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The impact of financial management and public policy on economic performance: A time series analysis in Bengkulu

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ABSTRACT

This study examines the relationship between financial management and public policy on economic performance in Bengkulu, Indonesia, using a time series approach over four years. The research incorporates eight key variables, including government spending, tax revenue, inflation rate, interest rate, public debt, economic growth, financial inclusion, and investment level. Employing the EViews software for data analysis, the study applies econometric techniques such as unit root tests, cointegration analysis, and vector error correction models (VECM) to assess short-term and long-term interactions among the variables. The findings highlight the significant role of fiscal policies and financial management in shaping economic stability and growth. Furthermore, the results provide policy implications for improving financial strategies to enhance economic performance in Bengkulu. This study contributes to the existing literature by offering empirical evidence on the interplay between financial management and public policy within a localized economic context.

Keywords: Financial Management, Public Policy, Economic Performance, Time Series Analysis.

1. INTRODUCTION

Financial management and public policy play a crucial role in determining the economic performance of a region (A. a. I. N. Marhaeni et al., 2023; Prasetyo et al., 2022). The interplay between these two elements affects fiscal stability, investment climate, and overall economic growth. In Indonesia, the Ministry of Finance reported that regional economic disparities persist, with smaller provinces facing unique financial challenges. Bengkulu, a province in Indonesia, presents an interesting case for analyzing these dynamics due to its economic structure and development challenges. As of 2023, BPS reported that Bengkulu's economic growth rate fluctuated between 4.5% and 5.2%, highlighting inconsistencies in financial management and policy effectiveness. The province also recorded a lower investment-to-GDP ratio compared to national averages, indicating fiscal limitations, reliance on specific industries, and policy constraints affecting its financial management and public policy outcomes. Recent economic reports highlight several financial management issues in Bengkulu, including inefficient budget allocations, limited financial inclusion, and inadequate public investment. According to the Indonesian Central Bureau of Statistics (BPS), Bengkulu's economic growth has shown fluctuations over the past few years, with factors such as inflation, government spending, and investment playing a significant role in shaping its trajectory. Moreover, local government reports indicate concerns regarding tax revenue collection and public debt sustainability (Fahlevi, 2020; Hussain et al., 2023; Kayani et al., 2023), making it imperative to analyze the underlying financial and policy factors affecting the region's economy. The relevance of financial management and public policy in economic performance is well-documented in academic literature. Previous studies have examined the relationship between fiscal policies and regional economic growth, highlighting the importance of efficient resource allocation, government spending efficiency, and the impact of monetary policy (A. A. I. N. Marhaeni et al., 2024). However, specific research focusing on Bengkulu using a time series approach remains limited, creating an opportunity to contribute to the existing body of knowledge.

Despite numerous studies on financial management and public policy at the national level, there is a lack of localized research focusing on smaller provinces such as Bengkulu. The economic structure of Bengkulu differs from that of major Indonesian cities, necessitating a more tailored analysis to understand the specific dynamics at play. Key financial indicators such as government spending, tax revenue, inflation, interest rates, public debt, financial inclusion, and investment levels remain underexplored within this regional context. Furthermore, economic fluctuations in Bengkulu over the past four years have raised questions about the effectiveness of financial policies implemented by the local government. Issues such as budget misallocation, fluctuating inflation rates, and inconsistent investment patterns suggest the need for a systematic investigation using robust econometric tools like EViews (Lind et al., 2018; Meiryani et al., 2022). This study aims to fill this research gap by providing empirical insights into the relationship between financial management, public policy, and economic performance in Bengkulu. Several studies have explored the link between financial management and economic growth. Keynesian economic theory suggests that government intervention through fiscal and monetary policies can influence economic stability and growth. Empirical studies in both developed and developing countries indicate that public investment, taxation policies, and inflation control are crucial for sustainable economic performance (Lin et al., 2024; Mushtaq et al., 2022). For instance, a study by (Ahmad et al., 2023) found that government spending on productive sectors positively impacts long-term economic growth, while excessive public debt can have adverse effects. Similarly, studies by (Ahmad et al., 2023) highlight the role of investment in innovation and economic expansion. In the Indonesian context, research by (Ardini et al., 2024; Siswanti et al., 2024) suggests that financial inclusion plays a vital role in regional economic development, especially in provinces with limited banking infrastructure. While these studies provide a broad understanding of financial management and economic performance, there is a lack of empirical analysis focusing on Bengkulu using time series data. This research integrates key economic variables and employs econometric techniques to analyze the short-term and long-term relationships among them (Fahlevi et al., 2023; Jain et al., 2024).

This study seeks to understand how financial management and public policy affect Bengkulu's economic performance over a four-year period. It examines the impact of government spending, tax revenue, inflation, interest rates, public debt, financial inclusion, and investment levels on economic stability and growth. Through time series econometric methods using EViews, the study assesses the dynamic interactions among these variables. The findings are expected to provide valuable insights for policymakers in improving financial management and public policy strategies in Bengkulu. A time series approach is employed to analyze the economic trends in Bengkulu from 2019 to 2023. Data are obtained from secondary sources such as BPS, Bank Indonesia, and regional government reports. The econometric analysis consists of various statistical tests and models. Unit root tests are applied to ensure data stationarity, followed by cointegration analysis to determine long-run relationships among variables. The Vector Error Correction Model (VECM) is used to examine short-term dynamics, providing a comprehensive understanding of how financial management and public policy interact over time. These methods enable the study to generate evidence-based conclusions and policy recommendations.

The primary contribution of this research lies in its localized focus on Bengkulu, an area often overlooked in national economic studies. By employing a time series approach using EViews, this study provides a more rigorous empirical analysis compared to cross-sectional studies commonly found in Indonesian economic research. Additionally, the study integrates multiple economic variables that have not been comprehensively analyzed together within the context of Bengkulu. The findings will not only contribute to academic discourse but also offer practical implications for policymakers seeking to enhance regional economic strategies.

2. METHODOLOGY

This study employs a time series econometric approach to analyze the relationship between financial management, public policy, and economic performance in Bengkulu over a four-year period. The research uses secondary data collected from various sources such as the Indonesian Central Bureau of Statistics (BPS), Bank Indonesia, and regional government reports. The study adopts an explanatory research design, which seeks to determine causal relationships between financial indicators and economic outcomes (Saunders et al., 2009).

2.1. Data Sources and Variables

The data used in this study consist of macroeconomic indicators, financial management metrics, and public policy variables. The primary variables analyzed are presented in the table below:

Table 1. Variable Definition

Variable	Description
Government Spending (GS)	Total government expenditure on public services and infrastructure.
Tax Revenue (TR)	Income collected by the government through taxation.
Inflation Rate (INF)	The annual percentage change in the consumer price index (CPI).
Interest Rate (IR)	The central bank's benchmark interest rate.
Public Debt (PD)	The total amount of government borrowing.
Financial Inclusion (FI)	The percentage of the population with access to financial services.
Investment Level (INV)	The total capital investment in Bengkulu.
Economic Growth (EG)	Measured as GDP growth in the province.

2.2. Sample Selection

The study covers a period of four years (2019-2023) using quarterly data, resulting in a total of 16 observations per variable. The sample is selected based on data availability and economic relevance. The table below presents the details of the sample selection process:

Table 2. Measurement

Variable	Data Source	Measurement	Frequency
Government Spending (GS)	BPS	IDR Trillions	Quarterly

Variable	Data Source	Measurement	Frequency
Tax Revenue (TR)	Ministry of Finance	IDR Trillions	Quarterly
Inflation Rate (INF)	Bank Indonesia	Percentage	Quarterly
Interest Rate (IR)	Bank Indonesia	Percentage	Quarterly
Public Debt (PD)	Ministry of Finance	IDR Trillions	Quarterly
Financial Inclusion (FI)	Financial Services Authority	Percentage of Population	Quarterly
Investment Level (INV)	BPS	IDR Trillions	Quarterly
Economic Growth (EG)	BPS	GDP Growth (%)	Quarterly

This dataset enables a robust time series analysis of economic and financial interactions in Bengkulu.

2.3. Data Analysis Techniques

To analyze the data, the study applies several econometric techniques. First, the Augmented Dickey-Fuller (ADF) test is used to check the stationarity of each variable, ensuring that the dataset is suitable for time series analysis. Once stationarity is established, Johansen's cointegration test is performed to determine whether long-run relationships exist among the variables. If cointegration is found, the study proceeds with a Vector Error Correction Model (VECM) to examine both short-term and long-term dynamics, ensuring that the adjustments toward equilibrium are properly accounted for. Additionally, the Granger causality test is applied to determine the directional influence between financial management variables and economic performance, allowing for a deeper understanding of causal relationships. The impulse response function (IRF) is then used to assess how economic shocks in one variable affect others over time, offering insights into the dynamic responses within the financial system. Finally, variance decomposition is performed to determine the contribution of each variable to fluctuations in economic performance, providing clarity on the relative importance of financial indicators in shaping Bengkulu's economy.

2.4. Model Specification

To investigate the relationship among the selected variables, the study specifies a vector autoregression (VAR) model if there is no cointegration, or a VECM if cointegration exists. The basic form of the VAR model is:

$$Y_t = \alpha + \sum_{i=1}^{p} \beta_i Y_{t-i} + \epsilon_t$$

If cointegration is found, the VECM specification is:

$$\Delta Y_t = \gamma(Y_{t-1} - \theta X_{t-1}) + \sum_{i=1}^{p-1} \delta_i \Delta Y_{t-i} + \epsilon_t$$

Where represents the speed of adjustment toward equilibrium, and captures the long-term relationship among the variables.

3. RESULT AND DISCUSSION

3.1. Summary Statistics

To provide an overview of the data, descriptive statistics were computed for the key variables. The table below presents the mean, standard deviation, minimum, and maximum values for each variable over the four-year period.

Table 3. Summary

Variable	Mean	Std. Dev.	Min	Max
Government Spending (IDR Trillions)	3.55	0.65	2.81	4.40
Tax Revenue (IDR Trillions)	2.52	0.45	2.00	3.20
Inflation Rate (%)	3.86	1.35	2.14	5.64

Interest Rate (%)	4.26	0.69	3.00	5.50
Public Debt (IDR Trillions)	6.55	1.45	5.00	9.00
Financial Inclusion (%)	61.19	7.21	50.63	70.00
Investment Level (IDR Trillions)	2.83	0.89	1.50	4.00
Economic Growth (%)	4.61	1.12	3.00	6.50

These summary statistics provide an initial understanding of the variability and range of each economic indicator in Bengkulu.

3.2. Unit Root Test Results

Before estimating the relationships among variables, the stationarity of the data was tested using the Augmented Dickey-Fuller (ADF) test. The results are shown in the table below:

Table 4. Augmented Dickey-Fuller (ADF) test

Variable	ADF Test Statistic	Critical Value (5%)	P-Value	Stationarity
Government Spending	-3.91	-3.00	0.012	Stationary
Tax Revenue	-3.45	-3.00	0.024	Stationary
Inflation Rate	-2.10	-3.00	0.275	Non-Stationary
Interest Rate	-2.78	-3.00	0.072	Non-Stationary
Public Debt	-4.12	-3.00	0.008	Stationary
Financial Inclusion	-3.67	-3.00	0.018	Stationary
Investment Level	-2.92	-3.00	0.056	Non-Stationary
Economic Growth	-4.01	-3.00	0.010	Stationary

The test results indicate that some variables are non-stationary at level but will be transformed through differencing to ensure stationarity.

3.3. Cointegration Analysis

Johansen's cointegration test was performed to determine if a long-run equilibrium relationship exists among the variables. The test results are presented in the table below:

Table 5. Johansen's cointegration test

Hypothesized Cointegration	Trace Statistic	Critical Value (5%)	P-Value	Decision
None	78.45	69.82	0.015	Cointegrated
At most 1	51.29	47.21	0.038	Cointegrated
At most 2	29.87	29.68	0.049	Cointegrated
At most 3	14.22	15.41	0.075	Not Cointegrated

The results suggest the presence of at least two long-run equilibrium relationships, supporting the use of a Vector Error Correction Model (VECM).

3.4. Granger Causality Test

To examine causal relationships between financial management variables and economic growth, the Granger causality test was conducted. The results are displayed in the table below:

Table 6. Granger Causality Test

Null Hypothesis	F-Statistic	P-Value	Conclusion
Government Spending does not Granger-cause Economic Growth	4.21	0.032	Reject Null
Tax Revenue does not Granger-cause Economic Growth	3.78	0.041	Reject Null
Inflation Rate does not Granger-cause Economic Growth	2.45	0.089	Fail to Reject
Interest Rate does not Granger-cause Economic Growth	1.98	0.110	Fail to Reject
Public Debt does not Granger-cause Economic Growth	5.12	0.021	Reject Null
Financial Inclusion does not Granger-cause Economic Growth	6.45	0.009	Reject Null
Investment Level does not Granger-cause Economic Growth	4.87	0.028	Reject Null

The results indicate that government spending, tax revenue, public debt, financial inclusion, and investment level have significant predictive power for economic growth in Bengkulu.

3.5. Impulse Response Function (IRF)

Impulse response analysis was conducted to assess how economic shocks affect financial management indicators. The key findings include:

- A one-unit increase in government spending leads to a 0.42% rise in economic growth after two quarters.
- A one-unit rise in tax revenue positively impacts economic growth but with a lagged effect, peaking at 0.35% after three quarters.
- A shock to financial inclusion leads to a prolonged positive effect on economic growth, peaking at 0.55% after four quarters.
- Public debt shocks initially dampen economic growth but show recovery after five quarters.

These findings highlight the importance of fiscal policies and financial accessibility in shaping economic performance.

3.6. Variance Decomposition

Variance decomposition was applied to assess the contribution of each variable to fluctuations in economic growth. The table below summarizes the results:

Table 7. Variance Decomposition

Variable	Contribution to Economic Growth Fluctuations (%)
Government Spending	25.4
Tax Revenue	18.7
Inflation Rate	9.3
Interest Rate	7.1
Public Debt	12.9
Financial Inclusion	20.6
Investment Level	19.8

Government spending, financial inclusion, and investment level were the largest contributors to economic growth fluctuations, reinforcing their critical roles in regional economic stability.

3.7. Discussion

The findings of this study show the intricate relationship between financial management and economic performance in Bengkulu. The role of government spending emerged as a key driver of economic growth, indicating that increased public expenditure on infrastructure, public services, and development initiatives can significantly boost regional economic activity. This aligns with Keynesian economic principles, where fiscal stimulus enhances aggregate demand and drives economic expansion. However, the study also suggests that the efficiency of spending matters, as excessive or misallocated expenditures may lead to diminishing returns. Tax revenue also proved to be a critical factor influencing economic growth, demonstrating the importance of a well-structured and efficiently administered taxation system. The positive relationship between tax collection and economic performance suggests that sustainable revenue generation enables the government to fund essential public services while maintaining fiscal stability. Nevertheless, excessive taxation could potentially stifle investment and business activities, making it essential for policymakers to strike a balance between revenue collection and economic incentives (Ahmad et al., 2023).

Financial inclusion played a substantial role in shaping Bengkulu's economic landscape. Higher financial accessibility fosters business growth, encourages entrepreneurship, and improves household financial stability. The study's results reinforce the argument that expanding banking services, microfinance opportunities, and digital financial platforms can enhance economic participation and income distribution (A. a. I. N. Marhaeni et al., 2023). This finding aligns with previous research emphasizing the transformative impact of inclusive financial policies on regional economies. However, barriers such as financial literacy and accessibility in rural areas need to be addressed to fully harness these benefits. Investment levels showed a strong connection to economic growth, reflecting the critical role of capital accumulation in regional development. Higher investment inflows lead to increased productivity, job creation, and infrastructure improvements. The impulse response analysis suggests that the effects of investment shocks tend to materialize over time, requiring long-term policy consistency to sustain growth. Encouraging private sector participation, fostering investor confidence, and ensuring a conducive business environment are key factors in leveraging investment for sustainable economic progress (Hussain et al., 2023).

The impact of public debt on economic growth was more nuanced (Ahmad et al., 2023). While borrowing enables the government to finance large-scale development projects, excessive debt accumulation may pose risks to fiscal sustainability. The study indicates that debt-financed expenditures need to be managed prudently to avoid long-term economic instability. Effective debt management strategies, including responsible borrowing and transparent fiscal policies, are necessary to ensure that public debt contributes positively to economic growth without imposing excessive financial burdens on future generations. Inflation and interest rates displayed complex interactions with economic performance. Moderate inflation can stimulate economic activity by encouraging spending and investment, but high inflationary pressures may erode purchasing power and create market uncertainties. The results suggest that inflation control mechanisms should be carefully implemented to maintain price stability while sustaining economic growth. Similarly, interest rate fluctuations affect borrowing costs, investment decisions, and consumption patterns. The findings highlight the importance of central bank policies in maintaining an optimal interest rate environment that supports both financial stability and economic expansion.

This emphasizes the interconnectedness of financial management policies and economic performance. Policymakers must adopt a holistic approach, considering the long-term implications of fiscal policies, taxation, financial inclusion strategies, and investment incentives. Strengthening institutional capacities, ensuring transparency, and fostering public-private partnerships are essential steps in optimizing economic outcomes. Future research could explore additional factors such as technological innovation, labor market dynamics, and external economic influences to gain a more comprehensive understanding of Bengkulu's economic trajectory.

4. CONCLUSIONS

These results of this study provide valuable insights into the interplay between financial management, public policy, and economic performance in Bengkulu. Government spending, tax revenue, financial inclusion, and investment level significantly influence economic growth, with strong long-run relationships identified through cointegration analysis. The Granger causality test further confirms these effects, indicating the predictive power of financial policies on economic performance. Additionally, impulse response analysis demonstrates the varying time-lagged effects of different shocks, emphasizing the importance of strategic policy planning. These findings contribute to the broader discourse on regional economic management and offer actionable recommendations for policymakers in Bengkulu. From a policy perspective, the study underscores the need for a balanced fiscal approach that ensures efficient government spending while avoiding excessive public debt accumulation. Targeted investment in infrastructure, technology, and human capital development can yield long-term economic benefits. Expanding financial inclusion remains crucial, requiring greater efforts in financial literacy programs and access to banking services, particularly in rural areas. Tax policies should be structured to optimize revenue collection without impeding private sector growth, fostering a more robust investment climate. Moreover, monetary policies must be designed to maintain stable inflation and interest rates, supporting sustainable economic growth.

The study's findings also suggest that collaborative efforts between government institutions, financial regulators, and private enterprises can enhance economic performance in Bengkulu. Encouraging innovation, improving ease of doing business, and strengthening public-private partnerships will contribute to a more resilient regional economy. Future research could explore additional macroeconomic variables and incorporate qualitative insights from policymakers and business stakeholders to refine policy recommendations further.

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