



Fiscal Decentralization Impact on Government Size Evidence From Indonesia

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Abstract. Fiscal decentralization has been implemented in Indonesia for more than two decades. This study, based on the Leviathan theory of Brennan and Buchanan, examines the impact of fiscal decentralization on government size. The Leviathan theory states that decentralization can lessen the central government's propensity to collect taxes in excess. This study's measurement of fiscal decentralization uses the variables of expenditure decentralization, revenue decentralization, and vertical imbalance as independent variables and government size as the dependent variable. This research uses panel data from 34 provinces in Indonesia from 2013 to 2023. The research uses secondary data from the Regional Revenue and Expenditure Budget (APBD) from the Directorate General of Financial Balance website. (DJPK). The impact of independent variables on the dependent variable is examined using the multiple linear regression analysis approach. Empirical results show that the variable of expenditure decentralization increases government size, while the variable of vertical imbalance decreases government size. This finding does not align with the Leviathan hypothesis, whereas revenue decentralization reduces government size, which aligns with the Leviathan hypothesis of Brennan and Buchanan.

Keywords: Fiscal Decentralization, Revenue Decentralization, Expenditure Decentralization.

1 Introduction

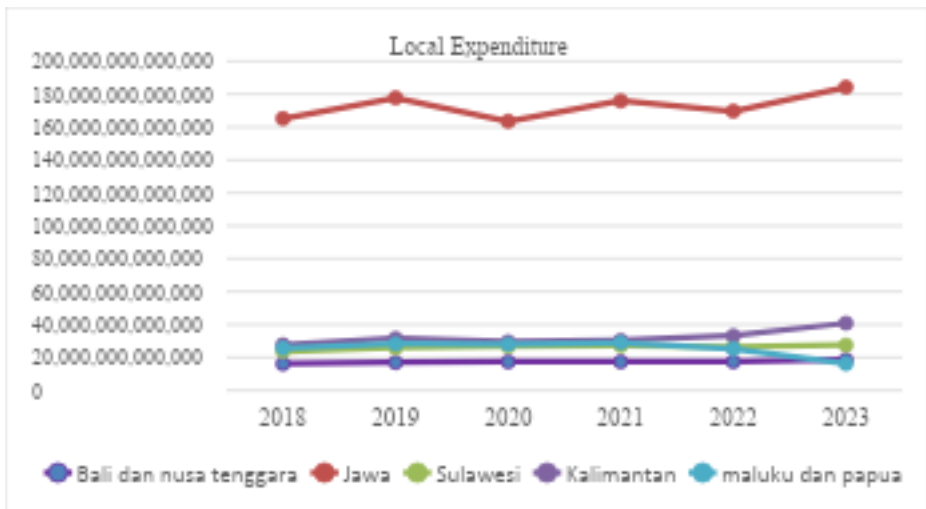
Fiscal decentralization has been adopted by both developed and developing countries, including Indonesia. Implementing decentralization can lead to more efficient spending, which means a smaller government size. This is because local governments better understand the resident's preferences, so the services provided will be more accurate, and the provision will be more efficient [1], [2]. Brennan and Buchanan's Leviathan hypothesis clarifies the relationship between fiscal decentralization and government size. The government is conceptualized as a unified entity that systematically aims to maximize fiscal revenue, constrained solely by constitutional limitations [3]. Decentralization is seen as a way to limit the behaviour of the government's "Leviathan," which can impose excessive taxation. Additionally, individuals can move around to choose regions that offer maximum benefits in terms of taxes and public goods, leading to competition among regions. This corresponds

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with Tiebout's "vote with feet" model, which limits the tax-collecting authority of local governments, promotes the efficient production and delivery of local public goods and services, and consequently restrains the expansion of local government [2]. A different perspective was presented by John Wallis [3]. He states that individuals who significantly influence local government policies and the provision of public goods at the local level will empower the government more, leading to a greater demand for goods and services that align with their preferences and needs. This alignment of preferences will enhance individuals' trust and support for local government in providing public goods, increasing local tax revenue as local spending rises, signifying an expansion of government size.

Local spending in Indonesia in recent years has consistently increased across almost all country regions (see Figure 1). This growth trend is a response from local governments to decentralization policies. The figure also illustrates the variation in local spending, with Java Island exhibiting a higher expenditure pattern than other areas in Indonesia. This difference is a varying response to the community's preferences in different regions. This is different from Buchanan's hypothesis, which states that with decentralization, the government size, measured in this instance, by local spending, will become smaller.



Source: Directorate General of Balance and Finance, BPS Year 2024

Fig. 1. Regional spending per island

Previous research on the relationship between fiscal decentralization and the size of government has shown varied results [4] justifying John Wallis's hypothesis; research findings indicate that both revenue decentralization, expenditure decentralization, and transfers between governments will increase the size of government, a similar conclusion was demonstrated by [4],[5],[6]. Different results show that the Decentralization of Revenue negatively affects government size [7], [8], [9], [10], decentralization of expenditures negatively affects government size [10], [11] And transfers between the government negatively affect the size of the

government [9]. This research aims to expand on previous studies regarding the relationship between fiscal decentralization and government size. This study employs panel data from 34 provinces spanning 2013–2023, utilizing expenditure decentralization, revenue decentralization, and vertical imbalance as indicators of decentralization to elucidate the relationship between decentralization and government size.

2 Methodology

The secondary data used in this study comes in the form of regional revenue and expenditure budget (APBD) obtained from the website of the Directorate General of Financial Balance, Ministry of Finance of the Republic of Indonesia. The data provides detailed information regarding revenue, expenditure, and transfers between provincial and district governments. Because Indonesian provinces have more sophisticated budgetary management and stronger institutional capacities, this study was carried out at the provincial level, encompassed a wider socio-economic variation, and played a coordinating role among districts, thus providing a more representative and comprehensive analysis. In selecting samples for this research, we excluded provinces newly established in 2023 concerning data balance. Finally, this research uses data from 34 provinces in Indonesia from 2013 to 2023. Government size is the dependent variable in this study, whereas fiscal decentralization—which comprises vertical imbalance, revenue decentralization, and spending decentralization—is the independent variable. The table below shows how the variables have been operationalized.

Table 1. Operational Definitions and Variables

Variables	Operational Definitions
Dependent variable	
Government size	Percentage of Local Expenditure to GDP
Independent variable	
Expenditure decentralization	The ratio of local expenditures to total government expenditures.
Revenue decentralization	The ratio of local revenue to total government revenue.
Vertical imbalance	Percentage (%) of local spending funded by transfers.

3 Result

3.1 Descriptive Statistics Test

Descriptive statistics are used in this study to gather data on government size, vertical imbalance, revenue decentralization, and expenditure decentralization. One must undertake the traditional assumption tests—normality, multicollinearity, and heteroscedasticity—before using regression analysis to test hypotheses. Using

descriptive tests and the P-P plot standard curve, the normalcy test. Here are the results of the tests conducted by the researcher:

Table 2. Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
X1_Expenditure Decentralization	340	.00	.21	.0294	.03461
X2_Revenue Decentralization	340	.01	.88	.3911	.17285
X3_Vertical Imbalance	340	10.27	191.27	53.5688	19.25331
Y_Government Size	340	1.25	15.82	4.6046	2.69970
Valid N (listwise)	340				

Source: Output SPSS, 2024

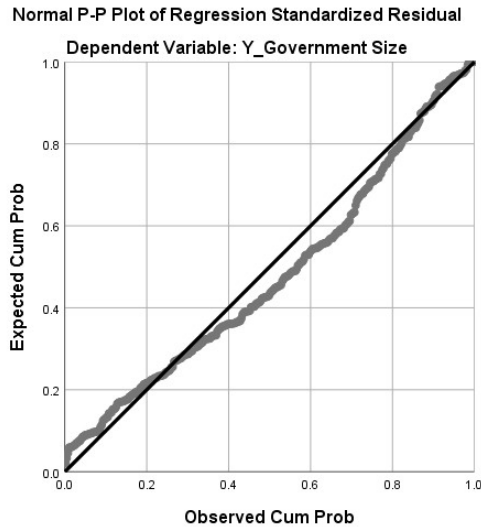


Fig. 2. Normality Test

Heteroscedasticity and multicollinearity tests were then performed; the multicollinearity test results are displayed in the table below:

Table 3. Collinearity Statistics

Model		Tolerance	VIF
1	X1_Expenditure Decentralization	.632	1.583
	X2_Revenue Decentralization	.626	1.597
	X3_Vertical Imbalance	.660	1.514

a. Dependent Variable: Y_Government Size

Source: Output SPSS, 2024

According to the multicollinearity test results, multicollinearity does not exist because the VIF values do not surpass 10. Furthermore, as shown in table 4 below, the results of the heteroscedasticity test show that heteroscedasticity is absent. A significance value higher than 0.05 is displayed in the table. This indicates that testing of the model is appropriate.

Table 4. Glejser statistics

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.210	.326		3.707	.000
X1_Expenditure Decentralization	-.2901	2.224	-.087	-1.304	.193
X2_Revenue Decentralization	-.431	.447	-.065	-.964	.336
X3_Vertical Imbalance	.007	.004	.125	1.915	.056

a. Dependent Variable: ABRESID

3.2 Multiple Regression Analysis

The regression analysis's findings led to the creation of the following equation:

$$\text{Government Size} = 11.624 + 10,930X_1 - 14,100X_2 - 0,034X_3 + e \quad (1)$$

Table 5. Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	11.624	.519		22.410	.000
X1_Expenditures Decentralization	10.930	3.534	.140	3.092	.002
X2_Revenue Decentralization	-14.100	.711	-.903	-19.838	.000
X3_Vertical Imbalance	-.034	.006	-.243	-5.488	.000

a. Dependent Variable: Y Government Size

Source: Output SPSS, 2024

The findings of the data processing indicate that the government size variable's constant value is 11,624. This suggests that in the absence of the factors of vertical imbalance, revenue decentralization, and expenditure decentralization, the size of the government would be 11,624 percent. The table shows that the slope of expenditure decentralization has a positive value of 10,930. This suggests that government size and expenditure decentralization have a favorable relationship. Therefore, government size will expand by 10.93% if expenditure decentralization increases by 1% while all other factors remain unchanged (*ceteris paribus*). The findings of the t-test, a statistical test that assesses the significance of the relationship, further support this condition. A significance value of 0,002 (less than 0.05) shows that the growth in expenditure decentralization significantly affects the size of the government.

Furthermore, the decentralization of the revenue variable shows a negative value of -14,1. This indicates a negative relationship between revenue decentralization and government size. Therefore, government size will drop by 14.1% if revenue decentralization increases by 1% and all other factors remain unchanged (*ceteris paribus*). The t-test result, which shows that revenue decentralization has a major impact on the government, further supports this condition with a significance value of 0.0000 (less than 0.05).

The value of the vertical imbalance variable is -0.034. This suggests that vertical imbalance and government size have a negative relationship. Therefore, provided all other factors remain the same (*ceteris paribus*), a 1% increase in vertical imbalance will result in a 0.034 percent reduction in government size. The t-test result, which shows that the decentralization of revenue has a substantial impact on government size, further supports this condition with a significance value of 0.0000 (less than 0.05).

3.2 Simultaneous Test

The computed F value, with a significance level of $0.00000 < 0.05$, is 145,002 based on the outcomes of the simultaneous analysis. This indicates that government size is influenced concurrently by the independent variables of vertical imbalance, revenue decentralization, and spending decentralization.

Table 6. Multiple Linear Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1394.016	3	464.672	145.002	.000 ^b
	Residual	1076.744	36	3.205		
	Total	2470.761	39			

a. Dependent Variable: Y_Government Size

b. Predictors: (Constant), X3_Vertical Imbalance, X1_Decentralisasi Expenditure, X2 Revenue Decentralise

Source: Output SPSS, 2024

3.3 Coefficient of Determination Test

According to the study's findings, the adjusted R square is 0.560. Thus, the variables of vertical imbalance, decentralization of revenue, and decentralization of expenditure comprise 56% of the size of the government. The remaining variables that were not part of the study, however, make up 44%.

Table 7. Multiple Linear Regression Analysis

Mo del	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751 ^a	.564	.560	1.79014

a. Predictors: (Constant), X3_Vertical Imbalance, X1_ Expenditure Decentralization, X2_ Revenue Decentralization
b. Dependent Variable: Y Government Size

Source: Output SPSS, 2024

4 Discussion

4.1 The influence of expenditure decentralization on government size

The findings indicate that government size and expenditure decentralization have a beneficial relationship. This research supports previous studies [4], [12] which are also in line with Wallis's hypothesis that individuals have a significant impact on public policy at the local level and have a high level of trust in local government in providing public goods, and increasing demand, which in turn enlarges local spending. This positive relationship indicates that the more decentralized the expenditure, the greater the public spending, meaning that the community's needs at the local level are increasing. In the context of Indonesia, decentralization, which also increases the responsibilities of local governments, has led to a growing demand for administrative functions, an increase in the number of government bureaucracies, and fiscal needs at the local level. This contributes to the overall expansion of government size, which is in line with data showing that regional spending has consistently increased year after year. Although ideally, decentralization aims to improve the efficiency of resource allocation. In reality, this efficiency often requires more significant expenditures to meet local needs effectively.

4.2 The Influence of Revenue Decentralization on Government Size

Considering the analysis's findings, there is a negative influence between the decentralization of revenue and government size. This research supports previous studies [8] that argue that fiscal decentralization significantly reduces public spending and the size of government in Vietnam. Their findings support the Leviathan hypothesis, which indicates that decentralization can lead to a more efficient allocation of resources, thereby limiting local government size. In other words, the

more decentralized an area is, the smaller its government will likely be. The same results were obtained by [10] and [9]. Research by [9] shows that income decentralization significantly and negatively impacts all income categories except for GDP income derived from its own sources. This is in line with the Leviathan theory, which holds that by lowering total government revenue and spending, fiscal decentralization can reduce the size of government. The same research by [10] that tested the Leviathan hypothesis at the local level shows that the potential for fiscal exploitation decreases with an increase in competing government units. This study uses economic freedom as the dependent variable, offering a more comprehensive measure of government intrusion into the economy than previous research focused on taxes or spending. Other research on the nature of decentralization has found evidence that higher-income decentralization can lead to a smaller size of the public sector [12]. This may be due to an overall increase in fiscal responsibility, but an increase in tax competition also accompanies it.

4.3 The Influence Vertical Imbalance on Government Size

Based on the results of the analysis, there is a negative influence between the Vertical imbalance and government size. The negative relationship of vertical imbalance with government size leads to an increase in the percentage of Local spending financed by transfers, which will suppress government size. This is more evident in regions with broad spending authority but need more revenue-raising mechanisms, resulting in dependence on transfers from the central government. This condition is described as "partial fiscal decentralization," where spending authority is limited by the ability to generate independent funds [5]. Although this dynamic can be bridged by the role of regional autonomy in managing financial resources, where significant control can encourage effective management of regional expenditures [13], the increase in government size based on the need to meet spending responsibilities without adequate resources, exacerbated by a lack of budget transparency, can obscure the actual size of local government and its fiscal health [14].

5 Conclusion

The study comes to the conclusion that decentralization factors—namely, vertical imbalance, revenue decentralization, and spending decentralization—have an impact on the size of government. Two variables in this study do not align with Brennan and Buchanan's leviathan hypothesis. Decentralization of revenue shows a positive influence on the size of government. Although this result defies the leviathan theory, it can be explained by Wallis's argument that a larger government is a reflection of people's confidence in local government to provide public goods that suit community preferences. Similarly, a high degree of control over the use of transfer funds by both the central and local governments is indicated by the vertical imbalance variable, which shrinks the size of the government.

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