The Effect of Transaction Volume, Coupons, and Macro Variables on the Price of Retail State Sukuk in Indonesia

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Abstract

Purpose: This study aims to analyse transaction volume, coupons, exchange rates, economic growth and the BI rate.

Methodology: The sample used in this study is Retail State Sukuk in Indonesia SR001-SR007. Variable transaction volume data, coupons obtained from The Indonesia Capital Market Institute. While for macro variable data (exchange rate, economic growth, and BI rate) obtained through publication *www.bi.go.id.* The number of observations used amounts to 264 data. The data analysis technique in this study is panel data regression analysis with E-views software 8.

Findings: The results show variable coupons, exchange rates, and the BI rate have a significant effect on the price of Retail State Sukuk with a significant value probability $<\alpha = 5\%$ (0.05). Whereas transaction volume and economic growth do not affect the price of Retail State Sukuk. This is because the income of each individual Indonesian society varies, so it does not affect the rise and fall of Retail State Sukuk.

Novelty: This research wants to analyze the instruments that influence fluctuations in Retail Government Sukuk Prices in Indonesia SR001-SR007. using data on internal variables (transaction volume, coupons) and macro variables (exchange rate, economic growth and BI rate). The analysis technique in this research is panel data regression analysis and among its benefits is adding to the repertoire of Islamic finance, providing knowledge and considerations for sukuk investors.

Keywords: Transaction Volume, Coupons, Exchange Rate, Economic Growth, BI rate, Retail State Sukuk Prices

Introduction

The capital market is a meeting between parties who have excess funds and parties who need funds by trading securities / securities that generally have a life of more than one year, such as stocks and bonds (Tandelilin, 2010). the existence of the capital market can encourage the creation of an efficient allocation of funds. The capital market is the choice of investors and business people in choosing alternatives that provide the most optimal return through conventional and sharia securities on the Indonesia Stock Exchange (IDX).

One of the instruments in the Islamic capital market that companies can use to obtain funds is sukuk. Sukuk is an Islamic security whose development is also increasing both at the international level such as Bahrain, Malaysia, Pakistan, and regional Indonesia. In Indonesia, sukuk has become a new investment that has coloured the Indonesian capital market since 2002. The pioneer was PT Indosat, which launched *Mudharabah* Bonds worth Rp 175 billion. This was followed by Matahari Putra Prima, Berlian Lajub Tanker, Bank Bukopin, PTPN VII, Ciliandra Perkasa, Bank Syariah

Mandiri, Bank Muamalat Indonesia, Citra Sari Makmur, Sona Topas Tourism Industry, Indorent, etc. Likewise, the issuance of medium-term securities (MTN) *Mudharabah* PT Pembangunan Perumahan (Adrian, 2009).

While the sukuk instrument issued by the state is Sukuk Negara Retail. sukuk. The Indonesian government through the issuing company as a sales agent issued the SR-001 series Retail Sukuk with the aim of helping the Indonesian state budget, especially to finance the development of the Indonesian State infrastructure. The Indonesian government always issues Retail Sukuk every year with different series. Currently the Indonesian government has issued Retail Sukuk series SR-001, SR-002, SR-003, SR-004, SR-005, SR-006, SR-007, SR-008, SR-009, and the latest in 2018 is the SR-010 series.

Statistics on Retail Sukuk Issuance in Indonesia Year SR001-SR007
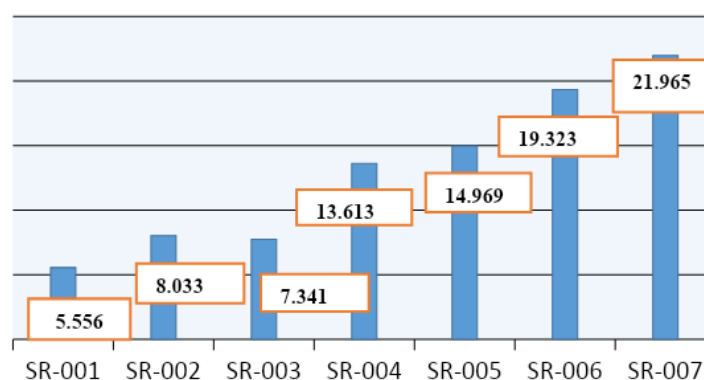
Source: Reprocessed from Ministry of Finance of the Republic of Indonesia (2023)
Figure 1. Chart of Retail State Sukuk Sales in Indonesia

The issuance of Retail State Sukuk is one of the important decisions taken by the government in order to obtain additional capital. One of the most important aspects for the development process of sukuk in Indonesia is the price of sukuk. The price of sukuk is the selling value of sukuk whose ups and downs are calculated at the end of each active day of transactions on the secondary market with the calculation of the index. In the issuance of sukuk for issuers is in setting the price of sukuk to be traded in the capital market (Rakhman, 2017).

Trading volume according to Nurhasanah (2011) the greater the volume of bond trading, the greater the capitalisation and the higher the probability of being traded in the secondary market. Trading activities in a very high volume on an exchange will be interpreted as a sign that the market will improve (Izzata, 2018). The results of Yusiarmayanti's research (2017) sukuk prices, *mudharabah* deposit profit sharing rates, and inflation have a negative effect on sukuk trading volume.

Coupon is a profit-sharing income that will be received by Islamic bondholders according to the agreement with the bond issuer (Rahardjo, 2013). Bonds that have high coupons above the average interest rate and the average coupon of other Islamic bonds can be very attractive to many investors. Therefore, if the bond coupon is high enough, the bond price tends to increase. Vice versa, if the bond coupon rate given is relatively small, the bond price tends to fall because the attraction for investors or for potential buyers is very little (Rahardjo, 2013).

Fluctuations that occur in the capital market, especially in the price of Retail State Sukuk, will be related to changes that occur in various macroeconomic variables. According to Tandelin (2010) the macroeconomic environment is an environment that affects the company's daily operations. The ability of investors to understand and forecast future macroeconomic conditions will be very useful in making profitable investment decisions so that investors must pay attention to several macroeconomic indicators that can help them understand and forecast macroeconomic conditions. Some macroeconomic variables that investors need to pay attention to are exchange rates, economic growth, and the BI Rate.

According to Dewi, et al. (2016) in their research obtained the results that the exchange rate has a significant negative effect on the market price of bonds. Meanwhile, based on other research conducted by Azizah and Hidjat (2016), the exchange rate has no effect on government bond prices. Brigham and Houstan (2006) If the prevailing interest rate decreases, the bond price will increase. This is due to *interest rate risk*, which is the risk of a decrease in bond prices due to an increase in interest rates.

This study conducted a further study of the Effect of Transaction Volume, Coupons, and Macro Variables (exchange rates, economic growth, and BI Rate) on the Price of Indonesian Retail State Sukuk 2009-2018. As an effort to assist in making investment decisions specifically on Retail State Sukuk.

Theoretical Foundations
Sharia Investment

Investment is the commitment of a number of funds or other resources at this time, with the aim of obtaining a number of benefits in the future (Tandelilin, 2010). In Islamic economics, investment is influenced by the increase in expected profits and the level of zakat on unproductive funds. Nowadays we can find a lot of options that can be used to invest in both real assets and financial assets. Sukuk are securities that represent equity participation in a company. The investment is made in companies that do not violate sharia principles, such as gambling, usury, producing prohibited goods such as beer, and others.

Fatwa of the National Sharia Council Number: 69/DSN-MUI/VI/2008 on State Sharia Securities or can be called State Sukuk is a State Securities issued based on sharia principles, as evidence of part ownership of SBSN assets, either in rupiah or foreign currency. SBSN asset is the object of SBSN financing and/or State Property (BMN) that has economic value, in the form of land and/or building, or other than and/or building that in the framework of SBSN issuance is used as the basis for SBSN issuance.

According to Salma Abdul Latiff and Abdul Hasan, sukuk, also known as Islamic Bonds, are Islamic investment certificates. The concept of sukuk has important virtues, namely transparency and purity of rights and obligations, that the income from the security must be linked to the purpose for which the funds are used and does not really consist of benefits, that the security will be returned as a real asset. Therefore, it can be said that sukuk are asset-backed, stable income, tradable and shariah compatible trust certificates (Wahid, 2010).

Retail State Sharia Securities (Retail Sukuk) are state securities issued based on sharia principles as proof of participation in State Sharia Securities Assets, which are sold to individuals or individual Indonesian citizens through selling agents, with a predetermined minimum volume (Sedarmayanti and Hidayat, 2011).

According to the Directorate General of Financing and Risk Management of the Ministry of Finance (2017) Retail Sukuk is sold to individual investors through sales agents with a minimum purchase of IDR 5 million. Retail sukuk coupons are fixed, paid monthly and can be traded. While the definition of Retail State Sukuk according to Mahfudz (2014) is a sukuk issued by the government and intended for individual Indonesian citizens. Although sukuk has the same meaning as conventional bonds, it has fundamental differences. If conventional bonds do not require an underlying asset, but sukuk must have a clear underlying asset as a guarantor. currently there are only two types of sukuk in Indonesia, namely *Mudharabah* and *Ijarah.* (Sedarmayanti and Hidayat, 2011). Based on the Fatwa of the National Sharia Council Number 72/DSN-MUI/VI/2008, the Retail Sukuk contract with the SR-001, SR-002, SR-003 series uses the *Ijarah Sale* and Lease Back/Land & Equipment contract.

Sale and Lease Back is the sale and purchase of an asset and then the buyer leases the asset to the seller. Meanwhile, the contracts in the retail sukuk series SR-004, SR-005, SR-006, SR-007, SR-008, SR-009, and SR-010 use the Ijarah Asset to be Leased / Government Project contract, which is an

ijarah contract in which the object of ijarah already exists when it will be carried out, but the delivery of the entire ijarah object is carried out in the future according to the agreement.

Sukuk Price

Price is the amount of money required in exchange for various combinations of products and services, thus a price must be associated with a variety of goods and/or services, which will ultimately equal a product and service (Laksana, 2008). Another opinion according to Mishkin (2008: 128) is that if the price of bonds is low, with other assumptions considered fixed, the amount of demand for bonds is higher. This can be seen from the Demand Curve on Bonds.
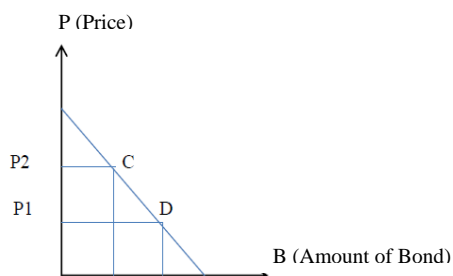

Figure 2. Bond Demand Curve

Figure 2. explains that curve B (Amount of Bonds), which connects lines C and D, is the bond demand curve. The Bond Demand Curve has a negative slope, which means that for every lower bond price (assuming everything else is constant), the amount of demand for bonds is higher.

Factors affecting sukuk prices
Transaction Volume

The volume of transactions in retail sukuk is the number of sukuk sheets traded by the exchange. The amount of transaction volume in sukuk indicates that the sukuk is actively traded.

Trading volume according to Nurhasanah (2011) the greater the volume of bond trading, the greater the capitalisation and the higher the likelihood of being transacted in the secondary market. Investment trading volume is important for an investor because for investors the trading volume illustrates the conditions that are traded in the capital market. So a large sukuk trading volume will increase the demand for sukuk. Trading activity in a very high volume on an exchange will be interpreted as a sign that the market will improve (Izzata, 2018).

Coupons

The price of sukuk also depends on the coupon rate provided by the sukuk. Coupons are returns that are paid periodically by the issuer to the holder. Coupons on sukuk are set at an annual percentage of the nominal and are paid at certain time intervals. According to Kempf and Homburg (2000), the price of bonds also depends on the discount (coupon rate). The higher the coupon rate will make the bond more attractive to investors.

Nurfauziah and Adistien (2004) in their research stated that high bond coupons cause investors to obtain higher profits. The increasing coupon rate causes the market price of bonds to increase, because the effect of coupon rates on bond prices is positive. Bond coupons are generally paid quarterly, both fixed and floating coupons (Manurung, 2006). If there is a decrease in market interest rates, the price of bonds that have lower coupons will experience a greater price increase than bonds that have higher coupons. (Tandelilin, 2010).

Rates

The exchange rate is the price level agreed upon by the people of two countries to trade with each other (Mankiw, 2007). According to another opinion, Noprin (1992) the exchange rate is an

exchange between two different currencies, then we will get a comparison of the value/price between the two currencies. According to Mankiw (2000), exchange rates are divided into nominal and real exchange rates: Nominal exchange rate, is the relative price of the currencies of two countries. For example, if the exchange rate between the US dollar and the Japanese Yen is 120 Yen per Dollar, it is possible to exchange 1 Dollar for 120 Yen in the world market for foreign currencies. A Japanese person who wants to get Dollars will pay 120 Yen for each Dollar bought. A US person who wants to get Yen will get 120 Yen for every Dollar paid. The Real Exchange Rate is the relative price of the two countries' goods. The real exchange rate states the rate at which we can trade goods from another country. The real exchange rate is also called the terms of trade.

The exchange rate affects the demand for bonds in Indonesia.The unstable exchange rate of the rupiah against foreign currencies affects the amount of demand for bonds.If the rupiah exchange rate against the USD falls, then bond investment increases (Sukanto and Widaryanti, 2015).According to another opinion, that money market trading is very global and far-reaching so that the level of reach of trading financial products abroad also greatly affects the liquidity of fixed income products in the country. With unstable fluctuations in the foreign exchange rate, bond trading is automatically affected, there can be an increase and there can also be a decrease (Raharjo, 2003).

Economic Growth

Another macro variable is economic growth. According to Bapepam-LK (2012), one of the factors that hinder the development of sukuk is the economic conditions in a country itself, and what can cause ups and downs in demand for Islamic bonds is the economy of a country. According to Tandelilin (2010) if economic growth improves, then the opportunity for companies to increase their sales. By increasing company sales, the company's opportunity to earn profits will also increase.

Economic growth produces additional community income in a certain period, which is the basis of economic activity, namely the process of using factors of production to produce goods and services. The process of using production factors will result in a flow of production factors owned by the community. With economic growth, it is expected that people's income as owners of production factors will also increase (Susanti, 2000).

BI *Rate*

One of the factors that determine whether the market price of bonds is attractive or not is seen from the prevailing interest rates. If interest rates decrease, then bond prices will increase, this is due to *interest rate risk*, which is the risk of falling bond prices caused by rising interest rates (Brigham and Houston, 2006). According to Bank Sentral Indonesia (2018), the BI rate is a policy interest rate that reflects the stance of monetary policy set by Bank Indonesia and announced to the public. According to Dewi, et al. (2016), interest rates are the most important factor in a country's economy because interest rates are able to influence the economy in general, in addition to being able to influence people's desire to spend or save their money, interest rates are also able to influence the business world in making investment decisions.

Hartono (2009) argues that as interest rates increase, savings will be more attractive because they provide high savings interest, so investors will sell their bonds and divert the proceeds to savings with higher interest, which causes the supply of bonds to increase. With the increase in supply, it will be offered at a discount so that the price of bonds weakens, and vice versa. High interest rates will attract people to save because it provides income in the form of high interest and lower risk. However, if interest rates decrease, people will tend to choose to invest in financial securities, namely bonds. If interest rates are lower than the bond coupon rate, investors will tend to choose to buy bonds (Longstaff and Schwartz, 1993).

Literature Review

Some empirical studies that have been the focus of previous research discussions include, Research on the Effect of Interest Rates, Exchange Rates, Coupon Rates, and Bond Liquidity on Bond Market Prices in the Financial Sector in Dewi, et. al (2016) research partially states that interest rate variables have a negative effect on bond market prices, exchange rate variables have a negative effect, coupon rate variables have a positive effect, while liquidity has a negative and insignificant effect on bond market prices.

Anandasari and Sudjarni (2017) in their published journal state that the liquidity variable has a positive effect on changes in bond prices. The maturity time variable has a negative effect on changes in bond prices. Meanwhile, the coupon variable has a positive effect on changes in corporate bond prices in the financial sector of the Indonesia Stock Exchange.

Research by Rahman and Nadir (2016). The journal shows the results that the SR-005 series retail state sukuk price variable, inflation rate and BI-Rate have no effect on the demand for SR-005 retail state sukuk. Research by Wafa (2010) shows that partially each independent variable has a significant influence on the level of demand for retail government sukuk. The results are in line and strengthen the hypothesis formed.

Sukanto and Widaryanti (2015), The Effect of Deposit Interest Rate, Rupiah Exchange Rate, and Inflation Magnitude on Government Bond Prices of the Republic of Indonesia (Period 2009-2013). Obtained the results that the variable deposit interest rates, exchange rates, and inflation partially had a significant effect on government bond prices. The R square value of the effect of deposit interest rates, exchange rates, and inflation on government bond prices is 70%, while the remaining 30% is influenced by other variables not included in the regression equation.

Datuk's research (2014) says that the value of domestic corporate sukuk emissions still fluctuates from year to year. The total outstanding corporate sukuk until May 2013 was Rp. 3.42 T and those that had matured were Rp. 3.19 T. Then another study by Fathurahman, et al. (2013) Comparative Analysis of Return on Sukuk and Conventional Bonds. Stating that the average sukuk and conventional bonds are significantly different overall. Sukuk offers higher returns for now.

Nasrullah, et al. (2013), sharia compliance and economic benefits significantly influence investors' decisions to buy state sukuk even though the most influential variable is interest rates. The high purchase of state sukuk is more influenced by speculative variables. In contrast to Ramasamy, et al. (2011) that sukuk are less risky than government bonds and less risky than conventional bonds. Since risk and return are positively correlated sukuk provide lower returns.

From several previous studies, the difference in this study is using the variables of transaction volume, coupons and macro variables which include exchange rates, economic growth, and BI rate on the price of Retail State Sukuk from the SR-001 to SR-007 series that have matured until 2018.

Framework

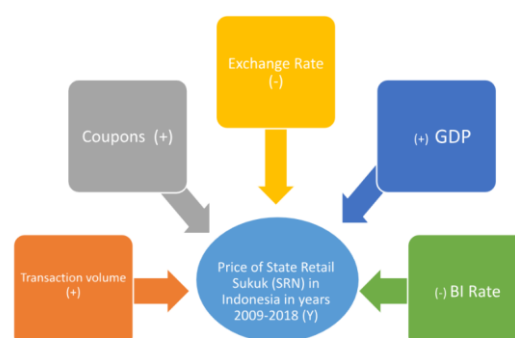To make it easier to understand this research, the following framework is made:

Figure 3. Framework

Table 1. Research Variables

Variables	Source	Formula
Retail Sukuk Price	The Indonesian Capital Market Electronic Institute	End of Month Price
Transaction Volume	The Indonesian Capital Market Electronic Institute	$VT = \dfrac{\sum Traded\ Sukuk}{\sum Outstanding\ Sukuk}$
Coupon	The Indonesian Capital Market Electronic Institute	$Coupon = \dfrac{Earning\ Yield}{Nominal\ Value}$
Exchange rate	www.bi.go.id	$Exchange\ Rate = \dfrac{Selling\ Rate}{US\$}$ $Exchange\ Rate = \dfrac{Buying\ Rate}{US\$}$
Economic Growth	www.bi.go.id	$R(t-1) = \dfrac{(PDBt - PDBt - 1)}{PDB - 1 \times 100}$
BI Rate	www.bi.go.id	$BI\ Rate = \dfrac{Interest}{Initial\ Loan} \times 100\%$

Methodology
Types of Research
This research includes *Descriptive Quantitative Correlational research*, research that aims to describe information on the correlation relationship between two or more variables by presenting it in the form of numbers.

Population and Samples
The population in this study is Retail State Sukuk. The sampling method uses a non-probability sample method with purposive sampling technique. The sample in this study used Retail Sukuk in Indonesia series SR-001, SR-002, SR-003, SR-004, SR-005, SR-006, SR-007. The data in this study were obtained from the publication of the official website *www.bi.go.id*, and purchases via e-mail at The Indonesian Capital Market Electronic Institute (TICMI).

Data Analysis Technique
Data analysis was processed using E-views 8 software. First, descriptive statistical analysis was conducted. Then panel data regression analysis with linear regression equation:

$$RSP_{it} = \alpha + \beta\, TV_{it} + \beta2\, CP_{it} - \beta3\, ER_{it} + \beta4 EG_{it} + \beta5 BIR_{it} + e_{it}$$

Description:
RSP   = Retail Sukuk Price
α   = Constant
β1-β5   = Regression Coefficient of the Dependent Variable
TV   = Transaction Volume
CP   = Coupon
ER   = Exchange Rate
EG   = Economic Growth
BIR   = BI Rate
e   = Coefficient of Error

To estimate panel data, several equation models are selected: Common Effect Model, Fixed Effect Model and Random Effect Model. For the selection of which model to use in research,

determining the best model is done with three tests (Widarjono, 2012, p.30): Chow test, Hausman Test, Lagrange Multiplier (LM) Test. In this study, we used the Lagrange Multiplier (LM) test.

Lagrange Multiplier (LM) Test

The langrange multiplier (LM) test in this study was conducted to compare or choose which model is the best between the *coomon effect* and *random effect*. The LM test is based on the chi-squared distribution *with a degree of freedom* equal to the number of independent variables. The LM statistical value is calculated based on the formula (Widarjono, 2012, p.363):

$$LM_{count} = \frac{nT}{2(T-1)} \left[\frac{T^2 \sum \bar{e}^2}{\sum e^2} - 1 \right]^2$$

Description:
n   = Number of individuals
T   = Number of periods
$\sum \bar{e}^2$ = Mean sum of squares of residuals
$\sum e^2$ = Sum of squared residuals

Then the hypothesis testing carried out is: Coefficient of determination (R^2) (Gujarati and Perter, 2015), F (*Simultaneous)* significance test (Subanti and Hakim, 2014), t (*Partial*) test (Ghozali, 2005) on Retail Sukuk Prices in Indonesia 2009-2018.

Results and Discussion
Descriptive Statistics

Descriptive statistics are used to explain in general the characteristics of the data which includes, mean, median, minimum, maximum, etc. Here are the results:

Table 2. Descriptive Statistical Data

Variables	N	Mean	Max	Min	Std. Dev
Price	264	100.49	105.49	94.55	2.09
Transaction Volume	264	7.27	51.67	0.002	7.94
Coupons	264	0.08	0.12	0.06	0.018
Rates	264	11102.12	14396.09	8532	1884.22
Economic Growth	264	4836.902	14637	2246	1507.97
BI *Rate*	264	6.56	8.25	4.25	0.92

Source: Secondary data processed by Eviews 8

The following is data from SR001-SR007 Retail State Sukuk in the 2009-2018 time frame, totalling 264 data. From the table, it can be seen that the highest retail sukuk price from buying and selling activities in the secondary market is 105.49 on SR001 retail sukuk in September 2010 and the lowest value of 94.55 in January 2014 on SR005. The lowest Retail Sukuk transaction volume was 0.002 on SR-003 Retail Sukuk in May 2013. While the highest value of Retail Sukuk transaction volume is 51.67 on Retail Sukuk SR-006 in March 2017. Coupon variable, the lowest value is 0.06 on SR-005. While the highest value is 0.12 on SR-001. The lowest value of the Rupiah exchange rate against the dollar showed a figure of Rp 8,532 in August 2011, while the highest value of the Rupiah exchange rate against the dollar was Rp 14396.09 in September 2015. The lowest economic growth

rate was 2246, while the highest rate was 14637. The lowest BI *rate* was 4.25% in September 2017. Then the highest value of the BI *rate was* 8.25% in January 2009. The *mean* value of the BI rate is 6.56%.

Lagrange Multiplier Test

The Lagrange Multiplier (LM) test is a test conducted to determine whether the *Random Effect* model or the *Common Effect* method is better. The hypothesis used is:

H0: *Common Effect Model*
H1: *Random Effect Model*

The LM test is based on the *chi-square* distribution with a *degree of freedom* equal to the number of independent variables. If the LM value is smaller than the *chi-square* value (0.05) then H0 is rejected and the more appropriate estimate to use in panel data regression is the *Random Effect* model. On the other hand, if the LM value is greater than the *chi-square* value (0.05) then H0 is accepted and the better model used in regression is *Common Effect*. The following are the results of the *Lagrange Multiplier* test:

Table 3. *Lagrange Multiplier* test results

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	
Breusch-Pegan	47.20621	3.455185	50.66140
	(0.0000)	(0.0631)	(0.0000)

Source: Reprocessed from Appendix 3

The results of the above *output* show that the *cross-section Breusch-Pagan is* 0.0000, the P *value* (0.0000) > 0.05. This indicates that H0 is rejected and H1 is accepted, so the correct model is *Random Effect*.

Panel Data Regression Analysis

The results of the panel data regression in this study:

Table 4. Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	103.1291	0.991633	103.9993	0.0000
Transaction Volume	0.008084	0.013065	0.618761	0.5366
Coupons	54.27262	5.027779	10.79455	0.0000
Rates	-0.000272	5.90E-05	-4.598763	0.0000
Economic Growth	2.58E-05	5.90E-05	0.438383	0.6615
BI Rate	-0.653277	0.101271	-6.450803	0.0000

Source: Eviews 8

Table 5. Weighted Statistic

R-squared	0.512608	**Mean dependent var**	**100.4912**
Adjusted R-squared	0.503162	**S.D. dependent var**	2.095965
S.E. of regression	1.477378	**Sum squared resid**	563.1223
F-statistic	54.26952	**Durbin-Watson stat**	0.595943
Prob(F-statistic)	0.000000		

Source: Eviews 8

From the panel data regression analysis results in table 1.3, the following regression equation is obtained:

Y = 103.1291 + 0.008084 VT + 54.27262 KPN - 0.000272 EXCHANGE RATE + 2.58E-05 PERT - 0.653277 SBBI

Determination Coefficient Test(R^2)

The purpose of testing the coefficient of determination (R^2) is to determine how far the model's ability to explain variations in the dependent variable (Gujarati, 2013: 108). The coefficient of determination is between 0 and 1, the closer to 1, the better the accuracy.

Table 6. Determination Coefficient Test

R-squared	0.512608
Adjusted R-squared	0.503162

Source: Eviews 8

The test results in the table above show that the *adjusted* value (R^2) of 0.503162 indicates that the ability of the independent variables, namely transaction volume, coupons, exchange rates, economic growth, and BI *rates* in explaining the dependent variable, namely the price of Retail State Sukuk, is 50.3162%. While the remaining 49.6838% is explained by other variables not included in this study.

Statistical F Test
The F test results from this study are as follows:

Table 7. Statistical F Test

F-statistic	54.26952
Prob(F-statistic)	0.000000

Source: Eviews 8

Based on the results of the analysis, the F-statistic value is 54.26952, which means that the independent variables, namely transaction volume, coupons, exchange rates, economic growth, BI *rate* affect the price of Retail State Sukuk by 54.26952% and the remaining 45.73048% is influenced by other factors outside the regression model. While the Prob (F-Statistic) shows 0.000000 <∝ = 0.05. In the significance level < 5%, the F test has a significant effect. So it can be concluded that in the equation the independent variables jointly affect the dependent variable (Ho is rejected and Ha is accepted).

T-Statistic Test

Partial test (t test) shows that each independent variable has a different influence on the dependent variable. The numerical value of the t test results can be seen in table 1.3 in the t-statistic and probability columns, with the following explanation:

Variable t test of transaction volume on the price of Retail State Sukuk

The test results of the transaction volume variable t-Statistic 0.618761 while the probability shows a value of 0.5366 $>\propto$ = 5% (0.05). So it means that in making a decision on the volume of transactions, Ha is rejected and Ho is accepted. In the sense that the transaction volume variable partially or individually has no effect on the price of Retail State Sukuk.

Coupon variable t test on Retail State Sukuk price

The coupon variable coefficient is 10.79455 with a significance value of 0.0000. This means that the significance value of 0.0000 <0.005, indicating Ho is rejected and Ha is accepted. So that the coupon variable partially affects the price of Retail State Sukuk. The positive regression coefficient value indicates a unidirectional relationship, therefore an increase in coupons will cause an increase in the price of Retail State Sukuk.

The t test of the exchange rate variable on the price of Retail State Sukuk

The significant value of the exchange rate variable is -4.598763 while the probability shows a value of 0.0000 <0.05, so Ho is rejected and Ha is accepted. This shows that the exchange rate variable affects the price of Retail State Sukuk. The t-statistic value shows the result with a negative sign, which means that there is an opposite relationship between the exchange rate variable and the price of Retail State Sukuk, so that an increase in the exchange rate will cause a decrease in the price of Retail State Sukuk.

Economic growth variable t test on Retail State Sukuk price

The test results that the economic growth variable t-Statistic 0.438383 while the probability shows a value of 0.6615 $>\propto$ = 5% (0.05). Thus, Ha is rejected and Ho is accepted. From these results it can be concluded that the economic growth variable partially or individually has no effect on the price of Retail State Sukuk.

BI *rate* variable t test on Retail State Sukuk price

The significant value of the BI *rate* variable is -6.450803 while the probability shows a value of 0.0000 <0.05, so Ho is rejected and Ha is accepted. This shows that the BI *rate* variable affects the price of Retail State Sukuk. The t-statistic value shows results with a negative sign, which means that there is an opposite relationship between the BI *rate* variable and the price of Retail State Sukuk, so that an increase in the BI *rate* will cause a decrease in the price of Retail State Sukuk.

Discussion

Panel data analysis aims to determine the effect of transaction volume, coupons, exchange rates, economic growth, and BI *rate* on the price of Retail State Sukuk in Indonesia in 2009-2018. After conducting the regression test, the selection of the regression model using the *lagrange multiplier* test shows that the best model is the *random effect model* with the regression coefficient results:

Y = 103.1291 + 0.008084 (Transaction Volume) + 54.27262 (Coupon) - 0.000272 (Exchange Rate) + 2.58E-05 (Economic Growth) - 0.653277 (BI *rate*)

In the regression equation, it can be seen that the constant coefficient is 103.1291 while the probability shows a value of 0.0000 < α = 5% (0.05). So the constant relationship to the price of Retail

State Sukuk is positive and significant. So if the independent variable (transaction volume, coupon, exchange rate, economic growth, BI *rate*) is zero (0), the price of Retail State Sukuk will increase by 103.1291%. The independent variables in the model that affect the price of Retail Sukuk in Indonesia in 2009-2018 are explained as follows:

The Effect of Transaction Volume on the Price of Retail State Sukuk

The regression results show that, the coefficient value of the transaction volume is 0.008084 while the probability shows a value of 0.5366 $> \propto$ = 5% (0.05). Indicates that the volume of transactions has no effect on the price of Retail State Sukuk. If there is a 1% increase in transaction volume, it will not increase the price of Retail State Sukuk by 0.008084% because the relationship between the two has no effect.

This research is not in line with the hypothesis that has been formulated. However, this research is in line with Yusiarmayanti (2017) that, transaction volume has a positive and insignificant effect on sukuk prices. Trading in a very high volume on an exchange will be interpreted as a sign that the market will improve. (Izzata: 2018). However, according to the secondary market study conducted by the Ministry of Finance of the Republic of Indonesia (2012) that since the first time sukuk was issued, its development in Indonesia has increased quite well every year, but the increase in sukuk has not been followed by the volume of trading in the secondary market. The data obtained shows that when the price of Sukuk increases, the volume of transactions also remains at a reasonable level. The maximum price of Retail State Sukuk was 105.49 in the SR-001 September 2010 series, at which point the transaction volume showed a figure of Rp 483,358,931.

Effect of Coupon on the Price of Retail State Sukuk

The coupon coefficient value from the regression results is 54.27262 while the probability shows a value of 0.0000 < α = 5% (0.05). So it can be concluded that the coupon relationship to the price of Retail State Sukuk in this study has a positive and significant effect. So if there is a 1% increase in the coupon will increase the price of Retail State Sukuk by 54.27262% because the relationship between the two has a positive and significant effect.

This research is in line with the hypothesis that has been formulated. Researchers who are in line include Nurfauziah and Adistien (2004) that, coupons are profit-sharing income that will be received by Islamic bondholders according to the agreement with the bond issuer, then high bond coupons cause investors to get higher profits. An increasing coupon rate causes the market price of bonds to increase, because the effect of coupon rates on bond prices is positive. Kempf and Homburg (2000) state that the bond price also depends on the coupon rate. The higher the coupon rate will make the bond more attractive to investors.

The data obtained also shows that when the coupon increases to a maximum of 0.12% on SR-001, investors will buy Retail State Sukuk. Because the higher the coupon rate, investors will get higher profits as well.

The Effect of Exchange Rate on the Price of Retail State Sukuk

Based on the regression results in the equation shows that, the exchange rate coefficient value is -0.000272 while the probability shows a value of 0.0000 < α = 5% (0.05). So the relationship between the exchange rate and the price of Retail State Sukuk is negative and significant. So if there is a 1% increase in the exchange rate will reduce the price of Retail Sukuk by 0.000272% because the relationship between the two has a negative and significant effect.

These findings are in line with the hypothesis that has been formulated. In line with the research found by Dewi, et al. (2016) that the exchange rate variable has a negative and significant effect on the market price of bonds in the financial sector. The US dollar is used as an option in investing by investors, because the US dollar exchange rate is relatively stable and is the most widely circulated currency in society compared to other currencies. Hadian (2013) that the exchange rate has a negative and significant effect on the price of corporate bonds. Changes in macroeconomic conditions affect changes in bond prices and can be used as a reference in decision making related to investment

activities in bond instruments. Sukanto (2009) the exchange rate has a significant negative effect on the price of Indonesian Government bonds.

The data obtained also shows that if there is a 1% increase in the exchange rate, it will reduce the price of Retail State Sukuk. when the exchange rate reached the lowest number of Rp 8,532 in August 2011, it showed that at that time the Sukuk price was still above 100.00. Because the US Dollar exchange rate is relatively stable and is the most widely circulated currency in society compared to other currencies.

The Effect of Economic Growth on the Price of Retail State Sukuk

Based on the regression results show that, the coefficient value of economic growth is 2.58E-05 while the probability shows a value of $0.6615 > \propto = 5\%$ (0.05). So the relationship between economic growth and the price of Retail State Sukuk is positive and insignificant. So if there is a 1% increase in economic growth will not increase the price of Retail State Sukuk by 2.58E-05% because the relationship between the two has a positive and insignificant effect.

One of the factors that hinder the development of sukuk is the economic conditions in a country itself, and what can cause the rise and fall of demand for Islamic bonds is the economy of a country (Bapepam-LK: 2012). According to Tandelilin (2010) if economic growth improves, then the opportunity for companies to increase their sales. By increasing the company's sales, the company's opportunity to earn profits will also increase.

Based on the data obtained, it also shows that when economic growth is at a maximum of 14637 and the price of Sukuk is at 99.81 which does not affect the price of Retail State Sukuk. This is because an increase in economic growth does not necessarily increase the per capita income of each individual so that investment patterns in the capital market are not affected by an increase in economic growth.

The Effect of BI *rate* on the Price of Retail State Sukuk

Based on the regression results in the equation shows that, the BI *rate* coefficient value is -0.653277 while the probability shows a value of $0.0000 > \alpha = 5\%$ (0.05). So the relationship between the BI *rate* and the price of Retail State Sukuk is negative and significant. So if there is a 1% increase in the BI *rate will* reduce the price of Retail State Sukuk by 0.653277 because the relationship between the two has a negative and significant effect.

This research is in line with the hypothesis that has been formulated and the results of these empirical findings are in line with the results conducted by Sukonto (2009) which states that, deposit interest has a negative and significant effect on the price of Indonesian government bonds. This is because some investors are still very loyal to deposit instruments, because in general certain investors still act as passive investors who only rely on deposits and conventional banking products. Other researchers in line with this research were also stated by Wijaya (2014) that the market interest rate (BI *rate*) has a negative and significant effect on bond prices on the Indonesia Stock Exchange. Irawan and Pramono (2017) state that interest rates have a positive and significant effect on bond prices. This means that an increase in interest rates will encourage an increase in bond prices. Vice versa, a decrease in interest rates will lead to a decrease in bond prices.

So when the BI *rate* increases 1%, it will reduce the price of Retail State Sukuk. and the lowest BI rate was 4.25% in December 2017 when the price of Retail State Sukuk was 100.39. This is because some investors are still very loyal to deposit instruments, because in general certain investors still act as passive investors who only rely on deposits and conventional products.

Conclusions and Suggestions

This study examines the effect of Transaction Volume, Coupon, exchange rate, economic growth, and BI *Rate* on the Price of Indonesian Retail State Sukuk Series SR001-SR007. From the results of data analysis it can be concluded Transaction volume has no effect on the price of Retail State Sukuk. Where the probability value is $0.5366 > \alpha = 5\%$. If there is an increase in the volume of transactions will not increase the price of Retail State Sukuk even though it shows a positive direction. Coupons have a positive and significant effect on the price of Retail State Sukuk. The higher the

coupon / yield offered by a sukuk, the higher the demand for the sukuk will be, so that the market price of sukuk tends to increase. Investors will also be interested in buying sukuk because it is considered to provide greater returns. The exchange rate has a negative and significant effect on the price of Retail State Sukuk. The US Dollar exchange rate is relatively stable and sometimes experiences appreciation or an increase in value, becoming a reason for people to invest in the foreign exchange market so that the demand for Retail State Sukuk has decreased. Economic growth has no effect on the price of Retail State Sukuk. Economic growth is not followed by an increase in investment in the capital market. Therefore, if economic growth increases, it does not necessarily increase the per capita income of each individual so that investment patterns in the capital market have no effect. BI *rate has a* negative and significant effect on the price of Retail State Sukuk. This is due to *interest rate risk*. So if there is a 1% increase in the BI rate will reduce the price of Retail State Sukuk. Together the independent variables consisting of transaction volume, coupons, exchange rates, economic growth, and BI *rates* have a significant influence on the price of Retail State Sukuk in Indonesia.

The limitations of this research lie in the object and research variables. Where the object of this research uses Retail State Sukuk SR-001 to SR-007 so that the expected results are still not optimal because Indonesian Retail State Sukuk is still issuing the latest series. For investors in investing in Retail State Sukuk, it is expected to consider several factors that affect the price of Retail State Sukuk. Among them are coupons, exchange rates, and BI *rates* because these three factors significantly affect the price of Retail State Sukuk.

References

Anandasari, Luh Putu Savitri Karina dan Luh Komang Sudjarni (2017). *Pengaruh Likuiditas, Waktu Jatuh Tempo, dan Kupon Terhadap Perubahan Harga Obligasi Korporasi di BEI.* E-Jurnal Manajemen Unud, Vol. 6, No. 6, 2017: 3283-3313, ISSN: 2302-8912.

Azizah, Fitriatul dan Imam Hidjat (2016). *Pengaruh Inflasi, Interest Rate (SBI), Jatuh Tempo dan Nilai Tukar Terhadap Harga Obligasi.* Jurnal Ilmu dan Riset Manajemen : Volume 5, Nomor 2, Februari 2016 Issn : 2461-0593.

Brigham, Eugene F., dan Joel F. Houston (2006). Dasar-Dasar Manajemen Keuangan, Edisi 11 Buku 1. Jakarta: Salemba Empat.

Datuk, Bahril. *Sukuk, Dimensi Baru Pembiayaan Pemerintah Untuk Pertumbuhan Ekonomi.* Jurnal Riset Akuntansi dan Bisnis Vol.14, No.1, 2014.

Dewi, Ni Putu Giri Kusuma, Ida bagus Anom Purbawangsa, dan Nyoman Abundanti. (2016). *Pengaruh Suku Bunga, Nilai Tukar, Coupon Rate, dan Likuiditas Obligasi Terhadap Harga Pasar Obligasi pada Sektor Keuangan*. E-Jurnal Manajemen. Vol. 5, No. 5, 2016: 2898 – 2927. Bali: Universitas Udayana.

Fathurahman, Heri, dan Rachma Fitriti. (2013) *Comparative Analysis of Return on Sukuk and Conventional Bonds*. American Journal of Economic. 2013, 3 (3): 159-163

Fatwa Dewan Syariah Nasional Nomor 40/DSN-MUI/X/2003 Tentang Surat Berharga Syariah Negara.

Fatwa Dewan Syariah Nasional Nomor 69/DSN-MUI/VI/2008 Tentang Surat Berharga Syariah Negara.

Fatwa Dewan Syariah Nasional Nomor 72/DSN-MUI/VI/2008 Tentang Surat Berharga Syariah Negara.

Fatwa Dewan Syariah Nasional Nomor 76/DSN-MUI/VI/2008 Tentang Surat Berharga Syariah Negara.

Gujarati, Damodar N dan Dawn C. Porter. (2012). *Dasar-dasar Ekonometrika Edisi 5 Buku 1*. Jakarta: Salemba Empat.

Gujarati, Damodar N dan Dawn C. Porter. (2013). *Dasar-dasar Ekonometrika Edisi 6 Buku 1*. Jakarta: Salemba Empat.

Hadian, Niki. (2013). *Pengaruh Perubahan Peringkat Obligasi, Tingkat Suku Bunga BI, Pertumbuhan PDB, Kurs Rupiah Terhadap Perubahan Harga Obligasi Korporasi yang Listing di PT. BEI Pada Periode 2002-2007*. Vol 3, No 1 (2013): Proceeding Seminar Nasional & Call For Papers (SCA-3).

Hartono, Jogiyanto. (2015). *Teori Portofolio dan Analisis Investasi Edisi Sepuluh*. Yogyakarta: BPFE.

Kementrian Keuangan Republik Indonesi, www.kemenkeu.go.id diakses pada 18 Oktober 2018.

Kementrian Keuangan Republik Indonesi, www.djppr.kemenkeu.go.id diakses pada 20 Oktober 2018.

Kempf, Alexander dan Marliese Uhrig-Homburg (2000). *Liquidity and Its Impact on Bond Prices*. Schmalenbach Business Review, Vol. 52, Pp. 26-44.

Laksana, Fajar. 2008. Manajemen Pemasasaran : Pendekatan Praktis. Edisi Pertama. Cetakan Pertama. Graha Ilmu. Yogyakarta.

Mahfudz, Ahmad Affandi (2014). *Pasar dan Instrumen Keuangan Islam*. Banten: Universitas Terbuka.

Manarung, Jonni dan Adler Haymans Manarung (2006). *Ekonomi Keuangan dan Kebijakan Moneter*. Jakarta: Salemba Empat.

Mankiw, N. Gregory (2000). *Teori Makro Ekonomi*. Jakarta: Erlangga

Nasrullah, Aan, Umar Burhan, dan Multifiah. *Studi Kepatuhan Syariah Dan Manfaat Ekonomi Terhadap Minat Investor Dalam Pembelian Sukuk Negara.* Jurnal. Vol.VII, No.1, 2013.

Nopirin. (1992). P*engantar Ilmu Ekonomi Makro dan Mikro Edisi Pertama.* Yogyakarta: BPFE.

Nurfauziah dan Adistien Fatma Setyarini (2004*). Analisis Faktor-Faktor yang Mempengaruhi Yield Obligasi Perusahaan (Studi Kasus Pada Industri Perbankan dan Industri Finansial)*. JSB No. 9 Vol. 2, Desember 2004, ISSN : 0853-7665

Nurhasanah (2011). *Hubungan antara Likuiditas dan Harga Sukuk Serta Faktor-Faktor yang Mempengaruhinya*. Tesis: Program Pasca Sarjana, Program Studi Timur Tengah dan Islam, Universitas Indonesia.

Peraturan Bank Indonesia No. 10/11/PBI/2008 Sertifikat Bank Indonesia Syariah.

Rahardjo, Sapto (2003). *Panduan Investasi Obligasi. Jakarta*: Gramedia Pustaka.

Rahman, Faizul, dkk. (2016). *Pengaruh Harga Sukuk Negara Ritel Seri Sr-005, Tingkat Inflasi Dan BI Rate Terhadap Tingkat Permintaan Sukuk Negara Ritel Seri Sr-005*. Jurnal Manajemen. Fakultas Ekonomi dan Bisnis Universitas Mulawarman. http://journal.feb.unmul.ac.id (Diakses pada 17 Oktober 2018).

Rakhman, Dicky Noor. (2017). *Pengaruh Likuiditas, Yield to Maturity, Jatuh Tempo, dan Variabel Makro Terhadap Harga Sukuk Ritel di Indonesia Tahun 2009-2017*. Skripsi: Fakultas Ekonomi dan Bisnis Islam UIN Sunan Kalijaga Yogyakarta.

Ramasamy, Ravindran, Shanmugam Munisamy, Mohd Hanif, danMohd Helmi. 2011. *Relative Risk Of Islamic sukuk over Government And Conventional Bonds.* Journal of Management and Business Research. Vol.11, Issue 6. 2011

Ratnasari, Ni Putu Anik Mas, I Putu Eka Nila Kencana, dan G.K Gandhiadi. (2014). *Aplikasi Regresi Data Panel Dengan Pendekatan Fixed Effect Model (Studi Kasus: PT PLN Gianyar).* E-Jurnal Matematika Vol. 3,No1 Januari 2014, 1-7, ISSN: 2303-1751.

Sedarmayanti, dan Hidayat. (2011). *Metode Penelitian*. Bandung: Mandar maju

Subanti, Sri dan Arif Rahman Hakim (2014). *Ekonometri.* Yogyakarta: Graha Ilmu.

Sukanto, Eman (2009). *Pengaruh Suku Bunga Deposito, Kurs Rupiah-USD, Tingkat Inflasi, IHSG dan Volume Transaksi Terhadap Harga Obligasi Pemerintah RI (SUN).* Fokus Ekonomi, Vol. 4 No. 2 Desember 2009 : 9-23.

Sukanto, Eman dan Widaryanti (2013). *Pengaruh Rate Bunga Deposito, Nilai Tukar Rupiah dan Besaran Inflasi Terhadap Harga Obligasi Pemerintah Republik Indonesia (Periode 2009-2013).* Jurnal Dinamika Ekonomi & Bisnis, Vol. 12 No. 2.

Susanti, H., Moh.Ikhsan dan Widyanti, 2000, *Indikator-indikator Makro Ekonomi,* Edisi Kedua, Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia, Jakarta.

Tandelilin, Eduardus (2010). *Portofolio dan Investasi Teori dan Aplikasi.* Yogyakarta: Kanisus.

Undang-Undang Republik Indonesia Nomor 19 Tahun 2008 Tentang Surat Berharga Syariah Negara

Wafa, Mohammad Agus Khoirul. (2010). *Analisa Faktor-faktor yang Mempengaruhi Tingkat Permintaan Sukuk Ritel*. Jurnal Ekonomi Islam. Volume IV, No. 2, Desember 2010. Yogyakarta: Universitas Islam Indonesia.

Wahid, Nazaruddin Abdul (2010). *Sukuk: Memahami dan Membedah Obligasi Pada Perbankan Syariah.* Yogyakarta: Ar Ruzz Media

Widarjono, Agus 2009. *Ekonometrika Pengantar dan Aplikasinya, Edisi Ketiga.* Yogyakarta: Ekonosia.

Widarjono, Agus 2013. *Ekonometrika Pengantar dan Aplikasinya, Edisi Keempat.* Yogyakarta:UPP STIM YKPN.

Yusiarmayanti, Rita. (2017). *Faktor-Faktor yang Memengaruhi Volume Perdagangan Sukuk Negara Ritel SR-005 di Indonesia 2013-2016*. Bogor: Institut Pertanian Bogor.