Analysis Of The Effect Of Inflation, Exchange Rate And Economic Growth On Retail Sukuk Series SR-015 Case Period Of 2021-2024

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Abstract

The purpose of this study is to analyze the effect of inflation, exchange rates, and gross domestic product on the yield of SR-015 retail sukuk. This study was conducted in order to find a solution to the problem of rising inflation, which can reduce the real value of the SR-015 series yield. In addition, fluctuations in the exchange rate against the US Dollar also affect investor sentiment, causing demand for retail sukuk to decline, which has an impact on the secondary market. When economic growth slows down, investor confidence in retail sukuk may weaken, causing sukuk yields in the secondary market to rise as sukuk prices decline. This research is quantitative in nature, employing VAR/VECM analysis methods. The data type used is time series data from September 2021 to September 2024. The data sources are obtained from monthly statistical reports on the official website of Bank Indonesia and the Directorate General of Financing and Risk Management (DJPPR) of the Ministry of Finance. The results of the analysis show that in the short term, there is no significant influence of the three variables on the yield of the SR-015 Retail Sukuk series. However, in the long term, the inflation and gross domestic product variables show a significant influence, while exchange rate does not have a significant influence. These findings have important implications for investors and policymakers in understanding the dynamics of the Sukuk market and its impact on macroeconomic conditions.

***Keywords**: economic growth, exchange rate, inflation, sukuk yield, VAR/VECM.*
JEL Codes : G12, Z12

INTRODUCTION

The capital market carries out two functions at once, for economic and financial as well, so it has a big role in a country's economy. Differences can also be seen in the context of conventional or sharia basis. One of the instruments of the Islamic capital market is sukuk, which is intended to collect investor funds by using underlying assets such as ijarah (rent), mudharabah (profit sharing), musyarakah, or others (Hendriyani, 2020). The development of sovereign sukuk in Indonesia has fluctuated over the past few years in line with Indonesia's economic growth. The factual conditions can be seen, among other things, in the issuance of retail sukuk series SR-001 to series SR-015. At the initial issuance, the retail sukuk sales volume was Rp5.56 trillion, exceeding the government's target of only Rp1.7 trillion with a total of 14,295 investors. After the peak at SR-008, the volume of issuance appeared to fluctuate, but never again reached such high numbers. These fluctuations can reflect market conditions, government policies, or external factors or macroeconomic factors such as inflation, exchange rates and GDP which influence the demand for this sharia investment instrument (Nurhayadi, et al., 2020).

Sovereign sukuk act as a source of financing for sustainable infrastructure development that can be utilized by the entire community and is thought to be greatly influenced by macroeconomic conditions. The macroeconomic conditions referred to include inflation, exchange rates and economic growth. Inflation can occur due to market mechanisms and several other things, such as increased public consumption, excess liquidity in the market that triggers consumption, or even speculation that occurs due to the uneven distribution of goods. (Kurniawan & Masitoh, 2020). Various factors such as financing, trade, inflation rate, and the amount of money in circulation play a role in supporting the stability and economic growth of a country. The interaction of these factors will determine whether the direction of the economy is on the right track or not (Yang & Shafiq, 2020 in Nuriawati, 2023).

Increased purchasing power will also increase demand for sukuk, which will result in lower yields in the secondary market. As a result, an increase in GDP will be accompanied by a decrease in sukuk yields. This is related to Gross Domestic Product (GDP), which can be used as a measure of a country's economic well-being (Nurmalasari, et al., 2023).

For the exchange rate factor, Thorbecke (2020), stated that the increase in the Rupiah exchange rate against foreign currencies helps attract investors. This is because if the Rupiah exchange rate strengthens, many investors want to invest in shares. If the Rupiah exchange rate weakens, foreign currencies will strengthen, which could indicate a decline in the country's economic conditions and will reduce investor interest in investing. A study conducted by Gusniarti & Primasuci (2019) stated that the level of demand for sukuk is influenced by the exchange rate (Hanifah & Pantas, 2022). In contrast, Ardiansyah & Lubis (2017) found that the level of demand for sukuk was not influenced by the exchange rate.

The general guideline used by investors and market players in monitoring the value of sukuk portfolios is to observe the movement of the yield curve and coupons. Several economic parameters are known to influence the yield level of a country's retail sukuk, including Gross Domestic Product (GDP), inflation rate, and exchange rate. Although there are many other macroeconomic indicators, these three parameters are considered quite clear in representing economic conditions (Fitriyah & Ryandono, 2020). Good conditions for investment are usually associated with improvements in domestic macroeconomic conditions, so that if domestic macroeconomic conditions are good, this will have a positive impact on investment activities (Hendriyani, 2020).

Several previous studies have suggested the need for studies examining how macroeconomic variables influence sukuk growth in Indonesia from 2021 to 2024. Based on those facts, this research was conducted within the framework of identifying and analyzing the influence of macroeconomic variables such as inflation, exchange rates, and GDP on retail sovereign sukuk SR-015. In detail, this study was conducted in order to analyze (1) the long-term and short-term impact of inflation on retail government sukuk SR-015, (2) the long-term and short-term influence of exchange rates on retail government sukuk SR-015, and (3) the long-term and short-term influence of GDP on retail sovereign sukuk SR-015.

LITERATURE REVIEW

The most fundamental thing in the practical world of investment in capital markets and money markets is the problem of signal indication which is the basis for the emergence of *signaling theory*. Signaling theory is a theory that refers to a form of information in the form of signals captured by investors, so that investors can consider their decisions to take action related to investments. This signal relates to how the company presents the prospects of the securities offered, whether they will generate profits or not. The better the company's prospects, the greater the investor's interest in investing (Kurniawan et al., 2020). Sharia bonds or Sukuk in DSN fatwa No.32 of 2002 are long-term securities issued by issuers to sharia bond holders and require issuers to pay income to sukuk holders in the form of profit sharing, margin or fees (Wafi et al., 2020).

Inflation could be caused by higher demand than supply, while some economists argue that inflation occurs because of the high amount of money in circulation. However, all economists agree that inflation is characterized by rising prices. Trading in the secondary market involving public debt instruments such as conventional and sharia bonds plays an important role in keeping inflation rates low (Hanifah & Pantas, 2022).

The real exchange rate between two countries is calculated based on the nominal exchange rate and price levels in each country. The exchange rate is the price of a currency compared to another currency, thus affecting the national economy. In the Indonesian context, this is especially true when the value of the US dollar increases, which impacts the value of the rupiah, which then weakens the value of the rupiah. Conversely, when the US dollar depreciates, the rupiah will strengthen, thereby increasing national economic stability (Nurhayadi et al., 2020).

Economic growth reflects an increase in people's economic activity which has an impact on increasing the production of goods and services and increasing welfare. The issue of economic growth is usually

associated with long-term problems. A country's ability to produce goods and services tends to increase over time, which can be influenced by an increase in the number or quality of production factors. Investments made in the past contributed to an increase in the number of capital goods and production capacity in the present, which ultimately led to an increase in overall production capacity (Nuriawati, 2023).

According to Roedyhantoro & Cahyono (2019) GDP is a measure of the number of products purchased by a country and the market value generated by final goods and services. Gross Domestic Product (GDP) can be viewed in two ways, whether as the sum of spending on the output of economic goods and services or as the sum of the economy as a whole, so that the GDP level shows the economic performance of a country, and GDP growth shows the phenomenon of economic growth. With the increase in state revenue, the performance and productivity of the capital market will change. In addition, economic growth can encourage investors to invest their funds in the capital market (Hanifah & Pantas, 2022).

Yield in investment is the rate of return or profit that investors expect from the investment they have made. Investor interest in purchasing sukuk is influenced by the yield level. The higher the rate of return offered, the more likely investors are to be interested in purchasing sukuk, as it is in line with expectations. Yield also reflects the size of the sukuk coupon itself and has an inverse relationship with the sukuk price (Nurhayadi et al., 2020).

Sukuk transactions are not included in the category of loan agreements, but rather are participation-based. This is because debt securities can give rise to the perception of interest, which is not permitted in sharia. Therefore, transactions in sukuk are based on investment principles, not borrowing and lending. Because investment is the ownership of the fund owner (asset), he has the right to sell it to other parties. Sukuk and bonds are two investment instruments that are often used as sources of funding and investment options. Despite having the same goal, both have fundamental differences, especially in terms of the nature of the instrument and its income.

Within the framework of this study, macroeconomic variables are factors that influence the value of Retail Sukuk in Indonesia. In this framework, independent variables are measured through the dimensions of dependent variables. Diagrammatically, the concept in this research is illustrated in a research framework as follows:

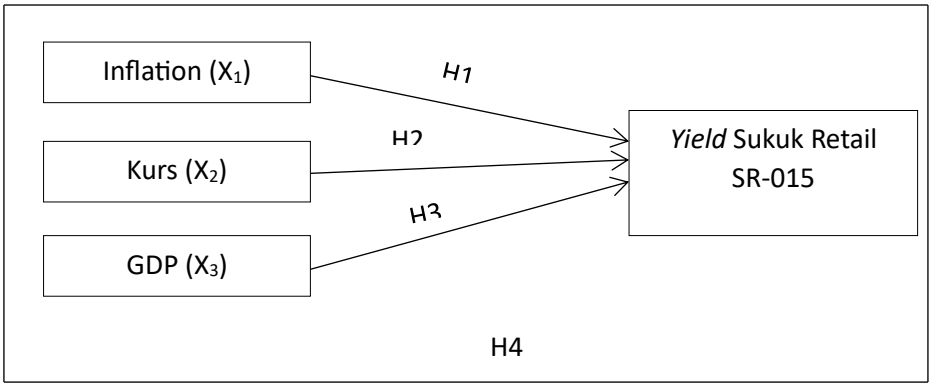

Figure 1. Research Framework
Source: Developing model, 2025

RESEARCH METHOD

Only retail sukuk series listed on the Indonesia Stock Exchange (IDX) are included in this research population in the form of Sharia Government Securities (SBSN). From this population, the sample taken for this research is one series of retail sukuk that matures in 2024, known as SR-015. The sampling method used is purposive sampling, which is a sampling method based on the fact that the sample has certain, clear, and complete characteristics that are considered representative of the population (Agung & Yuesti, 2019 in Nasution et al., 2023). The type of data used is secondary data using time series data. Data is

taken monthly from the official websites of the Ministry of Finance and Bank Indonesia. In detail, the secondary data taken are:

1. Retail State Sukuk data series SR-015 obtained through an application to the Directorate General of Financing and Risk Management (DJPPR), Ministry of Finance which can be accessed through the link https://e-ppid.kemenkeu.go.id/in/home in the form of monthly data for the period September 2021 – September 2024.
2. Inflation data obtained from the official Bank Indonesia website via the link https://www.bi.go.id/ in the form of monthly data for the period September 2021 – September 2024.
3. Exchange Rate Data obtained from the official Bank Indonesia website via the link https://www.bi.go.id/ in the form of monthly data for the period September 2021 – September 2024.
4. Gross Domestic Product data obtained from the official Bank Indonesia website via the link https://www.bps.go.id/ in the form of quarterly data for the period September 2021 – September 2024 which is then interpolated into monthly data to adjust to other data time periods.

The operational definition of each research variable and its measurement must be clearly described. Table 1 provides an explanation regarding the operational definition of each variable.

Table 1. Operational Definitions and Measurement of Variables

Variable	Variable Concept	Indicator	Measurement Scale
Inflation (X_1)	A continuous increase in the cost or price of goods and services over a certain period of time. (Nurhayadi et al., 2020)	Changes in the Consumer Price Index (CPI) $\pi = \frac{CPIn - CPIn - 1}{CPIn - 1} x100\%$ CPI_n : Consumer Price Index for year n CPI_{n-1} : Consumer Price Index for year n–1	Ratio
Exchange Rate (X_2)	Representation of the currency value or Rupiah exchange rate compared to the US Dollar.(Nurhayadi et al., 2020)	Middle rate = $\frac{Rs + Rb}{2}$ Rs : Selling rate Rb : Buying rate	Ratio
Economic Growth (PDB) (X_3)	Assessing the overall performance of an economy. When economic growth increases, people's purchasing power also tends to rise. (Fitriyah & Ryandono, 2020)	GDP Y on Y GDP = C + I + G + (X-M) C: Consumption I: Investment G: Government Spending X: Export M: Import	Ratio
Yield of Sovereign Sukuk (Y)	The rate of return that investors expect when investing in sovereign sukuk. (Nurhayadi et al., 2020)	*Yield* to Maturity (YTM)	Ratio

This research basically hypothesizes macroeconomic modeling with the Error Correction Model (ECM). The ECM modeling method explains the short-term and long-term behavior of an empirical event related to the relationship between several economic variables. In relation to the research data and hypothesized modeling, several tests were carried out first, consisting of stationarity tests and cointegration tests.

Both short-term and long-term disequilibrium are objects of correction in ECM modeling. This model is useful for avoiding *spurious regression* and modeling time series data as well as providing an explanation of the relationship between long-term and short-term research variables. If the significant and negative ECT (*Error Correction Term*) coefficient value is supported by cointegrated variables, then the ECM

model cannot be used. If the ECT coefficient is positive, then the direction of the variable used will be further from equilibrium in the long run. Based on the background of the problems raised, the ECM regression model developed in the research is as follows:

$$SR = \beta_0 + \beta_1 INF_t + \beta_2 ER_t + \beta_3 GDP_t + \mu_t$$

where SR = yield of sovereign sukuk (%)
INF = quarterly inflation rate (%)
ER = exchange rate of USD for IDR (Rp)
GDP = gross domestic product (%)
$\beta_1, \beta_2, \beta_3$ = regression coefficient
μ = error term
t = period

Tests related to the hypothesized model are carried out as in regression modeling. The partial test (t-statistic) is used to measure the extent to which each independent variable individually influences the variation in the dependent variable. Furthermore, the simultaneous test (F statistic) is used to confirm whether all independent variables in a model simultaneously have an influence on the dependent variable. Finally, a determination test (R^2 coefficient) is carried out to obtain an idea of how much variation in the dependent variable (SR) can be explained by the independent variable (INF, ER, and GDP) or to obtain a measure of the extent to which a model is able to explain the dependent variable.

RESULTS AND DISCUSSION

Research Data

Data presentation is carried out systematically and structured to provide a clear picture of field findings that are relevant to the problem formulation and research objectives. All data displayed is the result of the data collection process using the techniques explained previously. Initial data obtained from relevant sources as described in Table 1 can be seen in Table 2.

Table 2. Monthly Data of Inflation, Exchange Rate, GDP, and Sovereign Sukuk Yield

YEAR	MONTH	Inflation	Exch. Rate	GDP	Sukuk SR-015 Yield
2021	September	1.60	14,307	3.53	4.54
	October	1.66	14,199	6.95	4.39
	November	1.75	14,340	4.99	4.30
	December	1.87	14,269	5.03	4.50
2022	January	2.18	14,381	4.45	4.50
	February	2.06	14,371	4.86	4.52
	March	2.64	14,349	5.02	4.59
	April	3.47	14,418	4.46	5.24
	May	3.55	14,544	4.53	5.33
	June	4.35	14,848	5.46	5.12
	July	4.94	14,958	4.66	5.38
	August	4.69	14,875	4.70	5.39
	September	5.95	15,247	5.73	5.88
	October	5.71	15,542	4.88	6.59
	November	5.42	15,737	4.99	6.00
	December	5.51	15,371	5,01	6.05
2023	January	5.28	14,979	5,12	6.20
	February	5.47	15,274	5,21	6.25
	March	4.97	15,062	5,04	6.06
	April	4.33	14,751	5,35	6.15
	May	4.00	14,969	5,42	5.88
	June	3.52	15,026	5,17	5.92
	July	3.08	15,083	5,07	5.92
	August	3.27	15,239	5,52	5.89
	September	2.28	15,526	5,55	5.87
	October	2.56	15,916	5.69	6.57

YEAR	MONTH	Inflation	Exch. Rate	GDP	Sukuk SR-015 Yield
	November	2.86	15,384	5.81	6.46
	December	2.61	15,416	5.88	6.32
2024	January	2,57	15,796	5.88	6.12
	February	2,75	15,673	5.91	6.13
	March	3,05	15,853	5.87	5.95
	April	3,00	16,249	5.91	6.04
	May	2.84	16,253	5.83	5.79
	June	2.51	16,421	5.81	5.74
	July	2.13	16,320	5.86	5.88
	August	2.12	15,409	6.03	6.34
	September	1.84	15,138	6.08	6.37

Descriptive Statistics

Descriptive statistics present a summary of data for each variable in the study, including the mean, minimum, maximum, standard deviation, and total data used. This description can be seen in Table 2 below.

Table 3. Descriptive Statistics

Statistics	Inflation	Exch. Rate	GDP	Sukuk SR-015 Yield
Mean	1.137654	9.627226	1.667275	1.729435
Median	1.098612	9.624963	1.678634	1.773256
Maximum	1.783391	9.706316	1.939303	1.885553
Minimum	0.470004	9.560927	1.261298	1.458615
Standard Deviation	0.392745	0.041808	0.121947	0.127255
Skewness	0.093460	0.118803	– 0.793883	– 0.942417
Kurtosis	1.860699	2.075299	4.817006	2.557573
Jarque-Bera	2.054957	1.405272	8.976370	5.778693
Probability	0.357908	0.495278	0.011241	0.055613
Sum	42.09320	356.2074	61.68919	63.98908
Sum Sq. Dev	5.552940	0.062924	0.535359	0.582977
Observations	37	37	37	37

Source: *Data processed, 2025*

Test of Stationarity

This test uses the Augmented Dickey-Fuller (ADF) indicator which compares the ADF statistical value with the critical value from MacKinnon at a significance level of 5%. If the ADF statistical value is smaller than the MacKinnon critical value, it can be concluded that the data contains a unit root, or it means it is not stationary. On the other hand, if the ADF value exceeds the critical value, the data is considered to be free from unit roots and meets the stationarity requirements. In this study, stationarity testing was carried out at the level level first. The results of these tests are presented in detail in Table 4.

Table 4. Stationarity Test Result at Level Stage

Variable	ADF Value	McKinnon Critical Value			Remark
		1%	5%	10%	
Inflation	-1.305145	-3.626784	-2.945842	-2.611531	Not Stationary
Exch. Rate	-1.758463	-3.626784	-2.945842	-2.611531	Not Stationary
GDP	-0.748496	-3.639407	-2.951125	-2.614300	Not Stationary
Sukuk SR-015 Yield	-1.599612	-3.626784	-2.945842	-2.611531	Not Stationary

Source: *Data processed, 2025*

Table 4 shows the results of the stationary test at the level stage and none of the variables are stationary at this level. Therefore, all variables that are not stationary at the next level will be tested for stationary at the first difference level. The results of the stationarity test at the first difference level are presented in Table 5. The results of the stationary test at the first difference level show that all variables are stationary at this level. Therefore, the modeling stage can be continued to the next step.

Table 5. Stationarity Test Result at First Difference

Variable	ADF Value	MacKinnon Critical Value			Remark
		1%	5%	10%	
Inflation	**-4.916262**	-3.632900	**-2.948404**	-2.612874	**Stationary**
Exch. Rate	**-5.416236**	-3.632900	**-2.948404**	-2.612874	**Stationary**
GDP	**-7.557124**	-3.639407	**-2.951125**	-2.614300	**Stationary**
Sukuk SR-015 Yield	**-6.169780**	-3.632900	**-2.948404**	-2.612874	**Stationary**

Source: *Data processed, 2025*

Test for Optimum Lag

The results of the optimum lag test can be seen in Table 6 below. Based on the test results in the table, it is shown that the smallest Akaike Information Criterion (AIC) value is at lag two (2), by −11.33721. Based on these criteria, the model chosen in this study is lag two (2).

Table 6. Optimum *Lag* Test Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	198.7765	NA*	8.78e-11*	-11.80463*	-11.62324*	-11.74360*
1	208.6760	16.79919	1.28e-10	-11.43491	-10.52793	-11.12974
2	223.0640	20.92794	1.48e-10	-11.33721	-9.704655	-10.78790
3	241.9312	22.86941	1.41e-10	-11.51098	-9.152849	-10.71754

Source: *Data processed, 2025*

Test for VAR Stability

The VAR stability test is carried out so that the estimation results in the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) analyses can be assumed to be valid. In this study, VAR stability testing was carried out using the *VAR Stability Condition Check method* through the *Root of Characteristic Polynomial*. The results of the stability test are presented in Table 7.

Table 7. VAR Stability Test Result

Root	Modulus
0.664806	0.664806
-0.268372 - 0.569521i	0.629586
-0.268372 + 0.569521i	0.629586
-0.007174 - 0.590347i	0.590391
-0.007174 + 0.590347i	0.590391
-0.377521 - 0.093747i	0.388986
-0.377521 + 0.093747i	0.388986
0.265503	0.265503
No root lies outside the unit circle.	

Source: *Data processed, 2025*

The model is said to be stable if all root values have a modulus of less than one (<1). Referring to the stability test results shown in Table 7, it is known that the modulus value in this study is in the range of 0.664806 to 0.265503. All of these values are below one, which means that the model stability conditions have been met. Therefore, it can be confirmed that the model in this study is in a stable condition and is suitable for use in further analysis.

Cointegration Test

In this study, cointegration testing was carried out using the Johansen method through the *Trace Statistics Test*. Cointegration is assumed to occur if the *Trace Statistic* value exceeds the critical value at the specified significance level, which indicates a long-term relationship between the variables in the model. The results of the cointegration test can be seen in Table 8. Based on the test results, the trace statistic value of 0 (none) reached 65.41144 or bigger than the critical value at a significance level of 5%. This indicates the existence of cointegration among the variables been analyzed. Thus, it can be interpreted that there is a significant long-term relationship between macroeconomic variables been involved as Inflation, Exchange Rate, Gross Domestic Product on the long-term return on retail sukuk series SR-015.

Table 8. The Result of Cointegration Test

Hypothesized No. Of CE(s)	Trace Statistic	0.05 Critical Value
None *	65.41144	47.85613
At most 1	25.22278	29.79707
At most 2	7.058111	15.49471
At most 3	0.169624	3.841465

Source: *Data processed, 2025*

Granger Causality Test

In the context of this research, the Granger Causality Test method is applied to analyze the causal relationship between the yield variable and several macroeconomic indicators, namely Inflation, Exchange Rate, and Gross Domestic Product. Through this test, it is hoped that the direction of the causal relationship between these variables can be determined. The results of the Granger causality test are presented in Table 9.

Table 9. The Result of Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
X1 INFLASI does not Granger Cause Y YIELD	35	0.19015	0.8278
Y YIELD does not Granger Cause X1 INFLASI		3.29495	0.0509
X2 KURS does not Granger Cause Y YIELD	35	0.64809	0.5302
Y_YIELD does not Granger Cause X2_KURS		1.59893	0.2189
X3 PDB does not Granger Cause Y YIELD	35	0.02977	0.9707
Y YIELD does not Granger Cause X3 PDB		5.01130	0.0133

Source: *Data processed, 2025*

The results of the test show that there is a causal relationship between several pairs of variables which can be interpreted and analyzed in the following section.

1. The probability value for the effect of inflation on yields was recorded at 0.8278, while the effect of yields on inflation had an F-Statistic probability value of 0.0509. Both values are higher than the significance limit of 5% or 0.05. Based on these results, it can be concluded that there is no causal relationship between the inflation variable and returns and vice versa.
2. The probability value for the influence of exchange rates on returns was recorded at 0.5302, while the influence of returns on exchange rates had an F-Statistic probability value of 0.2189. Both values are higher than the significance limit of 5% or 0.05. Based on these results, it can be concluded that there is no causal relationship between the exchange rate variable and returns and vice versa.
3. The relationship between the gross domestic product variable and the yield variable can be seen through the F-Statistic probability value of 0.9707 which is greater than the critical value of 5% or 0.05 and the relationship between the yield variable and the gross domestic product variable can be seen through the F-Statistic probability value of 0.0133 which is smaller than the critical value of 5%. Thus, it can be concluded that there is a relationship between the yield variable and gross domestic product, namely that only the yield variable statistically influences gross domestic product and vice versa.

Estimation of *Vector Error Correction Model* (VECM)

The estimation procedure using Vector Error Correction Model (VECM) modeling was carried out after the results of the cointegration test showed a long-term relationship between variables, so the VECM approach was chosen as the analysis model in this study. The VECM model is designed to analyze the relationship between variables, both in the long term and the short term, thus providing a more comprehensive understanding of the dynamics of the relationships that occur. The estimation results of the VECM model are presented in detail in Table 10. The table shows the short-term and long-term influences between the independent variables and the dependent variable. If the t-statistic value is greater than the t-table value, there is a significant influence between the independent variable and the dependent variable. In this study, the t-table value for df = 33 was 1.69236. Based on the results of the Vector Error Correction Model (VECM) estimation test in this study, it can be concluded that no variables have a short-term influence. However, there is a significant long-term influence on two variables, which are the Inflation and GDP. Based on the explanation of the test results above, the short-term VECM estimation model in this study can be written as follows:

$$SR = 0.000351 - 0.66393\ INF_{-2} - 0.162761\ ER_{-2} + 0.012090\ GDP_{-2} + \varepsilon$$

Based on the estimation results using the VECM method, no variables were found to have a short-term influence on the yield variable of the Retail State Sukuk series SR-015. Furthermore, based on the explanation in Table 10, the long-term VECM model estimation in this study can be written as follows:

$$SR = -0.331434\ INF_{-2} + 1.336065\ ER_{-2} - 4.143866\ GDP_{-2} + \varepsilon$$

Table 10. Vector Error Correction Model (VECM) Estimation Test Results

Short Term		
Variable	**Coefficient**	**t-Statistic**
CointEq1	-0.061115	[-0.62065]
Inflation	-0.66393	[-0.74135]
Exchange Rate	-0.162761	[-0.32425]
GDP	0.012090	[0.04140]
Long Term		
Variable	**Coefficient**	**t-Statistic**
Inflation	-0.331434	**[-1.83167]**
Exchange Rate	1.336065	[0.74379]
GDP	-4.143866	**[-7.48750]**

Source: *Data processed, 2025*

The interpretation are as follows:

- The inflation coefficient value of −0.331434 indicates that inflation has a significant negative effect on the yield of retail government sukuk SR-015. If other variables are assumed to remain constant (ceteris paribus), then for every 1 unit increase in inflation, the yield rate of retail government sukuk SR-015 will decrease by 0.331434 units.
- The exchange rate coefficient value of 1.336065 does not affect the yield of retail government sukuk SR-015 because the t-statistic value < t-table, that is 0.74379 < 1.69236.
- The GDP coefficient value of −4.143866 indicates that GDP has a significant negative effect on the yield of retail government sukuk SR-015. If other variables are assumed to remain constant (ceteris paribus), then for every 1 unit increase in the exchange rate, the yield rate on retail government sukuk SR-015 will decrease by 4.143866 units.

In general, it can be concluded that during the period from September 2021 to September 2024, of the three variables, namely inflation, exchange rate, and GDP, only two variables consist of inflation and GDP, have a long-term influence on the yield variable of the Retail Government Sukuk series SR-015. None of the variables have a short-term influence on the yield variable of Retail State Sukuk series SR-015.

Impulse Response Function (IRF) Test

Impulse Response Function (IRF) testing is carried out to observe how a variable reacts when a shock occurs to another variable in the system, as well as to determine the duration of time required by the variable to respond to the change. This analysis is important in understanding the dynamics of interactions between variables over a certain period of time. The complete results of the IRF test can be seen in Table 11 and Figure 2.

Based on Figure 2, in the first period, the yield variable has not responded to the shock to the inflation variable. Entering the second period, a negative reaction from the yield variable to the inflation variable began to appear with a value of -0.003372 percent. However, in the 3rd period the response was still negative at -0.013315 percent. Furthermore, in the 4th period, there was a positive response of 0.004387 percent, which was then followed by a negative response of -0.002439 percent in the 5th period. This response pattern shows that the shock from inflation to yield is fluctuating until it reaches the 7th period. After that, the 8th period of the shock effect has completely subsided. From the 8th period to the 37th period, the yield variable consistently responded negatively to changes in the inflation variable.

Table 11. Impule Response Function (IRF) Test Results

Period	*Yield*	Inflation	Exch. Rate	GDP
1	0.061571	0.000000	0.000000	0.000000
2	0.025467	-0.003372	-0.004374	0.013392
3	0.025918	-0.013315	0.000694	-0.002233
4	0.038856	0.004387	0.002045	-0.002780
5	0.030344	-0.002439	-0.003260	0.007834
33	0.032265	-0.003776	-0.000651	0.002527
34	0.032263	-0.003730	-0.000643	0.002526
35	0.032258	-0.003742	-0.000654	0.002535
36	0.032271	-0.003758	-0.000651	0.002527
37	0.032258	-0.003737	-0.000646	0.002531

Source: *Data processed, 2025*

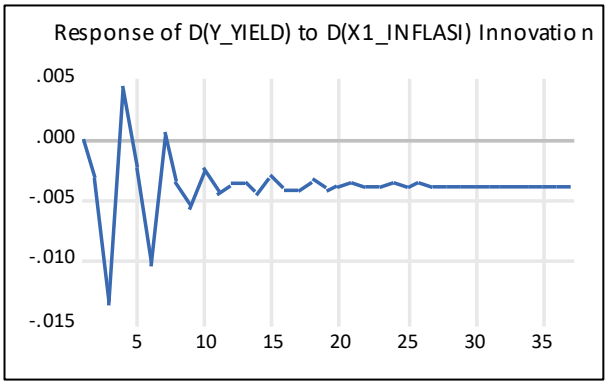

Figure 2. Multi Graphs Results of IRF Inflation Test
Source: *Data processed, 2025*

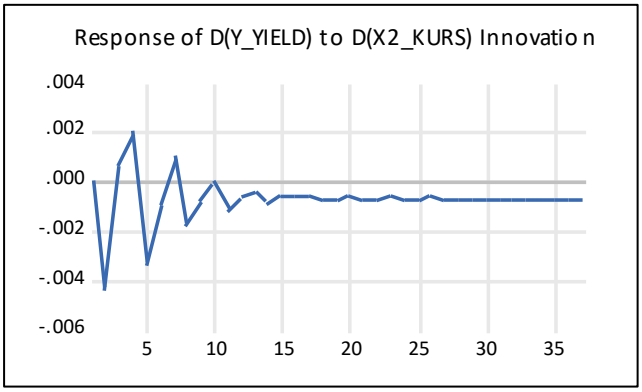

Figure 3. Multi Graphs Results of IRF Exchange Rate Test
Source: *Data processed, 2025*

Based on Figure 3, it can be seen that in the first period, the yield variable has not responded to the shock to the exchange rate variable. Entering the second period, a negative reaction began to be seen from the yield variable to the exchange rate variable with a value of -0.004374 percent. However, in the third period there was still a positive response of 0.000694 percent. Likewise, in the fourth period, there was still a positive response of 0.002045 percent, which was then followed by a negative response of -0.003260 percent in the fifth period. This response pattern shows that the shock from yield to exchange rate is fluctuating until it reaches the seventh period. After that, starting from the eighth period the effects of the shock had completely subsided. Starting from the eighth period to the thirty-seventh period, the yield variable consistently responded negatively to changes in the exchange rate variable.

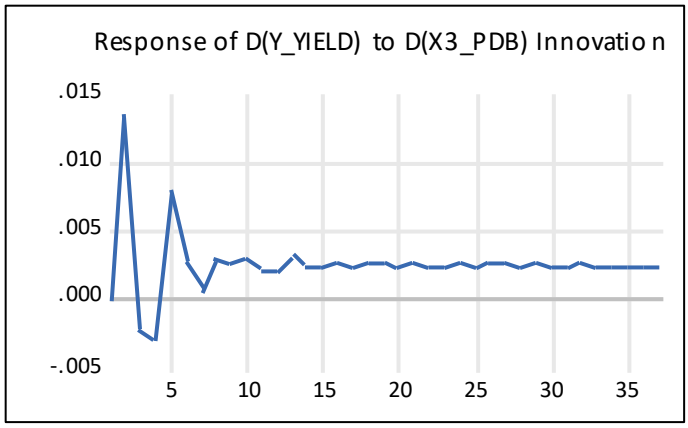

Figure 4. Multi Graphs Results of Gross Domestic Product IRF Test
Source: *Data processed, 2025*

Furthermore, Figure 4 shows that in the first period, the yield variable has not responded to the shock to the GDP variable. Entering the second period, a positive reaction began to be seen from the yield variable to the GDP variable with a value of 0.013392 percent. However, in the third period the response became negative by – 0.002233 percent. Furthermore, in the fourth period, the yield still gave a negative response of – 0.002780 percent, which then returned to a positive response of 0.007834 percent in the fifth period. This response pattern shows that the shock from yield to exchange rate is fluctuating until it reaches the fourth period. After that, the fifth period of the shock effect has completely subsided. Starting from the fifth period to the thirty-seventh period, the yield variable consistently responded positively to changes in the GDP variable.

***Forecast Error Variance Decomposition* (FEVD) Test**

Forecast Error Variance Decomposition (FEVD) is a method used to describe the variation of a number of variable innovations, with the assumption that these innovations are not correlated with each other. Through this analysis, FEVD provides an overview of how large the proportion of shocks a variable contributes to the fluctuations of other variables, both in the current period and in future periods. This information is important for understanding the dynamics and direction of influence between variables over a specific time period. The results of the FEVD test can be seen in Table 12.

The results of the Forecast Error Variance Decomposition (FEVD) test measure the extent to which shocks from the yield, inflation, exchange rate, and GDP variables contribute to the variation in changes in the yield variable itself. In the first period, changes in the yield variable were influenced by the variable itself, with a contribution reaching 100 percent. Meanwhile, the impact of shocks from other variables began to be seen in the second period, where yield still dominated with a contribution of 95.48677 percent, followed by inflation of 0.244557 percent, exchange rate of 0.411566 percent, and GDP of 3.857105 percent. In subsequent periods, the contribution of shocks to the variables of yield, inflation, exchange rates, and GDP experienced less significant changes, indicating the stability of the contribution of each variable over a longer period.

Table 12. Forecast Error Variance Decomposition Test Results

Period	S.E.	*Yield* of SR-015	Inflation	Exch. Rate	GDP
1	0.061571	100.0000	0.000000	0.000000	0.000000
2	0.068187	95.48677	0.244557	0.411566	3.857105
3	0.074189	92.86719	3.427491	0.356428	3.348889
4	0.083934	93.98507	2.951011	0.337821	2.726102
5	0.089686	93.76277	2.658559	0.427977	3.150696
33	0.194586	96.87925	1.845373	0.132936	1.142437
34	0.197295	96.91116	1.830792	0.130373	1.127676
35	0.199967	96.94099	1.817213	0.127983	1.113818
36	0.202606	96.96917	1.804581	0.125702	1.100544
37	0.205208	96.99619	1.792260	0.123524	1.088023

Source: *Data processed, 2025*

In the 20th period, the Forecast Error Variance Decomposition estimate shows that the largest contribution of shocks to changes in the yield variable still comes from the variable itself, namely 96.21485 percent. Meanwhile, the contribution from the inflation variable was 2.148621 percent, followed by the exchange rate at 0.186088 percent, and GDP at 1.450439 percent. Entering the final period of the 37th, the proportion of contributions experienced a slight shift, where yield remained dominant with a contribution of 96.99619 percent, followed by inflation of 1.792260 percent, GDP of 1.088023 percent, and the exchange rate which had the smallest influence of 0.123524 percent. Thus, in the 37th period, the order of variables based on the magnitude of the contribution of the shock's influence on yield starts from yield itself, followed by inflation, GDP, and the lowest exchange rate.

Discussion

The modeling shows that there is a non-unidirectional relationship between the inflation variable and the yield of Retail Government Sukuk series SR-015 in the long term or there is a significant relationship between inflation as an indicator of macroeconomic stability and the yield offered on the sukuk market. According to Sukirno (2016), high inflation rates will not encourage economic growth. Production activities become less profitable because production costs continue to increase. As a result, capital owners tend to divert their funds to speculative activities, such as investing in assets that do not directly increase national income, such as land, property, and buildings, rather than investing them in the goods and services sector, which can actually weaken overall economic activity (Aisyaturrahmah & Aji, 2021).

In this study, the effect of inflation on the yield of government sukuk is analyzed from the perspective of the public as investors. Inflation is characterized by rising prices which causes a decrease in people's purchasing power, because their income does not increase. Inflation also has an impact on reducing the real value of money in circulation, because the nominal amount of money needed to purchase goods or services becomes greater. This also affects investment instruments such as sukuk. Sayed (2013) stated that sukuk have fixed income characteristics. When inflation increases, the risks faced by investors become higher compared to the returns obtained, so that the real value of sukuk investments decreases. Therefore, the higher the inflation rate, the lower the public's interest in investing in corporate sukuk because the returns received are unable to keep up with the rate of inflation (Aisyaturrahmah & Aji, 2021).

On the other hand, the results of this study are not in line with previous research conducted by Fitriyah & Ryandono (2020) which examined the determinants of State Retail Sukuk yields in the 2009–2017 period. The study found that inflation had an insignificant negative effect on the yield of state retail sukuk. Previous research conducted by Wafi et al., (2020) also found that inflation had no influence on the long-term equilibrium of government sukuk growth. If referred from an Islamic Economic perspective, a Muslim is encouraged to invest as stated by Allah in QS. Al-Hasyr; 7: “So that wealth does not circulate only among the rich between you”. This verse reflects the importance of investing to encourage a more equitable distribution of wealth, so that it does not only circulate among the wealthy. Although inflation can reduce public interest in purchasing sukuk due to weakened purchasing power, there are a number of other investment alternatives that can be considered, such as investing in tangible real assets, for example precious metals, property, and the like.

Exchange rate fluctuations, both strengthening and weakening, have been proven to have no impact on changes in the SR-015 sukuk yield. These results are in line with research by Munir & Rosyidah (2022) which stated that the exchange rate does not have a significant effect on sukuk growth. However, these findings are inconsistent with previous research conducted by Kamila & Tripalupi (2020), which found that the exchange rate had a significant negative effect on the yield of retail government sukuk SR-009 in both the long and short term. Discordant results were also found in research by Kurniawan & Masitoh (2020) which stated that the exchange rate had a positive effect on sukuk growth.

The results of this study also show that Gross Domestic Product in the long term has a significant negative effect on the yield of Retail State Sukuk series SR-015. However, in the short term, it has no effect on the yield of the Retail State Sukuk series SR-015. Macroeconomic factors, such as Gross Domestic Product (GDP), influence the sukuk issued, both directly and indirectly. Directly, when GDP growth increases with the assumption that general economic conditions improve and people's purchasing power increases by 1%, it will cause a decrease in the yield received by sukuk holders by 4.143%.

These results are in line with research by Kamila & Tripalupi (2020) which states that GDP has a significant negative effect in the long term but has no effect in the short term. Contrary to the findings of Munir & Rosyidah's (2022) research, gross domestic product (GDP) had no significant effect on the growth of corporate sukuk in Indonesia. Likewise, the findings from Pramudiyanti's (2019) research state that economic growth does not significantly affect sukuk growth.

CONCLUSION AND SUGGESTION

Based on the results of modeling, testing, and analysis carried out related to the objectives of this research, it can be concluded that the relationship between the influence of inflation, exchange rates, and GDP on the yield of Retail State Sukuk series SR-015. The findings include: (1) inflation in the long term has a significant negative effect on the yield of Retail State Sukuk series SR-015 and in the short term has an insignificant negative effect on the yield of Retail State Sukuk series SR-015; (2) the exchange rate in the long term has a positive but insignificant effect on the yield of Retail State Sukuk series SR-015 and in the short term has a negative but insignificant effect on the yield of Retail State Sukuk series SR-015; and (3) In the long term, GDP has a significant negative effect on the yield of Retail State Sukuk series SR-015 and in the short term, it has an insignificant positive effect on the yield of Retail State Sukuk series SR-015.

Several implications can be drawn from this research's findings. *The first* relates to government policy, which is deemed necessary to maintain a reasonable inflation rate to ensure sukuk instruments, particularly retail sukuk, remain attractive to the public. In addition, fiscal and monetary authorities can consider sukuk designs that are more flexible in response to inflationary pressures, so that the real value of investments is maintained. *The second* is related to the influence of exchange rates on the yield of Retail Government Sukuk series SR-015. This study also implies that exchange rate stability is not the main factor in maintaining the attractiveness of domestic sukuk. Nevertheless, maintaining exchange rate stability remains important in the overall economic context, particularly if one wishes to encourage the issuance of foreign-denominated sukuk or attract foreign investors. Related to the results of this study which provide information on how GDP can affect the yield of Retail State Sukuk series SR-015, *the third* implication is for the government as the sukuk issuer. These results can be taken into consideration in designing sukuk issuance strategies at various phases of economic growth. In improving economic conditions, even if market absorption is high, the returns offered need to remain competitive to attract investor interest.

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