

# Impact of Macroeconomics on Corporate Sukuk Yield in Indonesia

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**Abstract**. This research aims to investigate the impact of macroeconomics variables on corporate *sukuk* yield in Indonesia. The method used is the VECM (Vector Error Correlation Model). The samples in this study were the entire company which issued the *sukuk* period from January 2014 to December 2018. The results of this research show that on the long-run variable BI Rate, IPI, World Oil Price (Brent and WTI), and exchange rate are significant effect on gross yield. Investors and corporations are expected to see macroeconomic conditions as a matter of consideration in funding and investment decision making. The government is expected to be able to control macroeconomic conditions especially a significant variable on the yield because it can affect the investment climate in the capital market especially in the investment related to *Sukuk*.

Keywords: Macroeconomic; Sukuk Yield; BI rate; IPI; World Oil Price; Exchange Rate

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## **INTRODUCTION**

*Sukuk* (Islamic Bonds) is an investment certificate of tangible assets or benefits that become the underlying asset. *Sukuk* is a long term financing model for the company and the government, so that prospective investors should pay attention to the duration or tenor or maturity time of the instrument. Currently, there are seven types of *sukuk* in Indonesia based on the underlying contract, among others: *murabaha sukuk, mudharabah sukuk, musharaka sukuk, ijarah sukuk, salam sukuk, istisna sukuk,* and hybrid/pooled *sukuk* (Wahid, 2010:116).

*Sukuk* Investor will get reward in the form of *sukuk* yield. *Sukuk* with great risk has higher yield compared to *Sukuk* with low risk (Melzatia, Doktoralina, & Mahroji, 2018; Kavtaevich et al., 2019). The fluctuation of *sukuk* yield is part of the risk that investors and issuers have to face. This is in accordance with the Islamic rule on investment, namely "*Al* – *Ghunmu bil Ghurmi*" which means the risk will always accompany the expectation of return or yield.

Risks in investments are divided into systematic risk and non-systematic risks. Non-systematic risk is the risk that comes from the internal company so that it can still be controlled by the company. The systematic risk is the risk that comes from external companies and cannot be avoided or controlled by the company. Macroeconomic factors empirically proven affect the condition of capital market. Factors include gross domestic product (GDP), inflation growth rate, and interest rate, world oil price, and rupiah exchange rate (Tandelilin, 2010).

Inflation is a continuous increase in prices that can affect individuals, corporations, and governments (Mishkin, 2011). Inflation has a positive and significant impact on bond yield where the inflation rate affects the large numbers of the yield desired by investors (Saputra & Prasetiono, 2014). Bank Indonesia (BI) rate has a positive and significant effect on yield *sukuk* Ijarah. Interest rate will affect investor decision making, when the interest rate increases, the *sukuk* value will decrease (Ulfah, Kusnendi, Aprilliani, & Adirestuty, 2019).

Gross domestic product (GDP) is used to determine the economic condition of a country within a certain period. The increase in GDP will positively impact the purchasing power of the public so as to increase demand for the company's products. Therefore, the increase in GDP is a positive signal for investors to invest (Saputra & Prasetiono, 2014). In this research we use Industrial Production Index (IPI).

The exchange rate has a big influence on the capital market. Research from (Hong, Niu, & Zeng, 2019) indicates that the exchange rate policy is a source of risk for the international bond market. Studies from (Gadanecz, Miyajima, & Shu, 2018) also proved that the risk of exchange rates can impact on yield bonds.

Macroeconomic factors are a reflection of systematic risk; the worsening of macroeconomic conditions will increase the systematic risk that can decrease the company's performance. This research aims to investigate the impact of macroeconomic variables projected by the inflation variable, BI rate, Industrial Production Index (IPI), world oil (Brent and WTI) as well as the rupiah exchange rate on the corporate yield *sukuk* in Indonesia.

### LITERATURE REVIEW

### Sukuk

*Sukuk* is a sign of investor's capital participation to the issuer based on Islamic law. *Sukuk* is a type of long-term investment instrument that has a due time limit issued by an entity to the public, thus giving rise to the issuer's obligation to repay the value of the investor's initial investment Full at the end of the tempo accompanied by regular payment at the set times until the maturity date arrives (Ryandono, 2008).

According to the National Sharia Council (DSN) No. 32/DSN-MUI/IX/2002 on sharia bonds, it defines the sharia bonds as follows: "Sharia bonds are a long-term securities based on the issuer's sharia-issued principle to sharia bondholders who require issuers to pay the income to sharia bonds in the form of revenue share/margin/fee and repay the bonds".

Based on Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), *Sukuk* in secondary market study grouped *Sukuk* into two, namely tradable *Sukuk* that include *Sukuk* Ijarah, Mudharabah, Musyarakah, and Murabahah; and *sukuk* that cannot be traded (non-tradable) include *Sukuk* Salam, Istishna ', and hybrid *sukuk*.

## Yield

Yield is the rate of return on investment received by investors. Effective Yield (EY) informs the overall yield of the bonds calculated based on the increase or decrease of the bond yield and has taken into account the accumulated interest accrual while the Gross Yield (GY) is a result of a calculation depicting the overall yield movement of bonds calculated based on rising or decreasing bond yield, accumulated running interest rate, and bond duration values. (IDX & IBPA, 2018).

## Macroeconomics

Macroeconomics talks about the economy as a whole and ignores individual units and the problems it faces. In learning the overall economic achievement the macro economy concentrates on the economy policies and policy variables that affect the achievement (Irawan & Suparmoko, 2008). The macroeconomic variables used in the study include: inflation, BI rate, GDP, Brent, WTI, and exchange rates.

Inflation can be interpreted as an increase in the price of goods or commodities and services generally over a certain period of time (Karim, 2015). A high level of risk causes investors to expect the results gained when bonds are also higher (Tandelilin, 2010).

H<sub>1</sub>: Inflation has significant effect on corporate *sukuk* yield in Indonesia

BI (Bank Indonesia) rate are interest rates stipulated by Bank Indonesia and used as a reference for interest rates and savings interest rates for financial institutions in Indonesia. BI Rate Positive and significant effect on yield *sukuk* Ijarah (Ulfah et al., 2019). If the BI Rate is increased, it will be responded with a rise in the return rate which the investor suggests because the price of the bond tends to decrease due to the BI Rate rise (Saputra & Prasetiono, 2014).

H<sub>2</sub>: BI Rate has significant effect on corporate *sukuk* yield in Indonesia

Economic growth can be proscribed by both GDP and IPI. In this study used IPI as the economic growth proxy to replace GDP due to the absence of GDP monthly data. The increase in GDP will positively affect the purchasing power of the public so as to increase demand for the company's products. Therefore, rising GDP is a positive signal for investors to invest (Saputra & Prasetiono, 2014).

H<sub>3</sub>: Economic growth has significant effect on corporate yield *sukuk* in Indonesia

Brent is an oil that represents the European index and is distilled from the North Sea. Brent futures contracts are traded on Intercontinental Exchange (ICE) in London. Research conducted by (Arshad, Muda, & Osman, 2018) stated that in the long-term world oil prices are positively and significantly influential towards yield sovereign bonds and *sukuk* in Malaysia.

H<sub>4</sub>: The world oil Price (Brent) has significant effect on corporate yield *sukuk* in Indonesia

West Texas Intermediate (WTI) originated in the United States. WTI futures contracts are traded on the New York Mercantile Exchange (NYMEX). In the long-term world oil prices positively and significantly affect the yield bonds and *sukuk* in Malaysia (Arshad et al., 2018).

H<sub>5</sub>: The world oil Price (WTI) has significant effect on corporate yield sukuk in Indonesia

The exchange rate represents the representation of the price level from one currency to another and is used in various transactions between countries that cross borders – geographical boundaries and boundaries – legal boundaries (Karim, 2015). Research from (Hong et al., 2019) indicates that the exchange rate policy is a source of risk for the international bond market. Studies from (Gadanecz et al., 2018) also proved that the risk of exchange rates can impact on yield bonds.

H<sub>6</sub>: The exchange rate has significant effect on corporate yield *sukuk* in Indonesia

### **METHODOLOGY**

The samples on this study were all *sukuk* issuing companies that were actively traded in the January period of 2014 to December 2018. Vector Error Correction Model (VECM) methods are used to answer the entire hypothesis.

### Analytical techniques

### **Test Stationary**

The method used to test the data station in this research is an Augmented Dickey Fuller test (ADF) using a real level of 5% (0.05), the hypothesis is as follows:

 $H_0 = 0$  (Root unit or no stationary time series)

 $H_1 = \delta < 0$  (Stationary Time Series)

If the probability of the ADF is less than  $\alpha = 0.05$ , then the H0 is rejected or the time series is stationary (does not contain the root of the unit). Unit root testing is done at level level up to first difference.

## Lag Optimal Test

The determination of the lag used to process data is needed when using the Vector Error Correction Model (VECM) so that the research gets better results. Some criteria for choosing the optimal lag can be chosen i.e. Aike Information Criteria (AIC), Schwarz Criteria (SC), or Hannan-Quin Criterion (HQ). In the selection of criteria, researchers chose the smallest criteria value of all three criteria.

## **Test Cointegration**

The purpose of a coherency test is to know whether the variables in the study have the same movement in the long run. The cointegration test was conducted using the method of the Johansen's Cointegration test by looking at the value of trace statistic and Max Eigen statistic which should be greater than the critical value or critical value. The critical value used in the study was 5%. If variables are proven to be cointegrated, the VECM analysis model can be applied.

## **Estimation of VECM Model**

The VECM analysis method can be used to see the short-term behaviour of a variable against its long-term value. In this study used Cointegration 2 to obtain the results of VECM estimates according to previous cointegration results. If the T-count value is greater than T-table, there is a significant relationship between the exogenous variable and the endogenous variable in the long or short term. Long term and short term estimates are separate; therefore, not all significant variables on the long run will have a significant influence on the short term.

# **RESULTS AND DISCUSSION**

### Results

### **Stationary Test Results**

Stationery test is the most important step in analyzing time series data. Stationary data means that the variance of data remains throughout the research period. Conversely if the data is not stationary, indicating at a certain time the economic situation performs certain actions that are out of normal state (Ekananda, 2014). Stationary test in this study using Augmented Dickey-Fuller test statistic testing at the trend and intercept levels. The following is the result of the test at the level seen in the table below:

| Variable                | ADF t-     | Droh   | Mac Kinnon Critical Value |           |           | Information       |
|-------------------------|------------|--------|---------------------------|-----------|-----------|-------------------|
| variable                | statistics |        | 1%                        | 5%        | 10%       | information       |
| Gross Yield             | -2,000808  | 0.5887 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |
| Inflation               | -3.445318  | 0.0551 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |
| BI Rate                 | 0.425044   | 0.9988 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |
| IPI                     | -8.148895  | 0.0000 | -4.121303                 | -3.487845 | -3.172314 | Stationary        |
| World Oil ( Brent )     | -1.63835   | 0.7656 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |
| World Oil (WTI)         | -2.190792  | 0.4855 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |
| Rupiah exchange<br>rate | -2.149842  | 0.5079 | -4.121303                 | -3.487845 | -3.172314 | Not<br>stationary |

**Table 1.** The Results of Unit Root Test Level Augmented Dickey-Fuller Statistic Test

Source: Estimation Results using Eviews 9.0 (data processed)

Table 1 explains that not all variables are stationary at level. In this study use  $\alpha = 5\%$ . The IPI variable has an ADF value of T-Statistic greater than the value of Mac Kinnon Critical Value that has the meaning that the variable is stationary. While the variable Gross Yield, inflation, BI rate, oil World (Brent), Oil World (WTI), and the rupiah exchange rate has a value of ADF t-Statistic that is smaller than the value of Mac Kinnon Critical Value Then it is declared not stationary. Because there are some variables that are not stationary at the level level, it is necessary to do a station test at the first difference level. This is with the intention that all variables can be freed from the unit root problem and has a stationary data condition

| Variable             | ADF t-     | Droh   | Mac Kinnon Critical Value |          |          | Information |
|----------------------|------------|--------|---------------------------|----------|----------|-------------|
| variable             | statistics | PTOD.  | 1%                        | 5%       | 10%      | Information |
| Gross Yield          | -7.405335  | 0.0000 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| Inflation            | -7.554897  | 0.0000 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| BI Rate              | -5.622885  | 0.0001 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| IPI                  | -12,32769  | 0.0000 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| World Oil ( Brent )  | -6.121774  | 0.0000 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| World Oil (WTI)      | -5.499602  | 0.0001 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |
| Rupiah exchange rate | -8.686093  | 0.0000 | -4.12427                  | -3,48923 | -3.17311 | Stationary  |

**Table 2.** The results of Unit Root Test Level First Difference Augmented Dickey-Fuller Statistic Test

Source: Estimation Results using Eviews 9.0 (data processed)

Table 2 provides an explanation that all variables in this study have been stationary. It can be seen from the ADF value of T-Statistic which is greater than the value of Mac Kinnon Critical Value at  $\alpha = 5\%$ . Therefore, it can be concluded that at first difference variable rate of Gross Yield, inflation, BI rate, IPI, oil World (Brent), Oil World (WTI), and the rupiah exchange rate does not have a root unit so the data is declared stationary.

# **Optimal Lag Test Results**

Determination of the optimal lag is an important step before proceeding to the cointegration test. Some criteria for choosing optimal lag can be chosen, namely Aike Information Criteria (AIC), Schwarz

Criteria (SC), or Hannan-Quin Criterion (HQ). In the selection of criteria, the researcher chooses the least value of the three criteria.

| Criteria of Name                | Criteria of Value |
|---------------------------------|-------------------|
| Aike Information Criteria (AIC) | -22.18029         |
| Schwarz Criteria (SC)           | -12.98306         |
| Hannan-Quin Criterion (HQ       | -18.62365         |

**Table 3.** The Results of Lag Criterion Test on Effective Yield

Source: The Results of Optimal Lag Test Eviews 9.0 (data processed)

Table 3 shows that the value of Schwarz Criteria (SC) has the smallest value compared to the other two lag criteria. Therefore, Schwarz Criteria (SC) will recommend lag that will be used for further testing. The table below is the optimum lag test results that have been processed:

| Lag | LogL     | LR         | FPE        | AIC         | SC          | HQ          |
|-----|----------|------------|------------|-------------|-------------|-------------|
| 0   | 363,0292 | NA         | 5.62e-15   | -12.9465    | -12.69104   | -12,84772   |
| 1   | 657.1723 | 502.7172   | 7.67e-19 * | -21.8608    | -19.81698 * | -21.07044 * |
| 2   | 689.5964 | 47.16234   | 1.53e-18   | -21.2581    | -17.42587   | -19.77612   |
| 3   | 747,2302 | 69,16058 * | 1.41e-18   | -21,572     | -15.95148   | -19.3985    |
| 4   | 799,1476 | 49,08552   | 2.08e-18   | -21.6781    | -14.26921   | -18.81302   |
| 5   | 861.9581 | 43,39634   | 3.33e-18   | -22.18029 * | -12.98306   | -18.62365   |

Table 4. The Results of Optimum Lag Test

Source: The Results of Optimal Lag Test Eviews 9.0 (data processed)

Table 4 shows the results of optimum lag test that will be selected to continue the cointegration test. Based on the table above, the value of Schwarz Criteria (SC) which has a star is in lag 1. Therefore, the selected optimal lag in this study is lag 1.

# **Cointegration Test Results**

The purpose of the cointegration test is to find out whether the variables in the study have the same movement in the long run. Cointegration test conducted using the Johansen's Cointegration test method by looking at the value of trace statistics and max eigen statistics which must be greater than critical values or critical values. The critical value used in the study is 5%. If the variables prove to be co-integrated, then the VECM analysis model can be applied.

| Hypothesized  |            | -                   | 5%               | Prob. ** |  |
|---------------|------------|---------------------|------------------|----------|--|
| No. of CE (s) | Eigenvalue | Trace<br>Statistics | Crtical<br>Value |          |  |
| None *        | 0.666252   | 152.5224            | 134.6780         | 0.0029   |  |
| At most 1     | 0.445963   | 88.87505            | 103,8473         | 0.3196   |  |
| At most 2     | 0.295019   | 54,62462            | 76.97277         | 0.6972   |  |
| At most 3     | 0.191841   | 34,34871            | 54.07904         | 0.7529   |  |

**Table 5.** The Results of Cointegration Test with Johansen's Cointegration Test Method

Source: Eviews 9.0 estimation results (data processed)

Table 5 shows the trace statistic value at none is greater than the critical value of 5%. This proves that the data in the study are cointegrated and indicate a long-term balance between variables. Furthermore, data integration can be seen in the max eigen statistics.

Table 6. The Results of Cointegration Test by Johansen's Cointegration Test

(Max Eigen Statistics)

| Hypothesized | Eigenvalue | Max | 5% | Prob. ** |
|--------------|------------|-----|----|----------|
|--------------|------------|-----|----|----------|

| No. of CE (s) |          | Eigen    | Crtical<br>Value |        |
|---------------|----------|----------|------------------|--------|
| None *        | 0.666252 | 63,64735 | 47.07897         | 0.0004 |
| At most 1     | 0.445963 | 34,25042 | 40,95680         | 0.2332 |
| At most 2     | 0.295019 | 20,27592 | 34.80587         | 0.7959 |
| At most 3     | 0.191841 | 12.35381 | 28.58808         | 0.9513 |

Source: Eviews 9.0 estimation results (data processed)

Table 6 shows that results of the max eigen statistical test where the value of the max eigen statistic is greater than the critical value of 5% at none. It means that data is cointegrated and has a balance between variables in the long run. The integration of data in Johanses's method shows that the use of VECM in the study is appropriate and can be continued to the next test phase, namely VECM estimation.

# **VECM Model Estimation Results**

If the research data has proved by cointegration test, the VECM analysis method can be used to see the short-term behavior of a variable against its long-term value. In this study, cointegration 2 is used to get the estimation results of VECM in accordance with the results of previous cointegration. If the value of t-count is greater than t-table, then there is a significant relationship between exogenous variables and endogenous variables in the long run or short run. The long-term and short-term estimation results are separate, therefore not all variables that are significant in the long term will have a significant effect on the short term too.

| Long-term            |             |              |                 |  |  |  |
|----------------------|-------------|--------------|-----------------|--|--|--|
| Variable             | Coefficient | t-statistics | Information     |  |  |  |
| С                    | 113.8554    | 4,71649      | -               |  |  |  |
| Gross Yield          | 1.00000     | -            | -               |  |  |  |
| Inflation            | 10.71977    | 1.09824      | Not significant |  |  |  |
| BI Rate              | -0.870737   | -7.12667     | Significant     |  |  |  |
| IPI                  | 42,33463    | 10,0428      | Significant     |  |  |  |
| World Oil ( Brent )  | 7.76884     | 2,68695      | Significant     |  |  |  |
| World Oil (WTI)      | -9.867052   | -3.18819     | Significant     |  |  |  |
| Rupiah exchange rate | -11.68702   | -4.93119     | Significant     |  |  |  |
| Short-term           |             |              |                 |  |  |  |
| Variable             | Coefficient | t-statistics | Information     |  |  |  |
| CointEq1             | -0.071647   | -1.32878     | Not significant |  |  |  |
| Gross Yield          | 0.048058    | 0.25002      | -               |  |  |  |
| Inflation            | 2,544966    | 0.39262      | Not significant |  |  |  |
| BI Rate              | 0.033713    | 0.13899      | Not significant |  |  |  |
| IPI                  | 1.47897     | 1.06769      | Not significant |  |  |  |
| World Oil ( Brent )  | 3.171768    | 1.88948      | Not significant |  |  |  |
| World Oil (WTI)      | -2.353743   | -1.42553     | Not significant |  |  |  |
| Rupiah exchange rate | -0.121986   | -0,04513     | Not significant |  |  |  |

**Table 7.** The Results of Vector Error Correction Model Estimation

#### t table = 1.67411624

Source: Eviews 9.0 Estimation Results (data processed)

Note: t-table is obtained from the value df = nk at  $\alpha$  = 5%

Based on the results of the VECM estimates in Table 7, the following long-term equation can be found:

 $GY_{t-1}$  = 113.8554 - 10.71977 INFLATION t-1 + 0.870737 BI t-1 - 42.33463 IPI t-1 - 7.76884 MD (Brent) t-1 + 9.867052 MD (WTI) t-1 + 11.68702 EXCHANGE t-1

Based on Table 7 in the long run, we know that inflation has no significant effect on Gross Yield because the t-statistic value of the inflation variable is 1.09824 smaller than the t-table that is 1.67411624. BI rate has significant and positive effect on Gross Yield because the t-statistic value of the BI rate of -7.12667 is greater than the t-table that is 1.67411624. IPI has significant and negative effect on Gross Yield Because the t-statistic value of the IPI variable is 10.0428 greater than the t-table that is 1.67411624. MD (brent) has significant negative effect on Gross Yield because the value of t-statistics on the MD variable (brent) of 2.68695 is greater than the t-table that is 1.67411624. MD (WTI) has significant and positive effect on Gross Yield because the value of t-statistics on the MD variable (WTI) of -3.18819 is greater than the ttable that is 1.67411624. Rupiah Exchange Rate has significant and positive effect on Gross Yield because the t-statistic value of the variable rupiah exchange rate of -4.93119 is greater than the t-table that is 1.67411624

## DISCUSSION

# The Relationship of Inflation to Sukuk Yield

The results of estimates on the table show that inflation has an insignificant effect on both the short and long term *sukuk* yield. Inflation is the rate of increase in the price of goods in the country. The results of this study are different from research (Ulfah et al., 2019) that shows that inflation has a significant negative impact on *sukuk* Ijarah yield in Indonesia and research from (Saputra & Prasetiono, 2014) which shows that inflation has an impact Significant positive on bond yield.

Inflation has no impact on the *sukuk* yield can be caused because the contract used in *Sukuk* in Indonesia is mostly Ijarah (lease) where Ijarah fee is already set at the beginning of the contract. In addition, during the period of fluctuating inflation research with the trend tends to decline so that the changes do not have much impact on the corporate yield *sukuk*. Investors then did not make inflation as a matter of consideration in decision making when investing. Investors observe other factors outside of inflation and then make investment decisions (Rachmawati & Laila, 2015).

## The Relationship of BI Rate to Sukuk Yield

The results of estimates on the table indicate that the BI Rate has an insignificant influence on the *sukuk* yield on the short term. On the long term, BI Rate significantly negative effect on the yield *sukuk*. The results of this research are different from research by (Ulfah et al., 2019) Stating that the BI rate has a negative impact on the yield *sukuk* ijarah. Research from (Saputra & Prasetiono, 2014) also stated that BI rate negatively impacts bond yield.

BI Rate rise or fall will affect the yield of corporate bonds. The rise of the BI Rate will trigger a corporate bond yield hike. This will have an impact on the bond issuer, both the government and the company, must add funds to pay the return to the Investor (Darmawan, 2019). Meanwhile, the decline of BI Rate will affect the issuer's opportunity to issue corporate bonds. The lower level of BI Rate makes the issuer's opportunity to issue corporate bonds greater because the issuer's load burden will be smaller due to the return of the corporate bond yield. If the BI rate decline has not been followed by a decrease in credit interest rates, then issuers would prefer to issue corporate bonds as a source of funding than borrowing at banks (Satriani, 2011). BI Rate which is negative and significant effect on *sukuk* yield in accordance with (Tandelilin, 2010) which mention that interest rate will affect securities in capital market because high interest rate is negative signal because investor will tend to Investment in the form of savings or deposits.

# The Relationship of Industrial Productivity Index (IPI) to Sukuk Yield

The estimation results in the table show that economic growth proxied by IPI has a positive and no significant effect on corporate *sukuk* yields in the short run. Whereas in the long run, IPI has a positive and significant effect on corporate yields *sukuk*. Results of this research according to the research by (Mawardi, Widiastuti, & Sukmaningrum, 2019) Indicating that IPI has a positive impact on capital market activities (ISSI index movement). Economic growth has significant effect on *sukuk* yield is supported by

research conducted by (Hanesti, 2015) stated that when GDP growth rate has increased the yield of ijarah *sukuk* received by *sukuk* holders will also increase.

When IPI increases, the condition of the real sector in Indonesia will be positive growth. During the study period, IPI fluctuated and tended to increase. It can be interpreted that the performance of companies in Indonesia has increased. So that investors will expect higher yield than *sukuk* owned.

# The Relationship of World Oil (Brent) to Sukuk Yield

The estimation results in the table show that world oil prices (Brent) have a no significant effect on corporate *sukuk* yields in the short term. But in the long run, world oil prices (Brent) have a positive and significant effect on corporate *sukuk* yields. This results in accordance with the research by (Arshad et al., 2018) stating that the world oil prices have a significant positive impact on the yield of sovereign bonds and *sukuk*.

The increase in oil prices has the potential to affecting the condition of the bond market in Indonesia (Andi, 2019). The Indonesian oil price Formula (ICP) refers to the price of Brent oil plus Alpha (Rezki, 2016), so the increase in the price of Brent oil will greatly impact the company in Indonesia. The price increase of Brent oil will have an impact on the risks received by the company increases so that investors will ask for higher yield as compensation.

# The Relationship of World Oil (WTI) to Sukuk Yield

The results of estimates on the table show that the world oil price (WTI) has no effect on the corporate yield *sukuk* on the short term but in the long term, the world oil Price (WTI) significant negative effect on the yield *Sukuk* Corporation. WTI world oil prices are different from BRENT because WTI is more traded in America. WTI is also less affected by the geopolitical crisis in Middle East as it is being produced in the lowlands of the United States region (Academy, 2019); (Bobrova, 2018). With the current conditions, the risk borne at the price of WTI oil is lower than BRENT. Investors assume that WTI price increases will not increase the risk incurred. So that WTI oil price increase can negatively impact the corporate Yield *Sukuk* in Indonesia.

## The Relationship of Exchange Rates to Sukuk Yields

The results of estimates on the table indicate that the exchange rate is not significant against the corporate *sukuk* yield on the short term. While the long-term exchange rate is negative and significant impact on the corporate *sukuk* yield. The results of this study correspond to the research by (Huang, Chang, & Tian, 2019) which shows that the exchange rate has significant effect on the corporate bond yield.

Research from (Gadanecz et al., 2018) concluded that the risk of exchange rate could affect sovereign bond yield. The exchange rate policy is one of the sources of risk for the international bond market (Hong et al., 2019). The increase in rupiah exchange rate against the USD indicates that the rupiah is depreciation so that the company risk is higher. The increase in the company's risk will result in the increase of corporate *sukuk* yield in Indonesia.

## CONCLUSION

The results of this research show that on long-term the variable Bank Indonesia Rate (BI Rate), Industrial productivity Index (IPI), Oil World Price (BRENT), Oil World Price (WTI), and exchange rates have significant effect on gross yield. While in the short term there are no variables that have significant effect on gross yield.

Investors should see macroeconomic conditions as a material consideration in the decision to invest in *sukuk*. In accordance with the results of the research, investors can consider the significant macroeconomic variable starting from the IPI, the rupiah exchange rate, the world oil Price (WTI), the world oil Price (Brent), and the BI rate. The company is expected to pay attention to the conditions of macroeconomic before the issuance of *sukuk*. The government is expected to be able to control the macroeconomic conditions especially significant variables against the yield because it can affect the investment climate in the capital market especially on the investment related to *sukuk*.

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