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Evaluating the Effectiveness of Special and General Allocation Funds on Capital Spending in Indonesia Regional Economies

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Abstract:

This study examines the effectiveness of Special Allocation Funds (DAK) and General Allocation Funds (DAU) on Regional Capital Expenditures in Regencies and Cities in Indonesia in 2021. The findings indicate that DAK does not have a significant positive effect on capital expenditures, while DAU has a positive and significant impact. However, simultaneous testing results show that DAK and DAU together significantly influence capital expenditures, as evidenced by an F-value of 72.050 with a significance level of 0.000 (< 0.05). These results suggest that while DAK individually does not directly impact capital expenditures, its combination with DAU plays a crucial role in supporting regional investment and infrastructure development. Therefore, optimizing DAK management is necessary to enhance its flexibility and effectiveness in financing capital expenditures, ensuring a more direct contribution to regional development. Local governments should allocate DAU wisely, not only for routine expenditures but also for long-term investments that drive economic growth. Additionally, improving transparency and accountability in budget management is essential to ensure that allocated funds are utilized effectively and efficiently. Future research is recommended to incorporate other variables, such as Local Revenue (PAD) and Revenue Sharing Funds (DBH), to gain a more comprehensive understanding of the factors influencing regional capital expenditures in subsequent years

Keywords: *Special Allocation Fund (DAK), General Allocation Fund (DAU), Capital Expenditure, Regional Government.*

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1. Introduction

The increase in regional capital expenditure is one of the key indicators in assessing the government's commitment to infrastructure development and public service delivery. However, the realization of capital spending in Indonesia has shown

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suboptimal patterns. As noted by Aritenang (2020), in certain fiscal years, capital expenditure absorption remained low in the first half of the year and tended to surge sharply towards the end. This condition indicates issues in budgeting and execution that may hinder the effectiveness of development initiatives.

For instance, in 2017, capital expenditure allocation in the State Budget (APBN) reached IDR 200.3 trillion, yet realization by mid-year was only about IDR 47.48 trillion or 23.7%. This phenomenon occurred not only at the central government level but was also reflected in the Regional Budget (APBD), where capital expenditure allocation averaged only 21.1% of total expenditure (Pratama, 2020; Dewi & Chairunesia, 2024). Such imbalances could slow infrastructure development and adversely impact public services.

The General Allocation Fund (DAU) and the Special Allocation Fund (DAK) are two primary fiscal transfer instruments from the central government to regional governments intended to support capital spending. DAU is designed to meet general administrative needs of local governments, whereas DAK is allocated for nationally prioritized programs. However, the effectiveness of these funds in stimulating regional capital expenditure remains debated in academic literature (Badriyah, 2020; Hanafiah, 2022).

Several studies have shown that DAU is often diverted toward employee salaries rather than capital investments, thus falling short of its intended purpose to support infrastructure development (Hadisantoso et al., 2023). On the other hand, delays in DAK disbursement have also hampered the implementation of strategic regional projects. This has led to project accumulation toward the year's end and a potential decline in development quality (Atichasari & Ristiyana, 2023).

Empirical research by Maula et al. (2023) reveals that the impact of DAK and DAU on capital spending varies across regions, depending on fiscal capacity and local government managerial competence. Therefore, it is essential to explore further the relationship between DAK, DAU, and capital expenditure in diverse regional contexts to produce more targeted policy recommendations.

This research is relevant due to the evident gap in findings from previous studies that have not consistently demonstrated a significant effect of DAK and DAU on capital expenditure. For instance, Sari (2021) found that DAU had no significant effect on capital spending, while Wally (2023) reported that both funds had a significantly positive influence. These inconsistencies highlight the need for further analysis, particularly one that considers contextual regional variables.

From a novelty standpoint, this study offers an evaluative approach to the effectiveness of central government transfers (DAK and DAU) on capital expenditure, taking into account regional disparities and budget absorption patterns. It is expected to contribute new insights to the field of fiscal decentralization, especially in developing more performance-based and responsive policies.

The main objective of this study is to analyze the extent to which DAK and DAU influence regional governments' capital expenditures in Indonesia. In addition, it aims to identify challenges in utilizing these fiscal transfers and provide policy recommendations to enhance their effectiveness in supporting regional development.

The findings of this study are expected to offer practical contributions for both central and regional governments in designing more effective and accountable mechanisms for the allocation and monitoring of fiscal transfers. Academically, this research enriches the literature on intergovernmental fiscal relations and provides an empirical foundation for future studies on regional financial management.

Thus, this study is essential in the broader context of achieving equitable and sustainable development in Indonesia, particularly through the optimization of capital expenditures financed by central government fiscal transfers.

2. Theoretical Background

Central Government Transfers and Local Infrastructure Funding
Research on the effectiveness of central government transfers—specifically the General Allocation Fund (DAU) and Special Allocation Fund (DAK)—on regional capital expenditure has become a critical concern in Indonesian fiscal policy studies. Aritenang (2020) emphasizes that intergovernmental transfers are the main financial source for local infrastructure development, especially in regions with limited Local Own-Source Revenue (PAD). His findings highlight that DAK plays a central role in encouraging capital expenditure due to its earmarked nature, focusing on specific projects, particularly in basic infrastructure. This aligns with the *flypaper effect* theory as explained by Lewis (2013), which argues that intergovernmental transfers from the central government are more likely to be spent by local governments than PAD, thus significantly affecting capital spending, an important indicator of regional growth and public welfare.

Empirical Evidence from Regional Case Studies
Atichasari and Ristiyana (2023), analyzing 29 districts/cities in Central Java, found both DAU and DAK to have a positive and significant influence on regional capital expenditures. Interestingly, they discovered that economic growth had no significant impact on capital spending, indicating that fiscal variables such as transfers are more dominant than local macroeconomic indicators. Supporting this view, Dewi and Chairunesia (2024), in their study of West Nusa Tenggara Province, concluded that PAD, DAU, and DAK collectively contribute positively to increasing capital expenditures.

Challenges in Transfer Utilization
Despite its importance, DAU utilization often lacks efficiency. Badriyah (2020) revealed a recurring pattern where local governments allocate more DAU toward employee expenditures than capital expenditures, resulting in fiscal inefficiency and undermining the intended infrastructure goals. This issue underlines the need for

stronger spending controls and policy guidance to align fiscal transfers with development priorities.

Regional Disparities in Effectiveness

Differences in regional characteristics also impact the effectiveness of DAU and DAK. Hanafiah (2022) and Hadisantoso et al. (2023) discovered that the influence of PAD, DAU, and DAK on capital expenditure varies across regions, depending on fiscal capacity, economic structure, and local governance. In Southeast Sulawesi, for instance, DAK significantly contributes to physical development, whereas in fiscally stronger regions, PAD plays a more substantial role. Maula et al. (2023), in West Java, highlighted that the quality of local financial management moderates the effectiveness of both DAU and DAK. This resonates with Lakat et al. (2025), who stressed the importance of transparency and accountability in ensuring that transfers are used for genuine development projects rather than administrative or consumptive purposes.

International Comparative Perspective

From an international lens, Sudhipongpracha (2017) compared Indonesia and Thailand, concluding that the design of transfer mechanisms significantly determines the efficiency and equity of local government spending. In Indonesia, the focus must be on enhancing planning quality and evaluation frameworks for DAK to prevent misallocation and ensure development outcomes.

3. Methodology

This study uses district and city governments in Indonesia as the population analyzed, with the 2021 budget realization report (LRA) as the object of study. The technique used in this study is total sampling, which means that the entire available population is used as a research sample. Thus, the sample used in this study is the LRA from district and city governments in Indonesia for 2021.

The data used in this study are secondary data, obtained through the documentation method as a data collection technique. The main data in this study is the budget realization report (LRA) of district and city governments in Indonesia in 2021.

Data analysis in this study was conducted through classical assumption testing and hypothesis testing. Classical assumption testing includes normality testing, multicollinearity testing, and heteroscedasticity testing, which aims to determine the extent to which the Special Allocation Fund (X1) and General Allocation Fund (X2) affect capital expenditure (Y). In addition, this study uses multiple regression analysis to measure the relationship between variables.

In hypothesis testing, several statistical tests are used, namely the t-test to measure the influence of independent variables partially, the F-test to measure the influence of independent variables simultaneously, and the coefficient of determination test to determine how much the independent variables are able to explain variations in capital expenditure.

4. Empirical Findings/Result

Normality Test

Table 1. Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			501
Normal Parametersa,b	Mean		,0000000
	Std. Deviation		172481,70883347
Most Extreme Differences	Absolute		,223
	Positive		,223
	Negative		-,158
Test Statistics			,223
Asymp. Sig. (2-tailed)c			,000
Monte Carlo Sig. (2-tailed)d	Sig.		,000
	99% Confidence Interval	Lower Bound	,000
		Upper Bound	,000

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 299883525.

Source: processed data, 2025

Based on the results of the normality test presented in Table 1, the Kolmogorov-Smirnov test produces a significance value of 0.000. When compared to the probability value of 0.05, it can be seen that the significance value is smaller than the probability limit. This indicates that the residual data is not normally distributed.

Multicollinearity Test

Table 2. Multicollinearity Test Results

Coefficientsa							
	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	33360,282	19760,130		1,688	,092		
Special Allocation Fund	,130	,120	,074	1,080	,281	,333	3,002
General Allocation Fund	,299	,050	,412	6,019	,000	,333	3,002

a. Dependent Variable: Regional Capital Expenditure

Source: processed data, 2025

The results of the analysis in Table 2 show that each independent variable in this study has a VIF value of less than 10 and a tolerance value of more than 0.1. This indicates that there is no multicollinearity problem among the independent variables.

Heteroscedasticity Test

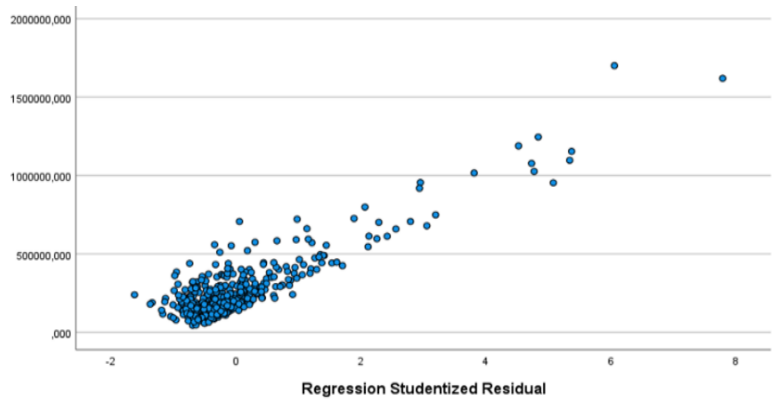

Figure 1. Heteroscedasticity Test Results

Source: processed data, 2025

Based on the analysis shown in Figure 3, the results of the heteroscedasticity test indicate the presence of heteroscedasticity in this study. This is caused by the pattern in the image that is not spread randomly, thus indicating the presence of a heteroscedasticity problem.

3.4 Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Results

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1 (Constant)	33360,282	19760,130		1,688	,092		
Special Allocation Fund	,130	,120	,074	1,080	,281	,333	3,002
General Allocation Fund	,299	,050	,412	6,019	,000	,333	3,002

a. Dependent Variable: Regional Capital Expenditure

Source: processed data, 2025

Based on the results of the multiple linear regression analysis shown in Table 4 above, the following regression equation was obtained:

Y= a+ b1X1+b2X2

Y= 33360,282+ 0,130X1 + 0,299X2

Based on the equation above, the explanation is as follows:

The constant of 33,360.282 represents the initial value of Regional Capital Expenditure (Y) when the Special Allocation Fund (X1) and General Allocation Fund (X2) are absent or have a value of zero. This means that if there is no allocation of funds from these two variables, Regional Capital Expenditure is estimated to be at 33,360.282.

The Special Allocation Fund coefficient (X1) of 0.130 indicates that every one unit

increase in the Special Allocation Fund will cause an increase in Regional Capital Expenditure (Y) of 0.130, assuming other factors remain constant.

The General Allocation Fund (X2) coefficient of 0.299 indicates that each additional unit in the General Allocation Fund will increase Regional Capital Expenditure (Y) by 0.299, assuming other variables do not change.

Coefficient of Determination (R2)

Table 4. R-Square Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,474a	,224	,221	172827,710603	,224	72,050	2	498	,000	1,651

a. Predictors: (Constant), General Allocation Fund, Special Allocation Fund

b. Dependent Variable: Regional Capital Expenditure

Source: processed data, 2025

The results of the determination coefficient test show that the R Square value is 0.221 or 22.1%. This indicates that the independent variables, namely the Special Allocation Fund (X1) and the General Allocation Fund (X2), contribute 22.1% to the dependent variable, namely Regional Capital Expenditure (Y). Meanwhile, the remaining 77.9% is influenced by other factors not discussed in this study.

T-test

Table 5. Results of T-Test Hypothesis Testing

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	33360,282	19760,130		1,688	,092		
	Special Allocation Fund	,130	,120	,074	1,080	,281	,333	3,002
	General Allocation Fund	,299	,050	,412	6,019	,000	,333	3,002

a. Dependent Variable: Regional Capital Expenditure

Source: processed data, 2025

Based on Table 5, the results of the partial test (t-test) for each variable can be explained as follows:

Special Allocation Fund (X1) has a significance value (Sig.) of 0.281. Because this value is greater than 0.05, it can be concluded that the Special Allocation Fund does not have a positive and significant influence on Regional Capital Expenditure in districts and cities in Indonesia. Therefore, hypothesis 1 cannot be accepted.

General Allocation Fund (X2) has a significance value (Sig.) of 0.000. Because this

value is smaller than 0.05, it can be concluded that the General Allocation Fund has a positive and significant effect on Regional Capital Expenditure in districts and cities in Indonesia. Thus, hypothesis 2 can be accepted.

F Test

Table 6. Results of Hypothesis Testing F Test

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4304157453494,816	2	2152078726747,408	72,050	,000b
Residual	14874969941057,156	498	29869417552,324		
Total	19179127394551,973	500			
a. Dependent Variable: Regional Capital Expenditure					
b. Predictors: (Constant), General Allocation Fund, Special Allocation Fund					

Source: processed data, 2025

Based on Table 6, the F value obtained is 72.050 with a significance level of 0.000. Because the significance value is less than 0.05 (0.000 < 0.05), it can be concluded that the Special Allocation Fund and General Allocation Fund have an effect on Regional Capital Expenditure.

5. Discussion

The findings indicate that the Special Allocation Fund (DAK) does not significantly influence regional capital expenditures. This can be attributed to the nature of DAK itself, which is designed to finance specific programs determined by the central government, leaving limited discretion to local authorities. As noted by Pambudi et al. (2021), the DAK, particularly in sectors like education, is often bound by rigid guidelines, thus reducing its flexibility to support broader capital spending agendas. Similarly, Badriyah (2020) emphasized that DAK's programmatic nature results in constrained adaptability, which can hinder its effectiveness in enhancing regional investment in infrastructure and fixed assets.

This limited impact is echoed by Hadisantoso et al. (2023), who observed that while DAK provides additional fiscal capacity, its influence on capital expenditures is conditional upon alignment with central priorities. Hanafiah (2022) and Atichasari and Ristiyana (2023) further support this by showing inconsistent outcomes across various districts, reinforcing the argument that DAK alone may not be a strong driver of local capital investment. In essence, although DAK aims to reduce regional disparities, its restricted application scope can dilute its overall effect on regional capital development.

In contrast, the General Allocation Fund (DAU) demonstrates a significant and positive relationship with capital expenditure. As highlighted by Dewi and Chairunesia (2024), DAU’s broader flexibility allows local governments to allocate funds according to local priorities, including infrastructure and development projects. This flexibility is a crucial advantage, as stated by Lewis (2013), enabling local governments to integrate DAU into their long-term investment strategies.

Moreover, the role of DAU in strengthening fiscal independence is corroborated by

Widodo (2023), who emphasized its contribution to sustainable development through increased autonomy in capital planning. Safitri et al. (2021) also affirm that DAU supports capital expenditure more directly, as it is not bound to specific sectors. This positive linkage has been echoed in multiple regions across Indonesia (Putra et al., 2023; Isyandi & Trihatmoko, 2022), where DAU serves as a financial buffer for capital projects that reflect regional development agendas.

Wulandari et al. (2018) add that DAU, along with other financial instruments, contributes positively to human development indices via capital spending, showing its broader socioeconomic impact. The empirical evidence supports the assertion that DAU plays a more consistent and supportive role in capital investment than DAK.

While DAK may not significantly impact capital expenditure in isolation, its combined role with DAU proves to be substantial. Several studies emphasize the importance of both funds working together to strengthen capital formation. Sari (2021) notes that DAU and DAK, when viewed simultaneously, contribute meaningfully to infrastructure and public service investment. Similarly, Tuwaidan et al. (2024) found that the synergy between DAU and DAK enhances financial independence through economic growth.

Maula et al. (2023) also suggest that although DAU is more potent individually, the presence of DAK can complement specific sectoral needs, creating a comprehensive investment mechanism. Aritenang (2020) supports this integrated approach by underlining the necessity of coordinated fiscal transfers for maximizing infrastructure outcomes.

The idea that capital expenditure depends heavily on central transfers is not new. Studies such as those by Mutiah (2015), Saud et al. (2021), and Lakat et al. (2025) affirm that regional governments often rely on these funds due to limited internally generated revenue. Therefore, as emphasized by Sudhipongpracha (2017), an optimal fiscal decentralization framework must balance general and special allocations to effectively support regional development.

In conclusion, while DAU provides flexibility and consistent support for capital expenditures, DAK's contribution is more nuanced and sector-specific. Nevertheless, their combined use can yield substantial benefits when strategically integrated into local budgeting and planning processes. These findings underscore the need for policy reforms that enhance the autonomy and effectiveness of fiscal transfers to empower regional development across Indonesia.

5. Conclusion

Based on the results of the study on the effectiveness of the Special Allocation Fund (DAK) and General Allocation Fund (DAU) on Regional Capital Expenditures of Districts and Cities in Indonesia in 2021, it can be concluded that DAK does not have a significant effect on regional capital expenditures, while DAU has a positive and

significant effect. However, the results of the simultaneous test show that together, DAK and DAU have a significant effect on capital expenditures, as indicated by the F value of 72.050 with a significance of 0.000 (<0.05). This finding indicates that although DAK has no effect individually, the combination of DAK and DAU still has an important role in supporting regional capital expenditures.

To improve the effectiveness of capital expenditure, optimization is needed in the management of DAK to be more flexible and able to contribute directly to regional development. In addition, regional governments need to allocate DAU more strategically, not only for routine spending, but also to encourage long-term investment that can accelerate economic growth. In order to ensure more effective use of the budget, transparency and accountability in fund management must also be improved.

Further research is recommended to include other variables, such as Regional Original Income (PAD) and Revenue Sharing Funds (DBH), in order to gain a more comprehensive understanding of the factors that influence regional capital expenditure in the future.

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