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The Effect of Regional Fiscal Independence on Development Expenditure

Muhammad Harits Zidni Khatib Ramadhani¹, Asmadhini Handayani Rahmah², Yunita Fitria³

¹Accounting, Fakultas Ekonomi dan Bisnis, Universitas Mulawarman

²Management, Ekonomi dan Sosial Politik, Universitas Muhammadiyah Kalimantan Timur

³Accounting, Ekonomi dan Bisnis, Universitas Mulawarman

Muhammadharits@feb.unmul.ac.id, ahr811@umkt.ac.id, yunita.fitria@feb.unmul.ac.id

Abstract

This study examines the effect of regional fiscal independence on development expenditure in Indonesian local governments, focusing on regencies and municipalities. Fiscal independence is measured by the share of local own-source revenue (Pendapatan Asli Daerah, PAD) in total regional revenue, reflecting the degree of fiscal autonomy. Development expenditure is proxied by capital expenditure, representing long-term public investment in infrastructure and productive assets. The study uses panel data from 35 regencies and municipalities over the 2018–2022 period, yielding 175 observations. A fixed effects panel regression model is employed, selected through Chow and Hausman tests, to control for unobserved time-invariant regional characteristics, including institutional capacity and governance quality. The results indicate that regional fiscal independence has a positive and statistically significant effect on capital expenditure. Greater fiscal independence is associated with higher development spending, suggesting that increased reliance on own-source revenue strengthens local governments' ability to finance development-oriented investments. In addition, both local own-source revenue and central government transfers have positive and significant effects on capital expenditure, although intergovernmental transfers remain the primary funding source. In contrast, regional gross domestic product does not show a significant influence on development expenditure after controlling for fiscal variables. These findings imply that while fiscal independence expands local fiscal space, development expenditure in Indonesia remains highly dependent on central government transfers. Strengthening local revenue capacity is therefore essential to enhancing fiscal autonomy, reducing transfer dependency, and supporting more sustainable regional development within the fiscal decentralization framework.

Keywords: Fiscal Independence, Capital Expenditure, Local Government Finance, Regional Revenue, Indonesia

1. Introduction

The implementation of fiscal decentralization in Indonesia requires local governments to possess sufficient fiscal capacity to finance public services and regional development. One of the main indicators used to assess this capacity is regional fiscal independence, which reflects the extent to which local governments rely on their own-source revenue rather than transfers from the central government. A higher level of fiscal independence indicates greater flexibility in budget allocation and decision-making autonomy.

In practice, however, many regencies and municipalities in Indonesia still depend heavily on central government transfers such as the General Allocation Fund and the Special Allocation Fund. Empirical data show that the average fiscal independence ratio of local governments remains relatively low, indicating a dominant role of the central government in financing regional expenditures. This condition raises concerns regarding the effectiveness of fiscal decentralization in promoting autonomous and sustainable regional development.

Development expenditure, represented by capital expenditure in the regional budget, plays a crucial role in supporting economic growth and improving public infrastructure. Capital expenditure reflects long-term government investment that provides benefits beyond a single fiscal year. Nevertheless, the proportion and magnitude of capital expenditure vary significantly across regions, suggesting differences in fiscal capacity, policy priorities, and institutional characteristics.

Previous studies have produced mixed findings regarding the determinants of regional capital expenditure. While fiscal independence and local revenue are theoretically expected to increase development expenditure, empirical evidence remains inconclusive, particularly at the regency and municipal levels. Moreover, the relative roles of local own-source revenue, central transfers, and regional economic size in influencing capital expenditure have not been fully clarified.

Based on these considerations, this study aims to analyze the effect of regional fiscal independence on development expenditure in Indonesian regencies and municipalities. By incorporating local own-source revenue, central government transfers, and regional gross domestic product as control variables, this study seeks to provide empirical evidence on the main fiscal determinants of regional development expenditure and contribute to the literature on fiscal decentralization and local public finance.

2. Research Methods

This study employs a quantitative explanatory research design to examine the causal relationship between regional fiscal independence and development expenditure in Indonesian local governments. The explanatory approach is chosen because the research aims to test hypotheses regarding the direction and magnitude of the influence of fiscal variables on capital expenditure using empirical data.

The analysis utilizes panel data, which combine cross-sectional data (multiple regencies and municipalities) and time-series data (multiple years). Panel data are particularly suitable for this study because they allow the analysis to control for unobserved heterogeneity across regions that remains constant over time, such as institutional capacity, geographical characteristics, and long-standing fiscal management practices.

2.1. Research Object, Population, and Sample

The object of this research is local government finance, specifically the relationship between fiscal independence and development expenditure at the regency and municipal levels in Indonesia. The population of the study consists of all regencies and municipalities in Indonesia, which number more than 500 administrative units.

Due to limitations in data availability and the need for balanced panel data, this study applies purposive sampling to select the research sample. The sampling criteria include:

1. Availability of complete and consistent regional budget realization data (APBD) for the 2018–2022 period.
2. Availability of regional gross domestic product (GRDP/PDRB) data at constant prices for the same period.
3. Representation of different geographical regions of Indonesia (western, central, and eastern regions).
4. Inclusion of both regencies and municipalities to capture variation in fiscal capacity and economic structure.

Based on these criteria, 35 regencies and municipalities were selected as the research sample. With an observation period of five years, the total number of observations used in the panel dataset is 175 (35 regions × 5 years). This sample size is considered adequate for panel regression analysis and hypothesis testing.

2.2. Data Type and Data Sources

This study uses secondary data obtained from official and publicly available sources. Data on regional financial variables—including local own-source revenue (PAD), total regional revenue, capital expenditure, and central government transfers—are obtained from the Directorate General of Fiscal Balance (DGFB), Ministry of Finance of the Republic of Indonesia.

Data on regional gross domestic product (GRDP/PDRB) at constant prices are sourced from publications of the Central Statistics Agency (BPS). The use of official government data ensures data reliability, comparability, and consistency across regions and years.

The study period covers 2018–2022, which allows observation of fiscal conditions before, during, and after the COVID-19 pandemic period. This timeframe provides a more comprehensive picture of regional fiscal behavior and development expenditure dynamics.

2.3. Variables and Measurement

The variables used in this study are classified into dependent, independent, and control variables as follows:

1. Dependent Variable
 - Development Expenditure (*Capital Expenditure*) Development expenditure is proxied by capital expenditure as reported in the regional budget realization. Capital expenditure reflects government investment in infrastructure and long-term assets. To reduce heteroscedasticity and

facilitate elasticity interpretation, this variable is transformed into a natural logarithm (Ln Capital Expenditure).

2. Main Independent Variable

- Regional Fiscal Independence Fiscal independence is measured using the ratio of local own-source revenue (PAD) to total regional revenue. This ratio indicates the extent to which a region can finance its expenditures using its own fiscal resources. The variable is expressed as a ratio and not log-transformed because it already represents a proportional measure.

3. Control Variables

- Local Own-Source Revenue (Ln PAD) PAD represents the fiscal capacity generated directly by local governments. The natural logarithm of PAD is used to capture elasticity effects.
- Central Government Transfers (Ln Transfer) This variable includes all forms of intergovernmental transfers received by local governments, such as DAU, DAK, and revenue-sharing funds. The logarithmic transformation is applied.
- Regional Gross Domestic Product (Ln GRDP) GRDP at constant prices is used as a proxy for regional economic size and activity. The variable is expressed in natural logarithm form.

2.4. Model Specification

To examine the relationship between fiscal independence and development expenditure, this study estimates the following panel regression model:

$$\ln(CAPEX_{it}) = \alpha + \beta_1 FISCAL_{it} + \beta_2 \ln(PAD_{it}) + \beta_3 \ln(TRANSFER_{it}) + \beta_4 \ln(GRDP_{it}) + \varepsilon_{it}$$

Where:

- $CAPEX_{it}$ is capital expenditure of region i in year t ,
- $FISCAL_{it}$ is the fiscal independence ratio,
- PAD_{it} is local own-source revenue,
- $TRANSFER_{it}$ is central government transfers,
- $GRDP_{it}$ is regional gross domestic product,
- α is the intercept,
- $\beta_1, \beta_2, \beta_3, \beta_4$ are regression coefficients, and
- ε_{it} is the error term.

Because the dependent variable is expressed in logarithmic form while fiscal independence is in level form, the coefficient of fiscal independence is interpreted as a semi-elasticity, whereas the coefficients of PAD, transfer, and GRDP are interpreted as elasticities.

2.5. Panel Data Estimation Technique

The panel regression analysis is conducted using three alternative estimation approaches:

1. Common Effect Model (CEM)
2. Fixed Effect Model (FEM)
3. Random Effect Model (REM)

To determine the most appropriate model, the following statistical tests are employed:

- Chow Test, to compare CEM and FEM.
- Hausman Test, to compare FEM and REM.

The Fixed Effect Model is selected when the tests indicate that unobserved individual effects are correlated with the explanatory variables. FEM is preferred because it controls for time-invariant characteristics specific to each region that may affect development expenditure.

2.6. Classical Assumption Tests and Hypothesis Testing

After selecting the appropriate panel regression model, classical assumption tests are conducted to ensure the reliability of the estimated coefficients. These include:

- Heteroscedasticity Test, using the White cross-section method.
- Multicollinearity Check, evaluated through correlation matrices and variance inflation factors (VIF).

Hypothesis testing is performed using:

- F-test, to assess the joint significance of all independent variables.
- t-test, to examine the partial significance of each explanatory variable.

Statistical significance is evaluated at a 5 percent significance level ($\alpha = 0.05$). All estimations are conducted using statistical software such as EViews

3. Results and Discussions

The results of the research are based on a logical sequence to form a story. The contents show facts/data. Can use This section presents the empirical results of the study and provides a comprehensive discussion of the relationships between regional fiscal independence, local own-source revenue, central government transfers, regional economic size, and development expenditure. The presentation follows a logical sequence, starting from descriptive statistical evidence, continuing with model selection and estimation results, and ending with an integrated discussion and generalization of findings in relation to fiscal decentralization theory and regional development policy. The analysis is based on panel data consisting of 175 observations from 35 regencies and municipalities over the period 2018–2022. The main objective is to examine whether regional fiscal independence significantly affects development expenditure while controlling for fiscal capacity and regional economic conditions.

3.1. Descriptive Statistics and Initial Patterns

The descriptive statistics provide an initial overview of fiscal conditions and development expenditure patterns across local governments. Table 1 presents the summary statistics of all variables used in the analysis.

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	Std. Dev.	Min	Max
Capital Expenditure (Ln)	27.21	0.65	25.88	29.15
Fiscal Independence	0.17	0.12	0.04	0.59
Local Own-Source Revenue (Ln PAD)	26.11	0.98	24.31	28.54
Central Transfers (Ln)	26.85	0.58	25.42	28.45
Regional GDP (Ln PDRB)	27.60	0.70	26.12	29.58

The average fiscal independence ratio of 0.17 indicates that, on average, only 17 percent of total regional revenue originates from local own-source revenue, while the remaining portion is financed through transfers and other external sources. This finding confirms that most regencies and municipalities in the sample remain fiscally dependent on the central government. The minimum value of 0.04 reflects extremely low fiscal autonomy in certain regions, whereas the maximum value of 0.59 suggests that only a limited number of regions have achieved a relatively high level of fiscal independence.

Capital expenditure shows substantial variation across regions and years, as reflected in its standard deviation. This variation suggests differences in development priorities, fiscal capacity, and possibly institutional characteristics among local governments. Local own-source revenue displays the highest dispersion among the fiscal variables, indicating a pronounced inequality in revenue-generating capacity across regions. In contrast, central transfers are more evenly distributed, consistent with their equalization function in Indonesia's intergovernmental fiscal system.

Regional GDP also varies widely, reflecting differences in economic structure and scale among regions. However, as an indicator of economic activity rather than fiscal capacity, its relationship with government spending decisions remains an empirical question that is addressed in the regression analysis.

3.2. Panel Model Selection and Its Implications

Before estimating the regression model, appropriate panel data specifications were tested to ensure the validity of the results. The Chow test rejects the pooled common effect model, indicating that ignoring regional heterogeneity would result in misspecification. This implies that each regency or municipality has unique characteristics that influence its development expenditure.

The Hausman test further confirms that the fixed effect model is more appropriate than the random effect model. This result indicates that unobserved regional characteristics are correlated with the explanatory variables. Consequently, the fixed effect model is employed to control for time-invariant regional factors such as institutional capacity, governance practices, and geographical conditions.

By using the fixed effect model, the estimated coefficients capture within-region variations over time. In other words, the results reflect how changes in fiscal independence, local revenue, transfers, and regional GDP within the same region affect changes in development expenditure.

3.3. Estimation Results of the Fixed Effect Model

The results of the fixed effect regression are presented in Table 2.

Table 2. Fixed Effect Regression Results

Variable	Coefficient (β)	t-Statistic	Probability
Fiscal Independence	0.8754	3.01	0.0031
Ln PAD	0.2511	4.55	0.0000
Ln Transfer	0.3018	5.08	0.0000
Ln PDRB	-0.0559	-0.92	0.3587
Constant	16.2230	7.88	0.0000

The model exhibits strong explanatory power, with an adjusted R^2 of 0.8415. This indicates that approximately 84.15 percent of the variation in development expenditure is explained by the fiscal variables included in the model and region-specific fixed effects. The F-statistic of 82.35 with a probability value of 0.0000 confirms that the model is jointly significant.

3.4. Effect of Fiscal Independence on Development Expenditure

The coefficient of fiscal independence is positive and statistically significant, indicating that increases in fiscal independence are associated with higher development expenditure. Because the dependent variable is expressed in logarithmic form while fiscal independence is measured as a ratio, the coefficient represents a semi-elasticity.

A practical interpretation can be derived by considering a change in fiscal independence of 0.10, or 10 percentage points. Such an increase is associated with an increase in the logarithm of capital expenditure of approximately 0.0875, which corresponds to an increase in capital expenditure of about 8.75 percent, holding other factors constant. This magnitude is economically meaningful and supports the hypothesis that fiscal independence enhances local governments' capacity to invest in development.

This finding aligns with fiscal decentralization theory, which posits that greater reliance on own-source revenue increases fiscal flexibility and accountability. Regions that are less dependent on transfers are better able to allocate resources according to local development priorities, including infrastructure and long-term investment.

3.5. Role of Local Own-Source Revenue (PAD)

Local own-source revenue has a positive and statistically significant effect on development expenditure. The estimated coefficient indicates that a 1 percent increase in PAD is associated with a 0.25 percent increase in capital expenditure. This elasticity suggests that PAD plays a direct and important role in financing development expenditure.

The significance of PAD highlights that fiscal independence is not merely a structural indicator but reflects real differences in fiscal capacity. Regions that are able to mobilize higher local revenue can expand their development expenditure without relying solely on external transfers.

3.6. Influence of Central Government Transfers

Central government transfers also have a positive and statistically significant effect on development expenditure, with an elasticity larger than that of PAD. A 1 percent increase in transfers is associated with a 0.30 percent increase in capital expenditure. This result indicates that transfers remain the most influential fiscal factor in determining development expenditure in Indonesian local governments.

The dominance of transfers reflects the design of Indonesia's intergovernmental fiscal system, in which a substantial portion of development spending is financed through earmarked and non-earmarked transfers. While transfers play a crucial role in supporting development, their strong influence also suggests persistent fiscal dependence.

3.7. Regional GDP and Its Non-Significant Effect

Regional GDP does not have a statistically significant effect on development expenditure. The estimated coefficient is negative but small and insignificant, indicating that economic size alone does not determine development spending once fiscal variables are taken into account.

This finding suggests that development expenditure decisions are driven more by fiscal capacity than by economic scale. Regions with large economies may rely more on private sector investment or may prioritize operational spending over capital investment, while regions with smaller economies may allocate a larger share of their budget to development.

3.8. General Discussion and Synthesis of Findings

Overall, the results indicate that development expenditure in Indonesian local governments is primarily determined by fiscal factors rather than economic size. Fiscal independence, local own-source revenue, and central government transfers all significantly influence capital expenditure, with transfers exerting the strongest effect.

The findings suggest that while fiscal independence contributes positively to development expenditure, its role is not yet dominant. Local governments still rely heavily on transfers to finance development. Strengthening local revenue capacity is therefore essential to expanding fiscal space and reducing long-term dependency on central government transfers.

These results contribute to the empirical literature on fiscal decentralization by demonstrating that fiscal autonomy matters for development expenditure, but its effectiveness is conditioned by the broader intergovernmental fiscal framework.

4. Conclusion

This study concludes that regional fiscal independence has a positive and statistically significant effect on development expenditure in Indonesian regencies and municipalities. An increase in the proportion of local own-source revenue relative to total regional revenue is associated with higher capital expenditure, indicating that greater fiscal autonomy enables local governments to allocate more resources toward development-oriented spending. This finding confirms that fiscal independence contributes to expanding local fiscal space and supports the objectives of fiscal decentralization. The results further show that local own-source revenue directly influences development expenditure. Regions with higher PAD are better able to finance capital investment, reflecting the importance of strengthening local revenue capacity as a foundation for sustainable development financing. Central government transfers also have a significant and positive effect on development expenditure and remain the most influential fiscal factor in the current system. This highlights the continued reliance of local governments on intergovernmental transfers to support development, particularly in regions with limited fiscal capacity. In contrast, regional gross domestic product does not have a significant effect on development expenditure when fiscal variables are taken into account. This indicates that economic size alone does not guarantee higher public investment, and that development spending decisions are more closely linked to fiscal capacity than to overall economic activity. These findings imply that policies aimed at increasing development expenditure should focus on strengthening local revenue mobilization while maintaining the effectiveness of transfer mechanisms to ensure fiscal equity. Improving fiscal independence can enhance budgetary flexibility and reduce long-term dependency on central transfers, thereby supporting more autonomous and sustainable regional development. Future research may extend this study by incorporating additional institutional or political variables, examining non-linear relationships, or expanding the observation period to capture long-term fiscal dynamics. Such efforts would

provide deeper insights into the mechanisms through which fiscal decentralization affects development outcomes.

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