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Analysis Of Connectivity Spending, Capital Expenditure And Fiscal Independence On The Pace Of GDP

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Abstract: *This study analysed the issue of the quality of regional spending, by analyzing the influence of Connectivity Spending, Capital Expenditure and Fiscal Independence on the GDP growth rate in Regencies/Cities throughout Lampung Province in the period 2018 to 2022. The results of the analysis indicated that the Connectivity Expenditure variable had a positive and significant influence on the GDP rate, meaning that every 1% increase in connectivity spending could increase the GDP growth rate by 0.26%. Meanwhile, Capital Expenditure had a negative impact or suppresses the GDP rate. It marked the allocation of the capital expenditure budget for asset acquisition was less effective in supporting economic growth and development between regions. Likewise, Fiscal Independence had no significant effect on the pace of GDP. This condition reflected the region's large dependence on central transfers. Using the Vector Autoregression (VAR) found that all variables affect GDP with a lag of 1 year after meaning that three variables could affect the rate of GDP after 1 year of implementation. The results of this study overviewed the importance of selecting efficient types of Capital Expenditure and Connectivity Expenditure which had an impact on economic growth (spending better), as well as the importance of increasing regional fiscal capacity through PAD optimization to support regional financing and sustainable regional economic growth.*

Keywords: Connectivity Spending, Capital Spending, Fiscal Independence, GDP Growth

JEL: E62, G31

1. INTRODUCTION

Economic growth, according to Solow-Swan's theory of growth, is characterized by three main factors, namely capital, labor, and technology (Solow, 1956). This theory emphasizes that capital accumulation and technological advancement are the main drivers of long-term economic growth. Meanwhile, in a Keynesian perspective, economic growth can be significantly boosted through government intervention, including fiscal policy and decentralization (Keynes, 1936). The policy of decentralization or regional autonomy allows local governments to manage resources independently, so that they can optimize the potential and characteristics of their respective regions (Rodríguez-Pose & Ezcurra, 2010). A study by Martinez-Vazquez (2016) shows that fiscal decentralization has a positive impact on regional economic growth, especially when followed by an increase in regional institutional capacity. In Indonesia, research conducted by (Finuliyah & Khusaini, 2022) found that regional autonomy contributes to increasing Gross Regional Domestic Product (GDP) through increased capital expenditure and inter-regional connectivity. In addition, high fiscal independence is an indicator of the success of regional autonomy, as it reflects the region's ability to finance development without relying on central transfers (Silaban, 2022). Thus, the synergy between connectivity spending, capital expenditure, and fiscal independence is key in driving the pace of regional economic growth.

In 2020, Indonesia in general and Lampung Province in particular experienced the most declining conditions from every year. Where the Covid-19 pandemic hit and caused a drastic

decrease in GDP growth. Lampung Province GDP had a drastic degradation in 2020 because of economic degradation caused by covid 19. The condition may be seen in Figure 2.

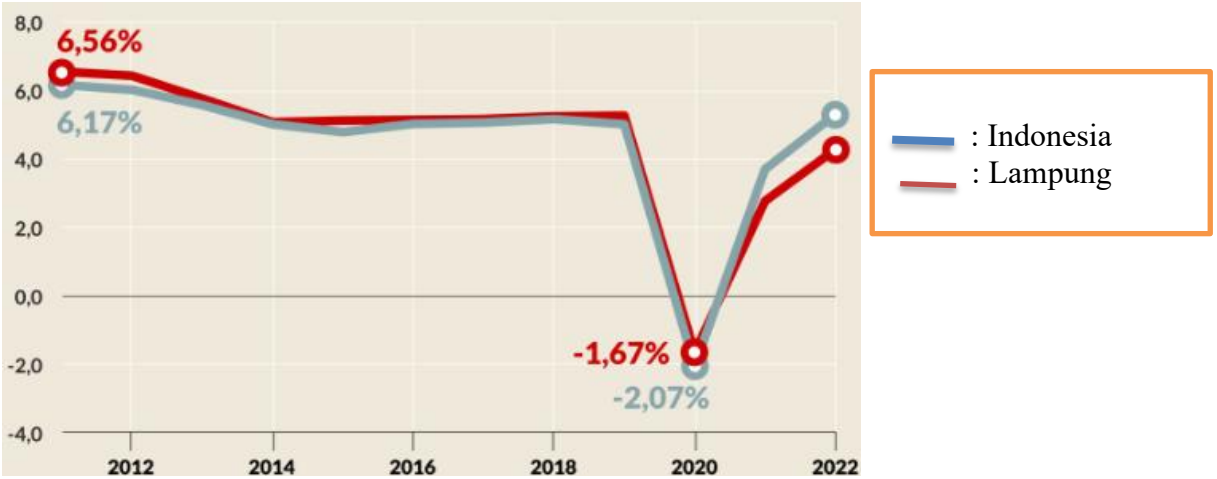

Figure 2. Lampung Province Economic Growth 2012-2022.
Source: Lampung Statistical Bureau, 2022.

However, in 2022, the GDP again experienced a significant increase in each regency/city in Lampung. The increase in the population of Lampung Province will also determine development policies for policyholders, especially in the driving areas of the overall economic sector (Emalia & Farida, 2018).

The growth of the Gross Regional Domestic Product (GDP) is greatly influenced by the availability of regional finances, both from the region's own potential and from the central government. Fiscal independence, which is an indicator of the fiscal strength of a region, refers to the ability of local governments to finance development activities and public services through Regional Original Revenue (PAD) and other sources of revenue such as tax revenue sharing and regional levies (Smoke, 2001). Studies by (Jorge Martinez-Vazquez Andrey Timofeev, 2009) show that high fiscal independence is positively correlated with regional economic growth, as it reduces dependence on central transfers and promotes the efficiency of resource allocation. In Indonesia, research by (Ibrahim, 2024) found that regions with a high level of fiscal independence tend to have better GDP growth, because they are able to optimize capital expenditure and infrastructure to support economic development. Law (UU) Number 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments (HKPD) emphasizes the importance of fiscal independence by emphasizing that regional autonomy gives greater responsibility to local governments in serving the community. This is in line with the findings (Smoke, 2015) in Public Administration and Development which states that effective fiscal decentralization requires increasing regional financial capacity to support sustainable development. Therefore, efforts to improve regional financial capabilities through PAD optimization and capital expenditure management are key in encouraging GDP growth and community welfare.

Minister of Finance Regulation (PMK) Number 193 of 2022 concerning Regional Fiscal Capacity Maps explains that fiscal independence is the capability of each region which is reflected through regional revenue and regional financing receipts minus transfer revenue (where the allocation has been determined). Regional fiscal independence requires that regions are able to explore various elements to increase PAD (Rante et al., 2018). A responsive attitude and care for regional potential is also the main task of local governments (Soukotta et al., 2023). The results of the study (Mirza Avicenna Asyifyan, 2018), found

that the higher the fiscal capability, the higher the economic growth of a region. The higher the fiscal independence, the more independent the local government is in financing its government activities. Various developments and services to the community can be realized through PAD and other sources of income. The higher the level of regional fiscal independence, the greater the GDP growth in a region (Rahmawati, 2024). The degree of fiscal independence proves that each region is able to finance its various activities through PAD funds compared to transfer funds from the central government, as well as loans (Zukhri, 2020). The higher the degree of fiscal independence, the lower the dependence on financing to the central government. In addition, it also means higher community involvement to carry out regional development through Regional Autonomy.

The use of spending should be used to develop productive sectors with high multiplier effects, such as quality roads and bridges, internet infrastructure, and connectivity that can stimulate the economy. This can have implications for an increase in regional income which can increase other development budget allocations. An area will thrive if it is connected or not isolated. Areas connected to growth centers, through connectivity infrastructure, will accelerate economic growth in the periphery or surrounding areas. The following is the budget allocation for Connectivity Expenditure in 15 districts/cities throughout Lampung province.

Table 1. Connectivity Expenditure on the Total Regency/City Budget in Lampung 2018-2022 (%)

Yes	Region	2018	2019	2020	2021	2022	Mean
1	West Lampung	13,97	9,93	4,94	6,69	10,44	9,19
2	South Lampung	12,67	9,31	4,68	7,63	9,69	8,80
3	Central Lampung	11,58	8,98	4,44	10,44	7,76	8,64
4	East Lampung	9,69	3,20	8,19	6,81	3,19	6,22
5	North Lampung	7,26	3,12	2,59	3,08	11,00	5,41
6	Mesuji	19,75	16,53	5,85	3,87	6,06	10,41
7	Pesawaran	14,01	7,54	6,07	6,75	9,69	8,81
8	Pesisir Barat	6,17	6,91	7,44	14,14	11,77	9,29
9	Pringsewu	10,23	9,25	6,52	6,93	7,50	8,09
10	Tanggamus	6,27	8,26	5,44	5,87	9,00	6,97
11	Tulang Bawang	13,21	2,89	1,74	3,61	5,69	5,43
12	Tulang Bawang Barat	29,61	18,50	7,92	16,43	9,90	16,47
13	Way Kanan	23,07	13,13	2,78	4,48	3,05	9,30
14	Bandar Lampung	10,81	6,17	3,92	8,06	8,17	7,43
15	Metro	11,18	8,56	5,91	7,70	5,06	7,68
16	Lampung Province	14,41	7,08	4,02	5,50	10,15	8,23

Source: Regional Office of DJPb Lampung Province, 2024 (processed)

Regency/city in Lampung for 5 years. Tulang Bawang Barat Regency occupied the highest position with an average connectivity expenditure allocation of 16.47%, showing a strong commitment to improving connectivity infrastructure. On the other hand, North Lampung Regency had the smallest allocation with an average of only 5.41%, reflecting the challenges in improving infrastructure that supports regional connectivity. Although some districts/cities had made significant increases in connectivity spending, this had not been fully able to drive economic growth in these areas. One of the inhibiting factors was

the quality of roads and bridges which was still not optimal. Poor infrastructure could have limited the flow of goods and services and hinder people's mobility, which in turn negatively impacted regional income.

Therefore, further research on the relationship between Regional Fiscal Independence, Capital Expenditure, and Connectivity Spending is essential to be conducted. This research was expected to map the effectiveness of budget allocation in each region in Lampung Province and become an evaluation material for local governments. The goal is to identify the right strategy to increase economic growth and community welfare in a sustainable manner in Lampung Province.

1.1.Problem Formulation

This study aims to explore several key relationships within the context of 15 Regencies and Cities in Lampung Province. Specifically, it seeks to determine whether there is a significant correlation between Connectivity Expenditure (BK) and the GDP Rate, as well as between Capital Expenditure (BM) and the GDP Rate. Additionally, the study will investigate the relationship between Fiscal Independence (KF) and the GDP Rate. Finally, it will assess the combined impact of Connectivity Expenditure, Capital Expenditure, and Regional Fiscal Independence on the GDP Rate in these regions.

1.2.Research Objectives

This study aims to explore several key relationships within the context of 15 Regencies and Cities in Lampung Province. It seeks to determine whether there is a significant correlation between Connectivity Expenditure (BK), Capital Expenditure (BM), and Fiscal Independence (KF) with the GDP Rate. Specifically, the study will investigate the individual relationships of BK, BM, and KF with the GDP Rate, as well as assess the combined impact of these three factors on the GDP Rate in the selected regions.

2. LITERATURE REVIEW

2.1. Decentralization and Regional Autonomy in the Economy

Decentralization is a strategy that aims to distribute authority from the central government to the regions to increase effectiveness and efficiency in the management of resources and public services. Based on the theory of Fiscal Federalism, fiscal decentralization provides flexibility to regions in allocating budgets according to specific needs, so as to increase efficiency in public financial management (Oates, 1972).

In the context of regional economies, fiscal decentralization is a key factor in achieving fiscal independence, where regions are able to manage their government financing independently without great dependence on transfers from the central government. This is in line with the theory of Fiscal Efficiency, which emphasizes that economic decisions that are closer to the community tend to be more effective in the allocation of resources (Musgrave, 1959).

Meanwhile, regional autonomy as an implementation of decentralization gives rights and authority to the regions in regulating their own household affairs. Good Governance theory emphasizes that regional autonomy supported by transparency and accountability can encourage government that is more responsive to the needs of local communities (World Bank, 1992). With autonomy, local governments have a greater opportunity to develop economic strategies based on local potential to improve community welfare and regional economic growth.

2.2. Fiscal Independence and the Role of Local Governments

Fiscal independence is the main indicator in assessing the ability of a region to finance its needs independently. The higher the fiscal independence of a region, the greater its ability to carry out sustainable economic development. This concept is closely related to Local Development Theory, which states that each region needs to have an economic policy based on its competitive and comparative advantages in order to be able to increase economic growth optimally (Stöhr & Taylor, 1981).

To achieve fiscal independence, local governments must optimize local sources of original revenue (PAD) through taxes, levies, and other economic resources. The Theory of Fiscal Decentralization explains that increasing regional fiscal capacity can provide incentives for local governments to increase innovation in financial governance and public investment (Bahl & Bird, 2008).

In addition, external factors such as infrastructure, education, and health also play a role in supporting regional economic development. Based on the findings of Djadjuli (2018), effective economic development requires synergy between regional fiscal policies and improving the quality of human resources to create a competitive and highly competitive economic environment.

2.3. Solow-Swan Growth Theory in the Context of Regional Development

Solow-Swan's (1956) theory of economic growth emphasizes that the economic growth of a region is influenced by three main factors: capital accumulation, labor growth, and technological advancement. In the context of regional development, this theory explains that investment in infrastructure, education, and technological innovation are key factors in driving long-term economic growth.

The application of this theory in regional development shows that regions with high levels of investment in infrastructure and human resources tend to experience faster economic growth. In addition, the endogenous growth model developed by Romer (1986) emphasizes the importance of investment in research and development (R&D) and human capital as the main factors that can improve the economic competitiveness of the region.

2.4.The Relationship of Decentralization, Regional Autonomy, and Fiscal Independence to Economic Growth

The implementation of decentralization and regional autonomy supported by strong fiscal policies has a positive impact on regional economic growth. Fiscal independence allows regions to allocate resources more optimally and in accordance with their specific needs, so as to increase efficiency and effectiveness in economic development.

Conceptually, the relationship between decentralization, regional autonomy, and economic growth can be explained through Tiebout's Theory (1956), which states that with competition between regions in providing optimal public services, economic efficiency will increase. Regions that are able to manage their resources independently with the right fiscal policies will be better able to create a conducive business environment, attract investment, and encourage sustainable economic growth.

2.5. Research Gap and Novelty

The study implemented a combined two types of regression and those two method was completing each other. Previous studies have revealed some findings related to the fiscal independence but this study tried to explore and compare all areas in Lampung province to be able detailing the efficiency and effectiveness in economic development.

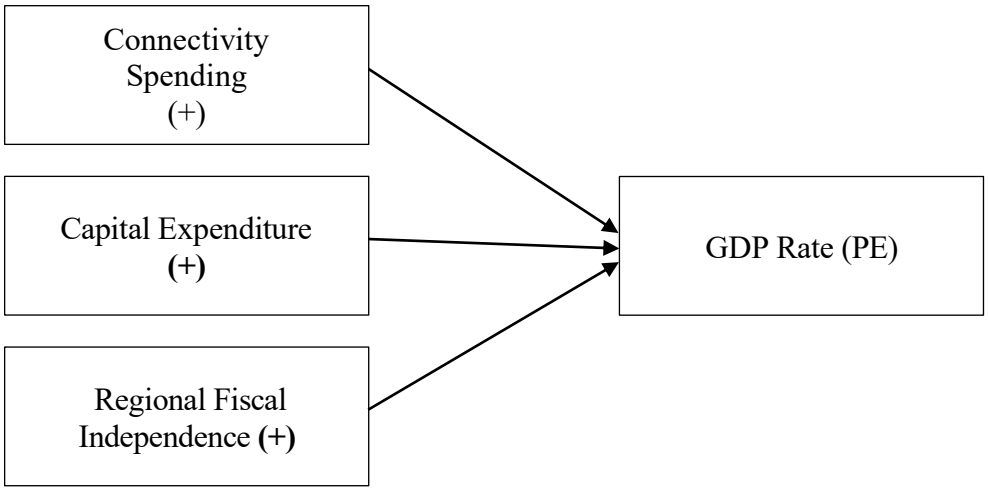

Figure 1. Frame of Mind

Information:
X1= Regional Fiscal Independence (KF) of Regencies/Cities in Lampung
X2= Capital Expenditure (BM) of Regencies/Cities in Lampung
X3= Regency/City Connectivity Expenditure (BK) in Lampung
Y = Economic Growth (PE) of Regencies/Cities in Lampung

2.6.Research Hypothesis

Several hypotheses in this research are as follows:

1. Regional Fiscal Independence is suspected to have a positive and significant relationship with Economic Growth in 15 Regencies/Cities in Lampung Province.
2. Capital Expenditure is suspected to have a positive and significant relationship with Economic Growth in 15 Regencies/Cities in Lampung Province.
3. Connectivity Spending is suspected to have a positive and significant relationship with Economic Growth in 15 Regencies/Cities in Lampung Province.
4. Simultaneously, Regional Fiscal Independence, Capital Expenditure, and Connectivity Expenditure are suspected to have a positive and significant relationship with Economic Growth in 15 Regencies/Cities in Lampung Province.

3. METHOD

3.1. Types of Research and Data Sources

The secondary data was a pooled data and data was obtained from existing sources. This research analyzed the influence of Regional Fiscal Independence (KF), Capital Expenditure (BM), Connectivity Expenditure (BK) as independent/independent variables on Economic Growth (PE) as a bound variable for all Regencies/Cities in Lampung Province during 2018 to 2022. Data is sourced from documents or *databases* on the pages of related agencies that are published, such as the Regional Office of the Directorate General of Treasury (DJPb) of Lampung Province through the Lampung Regional Fiscal Review (KFR), *website*, and *press* releases.

Table 2. Data and Data Sources

Variable	Era	Unit	Data Source
Regional Fiscal Independence	2018-2022	Percentage	Regional Office of DJPb Lampung
Capital Expenditure	2018-2022	Percentage	Regional Office of DJPb Lampung
Connectivity Spending	2018-2022	Percentage	Regional Office of DJPb Lampung
Economic Growth	2018-2022	Percentage	Lampung Statistical Bureau

Source: Regional Office of DJPb Lampung Province, BPS (processed)

3.2. Variable Operational Definition

The variables of this study are Regional Fiscal Independence, Capital Expenditure, and Connectivity Expenditure which were dependent variables, as well as economic growth as independent variables.The method used a pooled panel data. The analysis tool used is EViews 10 software with the help of Ms. Excel. The regression model using panel data will choose the best model between common effect, fixed effect, or random effect. The form of regression of the panel data is:

$$\boldsymbol{LJPDRB_{it} = \beta_0 + \beta_1 BK_{it} + \beta_2 BM_{it} + \beta_3 KF_{it} + \varepsilon_{it}}$$

Information:

$LJPDRB_{it}$	=	Economic growth rate (%)
β_0	=	Constant
β_1, , $\beta_2\beta_3$	=	Independent variable regression coefficient
BK	=	Connectivity Spending (%)
BM	=	Capital Expenditure (%)
KF	=	Regional Fiscal Independence (%)
Ɛ	=	Error term (error)
i	=	15 Districts/Cities in Lampung Province
t	=	5 Years (2018 to 2022)

3.2.1. Panel Data Regression Estimation

3.2.1.1. *Common Effect Model*

Common Effect Model (CEM) is a form of estimation combining *time series* analysis with *cross-section*. The use of this approach does not look at its individual dimensions or its time sides, therefore OLS is used in estimating the model. This can be assumed and displayed the same over time (Widarjono, 2018).

- CEM assumes that all individuals in the *dataset* have the same structure, so there are no individual effects or time effects. This model treats all units (such as companies, regions, countries) homogeneously.
- In CEM, it does not take into account differences between units or time. This is like the standard OLS regression model.

Equation Form:

$$\boldsymbol{Y_{it} = \beta_0 + \beta_1 X_{it} + \varepsilon_{it}}$$

Information:

Y_{it}	=	The dependent variable is individual i at time t.
X_{it}	=	The individual independent variable i at time t.
β_0	=	Intersep
β_1	=	The regression coefficient is an independent variable.
ε_{it}	=	*Error term* or residual for individual i at time t.

By interpretation, this model assumes that the relationship of independent and dependent variables is the same across all individuals and time periods.

4. RESULTS AND DISCUSSION

4.1.Descriptive Statistical Analysis

Descriptive statistical analysis was shown that the average GDP growth rate that occurs in Regencies/Cities throughout Lampung Province was 3.10% where the highest GDP growth rate occurred in Bandar Lampung City in 2018, while the lowest GDP growth rate occurred in East Lampung Regency of -2.26% with a standard deviation value of 2.56%. Meanwhile, the average fiscal independence in 15 districts/cities in Lampung province was 12.21%. The most fiscally independent regions are Bandar Lampung City and Metro City at 42.44% and 33.85%, respectively, while there were 3 districts that are least independent from the fiscal side, namely West Coast Regency, West Tulang Bawang, and Way Kanan. For the average percentage of Capital Expenditure allocation to the APBD of 16.67%, the 3 districts that had the highest allocation of their APBD to Capital Expenditure are Tulang Bawang Barat, West Coast, and Mesuji Regencies at 2.73%, 26.29% and 20.5%, respectively. Meanwhile, the 3 smallest districts allocated their APBD budgets for Capital Expenditure are East Lampung, North Lampung and Tanggamus Regencies, respectively by 11.51%, 11.64%, and 12.75%.

Table Error! No text of specified style in document.**-1. Descriptive Statistical Results of Research Variables**

	GDP	FISCAL INDEPENDENCE	BM	BK
Mean	3.108933	12.21920	16.67293	8.542000
Median	4.100000	8.030000	15.61000	7.630000
Maximum	6.200000	46.29000	39.41000	29.61000
Minimum	-2.260000	3.340000	5.260000	1.740000
Std. Dev.	2.569502	11.10368	6.531595	4.852495
Skewness	-0.906899	2.084205	0.913726	1.690923
Kurtosis	2.393657	6.083519	3.788426	7.222973
Jarque-Bera	11.42973	84.01164	12.37873	91.46995
Probability	0.003297	0.000000	0.002051	0.000000
Sum	233.1700	916.4400	1250.470	640.6500
Sum Sq. Dev.	488.5731	9123.584	3156.968	1742.456
Observations	75	75	75	75

Source: Processed Author

4.2. Model Selection

In the panel data model, to obtain the best model, the selection of the model was used using 2 tests, namely the Chow Test and the Hausman Test, with the following results:

4.2.1. Chow Test

Based on the test results of the Chow test, the F-Stat probability value was 0.000 or less than alpha 0.05 so that the best model selected in this study was FEM.

Table Error! No text of specified style in document.**-2. Chow Test Results**

Effects Test	Statistics	D.F.	Prob.
Cross-section F	77.960332	(14,57)	0.0000
Cross-section Chi-square	225.233442	14	0.0000

Source: Processed Author

4.2.2. Hausman Test

Also, based on the test results from the Hausman test, the F-Stat probability value was 0.01 or less than *alpha* 0.05 so that the best model chosen in this study was FEM.

Table Error! No text of specified style in document.**-3. Hausman Test Results**

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistics	Chi-Sq. D.F.	Prob.
Cross-section random	10.629076	3	0.0139

Source: Processed Author

4.2.3. Fixed Effect Model (FEM)

The resulting FEM models are as follows:

Table Error! No text of specified style in document.**-4. FEM Model Results**

Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.045387	0.855033	1.222627	0.2255
KMDRFISCAL	0.020689	0.025145	0.822801	0.4134
BM	-0.027305	0.076662	-0.356175	0.7228
BK	0.265277	0.104144	2.547229	0.0130
R-squared	0.291138	Mean dependent var		3.108933
Adjusted R-squared	0.256961	S.D. dependent var		2.569502
S.E. of regression	2.359243	Akaike info criterion		4.606417
Sum squared resid	395.1881	Schwarz criterion		4.730017
Log likelihood	-168.7407	Hannan-Quinn crister.		4.655769
F-statistic	5.592561	Durbin-Watson stat		0.460506
Prob(F-statistic)	0.001681			

Source: Data processed by the author

4.3. Inferential Statistical Analysis

4.3.1. Data Panel Regression Analysis

Based on the regression equation formed as follows:

$$\boldsymbol{LJPDRB_{it} = \beta_0 + \beta_1 BK_{it} + \beta_2 BM_{it} + \beta_3 KF_{it} + \varepsilon_{it}}$$

The regression results were obtained as follows:

$$\boldsymbol{LJPDRB_{it} = 1,045 + 0,26 BK^{*}_{it} - 0,02 BM_{it} + 0,02 KF_{it}}$$

The results of the variable analysis showed that only Connectivity Expenditure (BK) affected the GDP growth rate in districts/cities throughout Lampung Province which was shown with a probability value of 0.013 or less than *alpha* 5%. Meanwhile, the value of the connectivity expenditure regression coefficient is 0.265277 which means that, if connectivity spending was increased by the government by 1%, the GDP growth rate in districts/cities throughout Lampung Province will increase by 0.26%. Connectivity expenditure included local government expenditure for the construction of roads, bridges, irrigation and other productive expenditures that can increase the GDP rate of all districts/cities throughout Lampung province. Connectivity Spending had a significant influence on the rate of economic growth in Lampung, because this type of spending supports the interconnection of transportation, energy, and telecommunications infrastructure. The improvement of infrastructure could not only improve the efficiency of the distribution of goods and services but could also accelerate labour mobility and could increase the attractiveness for investment. This means that increasing Connectivity Spending supports the creation of a more solid network between economic activity centres and other regions.

The structure of the Connectivity Expenditure studied included various components of the capital expenditure of local governments in more detail. One of the components of the Connectivity Expenditure was the Road Procurement Capital Expenditure, which aimed to increase accessibility between regions to facilitate logistics distribution and accelerate connectivity between economic growth centres. In addition, there was Capital Expenditure Bridge Procurement plays a role in connecting areas separated by rivers or remote areas, which in turn expanded the scope of mobility and reduced travel time.

Another detail of expenditure that was no less important is the Capital Expenditure for the Procurement of Irrigation Water Buildings, which was a vital support for the agricultural sector, which was the main sector of the Lampung economy. In addition, Capital Expenditure for the Procurement of River Safety Buildings and Natural Disaster Management plays a role in reducing flood risk, protecting infrastructure and settlements from damage, and strengthening the community's economic resilience to disaster threats. Connectivity spending also included Clean Drinking Water Installation Spending, which ensured through the provision of drinking water treatment and piping systems for the community and businesses. In addition, Capital Expenditure for the Procurement of Power Plant Installations and Capital Expenditure for Power Substations played a role in supporting efforts to meet energy needs for industries and households, which were essential for economic growth.

The results of the analysis of the next variable show that Capital Expenditure (BM) did not significantly affect the increase in the rate of GDP and even the coefficient is negative. This meant that when capital expenditure is increased by the local government by 1%, it would reduce the GDP rate by 0.02%. This was contrary to the theory that increased government spending, especially for capital addition, would boost the pace of economic growth. Capital expenditure was expenditure to purchase assets whose age was 1 year or more While in Lampung Province this is not the case. When viewed from the elements of expenditure in capital expenditure, it turned out that the largest post was capital expenditure for routine government activities, such as expenditure on building maintenance, construction of local

government offices for services, purchased of official vehicles to support government and DPRD activities, purchase of land for offices, and others. So, it could be seen that capital expenditure was increasing, but for less productive sectors that did not directly increase regional production. Spending Mode like this tended to increase other spending, namely maintenance spending. Expenditure was included in building maintenance, official houses, expenditure on maintenance of official vehicles, fuel etc.

More deeply, Capital Expenditure that did not have a direct impact on economic growth could be identified through several budget items. One of the significant components was the Government's Land Capital Expenditure for Buildings, which, while important for strengthening administrative infrastructure, does not directly contribute to the increase in economic productivity. Likewise, Capital Expenditure on Equipment and Machinery, which focused more on technical operational needs and government administration. This post was usually used for the purchase of equipment that supports internal bureaucratic activities, without producing a multiplier economic effect in society. In addition, the budget allocation for Capital Expenditure for the Procurement of Workplace Buildings was also more directed to support government administrative activities, whose impact on economic growth tends to be indirect and limited.

Other expenditures included in this category are Capital Expenditure on Other Fixed Assets, which include the procurement of books, publications, library goods, cultural goods, sports equipment, and other assets such as animals. While this spending may support social or cultural development, its effect on economic growth directly was relatively small. For example, in 2022, 46.53% of the total capital expenditure of local governments in Lampung was not related to the connectivity function, namely expenditure that does not directly support the creation or facilitation of interconnection between economic activity centres (Regional Office of DJPb Lampung, 2024). This was showing that almost half of the total capital expenditure is not directed to the development of strategic infrastructure that could accelerate the pace of regional economic growth. These unproductive allocations could slow down efforts to improve economic efficiency, increased maintenance spending and create *gaps* in sustainable growth.
The results of the analysis of other independent variables were Fiscal Independence (KF), which reflects the ability of regions to generate their own finances derived from Regional Original Revenue (PAD). PAD in districts/cities throughout Lampung Province does not significantly affect the increase in the rate of GDP, this is due to the low contribution of PAD to the APBD. The stagnant growth of PAD sources throughout the year causes this source of revenue to be not optimal in supporting regional economic development. This was due to the high dependence on transfers from the central government and the use of PAD which is mostly allocated for routine government spending, such as administration and operations, rather than for productive investments that can accelerate economic growth. During the observation year, operating expenditure took up a portion of around 57.58% to 71.11% of the total Regional Expenditure (Regional Office of DJPb Lampung, 2024). Thus, PAD's ability to support the development of economic infrastructure and investment in strategic sectors is limited.

This condition was supported by data from the 2022 Fiscal Capacity Map from the Ministry of Finance (PMK-193/2022), local governments in Lampung Province generally had fiscal capacity that was in the very low to medium category. In fact, in 2022, Lampung Province was in the category of low fiscal capacity. This indicated that the financial capacity of the regions that come from itself or PAD is still very limited, not able to finance development independently, which hinders fiscal capacity for economic growth. Low fiscal capacity reflected the inability of regions to optimize the potential of local resources, thereby reducing fiscal impetus for economic development and weakening the capacity of strategic spending allocation as a key pillar in increasing GDP.

The regression coefficient or relatively small was only 29%, meaning that the variation in connectivity spending, capital expenditure and fiscal independence was only able to explain the variation in the GDP growth rate of 29%, the remaining 71% is influenced by other factors outside the model. The relatively small value of this regression coefficient allowed for $R^2 lag$ problems in the model that were not anticipated.

4.4. Vector Autoregression *(VAR)* Analysis

To further analyze the possibility of optimal lag or *cobweb lag* in the selection of free variables, data processing was carried out using *Vector Autoregression* (VAR) to find the optimal lag and obtained the following results:

Table 3. Vector Autoregression *(VAR)* Results

	LJPDRB01	KEMANDIRIAN FISKAL01	BM01	BK01
FISCAL INDEPENDENCE(-1)	0.010560	0.472033	0.071232	-0.007799
	(0.00938)	(0.24065)	(0.10986)	(0.06311)
	[1.12559]	[1.96152]	[0.64838]	[-0.12357]
BM(-1)	- 0.006292	-0.146671	0.012954	-0.169558
	(0.02435)	(0.62458)	(0.28514)	(0.16381)
	[0.25842]	[-0.23483]	[0.04543]	[-1.03511]
BK(-1)	0.015179	0.191930	0.361380	0.538129
	(0.02848)	(0.73063)	(0.33355)	(0.19162)
	[0.53289]	[0.26269]	[1.08343]	[2.80830]
C	1.921246	7.381258	11.87838	10.00191
	(0.84574)	(21.6940)	(9.90386)	(5.68962)
	[2.27168]	[0.34024]	[1.19937]	[1.75792]
R-squared	0.979360	0.361589	0.402827	0.499726
Adj. R-squared	0.973244	0.172430	0.225886	0.351496
Sum sq. Resids	5.941819	3909.554	814.8127	268.9153
S.E. equation	0.469113	12.03322	5.493473	3.155919
F-statistic	160.1402	1.911563	2.276625	3.371297
Log likelihood	-18.65472	-135.4597	-107.2317	-87.27758
Akaike AIC	1.536374	8.025537	6.457316	5.348755
Schwarz SC	1.932253	8.421416	6.853196	5.744634
Mean dependent	2.836389	13.89611	15.52028	7.738333
S.D. dependent	2.867925	13.22755	6.243738	3.918948

Source: Data processed by the author

Using the VAR method, it could be seen that the regression coefficient results increased to 97%, if optimal lag is used. This meant that 97% of the variation in the free variable can explain the variation in the GDP growth rate. As seen in the following equation.

$$\boldsymbol{LJPDRB_{it} = 1,921 + 0,01KF^{*}_{t-1} - 0,06BM^{*}_{t-1} + 0,01BK^{*}_{it-1}}$$

The GDP growth rate in the year t was significantly influenced by Capital Expenditure, Connectivity Expenditure and Fiscal Independence 1 year earlier. In addition to all the variables being free to have an effect, the value of the regression coefficient is smaller than that of the equation model without including the lag element. As seen in the following equation.

$$LJPDRB_{it} = 1,045 + 0,01KF_{it} - 0,02BM_{it} + 0,26BK^{*}_{it}$$

It was important to *highlight* that, using the VAR method, the Capital Expenditure variable still shows a negative coefficient. In VAR all variables were considered endogenous, which means that independent variables can also be affected by bound variables in the previous period. This should cause a change in the direction of the coefficient because the model accommodates feedback *loops* between variables. The condition of the negative coefficient of Capital Expenditure could indicate that in Lampung, Capital Expenditure needed to be managed more efficiently or directed to productive sectors. Capital expenditure allocated to routine expenditure to support government operations in the previous year still did not make a positive contribution to increasing economic output and short-term growth.

4.4.1. Individual Effect *Analysis*

Individual Effect reflected the influence that occurs between Fiscal Independence, Capital Expenditure and Connectivity Expenditure on the GDP rate in 15 Regencies/Cities in Lampung Province. The results of *the Individual Effect* are obtained from the sum of the coefficient values of each district/city related to the constant of the selected model estimation results.

Table 4. *Individual Effect*

Yes	Regency	*Individual Effect*
1	West Lampung	4.740022
2	South Lampung	4.893102
3	Central Lampung	5.227543
4	East Lampung	4.74153
5	North Lampung	4.940792
6	Mesuji	5.178784
7	Pesawaran	-1.733118
8	West Coast	-1.594498
9	Pringsewu	-1.893498
10	Tanggamus	2.047722
11	Tulang Bawang	2.220782
12	Tulang Bawang Barat	2.569652
13	Way Kanan	3.540081
14	Bandar Lampung	3.639429
15	Metro	4.095815

Source: Data processed by the author

Central Lampung Regency has the highest value in its *Individual Effect*, at 5.22%, meaning that without Fiscal Independence, Capital Expenditure and Connectivity Spending, the GDP growth rate of Central Lampung Regency has grown. The GDP rate of Central Lampung Regency is formed by other factors, in addition to the three types of regional spending. For example, there are many large industries that stand there. On the other hand, in 3 districts, namely Pringsewu, West Coast and Pesawaran, *the Individual Effect value* was negative, namely 1.89%, 1.7%, and 1.5%, respectively. This indicates that without Connectivity Spending, Fiscal Independence, Capital Expenditure, the GDP rate of Pringsewu, West Coast, and Pesawaran has decreased. For the districts of Pringsewu, West Coast and

Pesawaran, these three regional expenditures are very important for the growth of the GDP rate.

The *Individual Effect results* confirm that the influence of Fiscal Independence, Capital Expenditure, and Connectivity Expenditure on GDP varies greatly from district/city to district/city, depending on the economic conditions, resources, and infrastructure in each region. Districts with *positive Individual Effects* tend to have stronger economic capacity and are better able to grow independently, while districts with negative *Individual Effects* show greater reliance on the role of government spending to drive their economies.

5. CONCLUSIONS AND SUGGESTIONS

5.1. CONCLUSION

Based on the results of the study, the growth rate of Gross Regional Domestic Product (GDP) in districts/cities throughout Lampung Province is significantly influenced by connectivity expenditure (BK). The analysis shows that an increase in BK by 1% can boost GDP growth by 0.26%. This emphasizes the importance of connectivity spending which includes the development of transportation, energy, and telecommunications infrastructure in improving distribution efficiency and attracting investment.

On the other hand, capital expenditure (BM) does not make a significant positive contribution, and even tends to be negative. This indicates that the allocation of capital expenditure in Lampung is more directed towards routine expenditure and infrastructure that does not support direct productivity, such as land acquisition, government buildings, and bureaucratic equipment. Capital expenditure like this will increase routine expenditure of the local government such as expenditure on building maintenance, buildings, assets, maintenance of official vehicles, and fuel.

The Fiscal Independence (KF) variable of districts/cities in Lampung province, which reflects the financial capacity of the region to finance itself, also does not have a significant effect on GDP growth. This finding indicated that the region's dependence on transfer funds from the central government is still high and the low efforts to optimize Regional Original Revenue (PAD) in the regions.

The regression analysis of the data panel showed that the Fixed Effect Model (FEM) model was more suitable than other models based on the Chow and Hausman tests. VAR analysis carried out by including the optimal lag element showed that the independent variable was able to explain the variation in GDP up to 97%. However, the value of the capital expenditure coefficient remains negative, indicating that although the expenditure allocation has increased, its effectiveness in supporting economic growth still needs to be improved. Nevertheless, the study indicated how some of the districts in Lampung Province had a high dependency to the centre funding from the Finance Ministry. It imposed how the

5.2. ADVICE

1. *Reorientation of Capital Expenditure Allocation*: Local governments in Lampung Province need to direct capital expenditures towards more productive projects, such as strategic infrastructure that supports direct economic growth. Capital expenditure for routine activities and non-productive assets must be reduced so that the budget is more effective in encouraging economic growth.
2. *Increasing Efficiency of Connectivity Spending*: It is necessary to optimize connectivity spending by ensuring that the selected infrastructure projects have a high multiplier effect, such as increasing access to transportation between regions and developing energy and clean water facilities.
3. *Increasing Fiscal Independence*: Regions should focus on diversifying revenue sources and optimizing the potential of PAD without disrupting the business sector or MSMEs

to be more fiscally independent. This can be done by strengthening regional leading sectors and improving governance to increase the effectiveness of levies and the use of PAD.

4. *Project Management Improvements and Evaluations*: Any infrastructure project funded by capital expenditure needs to be evaluated for its effectiveness in supporting economic growth. A more rigorous, results-based evaluation of spending performance can help identify sectors that need to prioritize investment.
5. *Encouraging Collaboration Between Regions*: Cooperation between districts/cities in connectivity infrastructure projects can strengthen regional economic integration. With this collaboration, the distribution of goods and services between regions will be smoother, improving overall economic efficiency.
6. *Implementing The Synergy for the Upstream to Downstream Economy Sources*: Lampung Provincial Government should add on the regional income and generate more income from potency in each district. As an add on, the regional planning institution in Lampung province may act on the upstream to downstream economy sources. Strengthening as well as evaluating the output policy from each regional bureau is a must.

6.3.LIMITATIONS OF THE RESEARCH

This study has limitations in the use of data which only covers 15 districts/cities in Lampung Province and the period 2018-2022. In addition, the analytical model used can be developed by considering external factors such as global conditions or incidents that may affect economic growth in the timeline being studied. Further research can expand the scope of regions and time periods, as well as include external variables that can affect economic growth.

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