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THE INFLUENCE OF OWN-SOURCE REVENUE, TRANSFER FUNDS, REGIONAL FISCAL CAPACITY, AND CAPITAL EXPENDITURE ON REGIONAL LOANS

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Abstract:

This study aims to examine the effect of Own-own Source Revenue, Transfer Funds, Regional Fiscal Capacity, and Capital Expenditure on Local Government Loans in districts and cities across Sumatra. Employing a quantitative framework, the research is based on secondary data derived from regional budget realization reports together with fiscal capacity indices, and the data were selected through purposive sampling, resulting in 215 observations from 43 local governments during the 2019–2023 period. Panel data regression analysis was performed using EViews version 12. The results show that PAD and Transfer Funds have no significant effect on Local Government Loans. In contrast, Fiscal Capacity and Capital Expenditure show a statistically proven beneficial impact. Simultaneous testing confirms that all independent variables jointly influence Local Government Loans. These findings indicate that high capital expenditure and strong fiscal capacity encourage local governments to utilize loans as an alternative financing source for infrastructure development. Meanwhile, high transfer funds and PAD do not necessarily influence borrowing decisions. The study concludes that strengthening fiscal capacity and strategic planning of capital spending are crucial for promoting productive and sustainable local borrowing.

Keywords: Regional Original Revenue, Transfer Funds, Fiscal Capacity, Capital Expenditure, Local Government Loans

INTRODUCTION

The fiscal decentralization policy in Indonesia, legal authority derives initially from Law 23 of 2014 concerning Regional Government, which was later reaffirmed by the issuance of Law 1 of 2022 addressing fiscal interactions between the central and regional authorities, granting broader authority to local governments in managing their finances and resources independently. Within this framework, local governments are expected to enhance public services and infrastructure via the maximization of their own-source revenue capacity and alternative financing mechanisms, such as regional loans.

The government continues to promote regional loan programs, one of which is the Regional Economic Recovery Loan (PEN) scheme provided through PT Sarana Multi Infrastruktur (SMI) as a form of support for accelerating infrastructure development. According to PT SMI, by mid-2021, only 28 local governments had utilized this facility, with 38% of them located in Sumatra. This indicates that the capacity of local governments to manage and optimize alternative financing instruments remains uneven. A study by Dwitya (2024) affirms that the low realization of regional loans reflects structural weaknesses in development financing management.

Previous studies have explored various factors influencing local governments' decisions to undertake loans, including Own-Source Revenue (OSR), transfer funds from the central government, fiscal capacity, and capital expenditure (Ilmiddaviq, 2018; Ratnasari et al., 2024; Yulsiati



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& Maqruf, 2022). These findings are consistent with the theory of fiscal federalism, which emphasizes that the effectiveness of fiscal decentralization is largely determined by the balance between expenditure responsibilities and the ability to generate revenue at the local level. According to Masnila, N. et al. (2022), Own-Source Revenue plays a significant role in improving government governance, both directly and indirectly. Regions with strong fiscal capacity and high OSR are assumed to have greater ability in servicing debt, thereby making it easier for them to obtain financing through loans. Conversely, regions with high capital expenditure needs but limited revenues tend to rely more heavily on regional loans to close financing gaps.

Nevertheless, findings from prior research remain inconclusive. Some studies found that OSR has a negative or insignificant influence on regional loans (Yulsiati & Maqruf, 2022; Ilmiddaviq, 2018), while others revealed a significant positive effect (Lofton & Kioko, 2021; Ratnasari et al., 2024). Similar inconsistencies are observed regarding transfer funds, which theoretically should reduce borrowing needs but in practice are often inflexible, thereby pushing local governments to seek additional financing through loans. Based on these research gaps, this scholarly work attempts to generate empirical insights into the influence of Own-Source Revenue, Transfer Funds, Regional Fiscal Capacity, and Capital Expenditure on Regional Loans in districts and municipalities across Sumatra.

METHODS

This study employs a quantitative approach with a descriptive research method aimed at analyzing the influence of OSR, Transfer Funds, Regional Fiscal Capacity, and Capital Expenditure on Regional Loans. The quantitative approach is chosen as it is suitable for objectively and systematically testing the relationships between variables formulated in the hypotheses. According to Sugiyono (2020:16), the quantitative approach is grounded in the philosophy of positivism and is used to test hypotheses through the collection of numerical data analyzed using statistical techniques. All districts are incorporated as part of the study's population framework and municipal governments in Sumatra Island, totaling 154. A purposive non-probability sampling technique is employed, meaning that sample selection relies on particular standards set forth by the researcher.

Table 1. Samples Criteria

Criteria	Total
Total number of district/municipal governments in Sumatra	154
Districts/municipalities that did not conduct regional borrowing and were recorded in the APBD realization report and balance sheet from 2019 to 2023	(111)
Number of samples	43
Research period (years)	5
Total units of analysis	215

Secondary data serve as the basis of this study, acquired through systematic documentation. The data sources include the official website of the Directorate General of Fiscal Balance, Ministry of Finance of the Republic of Indonesia (<https://djpk.kemenkeu.go.id>), and the Minister of Finance Regulation concerning the Regional Fiscal Capacity Map.

Panel data regression was applied in this research, employing E-Views 12 software, in order to examine the impact of the independent variables on the dependent variable. The choice of panel data stems from its ability to combine temporal and cross-sectional datasets, allowing for more efficient estimation and greater degrees of freedom in the model. According to Ajija et al. (2019), the

methodology for estimating panel data involves three alternative models: the Common Effect Model, the Fixed Effect Model, and the Random Effect Model. Selecting the appropriate specification requires diagnostic evaluations, where the Chow Test is applied to distinguish CEM from FEM, the Hausman Test differentiates FEM from REM, and the Lagrange Multiplier Test is used for CEM against REM.

Before performing the regression, to guarantee the reliability of the estimation, classical assumption testing was applied in order to confirm that no statistical assumptions were breached. According to Napitupulu et al. (2021), not all classical assumption tests are required in panel data regression; only multicollinearity and heteroscedasticity tests are necessary. Additionally, normality testing is only needed when the number of observations is less than 30. As stated by Ajija et al. (2019), if the number of observations exceeds 30, normality testing is not required because the sampling distribution of the error term tends to approach normality.

Below is the formulation of the regression model employed for this study:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Explanation:

Y = Regional Loans

α = Constant

X1= Regional Original Revenue (PAD)

X2= Transfer Funds

X3= Regional Fiscal Capacity

X4= Capital Expenditure

$\beta_0 \beta_1 \beta_2 \beta_3 \beta_4$ = Regression Coefficients

e = Error Term, which represents the level of estimation error in the study

To test the hypotheses, three types of statistical tests were employed: To assess the overall effect of independent variables on regional loans, the F-test was applied, the t-test examined the effect of each independent variable separately on the dependent variable, while R² indicated the proportion of dependent variance explained by the independent variable.

RESULT AND DISCUSSION

Descriptive Statistics

Table 2. Descriptive Statistics Results

	Y	X1	X2	X3	X4
Mean	24.41313	25.50363	27.65939	-0.046370	26.15379
Median	24.67939	25.37396	27.63281	-0.028930	26.19444
Maximum	26.33298	28.06287	28.76350	1.489302	27.74069
Minimum	20.44157	23.11499	26.69513	-1.328025	24.21184
Std. Dev.	1.278988	0.864777	0.409872	0.511927	0.584530
Skewness	-0.975519	0.526233	0.205376	0.094850	0.084457
Kurtosis	3.592501	3.243718	2.887728	2.810430	3.413336
Jarque-Bera	13.16576	10.45511	1.624342	0.641313	1.786102
Probability	0.001384	0.005367	0.443893	0.725673	0.409405
Sum	1855.398	5483.281	5946.768	-9.923078	5623.065
Sum Sq. Dev.	122.6858	160.0377	35.95098	55.82071	73.11847



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	Y	X1	X2	X3	X4
Observations	76	215	215	214	215

Source: Output e-views ver 12

From the insights provided by the descriptive examination, the Regional Loan variable (Y) has a mean value of 24.41, ranging from 20.44 to 26.33, with a standard deviation of 1.27. The Regional Original Revenue (X1) variable shows an average of 25.50, with a minimum value of 23.11, a maximum value of 28.06, and a standard deviation of 0.86. Transfer Funds (X2) have a mean of 27.67, ranging between 26.69 and 27.74, with a standard deviation of 0.40. Meanwhile, the Regional Fiscal Capacity (X3) variable has a negative average of -0.04, with a minimum value of -1.32 and a maximum of 1.48, and a standard deviation of 0.51. Lastly, Capital Expenditure (X4) has an average value of 0.58, ranging from 24.21 to 26.15.

Panel Data Selection Method. To identify the most effective regression framework, a test for model selection was carried out.

Table 3. Model Test Results

Test Type	Probabilitas (p-value)	Model
Chow Test	0.1235	CEM
Hausman Test	0.0154	FEM
Lagrange Multiplier (LM)	0.8928	CEM

Source: Output e-views ver 12

Based on the model testing results, the CEM was selected as the most appropriate regression estimation model, as it passed both the Chow test and the Lagrange Multiplier (LM) test.

Classical Assumption Test; Multicollinearity Test

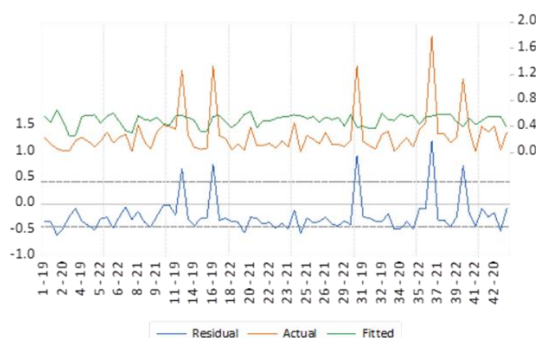
Table 4. Multicollinearity Test Results

	X1	X2	X3	X4
X1	1.000000	0.600618	0.457417	0.507238
X2	0.600618	1.000000	0.557483	0.677738
X3	0.457417	0.557483	1.000000	0.547395
X4	0.507238	0.677738	0.547395	1.000000

Source: Output e-views ver 12

The results of the multicollinearity test show correlation between X1 and X2 is 0.6006, between X1 and X3 is 0.4574, and between X1 and X4 is 0.5072. Furthermore, the correlation between X2 and X3 is 0.5575; X2 and X4 is 0.6777; X3 and X4 is 0.5474. The correlation metrics are < 0.80, which implies that the independent variables do not exhibit a strong linear relationship. Therefore, multicollinearity is not present in the model.

Heteroscedasticity Test



Source: Output e-views ver 12

Figure 1. Heteroscedasticity Test Results

Based on the heteroscedasticity test graph, since the residuals (blue line) stay confined within the range of 500 to 500, the data exhibits constant variance, indicating the absence of heteroscedasticity, the model passes the heteroscedasticity test. As a result, regression analysis can be proceeded with.

Panel Data Regression Model. The regression estimation results indicate that the constant value is 14.6086, which represents the predicted value of Regional Loans when all independent variables are equal to zero. The coefficients for Regional Original Revenue (X1) and Transfer Funds (X2) are negative, at -0.2856 and -0.7900, respectively, implying that increases in these two variables tend to reduce Regional Loans, assuming other variables remain constant.

On the other hand, Regional Fiscal Capacity (X3) and Capital Expenditure (X4) have positive coefficients of 0.6345 and 1.4765, respectively. This suggests that higher fiscal capacity and capital expenditure in a region are associated with a greater tendency to increase regional borrowing.

Hypothesis Testing: Coefficient Of Determination Test (R^2).

Table 5. Coefficient Of R^2 Results

R-squared	0.367478
Adjusted R-squared	0.331334

Source: Output e-views ver 12

The results of the R^2 test show an Adjusted R-squared value of 0.331334. This indicates that the correlation between the dependent and independent is 0.331334. Thus, the influence of Regional Original Revenue, Transfer Funds, Regional Fiscal Capacity, and Capital Expenditure on Regional Loans is 33.13%. The portion of 66.87% that remains unexplained can be ascribed to additional variables not considered in the present study.

T-test

Table 6. T-Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.60861	8.946015	1.632974	0.1070
X1	-0.285618	0.173728	-1.644049	0.1047
X2	-0.790023	0.488823	-1.616173	0.1106
X3	0.634546	0.263025	2.412487	0.0185
X4	1.476550	0.343746	4.295472	0.0001

Source: Output e-views ver 12

From the t-test summary, the significance value is 0.05, and the degrees of freedom are determined using $df1 = n - k - 1$, which equals 210 ($215 - 4 - 1$). From the data processed in E-Views (version), the t-table was calculated to be 1.652. It is known that the variable Own-Source Revenue (X1) has a t-count value of $-1.644 < t\text{-table} = 1.652$ and a significance of 0.1047; thus, it does not have a meaningful influence on Regional Loans. Similarly, Transfer Funds (X2) shows a t-count of $-1.616 < t\text{-table} = 1.652$ and a significance of 0.1106, which indicates that this variable also does not have a significant effect. On the other hand, the Regional Fiscal Capacity variable (X3) shows a t-count value of $2.412 > t\text{-table} = 1.652$ and a sig. 0.0185, meaning the variable has a favorable and statistically meaningful impact on Regional Lending. Similarly, Capital Expenditure (X4) shows a t-count value of $4.925 > t\text{-table} = 1.652$ and a sig. of 0.001, indicating a significant influence on Regional Lending. These results confirm that it is statistically proven that only Fiscal Capacity and Capital Expenditure influence lending policies at the local government level.

F-test

Table 7. F-test Result

F-statistic	10.16701
Prob(F-statistic)	0.000002

Source: Output e-views ver 12

According to the table, the F-test results show that the F-statistic is 10.16701. To obtain the critical F-value, consult the statistical table at a 0.05 sig. Level with $df1 = 3$ (number of independent -1) and $df2 = 210$ (computed as $n - k - 1 = 215 - 4 - 1$), where n refers to the total observations and k to the independent variables included in the model. The F-table result is 2.65.

The F-test results show that the F-count is $10.16701 > F\text{-table of } 2.65$, with a significance value of $0.000002 < 0.05$, indicating that H_a is accepted. The F-count is 10.16701 with a significance value of 0.000002, indicating that regional original revenues, transfer funds, regional fiscal capacity, and capital expenditures simultaneously have a significant effect on regional borrowing.

Influence of Own-Source Revenue on Regional Loans. The findings show that Own-Source Revenue exhibits a t-value of -1.644, which does not exceed the critical t-table value of 1.652, with a sig. Prob of 0.1047, indicating the effect is statistically non-significant. Thus, H_1 is rejected, indicating that Own-Source Revenue has no significant effect on Regional Loans. This finding contradicts the proposed hypothesis and previous studies by Lofton and Kioko (2021) and Shon & Kim (2019), which indicated that Own-Source Revenue significantly influences regional borrowing. Similarly, Ratnasari et al. (2024) found that Own-Source Revenue had a negative effect on regional debt. However, the result is consistent with Ilmiddaviq (2018) and Yulsiati and Maqruf (2022), who also found no significant relationship between OSR and regional borrowing.

Within the framework of fiscal decentralization, OSR represents revenue autonomy, reflecting a region's ability to finance public expenditures independently without excessive reliance on central government transfers (Litvack & Seddon, 1998). Theoretically, the higher the ORS, the greater the fiscal independence, which should reduce the need for external borrowing. However, this empirical result shows that the theory may not be fully realized in practice at the regional level.

This suggests that although OSR is a primary revenue source, its realization or fluctuation across districts/municipalities in Sumatra may not directly drive or reduce borrowing needs. Local governments may pursue loans based on urgent expenditure demands, regardless of OSR levels, or existing OSR might already be allocated to routine spending, leaving insufficient funds for large-scale development projects.

The Influence of Transfer Funds on Regional Loans. The hypothesis testing for Transfer Funds resulted in a t-statistic of $-1.616 < t_{table} = 1.652$ and a sig. of $0.1106 > 0.05$, which leads to the rejection of H_2 . This indicates that Transfer Funds do not significantly affect Regional Loans.

This finding contrasts with the study by Ilmiddaviq (2018), which found that transfer funds had a significant impact. According to the Fiscal Federalism theory, transfers from the central government—comprising the General Allocation Fund (DAU), Special Allocation Fund (DAK), and Revenue Sharing Fund (DBH)—serve as key instruments to support fiscal decentralization. These funds aim to address interregional fiscal imbalances and ensure sufficient resources for local governments to provide public services (Oates, 1972; Martinez-Vazquez & Boex, 2001). Theoretically, the higher the transfer funds received by a region, the lower the borrowing needs, since those needs are already met through central transfers.

However, this result aligns with the study by Yulsati and Maqruf (2022), which found that DAU had no significant partial effect on regional borrowing. This suggests that the ideal mechanism outlined in theory is not yet fully realized in practice. One possible reason is the limited flexibility in the use of transfer funds, especially the earmarked nature of DAK, which restricts its use for strategic expenditures. As a result, despite substantial transfer amounts, local governments cannot freely allocate them to finance large-scale capital needs.

In the context of fiscal decentralization, this indicates that the corrective fiscal function of transfers has not been fully effective in reducing the need for regional loans. Local governments remain inclined to seek alternative financing—particularly loans—to meet urgent capital expenditures not covered by transfer schemes.

Thus, it can be concluded that while transfer funds are a major component of local revenue, their realization, allocation constraints, and rigidity contribute to their insignificant influence on borrowing decisions.

The Influence of Regional Fiscal Capacity on Regional Loans. The hypothesis test for Regional Fiscal Capacity yielded a t-statistic of $2.412 > t_{table} = 1.652$ and a sig. Level of $0.0185 < 0.05$. Therefore, H_3 is accepted, indicating that Regional Fiscal Capacity has a significant positive effect on Regional Loans. This result is consistent with Ratnasari et al. (2024), who found a similar relationship in districts and municipalities across Sumatra.

A higher fiscal capacity implies a greater ability for regions to manage finances and fulfill debt obligations, sending a positive signal to creditors about the fiscal reliability and creditworthiness of the region. The positive regression coefficient indicates that regions with better fiscal capacity tend to utilize loans more actively, especially to finance strategic development projects requiring large investments.

Within the theory of fiscal federalism, fiscal capacity is a key indicator in assessing a region's ability to exercise fiscal autonomy responsibly. Regions with strong fiscal capacity are perceived as more trustworthy in managing their finances, including making informed borrowing decisions. Thus, loans are not solely a response to funding shortages but also a strategic financing choice based on adequate fiscal capability.

Moreover, under fiscal decentralization, fiscal capacity reflects the effectiveness of fiscal authority delegated from the central government to local governments. Regions with high fiscal capacity generally have sufficient fiscal space to plan long-term financing independently, including through loans. Therefore, this finding reinforces the view that fiscal capacity is a fundamental prerequisite for sustainable and accountable decentralization.

The Influence of Capital Expenditure on Regional Loans. The hypothesis test for Capital Expenditure showed a t-statistic of $4.925 > t_{table} = 1.652$ and a sig. Value of $0.001 < 0.05$. Hence, H_4



is accepted, indicating that Capital Expenditure has a significantly and positive impact on Regional Loans. This finding aligns with prior studies by Balaguer-Coll et al. (2016), Ilmiddaviq (2018), Yulsiati and Maqruf (2022), and Ratnasari (2024).

Capital expenditure represents local government investment in infrastructure and long-term assets. The increase in capital expenditure often requires large-scale funding that cannot always be covered by routine revenues, leading governments to utilize loans as a financing alternative for capital projects.

In the context of fiscal decentralization, capital expenditure reflects the authority of local governments to manage spending according to local priorities. Decentralization emphasizes not only revenue autonomy but also expenditure and financing authority. When capital needs increase and revenues or transfers fall short, loans become a legitimate and rational option for financing development functions.

The relatively large and positive coefficient (1.477) indicates that the higher a region's capital expenditure, the greater its tendency to apply for loans. This suggests that capital expenditure is one of the main drivers of regional borrowing, due to its substantial financial demands and long-term impact.

Therefore, this result supports the view that, within a decentralized fiscal system, regions must have financing flexibility to carry out strategic development. Regional loans are one such policy option to ensure that priority projects are implemented, as long as borrowing is managed carefully and aligned with fiscal capacity.

The Influence of OSR, Transfer Funds, Fiscal Capacity, and Capital Expenditure on Regional Loans (Simultaneous Effect). Based on the F-test results, the F-statistic value of 10.16701 > F-table of 2.65 with a sig. Value of 0.000002 < 0.05 indicates that H_a is accepted. This confirms that PAD, Transfer Funds, Fiscal Capacity, and Capital Expenditure jointly have a significant influence on Regional Loans. Although PAD and Transfer Funds were not significant individually, together these four variables explain a meaningful portion of the variance in regional borrowing.

From the perspective of fiscal federalism, this supports the notion that fiscal decisions—such as borrowing—result from interactions between local fiscal capacity and central government support. Transfer funds serve as corrective instruments to address fiscal disparities, while PAD, fiscal capacity, and capital expenditure reflect regional autonomy and responsibility. The combination of these factors shapes fiscal policy directions, including loan decisions.

In the context of fiscal decentralization, this finding is highly relevant. Decentralization involves not only revenue authority but also expenditure and financing autonomy. The fiscal capacity of local governments—as reflected in PAD, transfer funds, fiscal strength, and capital outlays—collectively illustrates how well fiscal autonomy is being implemented. These four variables together determine the fiscal space available and the extent to which regions require and can manage borrowing.

This conclusion is consistent with previous studies such as Ratnasari et al. (2024), Yulsiati & Maqruf (2022), and Ilmiddaviq (2018), which found that a combination of local fiscal variables significantly influences borrowing decisions. Therefore, local governments need to strengthen their overall fiscal capacity to enable effective, accountable, and sustainable loan decisions.

CONCLUSION

This study empirically investigates the influence of Own-Source Revenue (OSR), Transfer Funds, Regional Fiscal Capacity, and Capital Expenditure on Regional Loans in districts/cities across Sumatra for the period 2019–2023. The regression results using the Common Effect Model



(CEM) show that Regional Fiscal Capacity and Capital Expenditure have a positive and significant effect on Regional Loans. In contrast, Regional Original Income and Transfer Funds do not have a significant effect. However, jointly, the four independent variables significantly influence Regional Loans. These findings support the fiscal federalism theory, emphasizing that both internal fiscal capacity and intergovernmental fiscal support shape regional borrowing decisions.

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