Influence of PAD and DAU on Economic Growth with Capital Expenditure as an Intervening Variable on Regency and Municipal Government in South Kalimantan Province

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PAD, DAU, capital expenditure, economic growth

**ABSTRACT**
The purpose of this study is to examine and analyze how PAD (Local Original Revenue) and DAU (General Allocation Fund) affect direct and indirect economic growth. This paper differs from previous research, which generally places economic growth as an exogenous factor, and the results remain inconsistent. While this research puts the variable of economic growth in an endogenous position that is factor influenced by public expenditure, which in this context is the allocation of capital expenditure. PAD is an indicator of local government productivity that is influenced by local government innovations in the development of productive assets. DAU is one aspect of funding derived from government transfers used for public spending. The results of this study indicate that PAD has no significant effect on capital expenditure allocation. PAD is also an indicator of regional independence in providing financing sources of regional development. Theoretically, the greater the PAD of an area, the more independent the region is. But for whatever achievement PAD, if there is inefficiency in the management, the amount of PAD will be absorbed for operational financing, so it does not affect the capital expenditure for investment purposes. DAU has a significant influence on capital expenditure and economic growth. The total effect of DAU on Economic Growth through the Capital Expenditure is 0.359 or 36 percent. While the indirect effect of DAU (0.082 or 8 percent) is lower than the direct impact on economic growth (28 percent). This proves that capital expenditure variables have a role as a mediating variable, in the form of partial mediation.

**INTRODUCTION**

The regional autonomy is a form of decentralizing in managing financial resources and local assets that will be optimized to generate people welfare. One indicator of the success of the region in the welfare of its people is by the increase of economic growth marked by the achievement of increasing PDRB (GRDP) from year to year. Fiscal decentralization is also one form of implementation of New
Public Management (NPM) paradigm in the public sector. The practice of New Public Management (NPM) is considered to be a solution for improving the performance of the local government sector, in accordance with the demands of local financial reform and performance-based service management, so as to create good governance in the public sector environment. Halim (2012) stated: “the regional autonomy is the best way to encourage regional development because independence in carrying out development can be done effectively and efficiently.”

In the economic literature, (Gillis, 1992), (Barro, 1991), (Azwar, 2016) there are known two opposing views on the relationship between economic growth and government spending. In Keynesian theory, increased government spending will increase production (Jahan, et.al., 2014) thereby promoting economic growth. In Wagner's theory states that as economic growth so does the size of public sector spending. Among the research results, Barro (1991) provide empirical evidence about this. In the view of Wagner's Law or known the 'law of expanding state expenditure' is that if the economic growth of a region increases then the government will increase capital spending to improve and equip infrastructure facilities with the aim to improve public services (Salih, 2012).

Studies that link public spending or capital expenditure to economic growth as endogenous variables, especially in Indonesia based on the author's knowledge are limited. Generally, such research is undertaken for other Asian countries, whose economic growth increases after the economic crisis. Among the most influential studies, conducted by Barro (1991), (Baffes, et.al., 1998), (Azeem, 2009), (Sahoo, et.al., 2010), (Ali, S., et al, 2013), while in Indonesia by Ramayandi (2003), and Wardhani, Rossiesta (2003).

Sahoo, Dash (2010) examined the role of infrastructure in promoting economic growth in China for the period 1975 to 2007. Overall, the results show that infrastructure development in China has a significant positive contribution to the growth of private and public investment. Furthermore, there is a causal relationship in the direction of infrastructure development to output growth justifying China's high spending on infrastructure development. Infrastructure development is one of the main forms of public expenditure spending - which is part of capital spending.

Several other studies have examined the relationship of economic growth variables to capital expenditure allocation by placing economic growth as an exogenous variable, and the results still show inconsistencies, such as research (Hidayati, 2016), (Fajrina, M.N. and L. Suzan, 2014), (Merina, C.I. and M. Sari, 2016). In contrast to this research, putting the variable of economic growth as an endogenous variable, i.e. as a factor influenced by public spending, which in this context the allocation of capital expenditure.

The purpose of this study is to examine and analyze how PAD and DAU variables affect economic growth both directly and indirectly. This paper is important because it differs from previous studies, by linking the influence of PAD and DAU to economic growth, with capital spending as a intervening variable. The focus of this paper is to describe and answer the question of how the impact of PAD and DAU on Economic Growth through the allocation of Capital Expenditures. The results of this study are expected to be an input for local governments in considering policies related to PAD and DAU variables whose role can affect economic growth both directly and indirectly.

A. Budgeting in the Sector Public

According to Glenn A Welsch (1995) budget is a statement of management plans and policies used in a certain period as a blueprint in that period. The Budget has functioned as (1) political instruments, (2) Fiscal Policy Instruments (3) Planning Instruments (4) Control Instruments.

Capital expenditure is a budgetary expense for the acquisition of fixed assets and other assets which give a benefit for more than one accounting period (PP. 71/2010). The allocation of capital expenditures is aimed for the acquisition of the land, buildings, equipment, and intangible assets (IFAC, 2016). Regulation No.13/2006 on Local Financial Management regulates that “capital expenditure is used for expenses incurred in order to procure tangible fixed assets that have an economic benefit for more than 1 (one) year to be used in government activities. The use of local government capital expenditure can be performed by expanding the development of productive fixed asset.”
B. Regional Budget (APBD)
The law No.32/2004 on Regional Government states that “...the Regional Revenue and Expenditure Budget (APBD) is the annual financial plan of local government which is determined by regional regulations.” APBD is one of the engines of economic growth. The role of APBD as a driver of the achievement of regional macroeconomic targets and targets is directed to overcome various obstacles and main problems and challenges in realizing a prosperous society. The APBD management policy focuses on optimizing the functions and benefits of revenues, expenditures, and financing for the achievement of annual development agendas.

C. Economic Growth Theory
Economic growth is a parameter of a development activity, this is because economic growth can measure the rate of development of activity in the economic sectors in an economy. Economic growth is also defined as an increase in the ability to produce goods and services (Sahoo, et.al., 2010). In other words, economic growth refers to quantitative change and is usually measured using Gross Regional Domestic Product (PDRB) data or income per capita. PDRB is the total market value of final goods and services produced within an economic entity over a period of time, usually one year.

D. Previous Research and Hypothesis Development
1) PAD Relationship To The Allocation Of Capital Expenditures
Theoretically, the increase in PAD will increase capital expenditure, which in turn will improve the quality of public services and in turn increase the amount of community production. But empirically, this hope may not work, because the original revenue of the area is much sucked to finance other expenditure as found by Adiputra and Dwiantari (2015).
Sugiarti and Supadmi (2014), and Merina and Sari (2016) confirming that PAD variables have a significant effect on capital expenditure, whereas according to Hidayati (2016) PAD has no effect on capital expenditure allocation. From several previous studies, there are still findings of inconsistent research results that need to re-test into the hypothesis as follows:

\[ H_1: \text{PAD affects the allocation of capital expenditure.} \]

2) Relationship of General Allocation Funds (DAU) to the allocation of capital expenditures.
The General Allocation Fund (DAU) is a fund derived from the APBN allocated for the purpose of inter-regional fiscal balancing to finance expenditure needs in the context of decentralization. The financial balancing fund is a consequence of the transfer of central government authority to the local government. Thus, there is a significant transfer in the APBN from the central government to local governments. Local governments can use financial balancing funds (DAU) to provide services to the public that are realized through capital expenditures.
Pradita and Prastiwi (2012) concluded that the DAU affects Capital Expenditure this is because, with the transfer of DAU from central government, local government can allocate its income to finance Capital Expenditure. This is supported by Suhardjanto, et.al (2009). However, this is different from Sugiarti et.al (2014) which concluded that DAU has no significant effect on capital expenditure. Still, the findings of research results are not consistent so that researchers need to do the test back into the hypothesis as follows:

\[ H_2: \text{General allocation funds (DAU) affect the allocation of capital expenditure.} \]

3) PAD, DAU, Capital Expenditure and Economic Growth
The studies by Merina and Sari (2016), Hidayati (2016), Fajrina and Suzan (2014), Tamawiwy, Sondakh (2016), Maharani and Adi (2013) generally test the effect of economic growth variables on capital expenditure allocation or put economic growth as an exogenous variable, and the results still show inconsistencies. While this research puts the economic growth variables (Gills, M., et al, 1992), (Barro, 1991), (Azwar, 2016) on endogenous positions, i.e as variables affected by public spending, in this context the allocation of capital expenditures, as did by Sahoo, Dash (2010). Based on this, then put forward the following research hypothesis:

\[ H_3: \text{PAD affects economic growth} \]
METHOD

The population in this research is Regency and municipal government in South Kalimantan. The type of data observed is secondary data. The data were obtained from BPS of South Kalimantan Province, in the form of APBD documents for 2012 to 2016, published in Government Financial Statistics Book of South Kalimantan, and supporting data through the Ministry of Finance website (www.djpkpd.go.id). The APBD data analyzed is a five-year time series for 13 regency and municipal that describe cross-sectional all observed variables. The merging of this data is known as panel data, so the amount of data analyzed is for 13 regencies and municipals multiplied by 5 years that is as many as 65 units of observation data.

E. Variables and Measurements

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator</th>
<th>Scale Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Income Region (PAD)</td>
<td>Total PAD</td>
<td>Ratio</td>
<td>Exogenous Variable (X_1)</td>
</tr>
<tr>
<td>General Allocation Fund (DAU)</td>
<td>Total DAU</td>
<td>Ratio</td>
<td>Exogenous Variable (X_2)</td>
</tr>
<tr>
<td>Capital Expenditure (BM)</td>
<td>Amount of Capital Expenditure</td>
<td>Ratio</td>
<td>Intervening Variable (Y_1)</td>
</tr>
<tr>
<td>Economic growth (PE)</td>
<td>PDRB Price Applicable</td>
<td>Ratio</td>
<td>Endogenous Variable (Y_2)</td>
</tr>
</tbody>
</table>

The relationship between variables and hypothesis test can be described as follows:

\[ Y_1 = \rho_1 X_1 Y_1 + \rho_2 Y_2 + \epsilon_1 \] (1)

F. Analysis Technique

Data analysis technique used in this research is Path Analysis. Stages of analysis conducted in this study that is, the classical assumption test, formulation of Path Analysis model, and hypothesis test. The path equations for this study are as follows:

Sub Structural Model 1:

\[ Y_1 = \rho_1 X_1 Y_1 + \rho_2 Y_2 + \epsilon_1 \] (1)
**Sub Structural Model 2:**

\[ Y2 = \rho X_1 Y_2 + \rho X_2 Y_2 + \rho X_3 Y_2 + \rho X_4 Y_2 + \rho Y_1 Y_2 + \varepsilon_2 \] (2)

Notes:
- X1 = PAD = Local Original Revenue
- X2 = DAU = General Allocation Fund
- Y1 = BM = Capital Expenditure
- Y2 = PE = Economic Growth
- \( \rho \) = Path Coefficient
- \( \varepsilon \) = Error Level

**RESULTS AND DISCUSSIONS**

Before the model is used, first classical assumption test is performed. In path analysis, there are four assumptions to be met, namely assumption of normality, multicollinearity, heteroscedasticity, and autocorrelation. Test results show that all assumptions are met. Table 2 and Table 3 each present the conclusions of test results of the first and second model statistics related to the hypotheses tested in this study.

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients (Path)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PA,125</td>
<td>1.0</td>
<td>.285</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>(X1)</td>
<td>DA,357</td>
<td>2.9</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>(X2)</td>
<td>R2 = .742</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F Hitung = 23.479</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. F = .000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output

**G. Analysis of Sub-Structural Model 1**

The results of the first model test show that simultaneously PAD and DAU have a significant effect on Capital Expenditure with significance below 0.05 (p = 0.000), and R2 value coefficient of 0.742 or rounded to 74 percent, which means that Capital Expenditure is influenced by the observed variables was 74 percent. The remaining 26 percent is explained by other factors outside the model. Based on the coefficient value of the path, \( \rho Y_1 X_1 = 0.125 \) or 13 percent; and \( \rho Y_1 X_2 = 0.357 \), or 36 percent and significant with sig <0.285 on path X1, sig> 0.005 in line X2. This explains that simultaneously PAD and DAU can be used as variables affecting Capital Expenditures, but partially only DAU that have a significant effect on Working Capital. Furthermore, the empirical causal influence between the variables (X1) and (X2) can be described by sub-structural equations one:

\[ Y1 = 0.125 X_1 + 0.357 X_2 + 0.508 \varepsilon_1. \]
Table 3

Hypothesis Test Results of Sub-structure Model 2

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients (Path)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PAD (X1)</td>
<td>.025</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>DAU (X2)</td>
<td>.277</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Belanja Model</td>
<td>.231</td>
<td>2.4</td>
</tr>
</tbody>
</table>

R2 = .502
F Hitung = 8.057
Sig. F = .000

Source: SPSS Output

H. Analysis of Sub-Structural Model 2
The results of the second model test show that simultaneously PAD, DAU, and Capital Expenditures with significance (p = 0.000) <0.05, and R2 value coefficient of 0.502 or rounded to 50 percent, which means that Economic Growth is significantly affected by variables -variables observed with an influence of 50 percent. The remaining 50 percent is explained by other factors outside the model. While partially, based on the coefficient value of the path, can be explained in the two structural equations below. Based on the significance of 0.05, PAD variable (p = 0.495) > 0.00 is not significant influence to Economic Growth. DAU variable (p = 0.002) <0.000; means significant effect on Economic Growth, and Capital Expenditure (p = 0.003) <0.000; means significant effect on Economic Growth. Thus, PAD has no significant effect on economic growth; while DAU and Capital Expenditure have a significant effect on economic growth. Furthermore, the empirical causal influence between these variables can be illustrated by the following two sub-structural equations:

\[ Y2 = \rho Y2,0.025 + \rho Y2,0.277 + \rho Y2,0.231 + \epsilon0,705 \]

Based on the results of the analysis and equation above, it can be obtained diagram research model as follows:

Figure 2:
Model Chart of Path Analysis Results
I. Hypothesis Testing and Discussion

1) The Effect of Original Revenue (PAD) on the allocation of Capital Expenditures.
Based on the significance test of $X_1$ line, with the significance of PAD ($\rho = 0.495 > 0.00$) PAD stated no significant influence on Capital Expenditure. The coefficient of $X_1$ line is marked positive, which means that the increase in PAD can affect the increase in Capital Expenditure, by 13 percent but not significant. Thus, the hypothesis $H_1$: PAD affects the allocation of capital expenditure is rejected. The results of this study do not confirm the results of Sugiarthi and Supadmi's research (2014), and Merina and Sari (2016), but consistent with Hidayati’s (2016) study that PAD has no significant effect on capital expenditure allocation.

The amount of PAD of a region can mean that the amount of regional autonomy in financing regional development, but if there is inefficiency in the management, the amount of PAD will be absorbed for operational financing, so it does not affect the capital expenditure for investment purposes. In this context, the regions have no independence in generating development outcomes, in the sense of being heavily dependent on transfer funds from the center.

2) Effect of General Allocation Fund (DAU) on the allocation of capital expenditures.
DAU has significant effect to Capital Expenditure with significance $P = 0.005 < 0.05$. The magnitude of the effect of DAU on Capital Expenditure is 0.357 or rounded to 36 percent, which means DAU can affect the Capital Expenditure by 36 percent.

It can be concluded that $H_2$: The general allocation fund has a significant effect on the allocation of capital expenditure received. The results of this study are not in line with Subardjanto, et.al., (2009), Sugiarthi and Supadmi (2014) which states that the DAU variable has no significant effect on capital expenditure. DAU tends to be used for local government activities in addition to infrastructure development, in other words, more for routine spending (DJPK, 2013).

3) PAD has a direct effect on Economic Growth
Based on the significance test, PAD has no significant effect on Economic Growth with $P = 0.495 > 0.05$ significance. The magnitude of the direct effect of PAD on Economic Growth with path coefficient $\rho X_1Y_2 = 0.025$ or rounded to 3 percent. Based on this analysis, the hypothesis $H_3$: PAD has a direct significant effect on Economic Growth is unacceptable.

4) DAU has a direct effect on Economic Growth
Based on significance test, DAU has a significant effect on Economic Growth with significance $P = 0.002 < 0.05$. The magnitude of the direct influence of DAU on Economic Growth with path coefficient $\rho X_2Y_2 = 0.277$ or rounded to 28 percent. Based on this analysis, the hypothesis $H_4$: DAU has a significant direct effect on Economic Growth is acceptable.

5) PAD has an indirect effect on Economic Growth
The direct effect of PAD on Economic Growth is 0.025. While indirect effect of PAD on Economic Growth, that is through Capital Expenditure $= 0.125 \times 0.231 = 0.029$. The total path coefficient between PAD ($X_1$) to Economic Growth ($Y_2$) is $0.025 + 0.029 = 0.054$. Thus, it is known that the total effect of PAD on Economic Growth through Capital Expenditure is only 0.054 or 6 percent. From this path analysis, there was no significant variance between the indirect effect (0.029) and the direct effect (0.025). Thus, the hypothesis $H_5$: PAD affects Economic Growth through Capital Expenditure, not confirmed.

6) DAU has an indirect effect on Economic Growth
The direct effect of DAU on Economic Growth is 0.277. While the indirect influence of DAU on Economic Growth through the Capital Expenditure $= 0.357 \times 0.231 = 0.082$. Thus the total path coefficient between DAU ($X_2$) to Economic Growth ($Y_2$) is $0.277 + 0.082 = 0.359$. Thus, the total effect of DAU on Economic Growth through Capital Expenditure is 0.359 or 36 percent. While the direct influence of DAU on economic growth (0.277 or 28 percent) is greater than the indirect effect.
(0.082 or 8 percent). Thus, the hypothesis $H_0$: DAU affects on Economic Growth through Capital Expenditure, is accepted.

**CONCLUSION AND SUGGESTION**

PAD is one indicator of local government productivity that is influenced by local government innovation in developing productive assets. Increased innovation in the development of local government productive assets led to an increase in funds allocated for capital expenditures. However, the results of this study indicate that PAD has no significant effect on capital expenditure allocation. PAD is also an indicator of regional independence in providing financing sources of regional development. The larger the PAD of an area, the more independent the region is. But for whatever achievement PAD, if there is inefficiency in the management, the amount of PAD will be absorbed for operational financing, so it does not affect the capital expenditure for investment purposes. In this context, the regions have no independence in generating development outcomes, in the sense of being heavily dependent on central transfer funds, that is DAU.

Partially, DAU has a significant influence on capital expenditure and economic growth. The total DAU effect on Economic Growth through the Capital Expenditure is 0.359 or 36 percent. But the indirect impact of DAU (0.082 or 8 percent) is lower than the direct impact on economic growth (28 percent). This proves that capital expenditure is significant as mediation, but is a partial mediation in the context of this study.

DAU used for infrastructure development determines the pattern and amount of capital expenditure allocation and impacts on economic growth. Infrastructure is a development whose benefits are in direct contact with public needs in various sectors, which facilitates increased production. It, therefore, has an impact on economic growth and regional competitiveness.

In order to promote economic growth, local governments should prioritize infrastructure development that can increase people productivity, through local and private investment, supported by the efficient, effective, and free governance of corrupt spending patterns.

Experience from China proves that capital expenditure has become one of the government intervention strategies in promoting economic growth and competitiveness, through investment in infrastructure (Sahoo, et.al., 2010).

There are some limitations in the research: (1) the scope of the research is the South Kalimantan region, so that it is limited by the characteristics of the region, whether the area or the culture and other characteristics that may affect the research results; (2) the interpretation of the results of this study is not supported by personal experience of the stakeholders in the observation area; because it only uses secondary data.

For subsequent research, it is advisable to conduct a similar study with a broader scope and to consider the differences in regional characteristics, as well as with other variables that have not been observed.

**REFERENCES**


