

## Flypaper Effect of Own-Source Revenue and General Allocation Fund on Capital Expenditure in West Sumatera

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### ABSTRACT

This study analyzes the effect of Own-Source Revenue (PAD) and General Allocation Fund (DAU) on Capital Expenditure, and examines the Flypaper Effect phenomenon in districts/cities of West Sumatra Province during 2020–2024. Using a quantitative associative approach with panel data regression, the study covers 19 districts/cities (95 observations). Secondary data were obtained from BPS and DJPK. Model selection through Chow, Hausman, and Lagrange Multiplier tests confirmed the Random Effects Model (REM) as the best estimator. Results show that: (1) PAD and DAU simultaneously have a significant effect on Capital Expenditure; (2) PAD partially has no significant effect; (3) DAU has a positive and significant effect; and (4) the Flypaper Effect is confirmed, as the DAU coefficient (1.073457) exceeds the PAD coefficient (0.003460) with PAD being insignificant. The model explains 52.34% of Capital Expenditure variation (Adjusted  $R^2 = 0.5234$ ). These findings indicate that capital expenditures respond more to central government transfers than to Own-Source Revenue, reflecting strong fiscal dependence that is not yet aligned with fiscal decentralization goals. Local governments need to intensify tax collection, regional levies, and asset management to achieve sustainable fiscal self-reliance.

### ABSTRAK

Penelitian ini menganalisis pengaruh Pendapatan Asli Daerah (PAD) dan Dana Alokasi Umum (DAU) terhadap Belanja Modal, serta mengkaji fenomena Flypaper Effect di kabupaten/kota Provinsi Sumatera Barat periode 2020–

2024. Menggunakan pendekatan kuantitatif asosiatif dengan regresi data panel, penelitian mencakup 19 kabupaten/kota (95 observasi). Data sekunder diperoleh dari BPS dan DJPK. Pemilihan model melalui Uji Chow, Hausman, dan Lagrange Multiplier menetapkan Random Effects Model (REM) sebagai estimator terbaik. Hasil menunjukkan bahwa: (1) PAD dan DAU secara simultan berpengaruh signifikan terhadap Belanja Modal; (2) PAD secara parsial tidak berpengaruh signifikan; (3) DAU berpengaruh positif dan signifikan; serta (4) Flypaper Effect terkonfirmasi, karena koefisien DAU (1,073457) lebih besar dari koefisien PAD (0,003460) dengan PAD yang tidak signifikan. Model menjelaskan 52,34% variasi Belanja Modal ( $\text{Adjusted } R^2 = 0,5234$ ). Temuan ini mengindikasikan bahwa belanja modal lebih merespons transfer pusat dibandingkan peningkatan PAD, mencerminkan ketergantungan fiskal yang masih kuat dan belum selaras dengan tujuan desentralisasi fiskal. Pemerintah daerah perlu mengintensifkan pemungutan pajak daerah, retribusi, dan pengelolaan aset sebagai langkah menuju kemandirian fiskal yang berkelanjutan.



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## INTRODUCTION

Law Number 23 of 2014 concerning Regional Government and Law Number 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments mandate fiscal decentralization, which means that each region must become more independent financially and less dependent on the central government (Christia & Ispriyarso, 2019). In actuality, however, the structure of regional revenues in Indonesia is still dominated by central government transfer funds, which accounted for 65.7% of total revenue in 2024, while Regional Own Revenue (PAD) contributed just 28.7% (Media Keuangan Kemenkeu, 2025). Similar circumstances exist in West Sumatra Province, where PAD only contributes 19.97% of regencies' and cities' total revenue in mid-2024, although transfer payments account for 80.02%. (Direktorat Jenderal Perbendaharaan Kanwil Sumatera Barat, 2024).

High fiscal dependence on the General Allocation Fund (DAU) gives rise to a phenomenon known in public finance literature as the Flypaper Effect. Hines and Thaler (1995) define the Flypaper Effect as an anomaly where transfer funds from the central government have a much greater impact on local government spending compared to an equivalent increase in community income. Oates (1999) explains that in federal fiscal theory, unconditional transfers should be treated the same as increases in community income, but in reality, local governments tend to use almost all transfer funds for regional spending, a condition known as "money sticks where it hits" (Courant et al., 1979). This phenomenon contradicts the spirit of fiscal decentralization, which is supposed to encourage regional fiscal independence. The Flypaper Effect can be identified through

two conditions. First, the magnitude of the DAU coefficient value is higher compared to the PAD coefficient value, and secondly, the coefficient is significant. Second, the PAD coefficient value is not significant. If one of these conditions is met, it can be concluded that the Flypaper Effect occurs (Dewi et al., 2024).

This phenomenon of fiscal dependence can be explained through two complementary theoretical perspectives. First, Fiscal Federalism Theory proposed by Oates (1999) serves as the primary theoretical foundation, arguing that in a decentralized fiscal system, central government transfers are designed to correct vertical fiscal imbalances across levels of government. However, Oates (1999) observed that unconditional transfers such as the General Allocation Fund (DAU) tend to stimulate local government spending including capital expenditure far beyond what would occur from an equivalent increase in Own-Source Revenue (PAD), an anomaly widely known as the Flypaper Effect. This indicates that local government capital expenditure allocation is more influenced by the magnitude of central transfers than by the region's own fiscal capacity. Second, Agency Theory further reinforces this explanation by viewing the relationship between the central government as the principal and the local government as the agent. In this relationship, local governments tend to be more responsive in allocating DAU to capital expenditure compared to optimizing PAD for the same purpose, because increasing PAD requires considerably greater effort from the agent. It is this inherent information asymmetry in the principal-agent relationship that drives local capital expenditure decisions to remain dependent on central government transfers, thereby hindering the achievement of fiscal independence and the optimal goals of fiscal decentralization. From this perspective, PAD has a positive relationship with capital expenditure because the higher the PAD collected, the greater the local fiscal capacity to independently allocate capital expenditure (Rukmini et al., 2025). Likewise, DAU also has a positive relationship with capital expenditure, where an increase in DAU directly encourages an increase in capital expenditure allocation, especially in regions with low fiscal capacity (Fitrianti et al., 2025). The combination of low PAD contribution and high dependence on DAU is what potentially gives rise to the Flypaper Effect in capital expenditure allocation.

This condition of fiscal dependence is reflected in the low ratio of PAD to DAU of regencies/cities in West Sumatra Province during 2020–2024, as presented in Table 1 below.

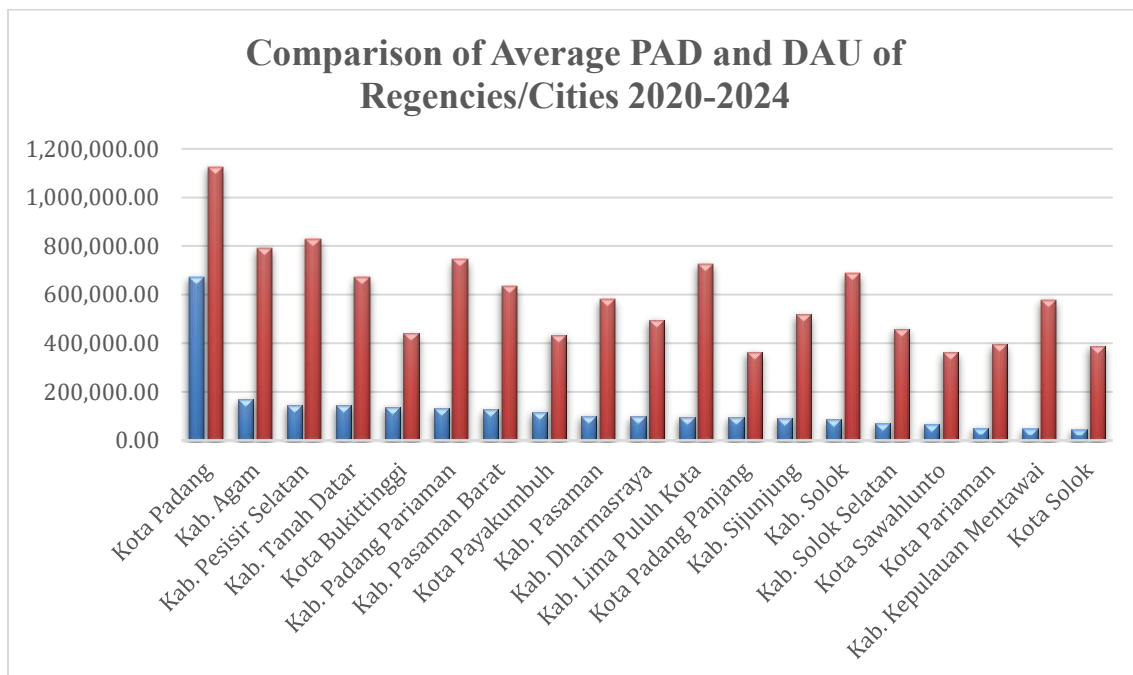
**Table 1. Ratio of Own-Source Revenue (PAD) to General Allocation Fund (DAU) of Regencies/Cities in West Sumatra Province for the Years 2020-2024**

No	Kabupaten/Kota	2020	2021	2022	2023	2024	Rata-rata
1	Kab. Agam	14,87%	17,34%	21,03%	26,87%	26,24%	21,27%
2	Kab. Dharmasraya	19,56%	17,55%	21,36%	19,16%	20,87%	19,70%
3	Kab. Kepulauan Mentawai	7,96%	5,77%	9,05%	8,84%	10,18%	8,36%
4	Kab. Lima Puluh Kota	12,88%	11,64%	12,10%	15,24%	14,63%	13,30%
5	Kab. Padang Pariaman	13,67%	14,55%	20,15%	19,17%	20,27%	17,56%
6	Kab. Pasaman	15,49%	16,22%	16,12%	18,98%	19,68%	17,30%

7	Kab. Pasaman Barat	21,25%	22,99%	19,48%	16,52%	19,77%	20,00%
8	Kab. Pesisir Selatan	17,86%	18,67%	18,71%	16,74%	15,90%	17,58%
9	Kab. Sijunjung	11,45%	18,28%	18,95%	19,98%	19,45%	17,62%
10	Kab. Solok	10,21%	11,60%	11,74%	12,94%	15,83%	12,46%
11	Kab. Solok Selatan	14,20%	9,26%	20,94%	16,62%	16,64%	15,53%
12	Kab. Tanah Datar	22,83%	19,06%	22,69%	21,11%	21,96%	21,53%
13	Kota Bukittinggi	32,20%	21,80%	31,07%	36,87%	34,11%	31,21%
14	Kota Padang	74,51%	51,62%	58,70%	55,63%	57,00%	59,49%
15	Kota Padang Panjang	24,92%	26,90%	24,77%	26,87%	29,23%	26,54%
16	Kota Pariaman	8,63%	9,96%	9,36%	24,74%	12,26%	12,99%
17	Kota Payakumbuh	26,25%	21,86%	30,74%	26,00%	28,13%	26,60%
18	Kota Sawahlunto	17,62%	15,10%	19,62%	19,69%	19,74%	18,35%
19	Kota Solok	11,12%	11,49%	10,62%	11,48%	13,08%	11,56%

Source: Badan Pusat Statistik (BPS), data processed in 2026

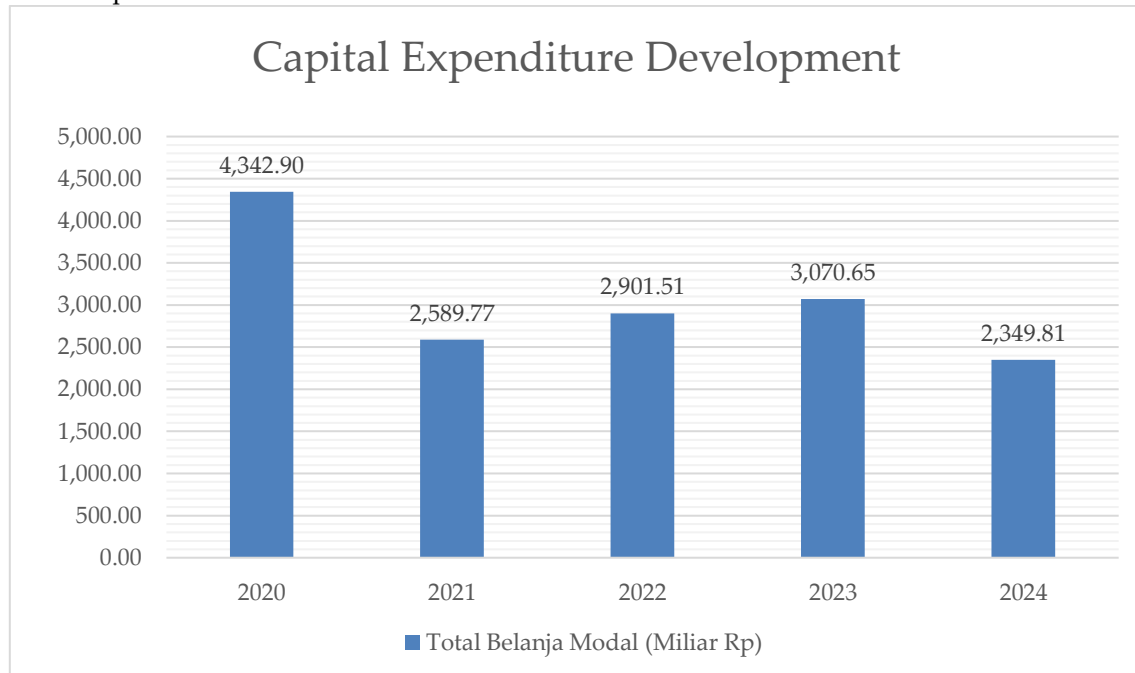
The data in Table 1 shows that most regencies/cities in West Sumatra Province have a PAD dtdo DAU ratio below 25%, with an average fiscal independence still very low except for Padang City at 59.49%. This condition indicates that locally generated revenue has not been able to become the main source of funding, so the General Allocation Fund still dominates the regional revenue structure.



**Figure 1. Comparison Graph of the Average PAD and DAU in Regencies/Cities of West Sumatra Province for the Years 2020-2024**

Source: Badan Pusat Statistik, data processed in 2026

Figure 1 shows a comparison of the average Own-Source Revenue (PAD) and general allocation fund (DAU) for districts and cities in West Sumatera Province from 2020 to 2024. Visually, the average DAU appears significantly higher than PAD in nearly all regions, confirming that Own-Source Revenue remains heavily dependent on transfers from the central government. Even in regions with relatively high PAD, such as the cities of Padang and Bukittinggi, DAU continues to dominate. In regions with low PAD, such as Mentawai Islands Regency, the gap between PAD and DAU is very large, indicating low fiscal autonomy. This pattern of DAU dominance over PAD is an important initial indicator for analyzing whether capital expenditure is more responsive to transfer funds than to PAD.



**Figure 2. Capital Expenditure Development Graph of Regencies/Cities in West Sumatra Province for the Years 2020–2024**

Source: Badan Pusat Statistik, data processed in 2026

Figure 2 shows the development of total capital expenditures of regencies/cities in West Sumatra Province during 2020-2024. In 2020, total capital expenditure was recorded at IDR 4.34 trillion, which was the highest value during the observation period. However, in 2021, there was a drastic decrease to IDR 2.59 trillion, coinciding with the Covid-19 pandemic that forced local governments to reallocate budgets to the health sector and economic recovery. In 2022 and 2023, there was a slight recovery, reaching IDR 2.90 trillion and IDR 3.07 trillion, respectively, but still far below pre-pandemic conditions. In fact, in 2024, capital expenditure dropped again to IDR 2.35 trillion, which was the lowest value during the research period. This pattern of capital expenditure fluctuations indicates the need for further study on the extent to which changes in DAU and PAD contribute to the allocation of regional capital expenditure.

Several previous studies have examined the Flypaper Effect phenomenon in Indonesia with varying results. Wati et al. (2022) found that central government transfer funds have a greater impact than Own-Source Revenue (PAD) on local expenditures, with this fiscal dependence phenomenon strengthening during the Covid-19 pandemic. The consistency of this anomaly is

supported by Nurosidah et al. (2023), who assert that the Flypaper Effect still occurs across all expenditures, including capital spending, and is reinforced by Fitrianti et al. (2025), who state that the structure of regional spending is still dominated by central transfer stimulation. Conversely, different results were found by Sema and Riduwan (2021), who reported that the Flypaper Effect phenomenon did not occur in the regency/city governments of East Java Province. This inconsistency in findings proves that the Flypaper Effect is contextual and highly dependent on regional fiscal characteristics.

West Sumatra Province was selected as the research location because, according to Minister of Finance Regulation No. 65 of 2024, this province falls into the category of low local fiscal capacity, which further underscores the urgency of studying the Flypaper Effect in this region. Melda and Syofyan (2020) have made an important contribution by identifying the Flypaper Effect in West Sumatra during the 2015–2018 period; however, they used total local government expenditure as the dependent variable and did not specifically examine how PAD and DAU influence capital expenditure. This study complements that research in two ways: first, by focusing on capital expenditure as a proxy for regional development investment; second, by covering the 2020–2024 period, which captures the fiscal pressures of the COVID-19 pandemic and post-pandemic recovery two conditions that have significantly altered the pattern of capital expenditure responsiveness to central government transfers and local revenue.

On a theoretical level, this study reinforces the application of Agency Theory in explaining local government spending behavior, particularly the tendency of local governments as agents to be more responsive to central government transfers than to optimize local revenue, which requires greater mobilization efforts. Additionally, this study also considers the perspective of Fiscal Federalism Theory (Oates, 1999), which explains that intergovernmental transfers ideally function as a fiscal stimulus that promotes efficiency in local spending a principle empirically tested through the Flypaper Effect phenomenon in this study. Practically, the results of this study are expected to assist local governments in planning to increase local revenue and improve capital expenditure priorities to make them more productive and sustainable.

Based on the description above, this study aims to: (1) analyze the simultaneous effect of PAD and DAU on capital expenditure; (2) analyze the partial effect of PAD on capital expenditure; (3) analyze the partial effect of DAU on capital expenditure; and (4) analyze the existence of the Flypaper Effect phenomenon on capital expenditure in regencies/cities in West Sumatra Province in 2020–2024.

## RESEARCH METHODOLOGY

An associative quantitative approach was used in this study. The secondary data employed consisted of the realization of the regional budget (APBD) of regencies/cities in West Sumatra Province for the years 2020–2024, based on publications from the Central Bureau of Statistics (BPS) and the Directorate General of Fiscal Balance (DJPK) of the Ministry of Finance. The 2020–2024 period was chosen because it encompasses significant fiscal dynamics, including the COVID-19 pandemic, which necessitated massive budget reallocations in 2020–2021, as well as the post-pandemic recovery period in 2022–2024, thereby providing a more comprehensive picture of regional fiscal dependency patterns. This study involved the population as well as the sample from all 19 regencies/cities in West Sumatra Province, using a total/sensus sampling technique, resulting in 95 observations (19 regencies/cities × 5 years). Capital expenditure (Y) is the dependent variable

of this study, while the independent variables consist of Own-Source Revenue (PAD) (X1) and General Allocation Fund (DAU) (X2).

**Table 2. Operational Definitions of Variables**

Variabel	Operational Definitions	Measurments of Variables	Source	Scale
Capital Expenditures (Y)	Local government expenditures for the acquisition of fixed assets with a useful life of more than one fiscal year	BM = BT + BPM +BG + BJIJ + BATL + BAL	BPS of West Sumatra Province	Ratio
PAD (X1)	Revenue collected by local governments in accordance with applicable laws and regulations as a source of funding for local government expenditures	PAD = PPD + PRD + HPKDD + LPS	BPS of West Sumatra Province	Ratio
DAU (X2)	Central government transfer funds are block grants intended to promote financial equity among regions	DAU = AD + CF	BPS of West Sumatra and DJPK Ministry Finance	Ratio

Source: data processed in 2026

This study includes only PAD and DAU as independent variables because the theoretical testing of the Flypaper Effect is based on a comparison of the impact of unconditional grants on local government spending (Hines & Thaler, 1995). DAU was selected because it is a block grant or unconditional grant that is, a transfer fund whose use is not specifically determined by the central government, thereby providing fiscal flexibility to local governments (Halim, 2014). Conversely, DAK is earmarked and thus does not reflect local fiscal flexibility in independently allocating capital expenditures, while DBH varies significantly depending on each region’s natural resource potential, making it less representative as a comparative variable at the provincial level (Law No. 1 of 2022).

All research variable data, including both the dependent variable (Capital Expenditures) and the independent variables (PAD and DAU), were transformed into natural logarithms (LN) to normalize the data distribution, stabilize the variance, and standardize the units of measurement across variables, as well as to produce regression coefficients that can be interpreted as elasticities between the independent and dependent variables, thereby enabling the regression model to yield better estimates (Ghozali & Ratmono, 2017). The equation model used is the log-log (double-log) model, in which all variables are expressed in natural logarithmic form, so that the regression coefficients ( $\beta_1$  and  $\beta_2$ ) are interpreted as elasticities—that is, the percentage change in capital expenditure resulting from a 1% change in PAD or DAU, holding other variables constant (Gujarati & Porter, 2009). The equation model used in this study is as follows:

$$LN\_Y = \alpha + \beta_1 LN\_X_1 + \beta_2 LN\_X_2 + \varepsilon$$

Description: LN<sub>Y</sub> = Natural Logarithm of Capital Expenditure;  $\alpha$  = Constant;  $\beta_1$  = Coefficient of PAD;  $\beta_2$  = Coefficient of DAU; LN<sub>X<sub>1</sub></sub> = Natural Logarithm of Regional Original Revenue; LN<sub>X<sub>2</sub></sub> = Natural Logarithm of General Allocation Fund;  $\varepsilon$  = Error term.

Three testing stages were carried out to select the best estimation model. These are the Chow test to choose between the Common Effect Model (CEM) and Fixed Effect Model (FEM), the Hausman test to choose between FEM and the Random Effect Model (REM), and the Lagrange Multiplier test to choose between CEM and REM (Winarno, 2017). Classical assumption tests were conducted after the model was selected. These include the multicollinearity test to determine whether there is a correlation between independent variables, with a correlation value below 0.85 indicating that there is no multicollinearity problem (Napitupulu et al., 2021). In addition, the heteroscedasticity test was conducted by examining the residual plot, where residuals not exceeding the  $\pm 500$  limit indicate that there are no signs of heteroscedasticity (Napitupulu et al., 2021). To test the hypothesis, a simultaneous test (F-test) is conducted to evaluate the simultaneous effect of PAD and DAU on capital expenditure, a partial test (t-test) is conducted to evaluate the effect of each independent variable partially, and the coefficient of determination (Adjusted R<sup>2</sup>) is used to determine how much the independent variables can explain the dependent variable (Ghozali, 2018). The Flypaper Effect was tested by comparing the DAU and PAD regression coefficients from the estimated results of the selected model, based on the methods developed by Tanjung et al. (2021) and Dewi et al. (2024), the Flypaper Effect is confirmed if either of the following two conditions is met: (1) the DAU coefficient is greater than the PAD coefficient and both have a significant effect on capital expenditure; or (2) the PAD coefficient does not have a significant effect on capital expenditure. This condition aligns with the definition by Hines and Thaler (1995), who state that the Flypaper Effect occurs when central government transfer funds have a much greater impact on capital expenditure than the increase in local revenue itself.

## RESULT AND DISCUSSION

### RESULTS

#### Descriptive Statistics

**Table 3. Descriptive Statistics Results**

	N	Maximum	Minimum	Mean	Std. Deviasi
PAD	95	20.93838	19.64739	20.14538	0.314964
DAU	95	20.64924	17.26987	18.45522	0.623807
BM	95	20.08272	17.60254	18.78335	0.464973

Source: data processed in 2026

Based on the results of the descriptive statistical analysis in Table 3, the PAD variable has a mean value of 20.145 with a standard deviation of 0.315, a maximum value of 20.938, and a minimum value of 19.647, reflecting an average PAD of approximately Rp134.4 billion per regency/city per year. The relatively small standard deviation indicates a relatively uniform distribution of PAD across regions, though significant disparities still exist between urban areas and island regions such as Mentawai. The DAU variable recorded a mean value of 18.455 with a standard deviation of 0.624, a maximum value of 20.649, and a minimum value of 17.270, reflecting an average DAU of approximately Rp590.1 billion per region per year. The larger standard deviation of DAU compared to PAD indicates a more uneven distribution of central government transfer funds across regencies/cities in West Sumatra Province during the study period. The average DAU value, which is approximately 4.4 times larger than PAD, indicates a high level of

regional fiscal dependence on central government transfers, serving as an early indication of the Flypaper Effect. The Capital Expenditure variable recorded a mean value of 18.783 with a standard deviation of 0.465, a maximum value of 20.083, and a minimum value of 17.603, reflecting an average realization of approximately Rp160.6 billion per region per year. The standard deviation values of all three variables are smaller than their respective mean values, indicating that the data are evenly distributed without extreme gaps between observations and are suitable for further analysis. Proportionally, the average value of Capital Expenditure is structurally closer to DAU than to PAD, suggesting that capital expenditure allocation is more closely related to central government transfer funds than to locally generated revenue.

**Model Selection Test**

Panel data regression analysis method with PAD and DAU data as well as Capital Expenditure in regencies/cities of West Sumatra Province in 2020-2024. The best model from the model specification test results is the Random Effect Model (REM)

**Table 4. Specification Results of the Panel Data Regression Model**

Test	P-Value	Hypothesis and Results
Chow Test	0.0023	Selected FEM Model
Hausman Test	0.3230	Selected REM Model
Langrange Multiplier Test	0.0361	Selected REM Model
Conclusion	The best model from the model specification test results is the Random Effect Model (REM).	

Source: data processed in 2026

The selection of the best model was conducted through three stages of testing. First, the Chow test yielded a p-value of 0.0023, which is less than 0.05, so the Fixed Effects Model (FEM) was chosen over the Common Effects Model (CEM). Second, the Hausman test yielded a probability value of 0.3230, which is greater than 0.05, so the Random Effect Model (REM) was selected over the FEM. Third, the Lagrange Multiplier test yielded a probability value of 0.0361, which is less than 0.05, further reinforcing the selection of the REM as the best estimation model.

**Classical Assumption Test Results**

**Multicollinearity Test**

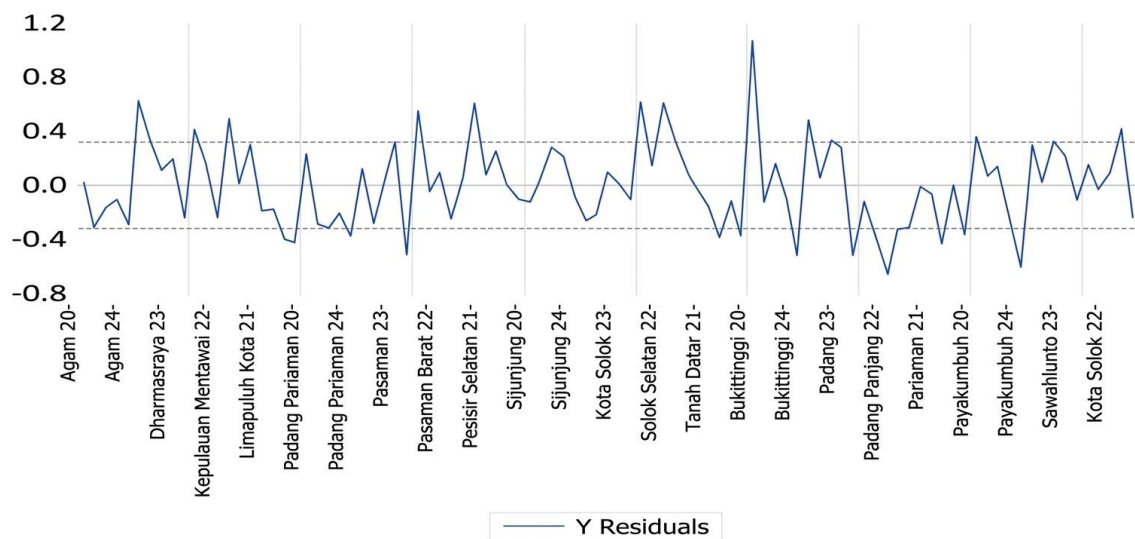
**Table 5. Multicollinearity Test Results**

	LN_X1	LN_X2
LN_X1	1.000000	0.705073
LN_X2	0.705073	1.000000

Source: data processed in 2026

Multicollinearity tests are conducted by looking at the correlation values between independent variables. Based on the test results, the correlation value between PAD (X1) and DAU (X2) is 0.705073. This value is less than 0.85, so it can be concluded that there is no multicollinearity between the independent variables in the model (Napitupulu et al., 2021).

**Heteroscedasticity Test**



**Figure 3. Heteroscedasticity Test Graph**

Source: Data processed in Eviews14 2026

Heteroscedasticity testing was carried out using a residual plot. Based on the test results, the residual plot shows that the residual values do not exceed the limits of 500 and -500, meaning the residual variance is homogeneous. Therefore, it can be concluded that there is no indication of heteroscedasticity, so the data passed the heteroscedasticity test (Napitupulu et al., 2021).

**Panel Data Regression Analysis**

**Table 6. Panel Regression Estimation Results with Random Effect Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.905693	2.238395	-1.298114	0.1975
LN_X1	0.003460	0.074847	0.046224	0.9632
LN_X2	1.073457	0.148240	7.241342	0.0000
R-squared	0.533511	Mean dependent var		18.78335
Adjusted R-squared	0.523370	S.D. dependent var		0.464973
S.E of regression	0.321010	Akaike info criterion		0.596380
Sum squared resid	9.480358	Schwarz criterion		0.677029
Log likelihood	-25.32806	Hannan-Quinn criter.		0.628968
F-statistic	52.60905	Durbin-Watson stat		1.290586
Prob (F-statistic)	0.000000			

Source: Data processed in Eviews14 2026

Based on the results of the Random Effects Model (REM) panel data regression, the following regression equation was obtained:

$$LN_Y = -2,905693 + 0,003460LN_X1 + 1,073457LN_X2$$

Since all variables are transformed using the natural logarithm, the regression coefficients are interpreted as elasticities. The coefficient for PAD ( $X_1$ ) of 0.003460 indicates that a 1% increase in PAD is associated with only a 0.003460% increase in capital expenditure, assuming all other variables remain constant. This very small elasticity value indicates that capital expenditure is unresponsive to changes in PAD, reflecting that local revenue has not yet been able to serve as the

primary driver in the allocation of capital expenditure in the regencies and cities of West Sumatra Province.

On the other hand, the DAU coefficient ( $X_2$ ) of 1.073457 indicates that a 1% increase in DAU is followed by a 1.073457% increase in capital expenditure, assuming all other variables remain constant. An elasticity value exceeding 1 indicates that capital expenditure is highly responsive to changes in DAU and exhibits a more-than-proportional relationship. The significant elasticity gap between DAU (1.073457) and PAD (0.003460) substantively reflects a clear fiscal dependence on central government transfers, consistent with the Flypaper Effect phenomenon as described by Hines and Thaler (1995), which states that central government transfers have a far greater impact on local government spending than increases in local revenue itself.

### Hypothesis Test (t-Test)

Partial testing was conducted to examine the effect of each independent variable on Capital Expenditure. The t-test result for the PAD ( $X_1$ ) variable showed a t-count value of 0.046224, smaller than the t-table value of 1.985802, with a significance value of 0.9632, which is greater than 0.05, so  $H_1$  is rejected and  $H_0$  is accepted. This means that PAD has no significant effect on Capital Expenditure in regencies/cities in West Sumatra Province during 2020-2024. Meanwhile, the t-test result for the DAU ( $X_2$ ) variable showed a t-count value of 7.241342, greater than the t-table value of 1.985802, with a significance value of 0.0000, which is less than 0.05, so  $H_0$  is rejected and  $H_1$  is accepted. This means that DAU has a positive and significant effect on Capital Expenditure in regencies/cities in West Sumatra Province during 2020-2024.

### F Test

Simultaneous testing was carried out to see the combined effect of PAD and DAU on Capital Expenditure. The F-test results showed an F-count of 52.60905, which is greater than the F-table of 3.095433, with a significance value of 0.000000, which is less than 0.05, so  $H_0$  is rejected and  $H_1$  is accepted. This means that PAD and DAU simultaneously have a significant effect on Capital Expenditure in regencies/cities in West Sumatra Province during 2020-2024.

### Test of the Coefficient of Determination ( $R^2$ )

Through the coefficient of determination, it can be observed how much the independent variables contribute to the dependent variable. From the test results, an Adjusted R-squared value of 0.523370 was obtained. This indicates that approximately 52.34% of the changes in Capital Expenditure can be explained by Own-Source Revenue ( $X_1$ ) and General Allocation Funds ( $X_2$ ). Meanwhile, external variables not included in this research model are responsible for the remaining 47.66%.

### Test the Flypaper Effect Phenomenon

The testing of the Flypaper Effect phenomenon was conducted by comparing the regression coefficients of DAU and PAD based on the estimation results of the Random Effect Model. The test results showed that the DAU coefficient ( $X_2$ ) of 1.073457 was greater than the PAD coefficient ( $X_1$ ) of 0.003460, accompanied by PAD having no significant effect on Capital Expenditure with a probability value of  $0.9632 > 0.05$ . Based on these two conditions, the Flypaper Effect phenomenon is confirmed to occur in the Capital Expenditure of regencies/cities in West Sumatra Province in 2020-2024.

## DISCUSSION

### **The Influence of Own-Source Revenue (X1) and General Allocation Fund (X2) on Capital Expenditure (Y) in Regencies/Cities of West Sumatra Province for the Year 2020-2024**

Based on hypothesis testing, PAD and DAU simultaneously have a significant effect on capital expenditure in the regencies/cities of West Sumatra Province from 2020 to 2024. Empirically, the average capital expenditure of regencies and cities in West Sumatra amounts to Rp160.6 billion per year, the majority of which is funded by the General Allocation Fund (DAU) at an average of Rp590.1 billion, far exceeding the contribution from local revenue (PAD), which averages only Rp134.4 billion per year. This indicates that although PAD is not significant on its own, its existence still contributes to the region's total fiscal capacity, which, together with DAU, drives the realization of capital expenditures in the regencies and cities of West Sumatra. The increase in PAD and DAU received by the regions has been proven to contribute to the increase in capital expenditure allocation, thereby accelerating infrastructure development and the improvement of public services in the regencies/cities of West Sumatra Province. From the perspective of Fiscal Federalism Theory, the combination of local revenue (PAD) and central government transfers ideally functions as a dual fiscal mechanism that complements each other in financing local capital expenditures (Oates, 1999). However, the dominance of DAU over PAD in driving capital expenditures indicates that the synergy between these two revenue sources has not yet been balanced. This finding is supported by Rukmini et al. (2025), who found that PAD and DAU together have a positive effect on local government capital expenditure in Indonesia, indicating that the synergy between local revenue and transfer funds is a key determinant in the allocation of capital expenditure. This condition aligns with the principles of fiscal decentralization, which expect that a combination of PAD and transfer funds can encourage an improvement in the quality of regional expenditure, especially capital expenditure oriented towards infrastructure development and the improvement of public services (Christia & Ispriyarso, 2019).

### **The Effect of Regional Original Revenue (X1) on Capital Expenditure (Y) in Regencies/Cities of West Sumatra Province for the Year 2020-2024**

The results of the hypothesis testing indicate that local revenue (PAD) does not have a significant effect on capital expenditures of regencies and cities in West Sumatra Province for the 2020–2024 period. From the perspective of Agency Theory, this condition reflects the existence of information asymmetry between the central government as the principal and local governments as agents, where local governments tend to rely more on transfer funds rather than optimizing PAD, which requires greater mobilization efforts (Jensen & Meckling, 1976). This situation is also inseparable from the structural constraints still faced by districts and cities in West Sumatra, such as limited local tax administration capacity, a low local tax base, and the community's economic dependence on the informal sector, which hinders the sustainable growth of PAD. This is consistent with the findings of Tarigan et al. (2023), who noted that the limited capacity of local governments to generate their own revenue has led to greater reliance on transfer funds from the central government, meaning that local revenue has not yet been able to serve as the primary driver in the allocation of capital expenditures. Although fiscal decentralization policies through Law No. 23 of 2014 and Law No. 1 of 2022 have granted local governments greater authority to tap into their revenue potential, the potential of key sectors such as tourism which has proven to have a significant impact on local revenue has not been fully utilized (Alyani & Siwi, 2020). This situation

indicates that fiscal decentralization efforts have not yet fully succeeded in promoting local fiscal autonomy; therefore, local governments need to strengthen their capacity for managing local taxes, optimize revenue from fees and charges, and develop key economic sectors as sustainable sources of PAD. This finding aligns with the research by Alpi and Sirait (2022) and Purnasari et al. (2022), which found that PAD does not have a significant effect on capital expenditure in North Sumatra. Conversely, Putri and Yuhendri (2025) found that local revenue has a positive and significant effect on capital expenditure in Bengkulu Province, indicating that the impact of local revenue on capital expenditure is contextual and depends on the fiscal characteristics of each region. In an international context, Dick-Sago et al. (2025) found that dependence on central government transfers reduces the incentive for local governments in Ghana to optimize their Own-Source Revenue, which is consistent with the situation in West Sumatra where PAD has not yet been able to serve as the primary driver of capital expenditure. This situation is supported by fiscal data showing that the structure of local government revenue in Indonesia remains dominated by central government transfers, accounting for 65.7% of total revenue, while PAD contributes only 28.7% nationally (Media Keuangan Kemenkeu, 2025). An even more extreme situation exists in West Sumatra, where PAD contributes only 19.97% of total district/city revenue, while central government transfers dominate at 80.02% (Direktorat Jenderal Perbendaharaan Kanwil Sumatera Barat, 2024). This structural disparity empirically explains why PAD has been unable to serve as a significant variable in driving capital expenditure in this region.

#### **The Effect of General Allocation Fund (X2) on Capital Expenditure (Y) in Regencies/Cities of West Sumatra Province for the Year 2020-2024**

Hypothesis testing shows that DAU has a positive and significant effect on Capital Expenditure in regencies/cities in West Sumatra Province for the years 2020-2024. From the perspective of Agency Theory, this condition reflects that local governments as agents utilize DAU, which is a block grant, more responsively in allocating capital expenditure, because DAU provides flexibility in use without strict earmarking, making it easier to reallocate for financing infrastructure development and regional asset procurement. This condition is exacerbated by the still high fiscal dependence of most regencies/cities in West Sumatra Province on transfer funds, so changes in DAU directly impact the region's ability to allocate capital expenditure. From a policy perspective, the high sensitivity of capital expenditures to DAU suggests that the sustainability of regional infrastructure development is highly vulnerable to changes in central government transfer policies. Therefore, local governments need to reduce this dependence by strengthening local revenue sources as a more independent and sustainable basis for financing capital expenditures. This finding is in line with the research of Zahra and Fitra (2025) on local governments in regencies/cities in Sumatra and Maula et al. (2023). in regencies/cities in West Java Province that both found that DAU has a positive and significant effect on capital expenditure. In an international context, Dick-Sago et al. (2025) confirm that central government transfers drive higher local government spending in Ghana, consistent with the findings of this study that DAU serves as the primary stimulus for capital expenditure in West Sumatra. Conversely, Putri & Yuhendri (2025) report that DAU does not have a significant effect on capital expenditure in Bengkulu Province, suggesting that the response of capital expenditure to DAU is contextual and influenced by the fiscal conditions of each region.

### **The Flypaper Effect Phenomenon on Capital Expenditure in Regencies/Cities of West Sumatra Province for the Years 2020-2024**

The research results indicate the occurrence of the Flypaper Effect in capital expenditures of regencies/cities in West Sumatra Province, which suggests that local governments are more responsive to the General Allocation Fund (DAU) compared to Own-Source Revenue (PAD) in allocating capital expenditures. This finding can be explained through the perspective of Agency Theory proposed by (Jensen & Meckling, 1976). According to the theory, local governments as agents tend to maximize the use of DAU because it is more flexible and does not require intensive efforts like sourcing PAD, which demands greater administrative and political efforts. From the perspective of Fiscal Federalism Theory, this phenomenon contradicts the principle that unconditional transfers should be treated as equivalent to increases in local revenue (Oates, 1999) which in fact demonstrates the existence of a persistent fiscal anomaly in West Sumatra.

The persistence of the Flypaper Effect amid fiscal decentralization policies can be explained by the nature of DAU as a block grant or unconditional transfer payment, which grants local governments full flexibility in its allocation (Halim, 2014). Although Law No. 1 of 2022 on Financial Relations between the Central Government and Local Governments was designed to promote local fiscal autonomy, the flexibility of DAU actually creates structural dependence because local governments, as agents, tend to choose funding sources that do not require significant mobilization efforts (Jensen & Meckling, 1976). This situation is exacerbated by weak incentives to increase local revenue (PAD), given that the amount of DAU transfers is not directly reduced when PAD increases, so local governments lack a sufficiently strong incentive to optimize their own revenue.

This situation has serious implications for local fiscal sustainability and the autonomy of local governments. From the perspective of fiscal sustainability, the high dependence on DAU makes capital expenditures by regencies and cities in West Sumatra highly vulnerable to changes in central government transfer policies, thereby destabilizing the continuity of local infrastructure development programs. From the perspective of local autonomy, the persistence of the Flypaper Effect indicates that the goal of fiscal decentralization to create local fiscal self-reliance, as mandated by Law No. 1 of 2022, has not yet been fully achieved, as regions that continue to depend on central government transfers will have limited fiscal space to independently determine their development priorities (Oates, 1999). Therefore, serious efforts are needed from local governments to intensify local tax collection, optimize fees, and develop leading economic sectors as sustainable sources of local revenue.

This research finding is in line with the results of Azzahra et al. (2022), which found the presence of the Flypaper Effect in capital expenditures in Gorontalo Province, and further strengthens the empirical evidence of Melda and Syofyan, (2020) regarding the existence of the Flypaper Effect in regencies/cities of West Sumatra Province. The consistency of these findings is not limited to the national context. International empirical evidence from Dick-Sagoie et al. (2025) also confirms the existence of the Flypaper Effect in local governments in Ghana, where transfers from the central government have been proven to encourage greater local government spending compared to the impact of local revenue. Furthermore, the study shows that dependence on central transfers can reduce local governments' incentives to increase their own revenue. This result

provides a significant empirical contribution as it specifically investigates the Flypaper Effect phenomenon on capital expenditure components in 19 regencies/cities of West Sumatra Province during the 2020–2024 period, which covers the pandemic and post-pandemic recovery period. This adds to the literature on the Flypaper Effect in the context of regional fiscal matters in Indonesia. Thus, the Flypaper Effect can be understood as a fiscal phenomenon that is universal and not limited to the Indonesian context alone.

Although there are limitations, this study not only enriches the literature on the flypaper effect in the context of fiscal decentralization in Indonesia, but also provides policy recommendations for local governments to optimize local revenue and reduce dependence on central transfer funds.

## CONCLUSIONS

The results of the study indicate that PAD and DAU simultaneously have a significant effect on capital expenditure in regencies and cities in West Sumatra Province for the 2020–2024 period. Partially, PAD does not have a significant effect on capital expenditure, while DAU has a positive and significant effect, indicating that local governments remain highly dependent on central government transfers. This condition confirms the occurrence of the Flypaper Effect, wherein capital expenditure is more sensitive to changes in DAU than to growth in PAD.

Theoretically, this study reinforces the relevance of Agency Theory in explaining local government spending behavior, particularly the tendency of agents to be more responsive to flexible transfer funds rather than optimizing PAD, which requires greater mobilization efforts. Furthermore, these findings contribute to the literature on Fiscal Federalism Theory by empirically demonstrating that unconditional transfers (DAU) are not treated equivalently to increases in local revenue but instead drive greater spending—an anomaly consistent with the Flypaper Effect across various international contexts.

In terms of policy implications, the results of this study indicate that fiscal decentralization policies have not yet fully succeeded in promoting local fiscal autonomy. Local governments need to intensify local tax collection, optimize service fees, develop key economic sectors, and improve the management of local assets as strategic steps toward sustainable fiscal autonomy and reducing dependence on central government transfers.

This study has several limitations that must be acknowledged. First, the scope of the study is limited to 19 regencies/cities in West Sumatra Province, so the findings cannot be generalized to other provinces. Second, the independent variables only include PAD and DAU, while other transfer components such as DAK and DBH have not been included. Third, the study period covers only five years (2020–2024), so it cannot yet represent long-term fiscal conditions. For future research, it is recommended to expand the geographical scope, include additional transfer variables, and consider a longer timeframe to provide a more comprehensive understanding of the Flypaper Effect phenomenon within the context of fiscal decentralization in Indonesia.

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