Faculty of Economics and Business
UNIVERSITAS KLABAT

KLABAT Accounting Review (KAR)
Volume 6, No.1, pages 24-35 (2025)
https://ejournal.unklab.ac.id/index.php/kar

The Relationship between Government Spending and Regional Economic Growth: Evidence from Indonesia

Junior Semuel Lakat[1*], Anderson Guntur Kumenaung[1],
Victor Paskah Kalawat Lengkong[1], Hendrik Gamaliel[1]

Article History:
Received November 16, 2024
Revised February 16, 2025
Accepted February 18, 2025
Published Online February 28, 2025

DOI:
10.60090/kar.v6i1.1217.24-35

Affiliation:
[1] Program Studi Doktor Ilmu Manajemen, Fakultas Ekonomi dan Bisnis, Universitas Sam Ratulangi, Manado, Indonesia.

Correspondence:
* juniorlakat061@student.unsrat.ac.id

Published by:
Faculty of Economics & Business
Klabat University (UNKLAB)
Jl. Arnold Mononutu, Airmadidi – 95371, Indonesia | Phone: (0431) 891035 | Fax: (0431) 891036
Email: kar@unklab.ac.id

ISSN:
ISSN: 2721-723X
P-ISSN: 2722-7278

Abstract
The study investigates the relationship between government spending and regional economic growth in Indonesia, focusing on their impact on per capita income and Gross Regional Domestic Product (GDP). Utilizing a comprehensive analysis of panel data in 508 districts/cities from 2018 to 2022, this study uses a Fixed Effect Model (FEM) to account for regional heterogeneity. These findings reveal that Personnel and Goods and Services Expenditure significantly increases per capita income and GDP, while Capital Expenditure negatively impacts these economic outcomes, potentially due to a delay in the return on infrastructure investment. Interest Payments show a positive effect on per capita income, suggesting that efficient debt management can improve economic performance. However, spending on subsidies, grants, and social assistance shows an inconsistent impact, indicating potential inefficiencies in resource allocation. This research provides important insights for policymakers in optimizing public spending to encourage equitable regional development and sustainable economic growth.

Keywords
Government expenditure, gross domestic product, per capita income, regional economic growth.

INTRODUCTION

In a dynamic public finance landscape, the role of government spending in driving economic growth and increasing per capita income has long been the subject of widespread debate. Theoretical perspectives, from Keynesian economics to Wagner's Law, have offered a variety of explanations for how public spending can stimulate or hinder economic development. Keynesian theory argues that government spending is an important tool for increasing aggregate demand, especially during economic downturns, thereby boosting growth and raising living standards. In contrast, Wagner's Law shows that as the economy develops, government spending naturally increases to meet the demands of a more complex and advanced society. This theoretical dichotomy underscores the importance of understanding the specific contexts in which government spending is most effective, especially in a diverse and decentralized economy like Indonesia, where regional disparities can significantly affect public spending policy outcomes (Popescu & Diaconu, 2022).

The relevance of this issue is growing in the context of fiscal decentralization, where local governments are empowered to make critical decisions about public spending. In Indonesia, the implementation of fiscal decentralization aims to increase regional autonomy and reduce dependence on central government transfers (Pusporini, 2020). The effectiveness of this decentralized spending in encouraging fair economic growth remains a critical question. The allocation of government funds across regions with varying levels of development presents unique challenges, particularly in ensuring that public spending translates into meaningful economic outcomes such as increased per capita income and sustainable growth.

The existing literature on the impact of government spending components on economic growth and per capita income reveals significant inconsistencies and contradictions, pointing to clear research gaps. Studies such as Maulid et al. (2021) consistently found that Employee Spending has a positive effect on economic growth, while Bachtiar et al. (2015) argued otherwise, showing no significant effect. Similarly, the impact of Goods and Services Expenditure on economic growth is still debated, with several studies reporting positive effects (Maulid et al., 2021) and others found no significance or even negative results of Pangestu in Ramadhanti et al. (2024). The role of Capex is equally controversial; While some researchers consider it to have a positive impact on growth and revenue (Natalia et al., 2019), such as Widiastuti and Sutrischastini (2022), reporting a negative or insignificant relationship. Interest payments are mostly viewed negatively, as seen in Sofilda and Hamzah (2015), but some findings show an insignificant impact (Maulid et al., 2021), challenging conventional wisdom. The effects of Subsidies, Grant Expenditures, and Social Assistance Expenditures vary widely, with studies reporting positive, negative, or insignificant impacts on economic outcomes (Deswantoro et al., 2017). This lack of consensus across the various dimensions of government spending and economic performance suggests that further investigation is needed to clarify this relationship, especially in different regional contexts, to provide a more definitive conclusion on how public spending affects economic growth and per capita income in Indonesia.

Previous studies of the impact of government spending on economic growth have often faced limitations in analytical units, sample sizes, and analytical techniques, typically focusing on a single province or a small regional subset using a basic regression model. The study addresses this gap by using a comprehensive panel data regression analysis across all districts/cities in Indonesia, allowing for a more detailed and representative examination of the relationship between the expenditure component and economic output. Expanding its scope and leveraging more sophisticated analytical frameworks, the study provides a deeper understanding of how government spending affects regional economic growth and per capita income, offering valuable insights for policymakers.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Government spending is one of the main instruments in economic policy that has a significant impact on economic growth and community welfare. In various economic studies, the role of government spending in driving economic growth has been a long debate among economists, especially in the context of Keynesian theory and Wagner's Law. These two theories provide different perspectives in understanding the relationship between government spending and the economic dynamics of a country or region.

In the Keynesian economic perspective, government spending is considered an exogenous variable that can be used to control economic fluctuations, especially in the face of recession or economic instability. According to Keynes, when aggregate demand in the economy declines, the government needs to actively intervene through expansionary fiscal policy, namely by increasing state spending on public goods and services. It aims to stimulate private consumption and investment, which will ultimately increase national output and employment levels (Jayasinghe et al., 2021). In conditions where the private sector is unable to meet the investment needs needed to maintain economic growth, government spending serves as the main driver in restoring and maintaining economic stability. The Keynesian approach is particularly relevant in the context of regions that have markets that are still developing or experiencing economic stagnation due to a lack of investment from the private sector.

In contrast, the Wagner Law states that government spending will naturally increase as the economy grows. This is due to the increasing complexity of economic and social systems that require more government intervention in various sectors, such as infrastructure, education, health, and social protection. Wagner argues that as per capita income levels rise, people will demand better quality public services and better infrastructure, forcing governments to increase state spending (Shaddady, 2023). In contrast to the Keynesian approach that emphasizes active government intervention in

stimulating economic growth, Wagner's Law shows a passive causal relationship, where economic growth that has already occurred creates the need for greater government spending.

The relationship between government spending and economic growth is not always unidirectional and positive. Several studies show that the impact of government spending on economic growth is highly dependent on various factors, such as institutional efficiency, transparency in budget management, and targeted resource allocation. In some countries or regions that have inefficient governance, increased government spending does not always result in proportional economic growth. Misallocation of resources or corruption in budget management can hinder the effectiveness of government spending, so that the expected benefits cannot be felt optimally by the community. A deeper understanding of the economic and political context of a country or region is important in evaluating the impact of state spending on economic growth.

In addition to affecting overall economic growth, government spending also plays a crucial role in increasing people's per capita income. In Keynesian theory, increased public spending is seen as a way to increase people's purchasing power, which in turn can boost economic activity and create more jobs. When the government allocates budgets for investments in productive sectors, such as infrastructure, education, and health, it can increase labor productivity and encourage long-term economic growth (Duruechi & Chigbu, 2022)

The effectiveness of government spending in increasing per capita income is highly dependent on the composition and distribution of the budget. Progressive spending, i.e. spending that is more aimed at low-income groups, has proven to be more effective in reducing economic inequality and improving people's welfare Ojong, Ekpo, and Anthony in Duruechi and Chigbu (2022). For example, well-designed social assistance and subsidy programs can increase the purchasing power of vulnerable groups, thus allowing them to increase consumption and investment in basic needs. Conversely, if government spending is allocated more to less productive sectors or has no direct impact on improving people's welfare, then the positive impact on per capita income will be more limited.

In the long term, the relationship between government spending and per capita income can also be explained through the lens of sustainable economic development. Wagner's Law in Magazzino et al. (2015) stated that as a country's per capita income increases, government spending will also increase due to the increasing public need for public services and infrastructure (Sofilda & Hamzah, 2015). This phenomenon creates a positive feedback cycle, where initial government spending can stimulate economic growth, which will ultimately increase per capita income and create a need for greater public spending. If these expenditures are not managed properly or are not in line with economic development priorities, then the expected long-term benefits may not be optimally achieved.

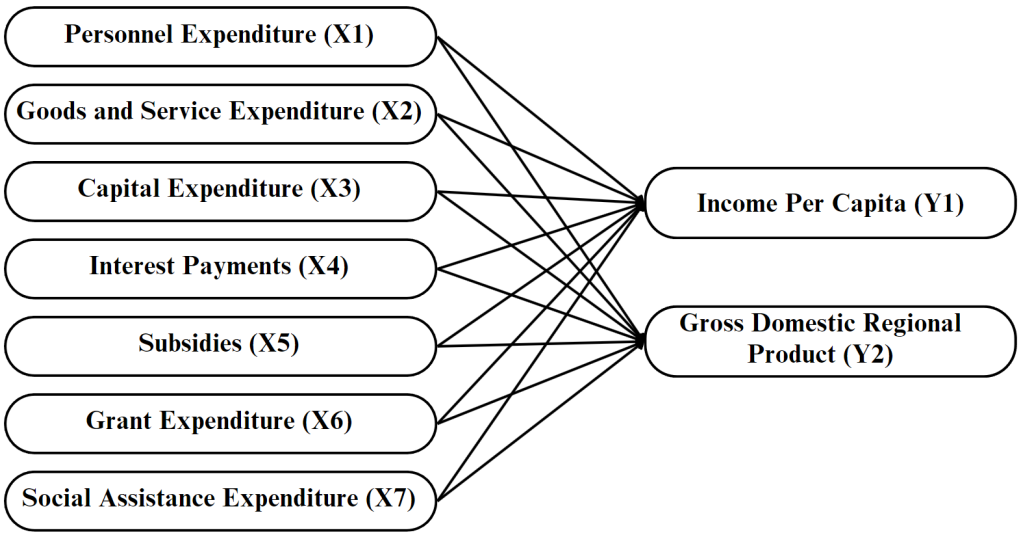

Figure 1. Conceptual Framework

Furthermore, each type of government spending has a different impact on economic growth and per capita income. For example, personnel spending that includes civil servant salaries can increase household purchasing power and encourage domestic consumption, which contributes to economic

growth in the short term. Spending on public goods and services also plays an important role in ensuring that government operations run efficiently and supporting the productivity of the private sector. Capital expenditure allocated for infrastructure development tends to have a greater long-term impact, although in the short term it can weigh on the state budget.

Debt interest payments can reduce the government's fiscal capacity to finance the productive sector, potentially hampering economic growth if not managed properly. Subsidies and social assistance, if distributed effectively, can have a positive impact on economic growth and community welfare, especially for low-income groups. Careful management of state expenditure based on the principle of efficiency is a key factor in ensuring that government spending truly benefits society at large.

The relationship between government spending, economic growth, and per capita income is a complex phenomenon and is influenced by various factors. While Keynesian theory emphasizes the active role of government in stimulating the economy, Wagner's Law further suggests that economic growth will drive a natural increase in public spending. The effectiveness of government spending in encouraging economic growth and increasing per capita income is highly dependent on how the budget is managed and allocated. A fiscal policy strategy based on the principles of efficiency, transparency, and accountability is crucial in ensuring that government spending truly has a positive impact on society and economic development as a whole.

RESEARCH METHODS

This study uses a descriptive-quantitative research design to analyze the relationship between the composition of local government spending and economic growth in 508 districts/cities in Indonesia (excluding 6 districts/cities in DKI Jakarta Province) during the period 2018 to 2022. The main purpose of this study is to evaluate the associative relationship between various types of government expenditure and regional economic growth indicators, namely per capita income and Gross Regional Domestic Product (GDP).

Data analysis in this study was carried out using panel data regression techniques, with estimates carried out through EViews software version 13. The main model proposed is the Fixed Effect Model (FEM), because this model is able to control unobserved heterogeneity between districts/cities that can affect regional economic performance. The FEM model was selected based on the assumption that there are specific factors that are fixed in each district/city that can affect regional economic outcomes differently. To obtain more robust results and ensure the selection of the most suitable model, this study will also compare the FEM Model with the Random Effect Model (REM) and the Common Effect Model (CEM). The selection of the best model will be determined based on three statistical tests, namely the Chow Test which is used to determine whether the Fixed Effect Model (FEM) is better compared to the General Effect Model (CEM), then the Hausman Test which is used to choose between the Fixed Effect Model (FEM) and the Random Effect Model (REM) based on the correlation between independent variables and individual effects, and finally the Lagrange Multiplier (LM) Test which is used to determine whether the Random Effect Model (REM) is more suitable compared to the Common Effect Model (CEM). The regression model used in this study can be formulated as follows:

$$Y1it = \alpha + \beta1X1it + \beta2X2it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \varepsilon it$$
$$Y2it = \alpha + \beta1X1it + \beta2X2it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \varepsilon it \quad \text{CEM}$$
$$Y1it = \alpha + \beta0i + \beta1X1it + \beta2X2it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \mu it$$
$$Y2it = \alpha + \beta0i + \beta1X1it + \beta2X2it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \mu it \quad \text{FEM}$$
$$Y1it = \alpha + \beta0i + \beta1X1it + \beta2X2it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \varepsilon it + \mu it$$
$$Y2it = \alpha + \beta0i + \beta1X1it + \beta2X2it + \varepsilon it + \beta3X3it + \beta4X4it + \beta5X5it + \beta6X6it + \beta7X7it + \mu it \quad \text{REM}$$

In this model, Y1it and Y2it represent per capita income and GDP in districts/cities *in* t. α is a model constant. β1 to β7 is a regression coefficient that measures the influence of each type of expenditure on economic growth. X1it to X7it is an independent variable that reflects various types of local government expenditures, namely Personnel Expenditure, Goods and Services Expenditure, Capital Expenditure, Interest Payments, Subsidies, Grant Expenditures, and Social Assistance Expenditures. εit captures stochastic disturbances or random errors in the model. μit captures individual effects that are not observed and specific to each district/city.

This study aims to identify the marginal effects of various components of government spending on regional economic growth. This study examines how Personnel Expenditure and Capital Expenditure contribute to the operational and regional development dimensions. In addition, to overcome the zero value in the independent variable that can affect the estimation results, special treatment is

carried out by adding a constant of one before data processing. This step aims to ensure the accuracy of the estimate and minimize the potential for bias in regression analysis. Through this approach, this study is expected to provide empirical insights into the effectiveness of fiscal policy in increasing economic growth at the regional level.

RESULTS AND DISCUSSION

Descriptive Statistics

To provide a more comprehensive overview of the characteristics of the data in this study, a descriptive statistical analysis was carried out on the main variables, both dependent variables and independent variables. Descriptive statistics aim to summarize the distribution of data by calculating the size of concentration (mean and median), the size of the spread (standard deviation, minimum value, and maximum), and the characteristics of the data distribution (*skewness* and kurtosis).

This analysis allows for a deeper understanding of central tendencies, data variability, and whether the data distribution shows a normal pattern or there are indications of *outliers*. The results of these descriptive statistics are the basis for determining further analysis techniques, including the validity of the regression assumptions used in the study.

Table 1. Descriptive Statistics

	Year 1	Year 2	X1	X2	X3	X4	X5	X6	X7
Mean	0.010	18,334,967	581.03	424.39	262.59	1.89	1.94	53.03	12.70
Median	0.010	8,531,705	461.91	323.30	210.66	1.00	1.00	37.29	4.84
Max	0.020	434,000,000	2903.13	5215.77	2431.01	28.95	252.31	957.91	486.44
Min	0.004	133,354	70.43	111.24	33.73	1.00	1.00	1.00	1.00
Std.Dev.	0.003	32,373,526	373.41	354.59	200.84	2.87	7.48	59.22	29.21
Slope	0.438	5.727	1.913	4.617	3.630	4.307	21.910	4.274	9.154
Curtosis	3.604	52.684	8.237	38.941	23.267	24.303	609.189	39.580	118.378

Per capita income (Y1) has an average value of 0.010, indicating a relatively moderate level of individual economic output across the study region. In contrast, the Gross Regional Domestic Product (GDP) (Y2) shows a much higher average value, at 18,334,967, with a very wide range between the maximum (434,000,000) and minimum (133,354) values. This large difference confirms the existence of significant economic disparities among the regions in this study.

In the independent variable, which represents different types of government spending, the distribution pattern shows considerable variation. For example, Personnel Expenditure (X1) has an average of 581.03 million rupiah with a standard deviation of 373.41 million rupiah, indicating a fairly high level of variation between regions. A slope of 1,913 and a curtosis of 8,237 indicate a *right-skewed* distribution, indicating that some regions have much higher personnel expenditure than the majority of others.

The same thing can be seen in Goods and Services Expenditure (X2) which has a slope of 4,617 and a kurtosis of 38,941, which indicates a very asymmetrical distribution with the existence of significant outliers. The average value of 424.39 million rupiah with a standard deviation of 354.59 million rupiah further strengthens the variation in inter-regional spending.

Capital Expenditure (X3) also showed a similar distribution pattern with an average value of 262.59 million rupiah and a standard deviation of 200.84 million rupiah. The high slope (3,630) and curtosis (23,267) show that although most regions have moderate capital expenditures, there are some areas with very large expenditures. Interest Payments (X4), Subsidies (X5), Grant Expenditure (X6), and Social Assistance Expenditure (X7) show extreme skew and kurtosis values, especially in Subsidies (X5) which has a slope of 21,910 and a kurtosis of 609,189. This shows that most regions have very low subsidy spending, but there are some areas with very large expenditure values, likely as a result of certain fiscal policies or unique local economic conditions.

Although some variables show abnormal distributions, this is a common phenomenon in real-world economic data and does not automatically invalidate regression analysis. The Central Boundary Theorem states that with a large sample size, the estimated distribution of regression coefficients will be close to normal, even if the original data is not normally distributed. The high inclination and kurtosis values reflect more real differences in economic characteristics between regions than as an analytical problem. The results of descriptive statistics can be used as a basis in choosing the right estimation method for the regression analysis to be carried out in the next stage.

Multicollinearity Test

Multicollinearity tests are performed to ensure that the independent variables in the regression model do not have too high a correlation with each other. High multicollinearity can cause distortion in the regression coefficient, increase the variance of the estimate, and reduce the reliability and interpretation of the research results. This testing is an important step before proceeding to regression analysis. In this study, multicollinearity analysis was carried out using a correlation matrix between independent variables. If the correlation coefficient between the two independent variables is more than 0.9, then it can indicate the presence of serious multicollinearity.

Table 2. Multicollinearity Test

	X1	X2	X3	X4	X5	X6	X7
X1	1.000	0.818	0.650	-0.027	0.124	0.598	0.136
X2	0.818	1.000	0.767	0.006	0.165	0.559	0.176
X3	0.650	0.767	1.000	0.100	0.104	0.480	0.170
X4	-0.027	0.006	0.100	1.000	0.059	-0.007	0.003
X5	0.124	0.165	0.104	0.059	1.000	0.056	0.052
X6	0.598	0.559	0.480	-0.007	0.056	1.000	0.201
X7	0.136	0.176	0.170	0.003	0.052	0.201	1.000

The results of the correlation matrix showed that no independent variable had a correlation coefficient above 0.9, so multicollinearity was not a significant problem in this study. The highest correlation was between Personnel Expenditure (X1) and Goods and Services Expenditure (X2) with a value of 0.818. Although it is quite high, this value is still below the critical limit of 0.9, so it does not pose serious problems in regression analysis. The correlation between Capital Expenditure (X3) and Personnel Expenditure (X1) and Goods and Services Expenditure (X2) was 0.650 and 0.767, respectively, which shows that the correlation is moderate and still within acceptable limits. Interest Payment (X4) has a very low correlation with other variables, such as -0.027 with X1 and 0.006 with X2, suggesting that this variable has almost no linear relationship with other independent variables. Based on the results of this multicollinearity test, it can be concluded that there is no strong indication of multicollinearity in the research model. All independent variables can still be used in regression analysis without the need for further elimination or transformation.

Estimated Results

Table 3 presents the estimation results of three regression models: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM), for two dependent variables, namely Income Per Capita (Y1) and Gross Regional Domestic Product (GDP) (Y2).

Based on the estimated results, the Fixed Effect Model (FEM) model shows the highest explanatory power for the Income Per Capita (Y1) variable, with an R-squared of 0.989, which means that 98.9% of the variation in Y1 can be explained by the model. This value is much higher compared to CEM (0.177) and REM (0.126), confirming that the FEM model is able to capture individual effects in different regions more accurately. The coefficients of Personnel Expenditure (X1) and Goods and Services Expenditure (X2) have positive and significant values, which shows that the increase in this expenditure component is correlated with an increase in per capita income.

In contrast, Capex (X3) had a significant negative coefficient across all models, indicating that an increase in capex may not have an immediate impact on the increase in per capita income in the short term. This can be due to the nature of capital investments that take time to generate economic benefits. Interest Payments (X4) are only significant in FEM and REM, which can indicate a complex relationship between government debt payments and per capita income when securities remain under control.

For GDP (Y2), the FEM model again showed the highest explanatory power, with R-squared of 0.998, compared to CEM (0.803) and REM (0.392). These results show that the fixed effect controlled in FEM plays a major role in explaining the variation in regional economic growth. The Personnel Expenditure Coefficient (X1) and Goods and Services Expenditure (X2) in the FEM again showed a positive and significant relationship to GDP, which strengthened the evidence that these components play a major role in driving regional economic output.

Table 3. Estimated Results

Not	Variable	Regression Model CEM		FEM		BRAKE	
		Statistics	*Prob.*	*Statistics*	*Prob.*	*Statistics*	*Prob.*
Year 1							
	C	94.681	0.000	129.598	0.000	76.240	0.000
1	X1	6.994	0.000	8.771	0.000	10.603	0.000
2	X2	7.967	0.000	10.079	0.000	10.995	0.000
3	X3	-4.217	0.000	-5.771	0.000	-5.817	0.000
4	X4	0.044	0.965	5.478	0.000	5.261	0.000
5	X5	0.922	0.357	-0.228	0.819	-0.038	0.969
6	X6	0.009	0.993	1.208	0.227	1.246	0.213
7	X7	-4.130	0.000	0.151	0.880	0.069	0.945
R-squared		0.177		0.989		0.126	
Prob(F-Statistics)		0.000		0.000		0.000	
Year 2							
	C	-27.516	0.000	18.611	0.000	4.306	0.000
1	X1	3.430	0.001	18.116	0.000	27.129	0.000
2	X2	46.658	0.000	24.718	0.000	31.487	0.000
3	X3	0.139	0.889	-4.215	0.000	-3.416	0.001
4	X4	-4.956	0.000	1.340	0.181	-0.170	0.865
5	X5	1.473	0.141	-0.886	0.376	0.451	0.652
6	X6	-1.440	0.150	4.396	0.000	4.995	0.000
7	X7	-3.338	0.001	1.119	0.263	1.431	0.153
R-squared		0.803		0.998		0.392	
Prob(F-Statistics)		0.000		0.000		0.000	

Capital Expenditure (X3) has a consistent negative coefficient across all models, which can indicate a short-term trade-off between capital investment and direct economic growth. This is possible because capital expenditures are often directed at long-term infrastructure projects that take time to produce real economic impact. Other variables such as Subsidies (X5), Grants (X6), and Social Assistance Expenditure (X7) did not show consistent significance across models. This indicates that its impact on economic growth may vary depending on the region or the specific characteristics captured by the FEM. For example, Grants (X6) are only significant in the FEM for GDP, which may reflect the presence of specific factors that are only identified in this model.

Selection of the Best Models

In this study, the selection of the most appropriate regression model was carried out through three types of tests, namely the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. These three tests aim to determine whether the Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM) models are more appropriate in analyzing the relationship between the components of government spending and regional economic output.

Table 4. Selection of the Best Models

Test	*Statistics*	*Probability*	*Breusch-Pagan*
Year 1			
Chow Test	10977.160	0.000	-
Hausman Test	27.639	0.000	-
Lagrange multiplier	-	-	0.000
Year 2			
Chow Test	11837.931	0.000	-
Hausman Test	1271.319	0.000	-
Lagrange multiplier	-	-	0.000

The Chow test is used to test whether FEM is more appropriate than CEM by looking at differences in fixed effects between regions. If the test results are significant, then the fixed-effect model (FEM) is preferred because it captures the variation that occurs in each observed region. The results of the Chow test in this study showed a statistical value of 10,977,160 for Year 1 and 11,837,931 for Year 2, with a probability of 0.000. Since the probability value is less than 0.05, the null hypothesis stating that CEM is better rejected, and FEM is more appropriately used. This suggests that there are significant differences between regions, which makes the model with a fixed effect more suitable than

the model without a fixed effect.

After FEM was selected as the best model candidate in the Chow Test, the Hausman Test was then carried out to compare FEM and REM. This test determines whether there is a correlation between independent variables and individual effects in the data. If the results are significant, then FEM is more appropriate than REM. In this study, the results of the Hausman Test show a statistical value of 27,639 for Year 1 and 1,271,319 for Year 2, with a probability of 0.000. Because the test results are significant, the null hypothesis stating that REM is better is rejected, and FEM is preferred. These results show that there is a correlation between regressors and individual effects in the data, so REM cannot be used optimally.

The Lagrange Multiplier (LM) test is used to test whether random effects in the regression model are significant. If this test shows significant results, then CEM is rejected, and REM is preferred. In this study, the results of the LM Test showed a probability of 0.000, which means that the random effect was significant, so CEM could not be used. Although REM is better than CEM based on the results of the LM Test, the results of the Hausman Test have shown that FEM is more accurate than REM. The Fixed Effect Model (FEM) is used in this study, because this model is able to capture specific factors from each region that can affect the relationship between government expenditure components and regional economic growth.

Hypothesis Testing

In this study, hypothesis testing was carried out to examine the significance, direction, and magnitude of the influence of various components of government expenditure on two main dependent variables, namely per capita income (Y1) and Gross Regional Domestic Product (GDP/Y2). The results of the test show how each type of public spending contributes to economic growth at the regional level.

Table 5. Hypothesis Testing

Variable	T Statistics	Prob.	Coefficient	STD error.
Year 1				
C	129.598	0.000	0.009	0.000
X1	8.771	0.000	0.000	0.000
X2	10.079	0.000	0.000	0.000
X3	-5.771	0.000	0.000	0.000
X4	5.478	0.000	0.000	0.000
X5	-0.228	0.819	0.000	0.000
X6	1.208	0.227	0.000	0.000
X7	0.151	0.880	0.000	0.000
Year 2				
C	18.611	0.000	7,041,296.000	378,346.500
X1	18.116	0.000	11,472.950	633.300
X2	24.718	0.000	11,212.220	453.599
X3	-4.215	0.000	-1,565.868	371.455
X4	1.340	0.181	21,611.200	16,133.680
X5	-0.886	0.376	-5,182.338	5,847.662
X6	4.396	0.000	4,287.554	975.273
X7	1.119	0.263	1,725.152	1,541.038

In the per capita income (Y1) variable, the regression results show that several components of expenditure have a significant influence on the income level of the people in the studied area. The variable X1 (Labor Expenditure) has a positive and significant coefficient, with a T-statistical value of 8.771 and a probability of 0.000. Similarly, X2 (Goods and Services Expenditure) also has a positive and significant influence, with a T-statistic of 10.079 and a probability of 0.000. These results show that the increase in expenditure allocation for employee salaries and procurement of goods/services contributes positively to the increase in per capita income. Economically, this makes sense because spending on labor increases people's purchasing power, while spending on goods and services can stimulate economic activity by increasing production and consumption.

In contrast to the previous two variables, capex (X3) has a negative and significant coefficient, with a T-statistic of -5.771 and a probability of 0.000. In theory, capital expenditure is expected to increase economic growth because it contributes to infrastructure and long-term investment. In the short term, capital expenditure often does not have a direct impact on people's income because the allocated funds have not been realized in the form of real economic benefits. In addition, large-scale

infrastructure projects may cause a temporary decline in consumption, thereby suppressing per capita income.

The regression results show that the debt interest payment (X4) has a positive and significant coefficient (T-statistic 5.478; probability 0.000). This finding contradicts the general view that debt payments burden regional finances. These results can be interpreted as an indication that regions with good debt management tend to have stronger economic conditions, so that the impact indirectly supports per capita income growth. Although subsidies (X5) and social assistance spending (X7) showed negative coefficients, they were not statistically significant, with probabilities of 0.819 and 0.880, respectively. This suggests that subsidies and social assistance may not have a direct impact on the increase in per capita income.

Grant expenditure (X6) has a positive coefficient but is not statistically significant (probability 0.227). This suggests that while grants have the potential to provide economic benefits, their impact is not strong enough to significantly affect per capita income. On the GDP variable (Y2), the regression results show a pattern relatively similar to per capita income, but with some interesting differences. As in Y1, labor spending (X1) and goods and services spending (X2) still have positive and significant coefficients, with T-statistics of 18.116 and 24.718, as well as a probability of 0.000. This shows that the increase in spending on employees and goods/services directly contributes to the increase in economic output in the area. The regression results show that capital expenditure (X3) again shows a negative and significant influence on GDP, with a T-statistic of -4.215 and a probability of 0.000. These findings reinforce previous findings that capital expenditure does not always have a positive impact in the short term.

Infrastructure projects funded by capital expenditure may take a long time to have a real economic impact, so the initial effect hinders economic growth. Unlike in Y1, interest payments (X4) have a positive coefficient but are not significant to GDP (probability 0.181). This suggests that while interest payments may reflect good economic conditions, their impact on overall economic output growth is still influenced by other factors, such as debt structure and the use of funds obtained from loans. Both subsidies (X5) and social assistance spending (X7) have negative and insignificant coefficients, with probabilities of 0.376 and 0.263. These results reinforce previous findings that these expenditures may not be effective enough in driving economic growth, likely due to less-than-optimal allocation or lack of efficient distribution mechanisms. One interesting finding is that grant expenditure (X6) has a positive and significant coefficient to GDP, with a T-statistic of 4.396 and a probability of 0.000. This suggests that grants can have a positive impact on regional economic output, especially if grant funds are used effectively for productive projects that drive economic growth.

Model Quality Measurement

The table below presents the key quality metrics for the FEM, including F-statistics, F-statistic probability, and adjusted R-squared values.

Table 6. Model Quality Measurement

Pattern	F-stats	Prob(F-stats)	Adj. R Square
Year 1			
Fixed Effects Model	356.731	0.000	0.986
Year 2			
Fixed Effects Model	2,108.365	0.000	0.998

Table 6 shows the strong overall quality as shown by the F-statistic and the adjusted R-squared values for both dependent variables. To evaluate the quality of the regression model used in this study, tests were carried out using several main metrics, namely F-statistics, F-statistical probability, and adjusted R-squared values (*Adjusted R-Square*). The results of these measurements are presented in Table 6 and show that the model used has an excellent degree of match in explaining the relationship between independent variables and dependent variables. In the analysis for per capita income (*Y1*), the Fixed Effect *Model* (FEM) shows an F-statistic value of 356.731 with a probability of 0.000. This value indicates that the model as a whole is statistically significant, so it can be concluded that the independent variables in this model collectively have a strong influence on the variation of per capita income in different regions.

In addition, an *Adjusted R-Square* value of 0.986 indicates that about 98.6% of the variation in per capita income can be explained by this model, while the rest is likely to be influenced by other factors not included in the model. For Gross Regional Domestic Product (*Y2*), the quality of the model is further strengthened by a much higher F-statistical value of 2,108,365, with a probability of 0.000.

A very high *Adjusted R-Square* value of 0.998 indicates that this model can account for 99.8% of the variation in GDP. This indicates that the independent variables used in the model have excellent predictive power for regional economic growth. Based on these results, it can be concluded that FEM is a very strong approach in this study, with an almost perfect match to the analyzed data. The high *Adjusted R-Square* value and significant F-statistic further strengthen the validity of the model used in explaining the relationship between government spending and regional economic outcomes. Thus, this model provides a strong empirical basis for policymakers to understand how the components of government spending can affect regional economies.

This study aims to analyze the influence of various components of government spending on regional economic growth, which is measured through per capita income and Gross Regional Domestic Product (GDP). Through a series of econometric tests, it was found that the fixed-effects model (FEM) is the most appropriate approach in analyzing this relationship.

The role of the government in budget management has a significant impact on regional economic growth. This is in line with Keynesian theory which emphasizes that government intervention through public spending can increase aggregate demand and ultimately boost economic growth (Keynes, 1936). This study analyzes how various components of government spending affect per capita income and Gross Regional Domestic Product (GDP), using the Fixed Effect Model (FEM) as the main approach.

The selection of the fixed effect model in this study is based on an econometric test that shows the existence of heterogeneity between regions. This is in accordance with Barro and Sala-i-Martin in Zhan and Zhan (2016), where each region has unique characteristics that can affect its economic growth. The model used in this study has strong validity, as indicated by the value of *Adjusted R-Square* which is very high, namely 0.986 for per capita income and 0.998 for GDP. This shows that independent variables in the model are able to account for almost all variations in dependent variables. Gujarati and Porter (2009) explained that the higher the value *Adjusted R-Square*, the better the model is at explaining the relationship between variables. This study shows that the model used has high reliability in analyzing the impact of government spending on the regional economy.

The results of the study show that employee spending and goods and services expenditure have a significant positive influence on per capita income and GDP. This finding is in line with Wagner's Law theory (Magazzino et al., 2015) which states that the increase in government spending will increase economic activity and people's welfare. Employee spending contributes to an increase in people's purchasing power, which ultimately encourages household consumption as one of the main components of economic growth (Samuelson & Nordhaus, 2009). Likewise with shopping for goods and services that have an effect *Multiplier* to the private sector, as explained in *Multiplier Effect* Keynes, where every government expenditure will create a greater increase in revenue within the economy.

Capital expenditure used for infrastructure development should have a positive impact on economic growth. In this study, capital expenditure actually has a negative impact on per capita income and GDP in the short term. This can be explained through theory *Time Lag Effect* submitted by Aschauer (1989), which states that infrastructure investment takes time to provide real economic benefits. Capital expenditures often involve large-scale projects that take time to complete and operate. The benefits will only be felt in the long term. This is consistent with the findings of Easterly and Rebelo in Yuan and Li (2000), which mentions that although public investment contributes to economic growth, the effects are often indirect and only visible after a few years.

In this study, subsidies and social assistance spending did not show a significant influence on economic growth. This result is in line with Friedman's view in Firdausy et al. (2019) stated that payment transfer policies, such as subsidies and social assistance, tend to create dependency and do not encourage people's productivity. Although subsidies have the goal of improving people's welfare, in many cases, their implementation is not on target and actually hinders market efficiency (Krueger, 2018). There needs to be a reform in the allocation of subsidies so that they are more directed to support productive activities such as skills training or investment in the MSME sector. The results of this study also show that debt interest payments have a positive impact on per capita income, although not significant to GDP. This can be explained through the Ricardian Equivalence theory (Barro, 1974), which states that government debt does not always have a negative impact on the economy if it is managed properly. If debt is used for productive investment, it can increase economic capacity in the future. If debt is used for short-term consumption without creating added value, it can become a fiscal burden that hinders economic growth.

This study confirms that government spending has a crucial role in driving economic growth, but its impact depends on the type of expenditure made. Employee expenditure and goods/services

have proven to be effective in increasing per capita income and GDP, while capital expenditure shows a negative impact in the short term due to *the time lag* effect. Subsidies and social assistance need to be evaluated to be more productive and not only act as payment transfers that create dependency. The results of this study also reinforce the Keynesian theory that government fiscal intervention can encourage economic activity but must be carried out with the right strategy. The theory of *Time Lag Effect* and *Ricardian Equivalence* is also relevant in explaining the results found. As a next step, further research can be carried out by considering external factors such as private investment, political conditions, and social aspects that can affect regional economic growth. An understanding of regional economic dynamics can be more comprehensive, so that the fiscal policies implemented can be more effective in achieving sustainable development.

CONCLUSION

The study concludes that different components of government spending have different impacts on regional economic outcomes in Indonesia. Expenditure on Labor and Goods and Services has consistently shown positive and significant effects on per capita income and GDP, demonstrating its important role in stimulating economic activity and regional growth directly. In contrast, CapEx shows a negative impact, likely due to the long-term nature of the investment that does not generate immediate returns. Interestingly, Interest Payments also show a positive relationship with economic outcomes, implying that regions with the capacity to manage debt efficiently can experience improved economic performance. Social assistance subsidies and expenditures have not had a significant impact on economic outcomes, highlighting potential inefficiencies or misallocation in these areas. The findings underscore the need for policymakers to allocate resources carefully, emphasizing spending that provides immediate economic benefits while carefully managing long-term investments and debt obligations.

Despite the robustness of the model and the comprehensive nature of the data, this study has limitations. Reliance on secondary data may not fully capture all relevant variables, such as the quality of government spending or the effectiveness of local governance, which can affect economic outcomes. The negative impact of capex requires further investigation, especially to distinguish between short-term and long-term effects. Future research should explore the disaggregated impact of the government spending component at a more granular level, potentially incorporating qualitative assessments of spending efficiency. Expanding the scope to include newer data and alternative modeling techniques, such as dynamic panel models, can also provide deeper insights into the temporal effects of government spending on regional growth. Future studies can offer more targeted recommendations to optimize government spending to encourage sustainable regional economic development in Indonesia.

REFERENCES

Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, *23*(2), 177–200. https://doi.org/https://doi.org/10.1016/0304-3932(89)90047-0

Bachtiar, H. F., Sofilda, E., & Kusumastuti, S. Y. (2015). Pembayaran bunga utang, dan subsidi terhadap pertumbuhan ekonomi Indonesia tahun 1999-2013. *Seminar Nasional Cendekiawan 2015*, 682–688.

Barro, R. J. (1974). Are government bonds net wealth? *Journal of Political Economy*, *82*(6), 1095–1117.

Deswantoro, D. B., Ismail, A., & Hendarmin, H. (2017). Pengaruh belanja daerah berdasarkan klasifikasi ekonomi terhadap pertumbuhan ekonomi dan kesejahteraan masyarakat di kabupaten/kota provinsi Kalimantan Barat tahun 2010 - 2015. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, *6*(3), 187. https://doi.org/10.26418/jebik.v6i3.23256

Duruechi, A., & Chigbu, S. U. (2022). Government capital expenditures and economic development paradigm in Nigeria. The per capita amplitude. *Journal of the Japan Welding Society*, *91*(5), 393–397. https://doi.org/10.2207/jjws.91.393

Firdausy, C. M., Suryana, A., Nugroho, R., & Y.B. Suhartoko. (2019). Revolusi industri 4.0 dan pembangunan ekonomi berkelanjutan. *Pusat Penelitian Badan Keahlian DPR RI*, *22*(1), 1–266.

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics*. McGraw-Hill Irwin.

Jayasinghe, M., Selvanathan, E. A., & Selvanathan, S. (2021). Energy poverty in Sri Lanka. *Energy Economics*, *101*(July). https://doi.org/10.1016/j.eneco.2021.105450

Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*. Macmillan.

Krueger, A. O. (2018). Government failures in development. *Modern Political Economy And Latin*

America: Theory And Policy, *4*(3), 10–17. https://doi.org/10.1257/jep.4.3.9

Magazzino, C., Giolli, L., & Mele, M. (2015). Wagner's law and peacock and wiseman's displacement effect in european union countries: a panel data study. *International Journal of Economics and Financial Issues*, *5*(3), 812–819.

Maulid, L. C., Bawono, I. R., & Sudibyo, Y. A. (2021). The effect of government expenditure on economic growth in Indonesia. *Ekuilibrium : Jurnal Ilmiah Bidang Ilmu Ekonomi*, *16*(1), 24. https://doi.org/10.24269/ekuilibrium.v16i1.3172

Natalia, N. D. A., Rumate, V. A., & Tolosang, K. D. (2019). Pengaruh belanja modal dan belanja sosial pemerintah terhadap pertumbuhan ekonomi di Sulawesi Utara. *Jurnal Berkala Ilmiah Efisiensi*, *19*(03), 97–106.

Popescu, C. C., & Diaconu, L. (2022). Inflation – unemployment dilemma. A cross-country analysis. *Scientific Annals of Economics and Business*, *69*(3), 377–392. https://doi.org/10.47743/saeb-2022-0012

Pusporini, P. (2020). Pengaruh tingkat literasi keuangan terhadap pengelolaan keuangan pada pelaku UMKM kecamatan Cinere, Depok. *Jurnal Ilmu Manajemen Terapan*, *2*(1), 58–69. https://doi.org/10.31933/jimt.v2i1.315

Ramadhanti, A. T., Muchtar, M., & Sihombing, P. R. (2024). Realisasi APBD sebagai stimulus pertumbuhan ekonomi provinsi Kalimantan Selatan. *Journal of Law, Administration, and Social Science*, *4*(4), 566–575. https://doi.org/10.54957/jolas.v4i4.710

Samuelson, P. A., & Nordhaus, W. D. (2009). *Economics*. McGraw-Hill Education.

Shaddady, A. (2023). Unveiling the dynamics of financial institutions and markets in shaping economic prosperity in MENA. *International Journal of Financial Studies*, *11*(4). https://doi.org/10.3390/ijfs11040148

Sofilda, E., & Hamzah, M. Z. (2015). Government spending contributions on per capita income and its effect toward the human development index (comparative study between western Indonesia and central & east Indonesia). *Journal of Social and Development Sciences*, *6*(3), 43–49.

Widiastuti, N., & Sutrischastini, A. (2022). Dampak belanja pemerintah daerah terhadap pertumbuhan ekonomi daerah: studi kasus data panel provinsi di Indonesia. *Kajian Bisnis Sekolah Tinggi Ilmu Ekonomi Widya Wiwaha*, *30*(2), 1–16. https://doi.org/10.32477/jkb.v30i2.394

Yuan, M., & Li, W. (2000). Dynamic employment and hours effects of government spending shocks. *Journal of Economic Dynamics and Control*, *24*(8), 1233–1263. https://doi.org/10.1016/s0165-1889(99)00007-x

Zhan, M., & Zhan, Z. (2016). A kind of neither keynesian nor neoclassical model (1): the fundamental equation. *OALib*, *03*(11), 1–16. https://doi.org/10.4236/oalib.1103207