the general allocation fund (DAU) has a negative and insignificant effect on capital expenditure in the Regency / City of North Sumatra with a probability value of 0.2149, this value is greater than 0, 05. The DAU coefficient value is -0.42, meaning that if the value of other variables is constant and the DAU increases by 1%, the BM value will decrease by 42%. Vice versa, if the value of other variables is constant and DAU decreases by 1%, the BM variable will increase by 42%. The results of this study are in line with the research conducted that the general allocation fund does not influence capital expenditure (Hermawan et al., 2016; Ivana et al., 2021).

DAU is a fund given by the central government to regions with the freedom to allocate according to their needs and priorities and improve services to the community in the context of implementing regional autonomy. the DAU of the Regency / City of North Sumatra indicated that it was not used for capital expenditure, but for other purposes that were prioritized by the local government.

CONCLUSION AND RECOMMENDATION

This study discovered that local revenue, revenue-sharing funds, and general allocation funds all had a substantial impact on capital expenditures in the Regency/City of North Sumatra. Meanwhile, it reveals that only revenue sharing has a substantial negative influence on capital spending, and the other two factors, namely local revenue and general allocation funds, have no significant effect on capital expenditure in the Regency / City of North Sumatra. Changes in revenue-sharing funds tend to affect capital expenditure significantly but negatively, while own-source revenues and general allocation funds have a less significant impact on capital expenditure.

Recommendations from researchers in future studies can add other factors or variables that are not included in this study, and then add more time spans with different types and methods of analysis. Future researchers are also expected to expand the research subjects, not only at the provincial level but at the national level.

REFERENCES


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