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The Influence of Budget Efficiency on the Regional Budget Deficit of Riau Province 2015–2024 from an Islamic Economic Perspective

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Abstract

This study aims to analyze the effect of budget efficiency on the budget deficit in Riau Province. The background of this study is based on the regional financial conditions that show fluctuations in the budget deficit during the 2014–2024 period. This study uses a quantitative approach with a simple linear regression analysis method. The data used are secondary data obtained from the financial reports of the Riau Provincial Government during the study period. The independent variable in this study is budget efficiency, while the dependent variable is the budget deficit. The results show that budget efficiency has an effect on the budget deficit. The coefficient of determination (R^2) value indicates that budget efficiency is able to explain variations in the budget deficit in the research model. This indicates that the higher the level of budget efficiency, the more likely the budget deficit can be reduced. The conclusion of this study is that budget efficiency plays a significant role in controlling the budget deficit in Riau Province. Therefore, local governments are expected to improve the quality of budget planning and management to be more efficient, thereby being able to maintain regional fiscal balance in a sustainable manner.

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Introduction

The budget realization report is a form of regional financial report prepared prior to the balance sheet and cash flow statement. In the public sector, the budget plays a key role in supporting the implementation of government functions. The regional government's efforts to optimize the potential of local resources and its ability to manage and utilize available funds are reflected in the structure of the Regional Revenue and Expenditure Budget (APBD). Effective and efficient regional financial management is a key indicator of good governance. In the context of regional autonomy, provincial governments have full authority to design and implement budgets aimed at improving public welfare. However, many regions, including Riau Province, still experience annual budget deficits (Ministry of Finance of the Republic of Indonesia 2023). Financial reports are an important means of conveying relevant information, as long as they are prepared using an appropriate system. This information is very useful for institutions, especially for decision-makers who must determine strategic steps effectively for the sustainability of the institution's operations. By recording structured transactions, financial reports help stakeholders such as management, shareholders, creditors, and regulators to assess the organization's financial performance, evaluate the achievement of financial targets, and identify areas that require improvement or strategic adjustments. Furthermore, these reports also serve as a basis for comparing actual revenues, expenses, transfers, and funding sources with the established budget, allowing for a more in-depth analysis of the organization's financial condition (Bastian 2012).

This research is relevant for providing an empirical overview of the relationship between budget efficiency and the budget deficit level in Riau Province over the past 14 years. The results of this study are expected to provide input for local governments in formulating more targeted, efficient, and sustainable budgeting strategies. To understand Indonesia's fiscal condition in recent years, particularly regarding the budget deficit, the following data presents the development of the budget deficit from 2019 to the 2024 projection. This data illustrates the amount of the deficit in trillions of rupiah and its percentage of Gross Domestic Product (GDP).

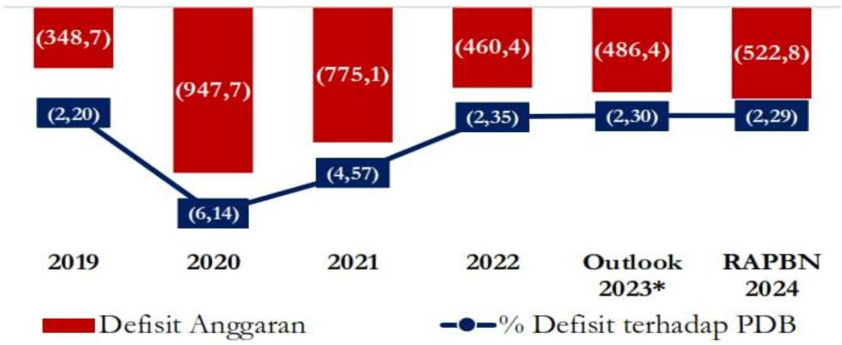

Figure 1. Budget Deficit Development Graph

The graph above shows the development of the budget deficit, indicated by the amount of the budget deficit (in trillions of rupiah), namely by the red bar. Then the percentage of the deficit to the Gross Domestic Product (GDP), is shown by the blue line with dots. We can see together that in 2019 the budget deficit was IDR 348.7 trillion where the percentage of GDP: 2.20% this is a normal condition before the pandemic. Then continuing in 2020 the budget deficit was IDR 947.7 trillion and the percentage of GDP: 6.14% which indicates a large spike due to the COVID-19 pandemic. The government allocated a lot of funds for handling the health crisis and economic recovery., Then in 2021 the Budget Deficit was IDR 775.1 trillion and the percentage of GDP: 4.57% The figure decreased compared to 2020, indicating the beginning of recovery, After that in 2022 the budget deficit was IDR 460.4 trillion and the percentage of GDP: 2.35% showed a significant decline, approaching normal conditions before the pandemic. In 2023, the budget deficit was IDR 486.4 trillion and the percentage of GDP was 2.30%. The deficit was relatively stable and began to be maintained so that it was not too high. In 2024, the budget deficit was IDR 522.8 trillion with a percentage of GDP of 2.29%. The government continued to maintain the deficit below 3% of GDP, in accordance with the regulations in the State Finance Law. It can be concluded that 3% of GDP, in accordance with the regulations in the State Finance Law. It can be concluded that2020–2021showsurge in deficit due to the pandemic. Starting 2022, the deficit began to decline and was gradually controlled towards the statutory limit, namely a maximum of 3% of GDP. This demonstrates the government's efforts in fiscal consolidation and sustainable management of state finances. Economic growth is defined as the process of increasing per capita output over the long term. An economy is said to be growing if the level of economic activity, as measured by GDP, is higher than the previous period. To increase economic growth, macroeconomic policies are directed at controlling the demand and supply sides of the economy. In the short term, economic growth is strongly influenced by demand, while in the long term, it is determined by supply factors such as investment levels, productivity, human resources, and others. The interaction of demand and supply determines the level of economic growth and inflation. Several previous studies have shown that government financial reports and budget deficits play a crucial role in reflecting fiscal conditions and serving as a basis for economic policymaking. Research by Rahmawati revealed that the transparency and accountability of regional financial reports significantly influence public perception of government performance, particularly in terms of budget deficit management. Meanwhile, a study by Putra and Wulandari found that short-term increases in budget deficits, such as those experienced during the COVID-19 pandemic, can be understood as expansionary measures.

fiscal deficit, but still requires a medium-term balancing strategy. Furthermore, according to Susanti's research, a high deficit trend without a corresponding improvement in the quality of public spending can pose risks to macroeconomic stability and hamper long-term economic growth. Therefore, continuous monitoring and analysis of the development of the budget deficit, as reflected in the 2019–2024 budget deficit graph, is crucial to maintain the country's fiscal health (Susanti 2022).

The research on budget realization reports, budget effectiveness, and efficiency was conducted by Yuliyanto, assessing the effectiveness and efficiency of the district government's revenue and expenditure budget for the 2018-2020 fiscal year as the purpose of the audit of the Budget Realization Report. A review of the effectiveness and efficiency of budget use, or lack thereof, is provided in the budget realization report. Resources used to carry out government activities are evaluated to determine their efficiency and effectiveness. Consequently, the budget has been successfully and efficiently used to meet local government objectives. A review of efficiency ratio and effectiveness ratio data shows that the Abc district government has consistently achieved very high levels of efficiency and effectiveness. Based on the explanations and phenomena from the previous research mentioned above, it can be concluded that the analysis of the budget realization report on the effectiveness and efficiency of the revenue and expenditure budget helps in assessing the extent to which budget use has been successful in achieving objectives and the extent to which resources have been used as efficiently as possible to produce desired results. This conclusion emphasizes the need for good budget management to achieve desired results at the lowest possible cost. The Riau Province P3AP2KB Office details the budget realization report by noting how budget funds have been used and the extent to which achievements are in accordance with the allocated budget (Yuliyanto 2021).

This record-keeping practice allows them to regularly monitor their financial performance, evaluate the extent to which budget targets are being achieved, and, if necessary, make improvements to improve their overall budget management. Riau Province's budget deficit fluctuated significantly during the 2020–2025 period. In 2024, the deficit was recorded at IDR 1.5 trillion, with an additional IDR 2.2 trillion in deferred payments, bringing the total liability to IDR 3.7 trillion. Projections for 2025 show a larger deficit of IDR 3.5 trillion, consisting of a budget deficit of IDR 1.3 trillion and IDR 2.2 trillion in deferred payments. Several factors contributing to this deficit include the realization of Regional Original Revenue (PAD) which only reached 72.1% of the IDR 6.7 trillion target, excess spending exceeding the 2024 Revised Regional Budget ceiling of IDR 196.8 billion, and delayed payments and distributions to districts/cities.(Fathiyah 2020)To overcome the deficit, the Riau Provincial government has taken steps such as spending efficiency.by postponing non-urgent activities and prioritizing spending related to public services,and allocated a budget to resolve the previous year's deferred payments, with a budget of Rp. 1.2 trillion in 2025. Furthermore, the 2025 APBD projection decreased by 15%, from Rp. 11.19 trillion to Rp. 9.56 trillion.

Literature Review

Budget Efficiency

Efficiency is achieving maximum output with a given input, or using the lowest input to achieve a given output. Efficiency is the ratio of input/output to predetermined performance standards or targets. Simply put, efficiency can be defined as the absence of waste.(Triyono and Ahyani nd). Stating that efficiency is a comparison between output and objectives, the relationship between output and the objectives to be achieved, and the ability to do things correctly (Suadi 2011). Price efficiency relates to managerial decision-making regarding the allocation of various production deficits, namely production inputs that the firm can control. Technical efficiency relates to resources that are fixed within the firm, at least in the short run, and are exogenous to the available environment. When both price efficiency and technical efficiency in terms of deficits occur, sufficient conditions exist for economic efficiency (Hasoloan and others 2024). efficiency can be measured as the ratio of output to input. The efficiency standard according to the Decree of the Minister of Home Affairs Number 690.900-327 of 1996 concerning Assessment Criteria and Financial Performance, can be determined as efficient or not by fulfilling the following criteria:

a. Comparison Results or achievement levels above 100% mean inefficient.
b. Comparison results between 90%-100% mean less efficient
c. Comparison results between 80%-90% mean quite efficient
d. A comparison result of 60%-80% means efficient
e. Comparison results below 60% mean very efficient(Hasoloan and others 2024).

Efficient simply means doing things correctly or appropriately in doing things.A job. Efficiency also means the ability to carry out tasks carefully and precisely, effectively, and appropriately. A job is said to be efficient when the process does not take up unnecessary time, energy, or burden. Efficiency means doing the job right and producing maximum results using minimal input(Zen and Murtanto 2023).

Budget efficiency indicates the extent to which budget allocations produce optimal output, but the evaluation formula used needs to be reviewed to ensure consistency. Efficiency is the best possible outcome from comparing output with input, as is the optimal outcome achieved through the utilization of limited resources. Meanwhile, performance is the achievement or accomplishment of a previously agreed-upon goal or target.(Suliantoro 2020). Government Regulation Number 8 of 2006 concerning Financial Reporting andGovernment Agency Performance: Performance is defined as a measurement of the quantity and quality of budget utilization relative to the results/outputs of programs/activities that have been or will be achieved. Performance measurement is necessary to determine the level of achievement of organizational goals. In practice, budget effectiveness and efficiency can determine an agency's success in achieving its stated performance (Annisa et al., 2022). Efficiency in budget use can be measured by comparing the realization of spending against the established budget.Budget efficiency means the government's ability to manage finances economically and without wasting money in order to achieve the set results. Budget efficiency is achieved when government spending produces output according to targets with minimal waste (Millennia and others 2022).

Budget Deficit

Understanding Budget Deficit

A budget deficit is a situation where government spending exceeds revenue generated during a given period. A budget deficit is a situation where government revenue is lower than its expenditures; in other words, government revenue is insufficient to cover government expenditures. A budget deficit is the difference between budgeted revenue and budgeted expenditure, which is the deficit. This means that budgeted revenue is less than budgeted expenditure (Siregar 2015). Budget Deficit is a situation where expenditure is greater than state income.5This budget efficiency was planned because of budget constraints or government spending was planned to be greater than government revenue (G>T) to meet state goals. Slow economic growth has led to a decline in state tax revenues, while spending remains high. This has led to an imbalance between state revenues and expenditures. Budget deficits often occur when government spending exceeds revenues from taxes and other sources. This is caused by increased government spending, both on routine and development spending, while revenues have not increased commensurately (Lasupu, Kalangi, and Mawikere 2021). The government deliberately runs a budget deficit in an effort to stimulate economic growth by increasing deficit spending (deficit expansion), for example, for infrastructure investment and deficit programs. In fact, since the beginning of Islam, the Prophet Muhammad (peace be upon him) always taught his companions to always carry out all work (charity) as effectively and efficiently as possible. Through various understandings from him, his companions understood how to use the word (efficiency) in its proper place. For example, the Prophet Muhammad demonstrated his high authority by emphasizing ihsan (generosity) and itqan (perfection) (Ramadhan and Sulistyowati 2019). He said that "Allah SWT has made ihsan obligatory for everything," and that "Allah SWT loves a person when he does something, he does it perfectly (itqan)." Even the Prophet SAW placed the value of a person's Islam when a Muslim is able to optimize his personality as efficiently as possible, the meaning of efficiency in this context is certainly doing all useful work and leaving work that wastes time and is not useful. So at least it can be concluded, that the definition of efficiency according to Islam is not the same as according to conventional economic theory. This is because the orientation of a Muslim's life is not limited only to his world, but there is an integration of worldly life and the hereafter, where the world is only a field for life in the hereafter (Bastian 2020).

Methodology

The type of research is the form or approach used by researchers to collect, analyze and interpret data in order to answer research questions or test hypotheses (Renggo and Kom 2022). This study uses a quantitative approach with an associative research type, as it aims to determine the effect of budget efficiency on the regional budget deficit in Riau Province from 2015 to 2024. A quantitative approach is used to statistically measure the relationship between variables. A quantitative approach is a research approach that emphasizes objective measurement of social phenomena through numerical data, statistical analysis, and generalization of results to a wider population (Rifa'i 2023). This research was conducted in Riau Province, with data obtained from the Regional Financial Information System, budget realization reports and regional government financial reports published by the Regional Financial Management Agency (BPKD) and the Central Statistics Agency (BPS). The research period started from May 2025 to August 2025. The subjects in this study were the regional government of Riau Province, specifically agencies related to regional financial management, such as the Regional Financial and Asset Management Agency (BPKAD), APBD. The data used were sourced from financial reports published by these agencies. The object of this study was data on budget efficiency and regional budget deficit in Riau Province from 2015 to 2024. Budget efficiency was measured through a comparison between realization and budget expenditure, while the budget deficit was measured based on the difference between regional revenue and expenditure. This study usedsecondary data, namely data obtained indirectly from related agencies through official documents or publications (Anggito and Setiawan 2018). The data sources used in this research include:

1. Budget Realization Report (LRA) Riau Province 2015–2024 published byRegional Financial and Asset Management Agency (BPKAD) of Riau Province**.**
2. Regional Government Financial Report (LKPD) Riau Province obtained fromAudit Board of Indonesia (BPK) and official local government websites.
3. Regional Financial Statistics Dataobtained fromCentral Statistics Agency (BPS) of Riau Province**.**
4. Other additional sources include regional fiscal policy documents, regional budget news, or official regional government websites that contain information related to budget efficiency and deficits.

The population in this study is the financial reports and regional budget of Riau Province for 2015–2024. Because the data is time series, all data from 2015 to 2024 was used as a saturated sample (census). To ensure data reliability, the researchers employed several data collection techniques, as follows:

1. Literature Study Literature study is a technique for collecting data or information by researching and reading websites, journals, publications, and books that are relevant or related to the issue that is the focus of the research.
2. Documentation Documentation is one form of evidence in collecting data, either in the form of written data or in the form of images (photos).

Results and Discussion

Result

Riau Province is located in the central part of Sumatra Island and enjoys a strategic position on the eastern coast of Sumatra. Its capital is Pekanbaru. Administratively, Riau Province comprises several regencies and cities with diverse economic characteristics. According to the official publication of the Riau Provincial Central Statistics Agency, Riau's economic structure is dominated by the manufacturing, mining, and agriculture and plantation sectors. These sectors contribute significantly to the Gross Regional Domestic Product (GDP) and are the main pillars of regional income.

Based on the collected data, the development of budget efficiency in Riau Province during the research period showed fluctuations. In several years, spending realization was lower than the established budget, indicating a level of efficiency in regional financial management. Furthermore, the budget deficit also changes from year to year. A deficit occurs when total regional spending exceeds total regional revenue in a given budget period. In below is a table of research data I took from the official website djpk.kemenkeu.go.id for 2011. The table lists account names, budgets, and their realization. From this data, I will determine the efficiency and deficit figures for each year from 2011 to 2024.

Table 1. Posture of the 2011 Riau Province Regional Budget

Account	Budget	Realization
Income	Rp. 4,275,900,506,351	Rp. 5,440,440,485,158
PAD	Rp. 1,502,360,878,451	Rp. 2,210,130,782,734

Regional Tax	Rp. 1,205,296,557,180	Rp. 1,773,621,889,147
Regional Retribution	Rp. 7,296,102,101	Rp. 8,490,985,544
Results of Management of Separated Regional Assets	Rp. 131,478,459,720	Rp. 131,607,412,155
Other Legitimate PAD	Rp. 158,289,759,450	Rp. 296,410,495,889
Balancing Fund	Rp. 2,683,189,627,900	Rp. 3,226,836,380,424
DBH	Rp. 2,209,170,004,400	Rp. 2,789,961,856,924
DAU	Rp. 380,051,123,500	Rp. 380,051,123,500
DAK	Rp. 93,968,500,000	Rp. 56,823,400,000
Other Income	Rp. 90,350,000,000	Rp. 3,473,322,000
Adjustment Fund and Special Autonomy	Rp. 90,350,000,000	Rp -
Other Income	Rp -	Rp. 3,473,322,000
Shopping	Rp. 4,468,257,731,323	Rp. 4,265,129,660,304
Indirect Shopping	Rp. 1,831,202,765,320	Rp. 1,962,058,946,000
Indirect Employee Expenditures	Rp. 740,736,593,124	Rp. 936,141,543,994
Direct Shopping	Rp. 2,637,054,966,003	Rp. 2,303,070,714,304
Direct Employee Shopping	Rp. 220,810,585,066	Rp -
Shopping for Goods and Services	Rp. 1,006,646,514,023	Rp. 960,890,615,586
Capital Expenditure	Rp. 1,409,597,866,914	Rp. 1,342,180,098,717
Subsidized Shopping	Rp. 14,172,000,000	Rp -
Grant Shopping	Rp. 229,050,000,000	Rp. 230,628,148,754
Social Assistance Shopping	Rp. 183,108,500,000	Rp. 197,806,681,225
Profit Sharing Shopping	Rp. 573,585,672,196	Rp. 511,015,528,902
Financial Aid Shopping	Rp. 80,550,000,000	Rp. 86,365,493,125
Unexpected Shopping	Rp. 10,000,000,000	Rp. 101,550,000
Financing	Rp. 332,357,224,972	Rp. 678,970,161,935
Financing Receipt	Rp. 262,357,224,972	Rp. 421,520,452,684
SiLPA of the previous fiscal year	Rp. 262,357,224,972	Rp. 404,707,156,731
Receipt of Loan Granting	Rp -	Rp. 16,813,295,953
Financing Expenditure	-Rp 70,000,000,000	-Rp 257,449,709,251
Formation of Reserve Fund	Rp -	-Rp 132,591,656,778
Equity capital	-Rp 70,000,000,000	-Rp 100,000,000,000

Principal Debt Payment	Rp -	-Rp 24,858,052,473

Source:(DJPK), processed by researchers.

The formula for obtaining the efficiency figure is to find the difference between the Budget and Actual Expenditures. To find the deficit figure, find the difference between the Revenue and Expenditures. The results of these formulas are presented in the following table and diagram.

Table 2. Budget Efficiency and Budget Deficit Data by Year

BUDGET EFFICIENCY AND BUDGET DEFICIT DATA BY YEAR 2011-2024			
NO	YEAR	EFFICIENCY	DEFICIT
1	2011	Rp. 203,128,071,019	-Rp 192,357,224,972
2	2012	-Rp 304,109,354,515	-Rp 878,880,000,000
3	2013	Rp. 906,813,809,451	-Rp 1,834,864,385,649
4	2014	Rp. 2,674,676,847,539	-Rp 1,150,102,342,092
5	2015	Rp. 2,923,001,814,723	-Rp 1,962,400,000,000
6	2016	Rp. 2,240,135,852,204	-Rp 3,383,426,461,897
7	2017	Rp. 1,819,408,057,591	-Rp 2,149,132,445,298
8	2018	Rp. 1,856,892,019,755	-Rp 1,089,571,778,427
9	2019	Rp. 488,658,365,803	-Rp 50,000,000,000
10	2020	Rp. 2,109,463,875,435	-Rp 65,884,363,053
11	2021	Rp. 201,044,635,879	-Rp 100,000,000,000
12	2022	-Rp 445,621,034,964	Rp -
13	2023	Rp. 274,795,401,040	-Rp 661,205,606,942
14	2024	Rp. 1,433,752,220,821	-Rp 958,481,859,857

Source: Processed Research Data

Budget efficiency showed an unstable trend throughout the study period. In the initial period (around 2011–2014), efficiency experienced a significant increase. This was influenced by the presence of a significant Budget Financing Surplus (SiLPA) in the previous period, which indicated that spending realization was not optimal but also reflected efficiency in budget use. Furthermore, in 2014, despite a deficit of around Rp1.15 trillion, the budget preparation process had begun to be more structured, although there were still dynamics in the APBD discussions. In 2015–2018, there was a gradual decline. Low absorption of the 2015 APBD, caused by delays in budget approval, suboptimal planning quality, and delays in technical instructions from the central government. This condition caused many programs to be ineffective, resulting in declining budget efficiency. Then in 2019, a sharp decline was seen, approaching zero. This can be attributed to the imbalance between regional revenue and expenditure, which is a structural problem in Riau. This region, although rich in resources, often experiences fiscal constraints due to dependence on central funds and fluctuations in regional revenue. After that, it experienced another increase in 2020. This situation was closely related to the COVID-19 pandemic, during which the government implemented a massive budget refocusing and reallocation. This policy made spending more selective and focused on key priorities such as health and social assistance, thereby relatively increasing budget efficiency. The 2021–2022 fiscal year saw another decline, with 2022 even showing a negative value.

The normality test aims to determine whether the residual data in a regression model is normally distributed. A good regression model is one with normally distributed residuals. In this study, the normality test was performed using the One-Sample Kolmogorov-Smirnov Test on unstandardized residual values.

Table 3. Kolmogorov-Smirnov test results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		14
Normal Parametersa,b	Mean	.0000872
	Standard Deviation	809403801456.10960000
Most Extreme Differences	Absolute	.167
	Positive	.131
	Negative	-.167
Test Statistics		.167
Asymp. Sig. (2-tailed)		.200c,d

Source: SPSS v.26 output

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Data processed by researchers (SPSS,26)

Basis for Decision Making If the sig value > 0.05 then it is normal, and vice versa, Based on the results of the normality test using the Kolmogorov-Smirnov method, the Asymp. Sig (2-tailed) value is 0.200. Because the significance value is greater than 0.05, it can be concluded that the residual data in the regression model is normally distributed. Thus, the regression model has met the assumption of normality.

The heteroscedasticity test aims to determine whether there is unequal variance in the residuals from one observation to another in the regression model. A good regression model is one that does not experience heteroscedasticity. In this study, the heteroscedasticity test was conducted using the scatterplot method, by observing the distribution of points between the Regression Standardized Predicted Value and the Regression Studentized Residual.

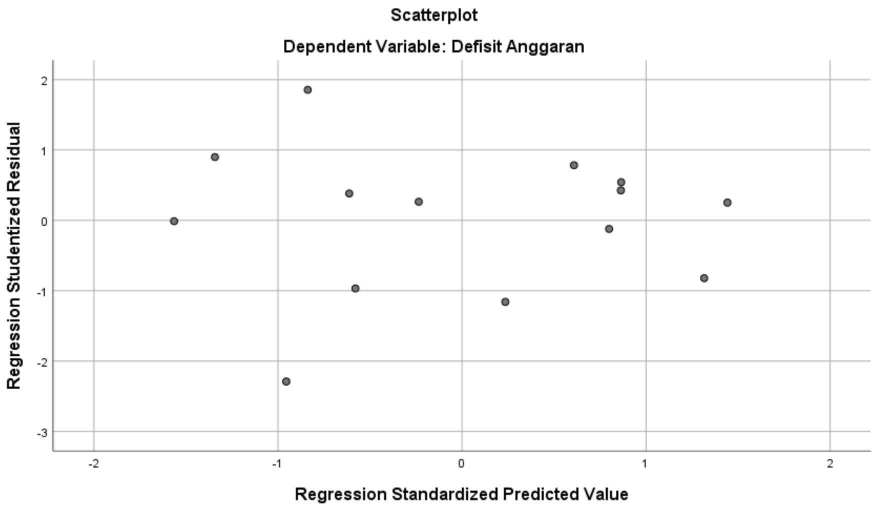

Figure 2. heteroscedasticity test results

Based on the results of the heteroscedasticity test using the scatterplot method, it can be seen that the points are randomly distributed above and below the number 0 on the Y-axis and do not form a specific pattern. Thus, it can be concluded that the regression model in this study does not experience heteroscedasticity and meets the classical assumptions. The autocorrelation test aims to determine whether there is a correlation between the residuals in the current period and the previous period. Because your research uses time series data

(2011–2023), an autocorrelation test is mandatory. The method used is the Durbin-Watson (DW Test).

Table 4. Autocorrelation Results

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	.588a	.345	.291	842454186664.910	1,355

Source: SPSS v.26 output

a. Predictors: (Constant), Budget Efficiency
b. Dependent Variable: Budget Deficit

Source: Data processed by researchers (SPSS,26)

General criteria:
DW between 1.5 – 2.5 → No autocorrelation occurs
DW < 1.5 → Positive autocorrelation occurs
DW > 2.5 → Negative autocorrelation occurs

Based on the results of the autocorrelation test using the Durbin-Watson method, a value of 1.355 was obtained. Because this value is smaller than 1.5, it can be concluded that there are symptoms of positive autocorrelation in the regression model. Thus, the regression model does not fully meet the classical assumptions of autocorrelation. Therefore, it can be concluded that there are symptoms of positive autocorrelation in the regression model. This means that the residuals of the current year tend to correlate with the residuals of the previous year. Based on the results of the Durbin-Watson test, a value of 1.355 was obtained, indicating a relatively weak positive autocorrelation. However, this value does not indicate strong autocorrelation because it does not approach 0. In addition, the number of samples in this study is relatively small (n = 14) so the Durbin-Watson test tends to be sensitive to fluctuations in time series data. Considering that the regression model used is a simple linear regression with one independent variable.

The linear regression equation aims to measure the magnitude of the influence. The regression equation tells how much Y changes if X increases by 1 unit. The simple linear regression formula is Y = a + Bx.

Deficit = -4,202,125,297.29 – 0.525 efficiency

Table 5. Linear regression equation results

Coefficientsa

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-420212529729.092	332026563361.274		-1.266	.230
	Efficiency	-.525	.209	-.588	-2,515	.027

Source: SPSS v.26 output

a. Dependent Variable: Deficit

Source: Data processed by researchers (SPSS,26)

The constant value of -4,202,125,297.29 indicates that if Efficiency is zero, then the Deficit is estimated at -4,202,125,297.29. The Efficiency regression coefficient of -0.525 indicates that every 1 unit increase in Efficiency will reduce the Deficit by 0.525 units. The negative sign indicates an inverse relationship between Efficiency and Deficit. The t-test (partial) is a test used to determine whether the independent variable (X) individually affects the dependent variable (Y). With the following criteria:
If Sig < 0.05 → significant
If Sig > 0.05 → not significant

Table 6. Partial test results

Coefficientsa

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-420212529729.092	332026563361.274		-1.266	.230
	Efficiency	-.525	.209	-.588	-2,515	.027

a. Dependent Variable: Deficit
Source: SPSS v.26 output

Based on the t-test results, a significance value of 0.027 was obtained, which is smaller than 0.05. This indicates that the Efficiency variable has a significant effect on the Deficit. Thus, the hypothesis stating that Efficiency influences the Deficit is accepted. The results of this study are in line with research conducted by Anggia Ramadhan and Nadia Ika Purnama, which found that regional spending influences the budget deficit in the North Sumatra Provincial Government's Regional Budget (APBD). These results indicate that government expenditure management plays a significant role in determining the condition of the regional budget deficit.

The coefficient of determination is used to determine how much the independent variable (Efficiency) is able to explain the dependent variable (Deficit).

Table 7. Results of the coefficient of determination test

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	.588a	.345	.291	842454186664.910	1,355

Source: SPSS v.26 output

a. Predictors: (Constant), Budget Efficiency
b. Dependent Variable: Budget Deficit

Percentage 0.291 X 100% = 29.1%. Based on the analysis results in the Model Summary table, the Adjusted R Square value was obtained at 0.291. This shows that the Efficiency variable is able to explain the Deficit variable by 29.1%, while the remaining 70.9% is influenced by other factors outside the research model. This shows that the budget deficit is not only influenced by budget efficiency, but can also be influenced by various other factors such as regional income, regional spending, balancing funds, inflation, and other economic conditions.

The results of this study align with research conducted by Anggia Ramadhan and Nadia Ika Purnama, which showed that the budget deficit is influenced by several factors, such as revenue sharing funds, regional original revenue, and regional spending. Furthermore, research by Aryo Irvan Tode, Nikson Tameno, and Maria PL Muga also showed that regional spending and financing receipts influence the budget deficit. This indicates that the budget deficit is influenced by various factors, so the budget efficiency variable in this study can only partially explain the variation in the budget deficit.

discussion

The Effect of Budget Efficiency on Regional Budget Deficit in Riau Province

This study aims to analyze the effect of budget efficiency on regional budget deficits. Based on the results of a simple linear regression analysis that has been conducted, the regression coefficient obtained is -0.525 with a significance value of 0.027, which is smaller than 0.05. These results indicate that the budget efficiency variable has a significant effect on regional budget deficits. The negative regression coefficient value indicates an inverse relationship between budget efficiency and regional budget deficits. This means that every increase in budget efficiency by one unit will reduce the budget deficit by 0.525 units. Thus, the hypothesis that budget efficiency affects regional budget deficits is accepted. This shows that the more efficient budget management carried out by regional governments, the smaller the possibility of a budget deficit. The results of this study are related to the theory of budget efficiency contained in the theoretical study section. Where Budget efficiency is defined as the government's ability to manage finances economically, not wastefully, and on target to achieve predetermined goals (Rahmadhani 2022). When local governments are able to manage spending more efficiently and avoid waste, they can reduce expenditures without compromising the quality of public services. This spending control can directly reduce the potential for budget deficits. In other words, the more efficient budget management is, the less likely it is that expenditures will exceed regional revenues. Furthermore, the results of this study also relate to the budget deficit theory, which states that a deficit occurs when government spending exceeds revenues earned in a given period (Rahmadhani 2022). Based on the results of this study, budget efficiency plays a role as a mechanism for controlling expenditure. If expenditure can be controlled through efficient budget management, the difference between revenue and expenditure can be narrowed, thereby reducing the budget deficit. This reinforces public finance theory, which states that fiscal discipline and spending efficiency are important instruments in maintaining a balanced government budget.

The results of this study also align with several previous studies related to government financial management and budget deficits. Research conducted by Anggia Ramadhan and Nadia Ika Purnama showed that regional spending influences the budget deficit in the North Sumatra Provincial Budget (APBD) (Ramadan and Full Moon 2021). This indicates that regional expenditure management plays a significant role in determining budget deficits. These findings align with the findings of this study, which demonstrate that efficient budget management can reduce regional budget deficits. Furthermore, research conducted by Aryo Irvan Tode, Nikson Tameno, and Maria PL Muga also shows that regional expenditure significantly impacts budget deficits in district/city governments in East Nusa Tenggara Province (Ramadan and Full Moon 2021). These findings reinforce the findings of this study, which show that controlling government spending through budget efficiency is a crucial factor in maintaining regional budget balance. This research is also supported by research by Ulfa Jamilatul Farida, who explains that budget efficiency, from a sharia economic perspective, is part of an effort to maintain public welfare and avoid waste in state financial management (Farida 2025). This is in line with the results of this study, which show that increasing budget efficiency can reduce the regional budget deficit. Contextually, Riau Province is a region that is highly dependent on the natural resources sector. The structure of regional revenue is heavily influenced by fluctuations in commodity prices on the global market. When revenue declines due to these external factors, the risk of a budget deficit increases. Under these conditions, budget efficiency is a crucial strategy for local governments to maintain fiscal stability. The results of this study indicate that strengthening spending efficiency can be one solution to reducing the pressure of the regional budget deficit.

Budget efficiency and budget deficit in the perspective of Islamic economics.

From an Islamic economic perspective, budget efficiency can also be analyzed through several basic principles, namely the prohibition of waste (israf), justice (al-'adl), transparency (amanah), and the prohibition of usury (riba). The first principle is the prohibition of israf (waste). In Islamic economics, israf means the excessive and disproportionate use of assets. Islam strictly prohibits waste in the management of assets, including in the management of state finances. Budget deficits often occur due to uncontrolled or inefficient government spending. Based on research results, budget efficiency has a negative and significant impact on regional budget deficits. This indicates that when budget efficiency increases, the budget deficit will decrease. Therefore, it can be concluded that increased budget efficiency indicates efforts by regional governments to reduce waste (israf) in regional financial management. This means that the results of this study did not find strong indications of excessive wasteful practices, because budget efficiency has been proven to be able to reduce regional budget deficits.

The second principle is justice (al-'adl). In Islamic economics, budget management must be conducted fairly and in favor of the interests of the wider community. If the budget is not managed efficiently and the budget deficit increases, the government may experience limitations in providing public services. This has the potential to create development inequality. Therefore, budget efficiency can support the creation of fiscal justice because available resources can be allocated more optimally to meet community needs. The results of the study indicate that increasing budget efficiency can reduce regional budget deficits. This indicates that more efficient budget management can support the creation of fiscal justice, because regional financial resources can be allocated more optimally to meet community needs. Therefore, the results of this study indicate that the implementation of budget efficiency has the potential to support the principle of justice in regional financial management. The third principle is transparency and accountability (amanah). The government, as the manager of public funds, has a responsibility to manage the budget openly and responsibly. Budget efficiency cannot be achieved without a sound oversight and transparency system. When financial management is carried out transparently, the potential for budget leakage and misuse can be minimized, thereby reducing the budget deficit. Based on research findings showing that budget efficiency has a significant impact on reducing the budget deficit, this indicates that regional budget management has led to better management practices. Therefore, it can be concluded that increased budget efficiency potentially reflects efforts to increase transparency and accountability in regional financial management. The fourth principle is the prohibition of usury. From an Islamic economic perspective, usury is prohibited because it can lead to economic instability and injustice. Prolonged budget deficits can encourage the government to finance itself through interest-based debt. Therefore, controlling the deficit through increased budget efficiency is a crucial step to prevent the government from over-reliance on financing that potentially contains elements of usury.

Based on the research results, increasing budget efficiency can reduce the regional budget deficit. By reducing the budget deficit, the government's need for financing through interest-based debt can be minimized. Therefore, budget efficiency not only functions to maintain regional fiscal stability but also has the potential to reduce dependence on financing containing elements of usury. The implications of this research indicate that regional governments need to improve the quality of budget planning and management to ensure more efficient budget use. Furthermore, increased transparency and accountability in regional financial management are also necessary to ensure that every use of public funds can provide optimal benefits to the community. However, this study has several limitations, such as limited research data and a research scope that is only focused on one region, namely Riau Province. Therefore, future research is expected to use a broader regional scope and include other variables that can influence the regional budget deficit. Overall, the results of this study indicate that budget efficiency plays a significant role in reducing the regional budget deficit. With more efficient budget management, it is hoped that regional financial conditions will be more stable and able to support sustainable regional economic development.

Conclusion

Based on the analysis and discussion, budget efficiency has a significant and negative effect on the regional budget deficit. This is indicated by the regression coefficient value of -0.525 with a significance level of 0.027 (<0.05). This means that any increase in budget efficiency will reduce the level of the regional budget deficit. These results indicate that more effective and targeted expenditure management is able to maintain regional fiscal stability. It can be concluded that budget efficiency partially affects the regional budget deficit. Thus, the research hypothesis stating that budget efficiency affects the budget deficit is accepted. In accordance with the research objectives, this study successfully proves that increasing budget efficiency is one of the important factors in controlling the regional budget deficit. Furthermore, from an Islamic economic perspective, budget efficiency is in line with the principles of prohibiting israf (waste), fairness in budget distribution, transparency (amanah), and efforts to avoid dependence on financing that potentially contains elements of usury. Thus, efficient budget management not only has an economic impact but is also in line with sharia values in public financial management. For the Regional Government, the Regional Government in Riau Province is expected to continue to improve efficiency in budget management by minimizing unproductive spending and strengthening the monitoring and transparency system to maintain regional fiscal stability. For Further Researchers, Further research is expected to add other variables that have the potential to influence the budget deficit, such as local revenue (PAD), economic growth, or regional debt levels, so that the research results become more comprehensive. For Sharia Economic Development, it is hoped that this research can be a reference in developing regional fiscal policies based on Islamic economic principles, especially in the application of the values of efficiency, justice, transparency, and avoidance of usury elements in public financial management.

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