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The Influence of Sharia Capital Market, Sharia Bonds (Sukuk), and BI Rate on Gross Domestic Products (GDP) in Indonesia

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Abstract: This study aims to determine what affect GDP (Gross Domestic Product) in constant Indonesian prices. The dependent variable used is GDP (Gross Domestic Product), and the independent variables are Islamic stocks, Islamic mutual funds, Islamic bonds (Sukuk), and the BI rate. The data used in this study are monthly during the period 2016: 1-2018: 12 sourced from OJK, BI, and Ministry of Home Affairs. The estimation tool used in this study is the Vector Error Correction Model (VECM) using E-views 7.0. Estimation results show that in the short term, the GDP variable (Gross Domestic Product) itself, Islamic stocks, BI rate, and Islamic mutual funds significantly affect GDP (Gross Domestic Product). In the long run, the estimation results show that sharia stock variables and sharia mutual funds have a significant effect on GDP (Gross Domestic Product). While the sharia bond variable (Sukuk) and the BI rate do not significantly affect GDP (Gross Domestic Product). VECM estimation results in this study also produce important Says, namely IRF (Impulse Response Function) and VDC (Variance Decomposition).

Keywords: GDP; Sharia Shares; Sharia Mutual Funds; Sharia Bonds; BI rate (Sukuk); VECM; IRF; VDC

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Introduction

The country has several strategies to improve its economy and to build a good economy. Of course, it took a long time before becoming a developed country and was a developing country. Of course, the country experienced several quite tricky processes before becoming a developed country. Countries are called developed when they experience a process of increasing, increasing income per capita of the population. The income per capita will increase in the long run, meaning it progresses (Hudiyanto, 2017).

When a country has a high GDP (Gross Domestic Product), the country is capable because GDP (Gross Domestic Product) is a measuring tool for a country's economy. However, high GDP (Gross Domestic Product) does not mean that all country citizens also have a high economy because their income determines society's economy.

For example, one example is a country with a high GDP (Gross Domestic Product) value. The surrounding community still has a low economy, such as poverty.

GDP data (Gross Domestic Product) is used to determine the economy in that country. From this data, we can find out how the development of a country in a certain period. GDP (Gross Domestic Product) is identical to the income obtained from a country based on business fields or at constant prices to determine economic growth, seen from the GDP percentage data (Gross Domestic Product).

The data used to determine a country's economy is GDP (Gross Domestic Product). GDP (Gross Domestic Product) based on prices applies to see the shift and economic structure, GDP (Gross Domestic Product) at constant prices to determine economic growth from year to year.

To increase GDP (Gross Domestic Product), the State of Indonesia made an increase in Indonesia's capital market. According to Islamic law, the Islamic capital market is to accommodate the needs of the Muslim community who will invest their funds in the capital market. The capital market in Indonesia has developed quite well, which tends to continue to increase, in line with the development of Indonesia's Islamic finance industry. The Islamic capital market has several instruments, such as Islamic bonds (Sukuk), Islamic mutual funds, and Islamic stocks.

Table 1 GDP at constant prices

Year	GDP (IDR billion)
2016	9,434,613.40
2017	9,912,703.60
2018	10,425,361.30

Source: Central Bureau of Statistics

A developing country is a country that is increasing income, the welfare of its population, and it takes quite a long time. Indonesia is one of the countries with a middle-class income compared to other countries because to form a country to have high income certainly takes a long time. Indonesia has done to get a stable income so that it does not decrease every year , namely conducting international trade by investing and through the capital market in Indonesia.

The first Islamic capital market in Indonesia is sharia mutual funds, which the IDX (Indonesia Stock Exchange) launched in collaboration with PT. Danareksa Investment Management. On 25 June 1997 and on 03 July 2000, the JII (Jakarta Islamic Index) was then followed by Islamic bonds in 2002.

The Islamic capital market was formally launched on 14 March 2003, signed by a memorandum of understanding between Bapepam and the National Sharia Council of the Indonesian Ulama Council (DSN-MUI). Activities in the capital market regulated by the Capital Market Law (Capital Market Law), does not conflict with sharia principles.

The Islamic capital market is not a separate system from the capital market system as a whole.

The activities of the Islamic capital market do not differ from conventional capital markets. However, the Islamic capital market has several unique characteristics, namely the products and transaction mechanisms that do not conflict with Islamic principles.

Data on Islamic mutual funds in Indonesia, from 2015 to April 2019, has always increased. It means that mutual funds in Indonesia are still in good condition, although with relatively small numbers.

Figure 1 Sharia Mutual Fund Development
Source: The data processed by author

Based on figure 1, Islamic bonds or Sukuk, Sukuk issuers in Indonesia reached a figure of 24.28 trillion with 120 Sukuk. Corporate Sukuk in Indonesia Compared to conventional bonds, the number of corporate Sukuk issuers is meager, as shown figure 2:

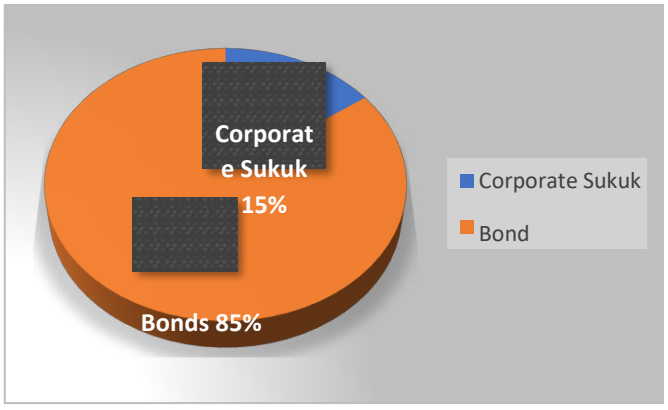

Figure 2 Development of Corporate Sukuk 09 May 2019
Source: Financial Services Authority (OJK)

The low number of corporate Sukuk is since Sukuk issuance is considered more complicated than conventional bonds. Sukuk issuers must have an underlying asset and a TAS (Sharia Expert Team).

Sharia stocks in Indonesia, from 2013 to 2018, always experience an increase and decrease. As seen in figure 3:

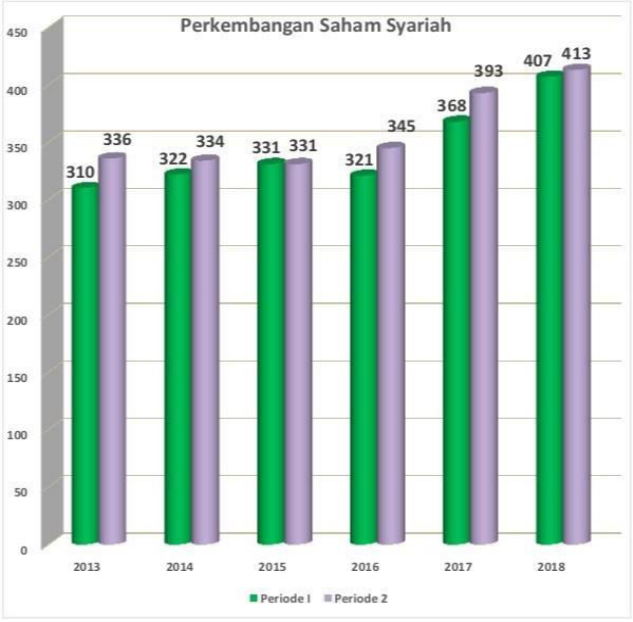

Figure 3 Number of Sharia Shares in the Stock Exchange List
Source: ojk.go.id, 2018

The BI Rate is a monetary policy set by BI (Bank Indonesia) to maintain economic stability and the determination of its value, namely inflation. Apart from maintaining economic stability, BI also has authority over fluctuations in the value of the rupiah. The developments in the BI rate data in Indonesia are as follows:

Table 2 BI 7-Day Repo Rate

Period	BI 7-Day
15 November 2018	6.00%
23 October 2018	5.75%
27 September 2018	5.75%
15 August 2018	5.50%

Source: bi.go.id

The purpose of this study is to determine the capitalization of Islamic stocks, Islamic mutual funds, corporate Sukuk, and the BI rate to GDP (Gross Domestic Product) in the long term and short term 2016: 1-2018-12.

Literature Review

Research conducted by Irawan and Siregar (2019). The method used is multiple linear regression with variables: the Islamic stock index, Islamic mutual funds, Sukuk, and GDP (Gross Domestic Product). The results of the research conducted by Lecturers of AMIK

Tunas Bangsa Pematangsiantar, in the T-test, stated that all variables used did not affect GDP (Gross Domestic Product) partially. In the F test, where it is greater than (7,368> 2,080) with a significant level of 0.002 <0.005, which means that simultaneously the Islamic stock index, Sukuk, and Islamic mutual funds have a positive effect on GDP (Gross Domestic Product). In other words, if the Islamic stock index, Sukuk, and Islamic mutual funds are getting better, it will increase the amount of GDP (Gross Domestic Product).

Research conducted by Kartika (2019) using the multiple regression analysis methods. The variables used are Islamic stocks, Islamic bonds, Islamic mutual funds, inflation. Kartika's research stated that Islamic stocks and Islamic bonds had a positive and insignificant effect on the variable GDP (Gross Domestic Product) partially. The variables of Islamic stocks, Islamic bonds, Islamic mutual funds, and inflation have a negative and insignificant effect on GDP (Gross Domestic Product).

Research conducted by Zou (2018) the method used was VECM (Vector Error Correction Model). The variables used are Islamic stock market capitalization, Islamic mutual funds, JUB (Total Money Supply), BI Interest Rate, and GDP (Gross Domestic Product). The research conducted by Zou stated that the Islamic stock market, Islamic mutual funds, money supply, or JUB (Total Money Supply) in terms of the amount of money in circulation, such as currency, demand deposits, and controlled money. The BI rate or interest rate has a significant effect on GDP (Gross Domestic Product) in terms of prices prevailing in Indonesia, both in the short and long term. In other words, if there is an increase in each variable, the amount of GDP (Gross Domestic Product) will increase in the specified year.

The research was conducted by Widodo in 2018 using the VAR (Vector Autoregressive) and VECM (Vector Correction Model) methods. The variables used are Islamic stocks, Sukuk, Islamic mutual funds, and GDP (Gross Domestic Product). The research conducted by Widodo stated that the Islamic stock variable has a significant positive effect on GDP in the long term. In the short term, it does not affect, only contributes to GDP by 30%. The Sukuk variable has a significant positive effect on GDP in the short term. In the long term, it does not affect GDP and only contributes 14%. Furthermore, the mutual fund variable does not affect the short term or long term.

The results of research conducted by Coskun in 2017 used the ARDL model, Markov Switching Regression, and the Kalman Filter Model. The variables used are the mutual fund/pension fund market, corporate bonds, the stock market, government bonds, and economic growth. The results of research conducted by Coskun stated that there was a long-term cointegration relationship between capital market development and economic growth. Capital market development has a symmetrical effect on economic growth, the government bond market is adverse, but the aggregate index of other sub-components is positively related to economic growth.

Research conducted by Ramlan and Suhaimi (2017). The study used the statistical package method for Social Sciences (SPSS) to assess the prospective relationship

between variables, the variables used were economic growth and inflation, and interest rates. The results of this study state that there is a positive relationship between interest rates and economic growth. It is also found that interest rates are significant and impact economic growth in Malaysia.

Research conducted by Maiga (2017), which used the statistical analysis regression method. The variables used are interest rates, financial system, and GDP (Gross Domestic Product). Result Research suggests that the interest rate has little impact on Nigeria's economic growth, but that economic growth can be increased by lowering interest rates, which will increase investment. It is also suggested that Nigerian authorities should set policy interest rates that will promote economic growth.

The research was conducted by Ologunwa and Sadibo (2016) using the structural dynamics method. The variables used are the capital market, market capitalization, turnover ratio, and economic growth. The results stated that the capital market ratio and turnover ratio were positive drivers of economic growth in Nigeria, and the stock market influenced economic growth through savings mobilization. Moreover, this study states that a large, liquid, and efficient stock market can facilitate savings realization.

Research conducted by Samuel and Nurina (2015), the method used for this research was Partial Least Square (PLS). The variables used are inflation, interest rates, exchange rates, and GDP (Gross Domestic Product). This study states that there is a significant negative relationship between interest rates on GDP (Gross Domestic Product) and a significant positive relationship from the exchange rate to GDP (Gross Domestic Product). Moreover, inflation has no significant effect on GDP (Gross Domestic Product). Research conducted by Khetsi and Mongale (2015) used an integrated approach. The variables used are the capital market, exchange rate, and GDP (Gross Domestic Product). The research results state a positive relationship between economic growth and the capital market in South Africa from 1971-2013. Furthermore, the country should focus on factors that contribute to capital market development, such as financial institutions' development.

Research Method

This research approach uses secondary data or time-series data with monthly periods, starting from 2016 in January to 2018 December, in Indonesia. This type of research uses quantitative research. The data obtained is realized in numbers and analyzed using statistical and econometric methods with the VECM (Vector Error Correction Model) approach. The research objects used are GDP (Gross Domestic Product), Islamic stocks, Islamic mutual funds, corporate Sukuk, and the BI rate. The selection of these variables is used to calculate how much influence the dependent variable (Gross Domestic Product) has on the independent variable (Islamic stocks, Islamic mutual funds, Islamic bonds (Sukuk), and the BI rate).

The technique of collecting data through a terminal or computer is a direct contact search (Kuncoro, 2009). In practice, this is done by researchers, such as collecting data by downloading directly. Which is available on websites such as www.bi.go.id, www.bps.go.id, www.kemendagri.go.id, www.ojk.go.id, and pusatdata.kontan.go.id will be held on 26 November 2019 respectively.

Result and Discussion

Data Stationary Test

Testing using Eviews-7, in the guide if the ADF t-Statistics is smaller than the critical value of 5% (0.05), H_0 is rejected H_1 is accepted, which means it does not contain a unit root and the data is stationary.

Table 3 Augmented Dicky-Fuller Test 1stDifference level

Variable	1st difference		
	T-stat	Probability	Information
GDP	-3,216580	0.0304	Stationary
SS	-5.389997	0.0001	Stationary
SO	-4,944988	0.0003	Stationary
RS	-6.277892	0.0000	Stationary
SB	-4,220292	0.0022	Stationary

Source: The data processed by author

Based on table 3, it can be seen that all the variables used in this study are stationary at 1st difference.

Determination of the Optimal Lag Length

Table 4 Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	261,0375	NA	7,73e-14	-16.00234	-15.77332*	-15,92643*
1	283,9459	37,22615	9.00e-14	-15.87162	-14.49749	-15,41613
2	313,0260	38,16763	7,89e-14	-16,12662	-13,60739	-15.29157
3	352,9376	39.91161*	4,40e-14*	-17,05860*	-13,39426	-15.84397

Source: The data processed by author

Table 4 shows that which has the most asterisks, namely lag 3, so that this lag was also chosen as the optimal lag based on the criteria. If the lag length test shows that most of the asterisks are at the same lag, then the lag length is at that lag. In other words, the determination of the optimal lag length uses lag three because it has the most asterisks.

VAR (Vector Autoregression) Stability Test Results

When using the VECM (Vector Error Correction Model) method, it is necessary to determine whether the data is stable. So, VAR stability testing can be performed by looking at the modulus number smaller than 1.

Table 5 The root of Polynomial Characteristic

Root	Modulus
0.865074 - 0.443406i	0.972092
0.865074 + 0.443406i	0.972092
-0.796333 - 0.399855i	0.891083
-0.796333 + 0.399855i	0.891083
-0.876078i	0.876078
0.809121	0.809121
-0.185558 - 0.769303i	0.791365
-0.185558 - 0.769303i	0.791365
0.260703 - 0.746103i	0.790339
0.260703 + 0.746103i	0.790339
0.440901 - 0.644593i	0.780957
0.440901 + 0.644593i	0.780957
-0.307352 - 0.654480i	0.723056
-0.307352 + 0.654480i	0.723056
0.074281	0.074281

Source: The data processed by author

From table 5, it can be seen that the results of the VAR (Vector Autoregression) stability test, which will be used for the IRF (Impulse Response Function) and VDC (Varian Decomposition) analysis, have been stable because the modulus range is <1. Thus, the results of the IRF (Impulse Response Function) and VDC analysis (Decomposition variant) are valid.

Cointegration Test Results

If the trace statistic or max-Eigen statistic value is greater than the critical value, it is stated that there is cointegration between variables. If there is no cointegration in this test, it is recommended to use the VAR (Vector Autoregression) method.

Table 6 Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. Of CE (s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob. **
None *	0.845819	127.7783	69,8189	0.0000
At most 1 *	0.658467	69.81976	47,8563	0.0001
At most 2 *	0.474643	36,51614	29,7971	0.0072
At most 3 *	0.401343	16,56213	15,4948	0.0344
At most 4	0.020973	0.657067	3,84147	0.4176

Source: The data processed by author

From table 6, it can be seen that the trace statistic value in several variables is greater than the critical value. According to the provisions, it is stated that this test has cointegration.

Results of the Granger Causality Analysis

Granger causality is used to determine and prove the short-term relationship between variables and the reciprocal relationship between variables. If the probability value is less than 5% (0.05), then the variable is declared to have a causal relationship.

Table 7 Pairwise Granger Causality Tests

Null Hypothesis	Obs	F-Statistics	Prob.
SO does not Granger Cause PDB PDB does not		3,29899	0.0361
Granger Cause SO	33	3,11037	0.0436
SB does not Granger Cause PDB		7,74993	0.0007
PDB does not Granger Cause SB	33	0.28573	0.8352
RS does not Granger Cause PDB PDB does not		8,66538	0.0004
Granger Cause RS	33	4,26212	0.0142

Source: The data processed by author

Table 7 shows that those who have a causal relationship have a probability value smaller than α 0.05 so that H_0 will be rejected, which means that a variable will affect other variables.

The variables SO (Sukuk), SB (BI Rate), RS (Sharia Mutual Funds), and GDP have a reciprocal relationship, or a two-way relationship. In other words, it influences each other between variables. Meanwhile, the SS variable (Sharia Stock) only has a one-way relationship.

Interpretation of VECM Estimation Results (Vector Error Correction Model)

If the partial T-statistic value is more than +22.02108 or less than -2.02108, it is stated that H_0 is rejected and H_1 is accepted (Winarno, 2015).

Table 8 Short Run VECM (Vector Error Correction Model) Estimation Results

Variable	Coefficient	T statistics
CointEq1	-0.514285	[-3,18842]
D ((PDB (-2))	0.456235	[2,52090]
D (SS (-2))	-0.028383	[-2,98847]
D (SB (-2))	7297,205	[2,14298]
D (RS (-1))	-3.527139	[-4,12444]
C	5648,866	[2,33749]

Source: The data processed by author

According to the type of data used, the short term used is one month, namely the monthly edition data for the period January 2016-December 2018. There are four

independent variables in lags 1 and 2, which significantly affect GDP (Gross Domestic Product). The influential variables are GDP itself at lag 2, SS (Sharia stocks) at lag 2, SB (BI rate) on lag 2, and RS (Islamic mutual funds) on lag 1. However, the SO (Sukuk) variable does not affect. Significant to GDP (Gross Domestic Product) in the short run.

Table 9 Long Run VECM (Vector Error Correction Model) Estimation Results

Variable	Coefficient	T statistics
SS (-1)	-0.084546	[-6,55812]
RS (-1)	-2,150300	[-8,30611]

Source: The data processed by author

In the long term, the variables SS (Sharia Stock) and RS (Sharia Mutual Funds). With a coefficient value of -0.084546 for SS (Sharia Shares) and RS's (Sharia Mutual Funds) value is -2,150300 has a positive effect on GDP (Gross Domestic Product). It means that if there is an increase in SS (Sharia Stock) and RS (Sharia Mutual Funds) of 1% (one percent) will cause the GDP (Gross Domestic Product) to increase by -6,55812 and -8,30611.

IRF (Impulse Response Function) Analysis Results.

IRF (Impulse Response Function) can provide an overview of the response of a variable in the future to the disturbance or shock (shock) of other variables. The duration of effect from a shock on other variables until the effect is returned to the equilibrium point can be known.

The IRF (Impulse Response Function) test results show how fast it takes for a variable to respond to other variables' changes. The IRF (Impulse Response Function) analysis is as follows:

a. The response of GDP (Gross Domestic Product) to shock Sukuk.

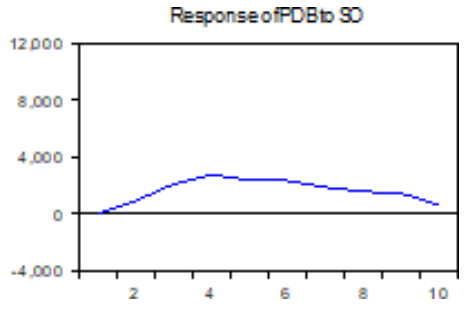

Figure 4 IRF Analysis Results
Source: The data processed by author

Figure 4 shows that the GDP (Gross Domestic Product) response to the SO (Sukuk) variable shock experienced a positive response from period 1 to period 10. So, it can be concluded that the GDP variable to the SO (Sukuk) variable shock is in a positive

response state. Throughout the period. That is, these variables experience a fluid response. The SO (Sukuk) variable returns to stability at eight until the end of the period.

b. GDP (Gross Domestic Product) Response of Sharia Shares.

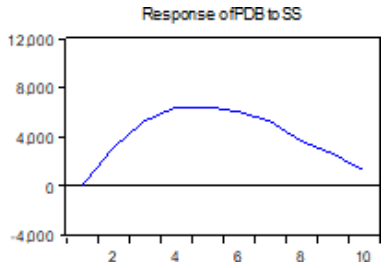

Figure 5 IRF Analysis Results
Source: The data processed by author

Based on Figure 5, it can be explained that the GDP response to the shock variable SS (Sharia Stock) experienced a positive response from period 1 to period 10. So, it can be concluded that the GDP variable to the SS variable shock (Sharia Stock) was in a positive response state throughout the period. It means that the SS variable (Sharia Stock) is always stable throughout the period or is always stable from period 1 to period 10.

c. GDP (Gross Domestic Product) response to SB (BI rate).

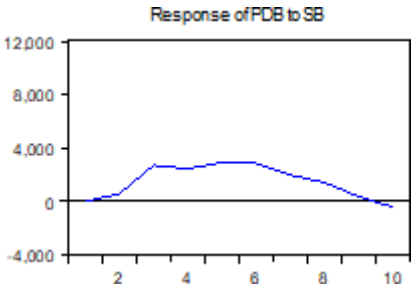

Figure 6 IRF Analysis Results
Source: The data processed by author

Figure 6 above shows that the response of GDP (Gross Domestic Product) to the shock variable SB (BI rate) experiences fluctuation in response. From period 1 to period 8 experienced a positive response, but in period 9 to period 10 experienced a negative response. So, it can be concluded that the GDP (Gross Domestic Product) variable to the SB variable shock is in a state of response fluctuation throughout the period. That is, these variables experience a fluid response. The SB (BI rate) variable has stabilized from 1 to 8. The rest has a negative response.

d. Response to GDP (Gross Domestic Product) of Sharia Mutual Funds.

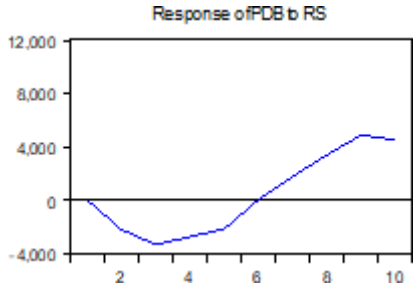

Figure 7 IRF Analysis Results
Source: The data processed by author

Figure 7 above shows that the response of GDP (Gross Domestic Product) to the shock variable RS (Sharia Mutual Funds) experiences fluctuation in response. From periods 1 to period experiencing a negative response, periods 7 to 10 experiencing a positive response. So, it can be concluded that the GDP variable against the shock variable RS (Sharia Mutual Fund) is in a state of fluctuation in response throughout the period. That is, these variables experience a fluid response. The RS (Sharia Mutual Fund) variable returned to stability in period 7 to period 10.

VDC Analysis Results (Variant Decomposition)

VDC (Variance Decomposition) aims to measure the amount of composition or contribution of the independent variable's influence on the dependent variable. In this study, VDC (Variance Decomposition) analysis is focused on seeing the effect of independent variables (Sharia Shares, Sharia Mutual Funds, Sharia Bonds, and BI Rate) on the dependent variable, namely GDP (Gross Domestic Product).

Conclusion

After testing the VECM model, the researchers concluded the research results on the effect of the Islamic capital market, Islamic bonds (Sukuk), and the BI rate on Gross Domestic Product in Indonesia for the 2016 period: 1-2018: 12. In the short term, Sharia Shares are lagging 2 (+), BI rate (+), and Sharia Mutual Funds (+) Sukuk (-). In other words, it has a significant effect on GDP (Gross Domestic Product) in Indonesia. Simultaneously, the Sharia Bond (Sukuk) variable does not show a significant effect on GDP (Gross Domestic Product) in Indonesia. In other words, the Sukuk variable does not affect the increase or decrease in the amount of GDP (Gross Domestic Product) in the short-term test.

In the long term, the variable Sukuk (-), Islamic stocks (+), BI rate or interest rate (-), Islamic mutual funds (+). In other words, it has a significant effect on GDP (Gross Domestic Product) in Indonesia. Except, the Sukuk and interest rate variables do not

significantly affect GDP (Gross Domestic Product) in Indonesia. It means that the variables that do not affect GDP (Gross Domestic Product), the variables that do not have that effect do not increase or decrease the amount of GDP (Gross Domestic Product).

Based on the results of VDC (Varian Decomposition) analysis, it is known that Islamic stocks provide the highest contribution to the formation of GDP (Gross Domestic Product), which is 45.05%, meaning that financial market conditions in Indonesia are still weak. Therefore, it is essential to deepen the capital market. People are advised to contribute to buying bonds, stocks, or savings.

Based on the VECM (Vector Error Correction) estimation results, it is known that the variables of Islamic stocks and Islamic mutual funds have a positive and significant effect on GDP (Gross Domestic Product) in Indonesia in the short term. Therefore, Islamic capital market financial literacy needs to be improved to manage their finances properly.

Based on the VECM (Vector Error Correction) estimation, the BI rate variable has a positive and significant effect on Indonesia's GDP (Gross Domestic Product) in the short term. Therefore, it is necessary to optimize the Bank Indonesia mix policy because an increase in the BI rate can raise inflation.

From the research found, it can be seen that the number of Islamic capital markets is still minimal, and encouragement from various parties is still needed. With the analyzed data, the researcher found a positive relationship between the Islamic capital market and Gross Domestic Product. It means that the Islamic capital market can increase the amount of GDP (Gross Domestic Product) if there is an increase in the Islamic capital market.

The Islamic capital market in Indonesia is still tiny. However, it can boost or increase the amount of GDP (Gross Domestic Product) in Indonesia. If the numbers or data found are more significant, of course, it will have a good impact on the increase in GDP (Gross Domestic Product).

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