The Volume of Issuance of Government Islamic Securities SR-007 Series, 2015–2018

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Abstract

In Islamic finance, Sukuk instruments are similar to the bond market in conventional finance and are intended to increase long-term investment capital. However, according to Sharia, Sukuk means there is no uncertainty (*Garar*), interest (usury) and gambling (*Maisir*).This is also new in the financial market in Islamic Bank. The government uses Sukuk as an instrument for financing the state budget, and Sukuk financing has contributed to the development and financing of state projects. The amount of Sukuk issuance volume is influenced by external factors such as macroeconomic conditions and internal factors, namely prices and yields of Sukuk. The problem is whether inflation, exchange rates, Sukuk prices and returns affect the volume of Sukuk issuance. Therefore, this research aims to determine the effect of macroeconomic variables (inflation and exchange rates), Sukuk prices and Sukuk yields on the volume of Retail Sukuk issuance in Indonesia, using the Vector Error Correction Model (VECM) research model and the assistance of econometrics EViews 9. The data used in this study are time-series data from April 2015 to March 2018, with a research sample of Retail Sukuk with the latest maturity in March 2018, namely Retail Sukuk SR-007 series. The results of the study show that the inflation and price variables have a long-term significant influence on the volume of Retail Sukuk SR-007 issuance and only yield variables that do not influence both the long- and short-term, while the exchange rate variable has significant long- and short-term effects.

Keywords: issuance volume, retail Sukuk, inflation, exchange rate, Sukuk prices, yield, VECM

1. Introduction

Since the World Bank (2008) stated that Islamic finance has grown exponentially and outperformed conventional financial instruments, many varieties of Sukuk have been offered in Indonesia. This issue of that Islamic finance has grown was later linked to the number of Indonesian Muslims, totalling 231 million but not yet growing rapidly (Pew Research, 2018). The Government of Indonesia used State Government Islamic Securities (SBN) to support innovation and development of the Islamic finance industry, with a positive impact on infrastructure development of USD 16.15 million (Direktorat Jenderal Pengelolaan Pembiayaan dan Risiko Kementerian Keuangan, 2018; Sumaidi, 2018). The increase in outstanding 44 types of Sukuk amounted to Rp 615.39 trillion (an increase of 20%) compared to the outstanding 37 Sukuk in 2017 (Rp 512.33 trillion), indicating positive Sukuk growth that helped finance the State Budget (APBN) deficit and could be used as an instrument for financing project development (Kementerian Keuangan, 2018; Khatimah, 2017).

One of the impacts of government regulation is that the development of Islamic finance has reached a market share of 8.47% of Indonesia's total financial assets (Otoritas Jasa Keuangan, 2018). The contributions of the Islamic capital market beyond the capitalization of shares listed in the Indonesian Syariah Stock Index (ISSI) is equal to 54.94%, or Rp 661.71 trillion. That is why the effect on the price and volume of Sukuk shares issued by the capital market is quite promising (Cheung, Cheung, He, & Wan, 2010). Therefore, the issue of the independent variable of this research discusses the increasing volume of Retail Sukuk issuance (SR) – where SR is a type of Sukuk issued by the state that can be purchased by any Indonesian citizen through a selling agent – that has a value of Rp 2.64 trillion (14%), where the yield given is 0.5% smaller and the number of investors is less than that of the SR-006.

The factual development of retail Sukuk in Indonesia is inseparable from the characteristics of the investment product itself, such as the price of the Sukuk and the level of yield provided and general economic conditions. Many macroeconomic indicators can influence the development of retail Sukuk in Indonesia. Those indicators such as

inflation, income (per capita) and the Rupiah exchange rate against foreign currencies and interest rate (Apriliani, Azib, & Senjiat, 2017). In this case, the authors focus on the variable inflation rate and exchange rate. The inflation rate is an important concern for a stable economic environment for the development of bond and Sukuk markets. High inflation can cause a lack of investor interest (Hansen, 2016; Kuncoro, 2013). The exchange rate was selected because SBSN uses IDR and $ USD transactions, which affect investors' investment decisions. The reason investors consider logical investments is because they have an interest in obtaining long-term benefits for the investments made.

Pricing for securities requires a compelling and credible rate, so investors and publishers must regularly distribute Sukuk with different maturities to create a yield curve (Zulkhibri, 2015). The issuance volume of Sukuk bonds is related to market risk, which includes interest, risk of inflation and exchange rates. Therefore, investors maintain the Sukuk value until the maturity period, without numerous fluctuations that require the support of return analysis (Kamarudin, Kamaluddin, Manan, & Ghani, 2014) because the fluctuating volume of Sukuk issuance can be caused by economic variable shocks (N. Ahmad, Hashim, & Johari, 2015). Some studies on the reaction of the bond market and the stock market show that the transition in the volume of stock issuance affects the decline in bond prices (Abaffy, Bertocchi, Dupačová, Moriggia, & Consigli, 2007). The negative reaction to bond prices also decreases the price of stock market issues (Abad-Romero & Robles-Fernandez, 2006; Jorion & Zhang, 2007). In macroeconomics, inflation is decisive as a market factor, and the volume of issuance is one of the references for investors to invest (Adam & Thomas, 2004; Mohamed Ariff, Iqbal, & Mohamad, 2012). This is also supported by Said & Grassa (2013); Soekapdjo, Nugroho, Badawi, & Utami (2018); and Tim Studi Minat Emiten di Pasar Modal (2009), who state that external factors (such as macroeconomics) are influential because they are difficult to predict and control.

Inflation is an important concern for a stable economic environment for the development of the bond and Sukuk markets. The high value of inflation can cause a lack of investor interest (Hansen, 2016; Kuncoro, 2013). Research by Said & Grassa (2013) found a significant negative effect on the development of the Sukuk market for inflation, which caused a financial crisis due to a decrease in the number of outstanding Sukuk bonds. Therefore, F. Rahman, Paminto, & Nardi, 2016; Yanti, 2016 found that a low inflation rate can provide a positive signal of increased purchasing power towards trade and investment in bonds. Therefore, the Sukuk SR-007 volume by the Indonesian Government continues. In reality, the inflation theory is not suitable for the phenomenon that shows a downward trend in the volume of Sukuk SR-007 issuance when the inflation rate is low. This can be proven in November 2017, the inflation rate was 3.3% but the volume of Sukuk SR-007 issuance was only Rp 796 billion while in December 2017 inflation was 3.61% and was able to reach the issuance volume of Rp 1.804 billion.

Exchange rates are important for monetary policy authorities in achieving price stability. The interest of policy authorities is because the exchange rate has a significant influence on the issuance of Sukuk in the capital market (W. Ahmad & Radzi, 2011). In addition, the exchange rate in Indonesia is not always stable. The exchange rate of the Rupiah (IDR) against the US dollar (USD) has an indirect relationship through investor behaviour (Malkiel, 2015).

Meanwhile, SBSN uses IDR and $ USD transactions, which affects investors' investment decisions. The reason investors consider investment logical is because they have an interest in obtaining long-term benefits for investments made. If $ USD is valued, investors will switch from Sukuk to other investments using foreign exchanges and conversely if $ USD depreciates, investors tend to choose to invest in Retail Sukuk given the certainty of low yield and risk levels. Therefore, the exchange rate is important as one of the macroeconomic factors that also affects the volume of Sukuk issuance (Arshad, Muda, & Osman, 2018; Manab & Sujianto, 2016; Suriani, Majid, Masbar, & Wahid, 2018)

In demand theory, a product is influenced by prices inherent in the product and in terms of investment (Hildenbrand, 2014). If the price of Sukuk is high, the demand for Sukuk will be low, whereas a low Sukuk price will increase demand for Sukuk (Wafa, 2010). Thus, Sukuk offers still fluctuate. Additionally, a low Sukuk price should increase the volume of Sukuk issuance, but the theory is not in accordance with this phenomenon. Where the volume of Sukuk issuance in September 2015 decreased by Rp 8.6 trillion (96%) compared in August 2015 i.e., Rp 10.87 trillion (99.25%). This negative influence is also supported by Rahman *et al.* (2016), which states that prices have a negative effect and are not significant to the demand for Sukuk SR-005 countries. Because there are differences between the theories and phenomena that occur, this research related to Sukuk needs to be reviewed.

The Sukuk yield has the potential for capital gains if there is a tendency for price increases in the secondary market (Huda & Heykal, 2010). This specialty of Sukuk has caused the volume of Sukuk issuance SR 001-SR 010 to grow with yield between 5.90%-12% (Direktur Jenderal Pengelolaan Utang, 2009). Other strong factors that influence investors' investing decisions are yields as payments that can take the form of profit/margin/fee or other forms of

payment in accordance with Sukuk emission agreements granted to Sukuk holders until the end of the Sukuk period (M Ariff, Chazi, Safari, & Zarei, 2017; Melzatia, Doktoralina, & Mahroji, 2018; Sholihin, 2010). The yield rate shows that the Retail Sukuk SR-007 was highest in January 2018 (10.12%), while the lowest yield was in March 2017 (5.97%). Thus, yields stably fluctuate and tend to increase. This is to support research conducted by Mohamed Ariff et al., 2012; Fathurahman & Fitriati, 2013; Naifar, 2016, who found that yields had a positive influence on Sukuk issuance. However, research conducted by Marimin, Mustofa, & Anik (2016) states that there are no differences in the performance of Sukuk and Islamic bonds if measured from each yield. There is an inconsistency in this phenomenon, which is a gap and establishes the need for further research.

Price theory states that prices are closely related to the allocation of resources between different uses or the price of one item relative to other goods (Friedman, 2017). Signalling theory states that information must have relevance that can be utilized by the recipient to be adjusted by the recipient based on the behaviour of the signal (Spence, 1973). Based on the Sukuk Issue, gap and previous research, the title of The Volume of Issuance of Government Islamic Securities SR-007 Series, 2015–2018, we did. The first problem is whether inflation affects the volume of Retail Sukuk issuance. Second, does the exchange rate affect the volume of Retail Sukuk issuance? Third, does the Sukuk price affect the volume of Retail Sukuk issuance? Last, regarding Sukuk issuance, does the Sukuk yield affect the volume of Retail Sukuk issuance?

2. Literature Review

2.1 Theoretical Study

There are four theories on the relevance of research in Sukuk issuance: price theory (Friedman, 2017), demand theory (Hildenbrand, 2014), trading volume theory (Karpoff, 1986) and signalling theory (Spence, 1973). However, market participants need information for interpreting and analysing information as good or bad news (Hartono, 2016). One of information as good or bad news is Sukuk volume which has the potential to obtain capital gains and low risk because the state guarantees 100% of income payments and a high return of 12% gross => 9.6% net compared to other conservative products, such as money market funds or deposits (Abidin, Suhadak, & Hidayat, 2016; Suharto, 2015). In this research, the usual theory used is the grand theory used is signalling theory.

2.2 Sukuk (Sharia Bonds)

The fatwa of the *National Sharia Board* (DSN) explains that Islamic bonds (including Sukuk) are long-term securities based on Sharia principles in Indonesia (Nurhayati & Wasilah, 2014). Sukuk is distinguished according to the contract, Sukuk *Mudharabah* (sukuk based on equity partnership), Sukuk *musyarakah* (joint venture sukuk), Sukuk *Istisna* (Islamic project bond), Sukuk *Ijarah* (lease-based sukuk).

The structure of Sukuk is based on tangible assets, namely the value of Sukuk, which pool of assets can comprise of Murabahah, Ijarah as well as Istisna'a. Therefore, investment income is not based on interest rates but rather rewards and margin/profit-sharing ratios according to what is accrued. Nurhayati & Wasilah (2014) stated that the characteristics of Islamic Sukuk have the same involvement in gains and losses through fixed-asset assets, outstanding assets or *maknawiyah* rights. The purpose of circulating assets is mandatory through the mediation of the syar'i system, where they can be traded, can be rated, can be added to, have legal flexibility with different tax treatments, and can be redeemed based on a transaction or underlying Islamic contract (Widyanto, 2018).

2.3 Retail Sukuk

SR is a Sharia investment product issued by the government and sold to individual Indonesian Citizens (WNI) through a sales agent. There are still three investment risks with Retail Sukuk: risk of default failure, liquidity risk and market risk. However, the advantages for investors who buy Retail Sukuk are a fixed fee every month, the potential for capital gains due to a selling price of Retail Sukuk that is higher than the purchase price, and government-guaranteed investments (low risk). In addition, returns on Sukuk are relatively high at 12% gross => 9.6% net compared to other conservative products, such as money market funds or deposits (Huda & Heykal, 2013; Kementerian Keuangan, 2018). Retail Sukuk investment is, in principle, an investment that is free from the risk of default, namely the failure of the government to pay compensation, and of nominal value to investors.

2.4 Effect of Inflation on Issuance Volume

According to Alagidede & Ibrahim, (2017); Oikawa & Ueda, (2018); Sukirno, (2015) the inflation rate will affect a country's economic development. High inflation will not promote economic development. When inflation is high, capital owners prefer to use their money to buy fixed assets such as land, houses, and buildings. This is because of the large profit level when the goods are resold. Unstable inflation will create uncertainty for economic actors in

making decisions. Empirical experience shows that unstable inflation will complicate people's decisions in consumption, investment and production, which in turn will reduce economic growth (Bank Indonesia, 2018; Keynes, 2018). This condition will have an impact on investment demand in the capital market including Sukuk because few people save their funds in the capital market. Based on this, then H_1: Inflation affects the volume of Retail Sukuk SR-007 issuance.

2.5 Effect of Exchange Rate on Issuance Volume

Exchange rates are used as a measure of prices in international transactions (De Grauwe & Grimaldi, 2018; Mankiw, Quah, & Wilson, 2014; Sukirno, 2015). Determination of a fixed exchange rate is based on the exchange rate system – which sets the value of the foreign exchange rate against the currency of the country concerned with a certain value that does not change in a certain period – Second, Floating Exchange Rate (FER) is the determination of the value of a country's currency determined bythe power of demand and supply on official and Third money markets, namely the Pegged Exchange Rate - PER, which is to associate value exchange with the value of another country's currency (Putong, 2013). Unstable fluctuations in the foreign exchange rate automatically affect trading increases and decreases in bonds (Rahardjo, 2003). Based on this, then H_2: Exchange rates affect the volume of Retail Sukuk issuance.

2.6 Effect of Sukuk Prices on Issuance Volume

Price is one of the factors that can influence the demand for goods and services, including the demand for Sukuk. Essentially the lower the price of an item, the more demand will be for that item. Conversely, the higher the price of an item, the less demand for that item (Sukirno, 2012). In demand theory, what changes the balance along the retail Sukuk demand curve is the interest rate and retail Sukuk prices. In Addition, the investor tends to obtain for buying Indonesian Retail Government Bonds (ORI) compared to retail Sukuk because they have a fixed return with high prices (F. Rahman et al., 2016). Based on research conducted by (Sadeghi, 2015; Wafa, 2010) the price of Sukuk has a significant effect on the volume of retail Sukuk issuance.Based on this, then H_3: Sukuk prices affect the volume of Retail Sukuk SR-007 issuance.

2.7 Effect of Yield on Issuance Volume

Sukuk retail is one investment instrument, so basically, an investor would want a high profit as a result of the purchase of this Sukuk. Before deciding to invest, investors consider the amount of Sukuk yield as one of the factors measuring the rate of return to be received. The amount of yield can affect investor demand to buy Sukuk. In general, investors will buy Sukuk if the rate of return provided is higher because it is considered to provide promising benefits. This is in line with research Mohamed Ariff & Safari, 2012; Fathurahman & Fitriati, 2013; Naifar, 2016 that the yield has a positive effect on the volume of retail Sukuk issuance. Based on this, then H_4: Yield affects the volume of Retail Sukuk issuance

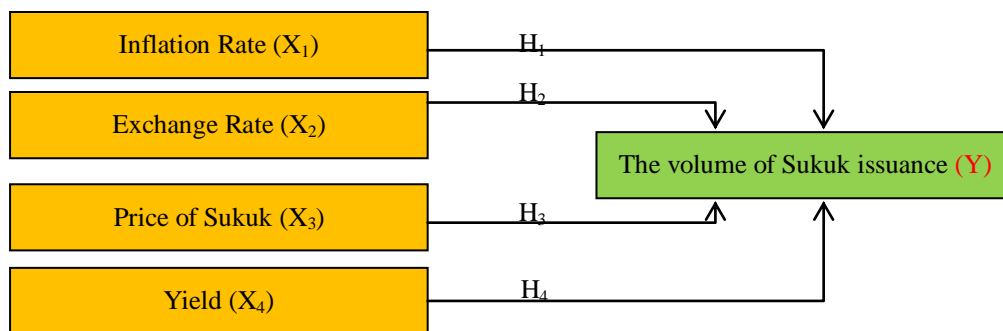For the entire hypothesis, the theoretical model is (Figure 1):

Figure 1. Research model

3. Research Methods

The analytical methods used were the Vector Autoregression (VAR) method or the Vector Error Correction Model (VECM) method if occurs cointegration between a variable with the help of EViews 9 (Widarjono, 2013). The approach of all variables is considered endogenous, and estimation can be carried out simultaneously or sequentially

(Ariefianto, 2012).

3.1 Research Design

This study was a type of causal research. The aim was to test the hypothesis about the effect of one or several independent variables on the dependent variable (Agung, 2011; Hox, Moerbeek, & de Schoot, 2017; Ouliaris, Pagan, & Restrepo, 2016; Wati, 2018). The dependent variable (Y) is Retail Sukuk SR-007 Issuance Volume and the independent variables are inflation (X_1), exchange rate (X_2), Sukuk prices (X_3) and Sukuk yield payments (X_4).

3.2 Operational Definition of Variables

Retail Sukuk SR-007 issuance volume is an important indicator of trade market analysis. The volume shows the number of transactions traded on the market in a certain period and can illustrate the strength between selling and buying an interest in market transactions, such as the number of issuers' shares (Abidin et al., 2016; Suharto, 2015). Inflation is the tendency of increasing prices of goods and services in general and continuously (Galí J., 2015; Kuncoro, 2013) and is measured through the Consumer Price Index (CPI) obtained from the official website of Bank Indonesia.

Exchange rate (exchange rate) is the rupiah exchange rate (IDR) against the US dollar (USD), referring to the official website of Bank Indonesia. Exchange rates are important for businesspeople and related to business planning because changes can cause risks in bond market trading (Noor, 2009; Rahardjo, 2003). Meanwhile, bond prices are expressed as a percentage (%), which is the percentage of the nominal value and yield expressed as a percentage of the total income received by investors from investment in Sukuk securities (Fahmi, 2012; Sitorus, 2015).

3.3 Population and Sample

The population in this research was Retail Sukuk issued by the government from 2015 to 2018. Nonprobability sampling techniques were used to support research (Wati, 2018) of the 36 Retail Sukuk SR-007 monthly secondary data was due from March 2018 from the Indonesia Stock Exchange and Bank Indonesia. Technically, the data was collected using library techniques, and Secondary data was obtained from Indonesia Stock Exchange (IDX) and Bank Central of Indonesia (BI) with time-series data during the period April 2015–March 2018. They note the effect of inflation, exchange rates, prices and yields on the volume of Retail Sukuk issuance. Based on the conceptual research framework, transformation is carried out to produce linear information using natural logarithms (Ln) through the following equation.

$$VOL = \beta_0 + \beta_1 \, Inflation_{tt} + \beta_2 \, Ln \, Exchange \, Rate_{st} + \beta_3 \, Price_t + \beta_4 \, Yield_t + \mu_t$$

Information:

Ln	: Linear Logarithm
Vol.	: Retail Sukuk SR-007 issuance volume
Inflation	: Inflation Rate (percentage)
Exchange rate	: The exchange rate of the rupiah against the US dollar
Price	: Price of Retail Sukuk SR-007 (percentage)
Yield	: Yield of Retail Sukuk SR-007 (percentage)
M	: Margin error
T	: Time series
β_0	: Intercept
$\beta_1, \beta_2, \beta_3, \beta_4$	: Regression coefficient

4. Results and Discussion

4.1 Variable Stationary Test

This stationarity test was carried out with Augmented Dicky-Fuller (ADF) with a real level of 5%. If the ADF statistical value is more significant than Mackinnon's critical value (5%), then the data is stationary because it does not contain the unit root. Conversely, if the ADF test results are smaller than the critical value, then the data is not stationary and must be tested at the first-difference level (Hill, Griffiths, & Lim, 2018; Maiti, 2017; Thierry, Jun, Eric, Yannick, & Landry, 2016). Table 1 shows that three variables – exchange rate, yield and volume – are stationary, while inflation and price variables are not stationary; thus, the ADF test must be done at first-difference.

Table 1. Stationary Test

Augmented Dickey-Fuller Data Level

Variable	ADF t-statistic	Critical Value			Prob	Result
		1%	5%	10%		
Inflation	-1.798051	-3.632900	-2.948404	-2.612874	0.375300	Not stationary
Exchange Rate	-3.208594	-3.632900	-2.948404	-2.612874	0.027900	Stationary
Price	-2.911372	-3.632900	-2.948404	-2.612874	0.054200	Not stationary
Yield	-4.782935	-3.632900	-2.948404	-2.612874	0.000500	Stationary
Volume	-3.481368	-3.632900	-2.948404	-2.612874	0.014600	Stationary
Augmented Dickey-Fuller First-Difference						
Variable	ADF t-statistic	Critical Value	Prob	Hasil	Variable	ADF t-statistic
		1%	5%	10%		
Inflation	-5.475240	-3.639407	-2.951125	-2.614300	0.000100	Stationary
Price	-7.566561	-3.639407	-2.951125	-2.614300	0.000000	Stationary

Source: Data Processed (2019)

The ADF test results on the first-difference show the stationary inflation and price variables as evidenced by the ADF t-statistic value in the inflation variable, which is -5.475240 > 0.05 and the ADF t-statistic value for the price variable which is -7.566561 > 0.05. From the results of the ADF test, it was concluded that all data was stationary, and it could be used for research at a later stage.

4.1.1 Optimum Lag Test and VAR Stability Test

The Optimum Lag Test overcame the problem of autocorrelation in the VAR system through the of Final Prediction Error Correction (FPE) criteria or the smallest number of AIC, SIC and HQ among the various lags proposed or paying attention the number of asterisks (*) in the lags (Ajija, Wulansari, Setianto, and Primanti, 2011). Noting Table 2, the smallest number of AIC, SIC and HQ and the most significant number of asterisks (*) which is located in the one with the smallest AIC value of -13.49598. The next process is to ensure that the optimum lag chosen is stable against the VAR, so the VAR stability test must done by looking at the modulus value of each unit root below 1. From the results of the VAR stability test (Table 3), it is known that the entire modulus at the root of the unit is less than 1, so the VAR equation was stable.

Table 2. Optimum Lag Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	2.010.605	NA	6.74e-12	-1.153.297	-1.130.851	-1.145.642
1	2.594.317	96.14084*	9.65e-13*	-13.49598*	-12.14920*	-13.03669*
2	2.802.838	2.821.166	1.36e-12	-1.325.199	-1.078.288	-1.240.995

Source: Data Processed (2019)

Table 3. VAR Stability Test Results

Root	Modulus
0.765549	0.765549
0.612201	0.612201
0.423615	0.423615
-0.290224	0.290224
0.099360	0.099360

Source: Data Processed (2019)

4.1.2 Cointegration Test

Cointegration tests are used to determine the existence of long-term relationships between variables in the VAR system. This study used the Johansen cointegration test model. In the test, as in Table 4, If trace statistics> critical values, it can be concluded that the variables used have cointegration so that the analysis used is VECM. In the test, as in Table 4, the Unrestricted Cointegration Rank Test (Trace) that the value of None * trace statistic is 98.09362> critical value 69.81889. Additionally, the output of the Unrestricted Cointegration Rank Test (maximum eigenvalue) showed the max eigenvalue stat value of 38.63972 > critical value 33.87687, and the probability is smaller than 5%.

Table 4. Cointegration Test results

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.679048	98.09362	69.81889	0.0001
At most 1 *	0.533457	59.45390	47.85613	0.0028
At most 2 *	0.410158	33.53215	29.79707	0.0177
At most 3 *	0.234713	15.58353	15.49471	0.0485
At most 4 *	0.173731	6.488385	3.841466	0.0109

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.679048	38.63972	33.87687	0.0125
At most 1	0.533457	25.92175	27.58434	0.0803
At most 2	0.410158	17.94862	21.13162	0.1318
At most 3	0.234713	9.095141	14.26460	0.2783
At most 4 *	0.173731	6.488385	3.841466	0.0109

Source: Data Processed (2019)

Based on the econometric analysis, among the five variables in this study, there was one cointegration at the 5% significance level. Thus, the results of the cointegration test indicated that between the movements of inflation, exchange rates, prices and yields have a long-term relationship of stability/balance and similarity of movements so the method used in this study was the Vector Error Correction Model (VECM).

4.1.3 Vector Error Correction Model (VECM)

VECM is used to calculate long-term and short-term relationships between variables. The trick is to look at the comparison of t-statistic values resulting from the estimation of the t-label value. If the t-statistic value is greater than the t-table value, then the results can be said to have a long- or short-term relationship between variable (Ajija et al., 2011).

From Table 5, it is known that the t-table value is 1.69552. Based on the testing, the long-term t-statistic value is -5.25689 < 1.69552 and short-term t-statistic value is -2.13404 < 1.69552. Then statistically the short- and long-term outcome variables do not affect the issuance volume variable, whereas the exchange rate variable has an influence on the volume of Retail Sukuk issuance both in the long- and short-term. The variable long-term exchange rate has a positive effect on the volume of issuance with a t-statistic value of 6.18%, which means that if the exchange rate rises by 1%, there will be an increase in the volume of issuance of 6.18%.

Table 5. Vector Error Correction Model Test results

Long-Term		Short-Term	
Cointegrating	CointEq1	Error Correction	CointEq1
Vol		D Vol	-1.440536
			(0.28372)
			[-5.07733]
VOL(-1)	1.000000	D(VOL(-1))	0.621079
			(0.21665)
			[2.86667]
EXR(-1)	40.60647	D(EXR(-1))	31.45105
	(6.56345)		(9.07605)
	[6.18676]		[3.46528]
INF(-1)	0.577333	D(INF(-1))	0.554968
	(0.28628)		(1.04783)
	[2.01666]		[0.52964]
PRICE(-1)	39.54118	D(PRICE(-1))	7.250576
	(16.9657)		(19.5864)
	[2.33066]		[0.37018]
YIELD(-1)	-3.433.230	D(YIELD(-1))	-2.623.305
	(0.65309)		(1.22927)
	[-5.25689]		[-2.13404]
@TREND(15M04)	0.058497	C	-0.089472
	(0.00583)		(0.10588)
	[10.0411]		[-0.84502]

Source: Data Processed (2019)

Inflation and Sukuk prices also play a role in increasing the volume of issuance in the long-term with t-statistic 2.01% and 2.33%, which means there will be an increase in Sukuk issuance volume of 2.01% and 2.33%, if inflation and Sukuk prices increase by 1%. It can be concluded that the exchange rate variable has a long- and short-term effect on the volume of Retail and Variable Sukuk issuance. Sukuk inflation and prices have a long-term effect on the volume of Retail Sukuk issuance. The yield variable does not affect the volume of Retail Sukuk issuance

4.1.4 Granger Causality Test

Granger causality tests are used to determine the causal relationship between endogenous variables by comparing a critical value (CR) with variable probability. The result is the significant value used is 5%. The variable exchange rate, inflation, Sukuk price and yield do not have a causal relationship with Sukuk issuance volume because all the probability values are > 5%, while the variables that occur causally are exchange rates with Sukuk prices and yields with probability values 0.0327 and 0.0422. In addition to these two variables, the variable inflation with Sukuk prices causes a causal relationship with a probability value of 0.0222.

4.1.5 Impulse Response Function (IRF) Test and Variance Decomposition (FEVD) Test

The IRF test results (Table 6) show that the response of the issuance volume to the exchange rate and price variables had a negative and fluctuating response from the 1st to the 10th period. Positive volume issuance responses occur in inflation and yield variables. In the first period, the response of the issuance volume to inflation shocks was a positive response of 0.07% and fluctuated stably in the 8th–10th periods, with a response range of 0.05%. Furthermore, the positive response of the issuance volume to the yield variable in the first period was 0.25% and increased in the second period to 0.47%. However, there was a decline in the response in the 4th and 5th periods, which subsequently increased in the 6th to 10th period. The positive response of issuance volume to yield shocks fluctuated stably with a response of 0.31% at the end of the 10th period.

The FEDV test results (Table 6) show that the price variable had the most significant contribution to the issuance

volume fluctuations among the other three independent variables. The increase evidences this, since the first period of 23.44% continued to increase until the 10th period, with a contribution of 31.23%. In line with the price variable, the contribution that continued to increase was also shown by the yield variable with a contribution of 7.2% in the first period and an increase of 166% in the second period to 19.22%, continuing to increase until the final period of 22.04%. Furthermore, the exchange rate and inflation variables showed the highest contribution among all periods that occurred in the third period of 3.16% and 1.14%, respectively, but continued to decline in contributions to 2.46% and 0.87% in the final period.

Table 6. IRF and FEDV Test

	Result of IRF Test					Result of FEDV Test					
Period	VOL	EXR	INF	PRICE	YIELD	S.E.	VOL	EXR	INF	PRICE	YIELD
1	0.601217	0.000000	0.000000	0.000000	0.000000	0.601217	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.502611	-0.11845	0.073907	-0.4628	0.256478	0.955790	67.22015	1.535777	0.597923	23.44546	7.200690
3	0.342645	-0.18585	0.109939	-0.47624	0.478568	1.238307	47.70337	3.167492	1.144431	28.75896	19.22575
4	0.392277	-0.02919	0.037034	-0.31106	0.276872	1.364890	47.52562	2.652961	1.015624	28.86582	19.93997
5	0.432394	-0.0929	0.047136	-0.35027	0.286501	1.505163	47.33276	2.562484	0.933213	29.15183	20.01971
6	0.406836	-0.11998	0.062920	-0.40524	0.334306	1.650867	45.41952	2.658317	0.921016	30.25858	20.74256
7	0.397269	-0.08839	0.060391	-0.36211	0.321390	1.768915	44.60343	2.565039	0.918743	30.54531	21.36747
8	0.413506	-0.08876	0.052378	-0.36113	0.304872	1.879902	44.33057	2.494011	0.891093	30.73532	21.54901
9	0.409423	-0.10142	0.057753	-0.3774	0.318109	1.989698	43.80720	2.486184	0.879710	31.03444	21.79247
10	0.405139	-0.09628	0.058201	-0.37181	0.318887	2.091800	43.38624	2.461235	0.873341	31.23822	22.04097

Source: Data Processed (2019)

4.2 Discussion

Based on the results of the tests that have been executed, inflation has a significant long-term effect on the volume of Retail Sukuk SR-007 issuance, which can be seen from the VECM test results t-statistics with t-table in the long run of 2.01666 > 1.69552. In the long run, when inflation rises, the country needs more capital to stabilise the country's economy, as well as the country issues Sukuk to get investment from the public. The results of this study support M. P. Rahman *et al.*, (2017) who stated that the inflation rate affects the yields of state Sukuk, and Yanti (2016), who stated that inflation affects customer interest in Retail Sukuk 004 series. Thus, the results of this study reject H_0, which states that inflation does not significantly affect the volume of Retail Sukuk SR-007 issuance.

Second, the exchange rate has significant long- and short-term effects on the volume of Retail Sukuk SR-007 issuance. The statement pays attention to the VECM test results between the t-statistic values with t-tables in the long run at 6.18676 > 1.69552 and in the short-term at 3.46528 > 1.69552. Exposure to the exchange rate increases the risk for sovereign Sukuk issuers, especially those denominated in non-domestic currencies. For this reason, the government needs to carefully consider all economic policies that are put in place and have an impact on the exchange rate because capital market products will be significantly affected in the long run. The results of this study support Juaris *et al.* (2018), that the exchange rate has a significant effect on the issuance of Government Islamic Securities (SBSN), and Arshad, Muda, & Osman (2018); Suriani, Majid, Masbar, & Wahid (2018), that the Sukuk market is influenced by exchange rates and the exchange rate has a significant long-term effect on bond yields. Thus, the results of this study reject H_0, which states that the exchange rate has no significant effect on the volume of Retail Sukuk SR-007 issuance.

The price of Sukuk has a long-term significant effect on the volume of Retail Sukuk SR-007 issuance. The influence is seen from the results of the VECM test between the t-statistics and t-table values in the long run of 2.33066 > 1.69552. The results of this study support Aloui, Hammoudeh, & Ben (2015), who stated that the GCC Sukuk price index has a significant impact on the probability of cross-regime transmission. Furthermore, the results of Sadeghi's (2011) study said that the investor's reaction to shares in accordance with Sharia is positive, which is reflected in the increase in stock prices and research. Wafa (2010) also stated that state Retail Sukuk prices have a significant influence on the level of demand for state Retail Sukuk-1. Thus, the results of this study reject H_0, which states that the price of Sukuk has no significant effect on the volume of Retail Sukuk SR-007 issuance.

Fourth, the yield does not affect the volume of Retail Sukuk SR-007 issuance in the long- or short-term, because the results of the VECM test between the t-statistic value with the long-term t-table is -5.2568 <1.69552 and in the short-term at -2.1340 <1.69552. The hypothesis is in accordance with the results of research conducted by Marimin *et al.* (2016), which states that there is no significant difference between the performance of retail bonds and Retail Sukuk if measured from the yield of each bond. Thus, the results of this study affirm H_0, which states that the yield does not significantly affect the volume of Retail Sukuk SR-007 issuance.

5. Conclusions and Suggestions

This study aimed to determine the effects of inflation, exchange rates, Sukuk prices and yields on the volume of Retail Sukuk SR-007 issuance. Based on data that was processed using the VECM econometric EViews 9 method, it can be concluded that, long-term, the inflation and price variables significantly influence the Retail Sukuk SR-007 issuance volume; only the yield variable does not affect both the long- and short-term. In addition, only the exchange rate variable has a significant effect on the volume of Retail Sukuk SR-007 issuance in the long- and short-term.

These empirical findings contribute to the Indonesian government in increasing the volume of retail Sukuk issuance through pricing and yields of Sukuk as well as appropriate macroeconomic policies. Indonesia's inflation stability and exchange rate are important as economic policies in promoting internationally traded Sukuk. This study only explores the variables inherent in Sukuk, namely prices and yields as well as macroeconomic variables of inflation and the exchange rate of the Indonesian Rupiah against the US dollar. Further studies can consider variables about the importance of price levels, Sukuk results and macroeconomic policies in promoting the global Sukuk market.

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