THE ROLE OF MACRO ECONOMIC VARIABLES AND WORLD GOLD PRICES IN JAKARTA ISLAMIC INDEX MOVEMENT IN INDONESIA STOCK EXCHANGE IN THE PERIOD 2013-2017

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Abstract
Islamic investment in the capital market has an important role to play in developing the market share of the Islamic financial industry in Indonesia. One of the tools to measure the performance of the Islamic capital market in Indonesia is the Jakarta Islamic Index (JII). This study aims to obtain empirical evidence on the role of macroeconomic variables represented by the Bank Indonesia (BI) interest rates, world gold prices, the rupiah exchange rate against the United States Dollar (USD) and the money supply against JII movements in the Indonesia Stock Exchange (IDX). The data is taken from the monthly time series data for the period 2013-2017. The variables in this study are BI interest rates, world gold prices, rupiahs exchange rate against the US dollar, the money supply and the JII. The analytical method used in this research is the Vector Error Correction Model (VECM). The analysis shows that the BI interest rate, world gold price, rupiah exchange rate against the US dollar and the money supply have all contributed to the movement of the JII.

Keywords: Interest Rate, World Gold Price, Jakarta Islamic Index, Indonesia
INTRODUCTION
The existence of the capital market in Indonesia is one of the important factors in the effort to participate in building the national economy, as evidenced by the many industries and companies that use capital market institutions as a medium to absorb investment and the media to strengthen their financial position. Indonesia is one of the countries in the world that has with the largest Muslim population and has a large market to develop the financial industry, especially the Islamic finance industry.

The Islamic capital market in Indonesia over the past 5 years has had a positive growth. Based on the 2015-2019 Indonesia sharia capital market roadmap, the integrated supervision of the sharia financial services industry, which includes sharia banking, sharia capital market and sharia non-bank financial industry (IKNB) run by the Financial Services Authority (OJK) and the entry into the ASEAN Economic Community (AEC) are the fundamental changes in this era. Some of the main strategies for the development of the sharia capital market within the next 5 years are strengthening the rules, increase supply and demand, develop human resources and information technology, facilitate promotion and education, as well as policy synergies with related parties (Otoritas Jasa Keuangan, 2015).

There are several macroeconomic factors that can influence the stock index and stock activities in JII and the Indonesia Stock Exchange (IDX). These include the interest rates, world gold prices, the value of foreign exchange rates, the money supply and others. Interest rate describes the monetary stance previously determined by the Board of Governors of Bank Indonesia at each monthly Board of Governors’ meeting and implements it during monetary operations conducted by Bank Indonesia through managing the policy of liquidation in the money market in order to achieve operational monetary policy objectives (Pasaribu, Firdausdan Dionysia, 2013).

The purpose of this study is to analyze the role and contribution of BI interest rates, world gold prices, rupiah / US dollar exchange rates and the money supply to the JII for the 2013-2017 period.

THEORETICAL FRAMEWORK AND RELATED ARTICLES
The Jakarta Islamic Index (JII) is currently one of the stock indices that have a promising perspective on the capital market. JII is an alternative for investors in addition to the Composite Stock Price Index (CSPI). JII currently has the option to be able to invest in the capital market in accordance with Islamic Sharia. Sharia products that are available until the end of 2014 consist of sharia securities in the form of sharia shares, sukuk, sharia mutual funds, and exchange traded funds (sharia ETF), as well as sharia services including sharia online trading. JII is a
The sharia stock index that was first launched in the Indonesian capital market on July 3, 2000. The JII constituency consists of only 30 of the most liquid Islamic stocks listed on the IDX. Just like the Indonesian Sharia Stock Index (ISSI), a review of Islamic stocks that are constituents of JII is conducted twice a year, one in May and then in November, following the schedule of DES review by OJK. IDX determines and selects Islamic stocks that are constituents of JII. The liquidity criteria used in selecting 30 Islamic stocks which are JII constituents are as follows: (1) Islamic stocks included in the ISSI constituency that have been recorded in the past 6 months; (2) 60 shares are selected based on the average order of the highest market capitalization in the last 1 year; (3) Of the 60 shares, 30 were then selected based on the average daily transaction value in the highest regular market and the remaining 30 shares are selected shares. The following is a description of the independent variables used in this study.

Gold is a real asset that is often used as an option for people to invest. Gold prices that tend to rise, influence people to make gold an alternative investment from the capital market and money market. Gold is a form of investment that tends to be risk free (Sunariyah, 2006) and because its value tends to be either stable or increase.

Exchange rates can be interpreted as terms of domestic currency exchange rates in exchange for foreign currencies. According to Puspopranoto (2004) the exchange rate is the price at which a currency is exchanged with another country’s currency. Common exchange rates in various transactions of buying and selling of foreign exchange are of four types (Dornbusch, Stanley Fischer and Richard Startz, 2010), namely (1) selling rate; (2) middle rate; (3) buying rate; (4) flat rate.

The money supply is the overall accumulation of value from the money circulating in the hands of the people. According to Suparmono (2004) the concept of circulating money has two forms, namely: (1) circulating money in the narrow sense or M1 (narrow money) is the purchasing power that can be used directly for payment of goods and can be expanded and include payment instruments that approach money; (2) circulating money in an external sense or M2 (broad money) can also be interpreted as monetary liquidity, M2 is defined as M1 plus time deposits and the balance of public savings in banks.

In 2005, Ash-Shidiq, Hafidz and Aziz found that interest rates did not affect the JII. Interest rate volatility affects the volatility of the conventional stock market, but does not affect the Islamic stock market. This is in line with sharia principles that interest rates are not a significant variable in explaining stock market volatility (Yusof. RM and Majid, MSA, 2007). According to Kristanti, and Lathifah, NurTaufiqoh (2010), interest rates have a negative and significant effect on JII. Interest rates again show that they do not affect JII that is found by Dewanti (2013).
The increase in gold prices will encourage investors to choose to invest in gold rather than the capital market. With a relatively lower risk, gold can provide a good return on prices. Witjaksono (2010) found that gold prices affected the JII. Wastriati (2010) shows that in the long run there is an influence between variable exchange rates, M2, inflation and GDP against the JII value. This implies that in the long run macro variables can be used to predict the movement of JII values. In the short term there is no influence between the exchange rate, M2 and inflation on the JII value, only the GDP variable that affects the JII value in the short term. The results of Rusbariandi’s (2012) study state that the price of gold does not affect the movement of the JII.

Antonio, Hafidhoh and HilmanFauzi examined the Islamic Capital Market Volatility: A Comparative Study Between Indonesia and Malaysia using VECM analysis. The VECM analysis shows that in terms the three global macroeconomic variables, world oil price (OIL), Fed rate (FED) and Dow Jones Index (DOW), OIL and FED are the most significant influential variables to cause movements on JII and FHSI. Furthermore, the research from Pangestu (2018) shows that interest rates, exchange rates and money supply affect the JII, while the world gold price does not affect the JII.

RESEARCH METHOD
In this study the data used are secondary data obtained from annual publication stock reports over the JII 2013-2017 period, Bank Indonesia, Financial Services Authority (OJK), gold.org, and Central Statistics Agency (BPS). JII is a sharia stock index in the Indonesian stock exchange, which has high liquidity and capitalization as issued by the IDX. This index is a benchmark for the performance of sharia-based shares and for developing the sharia capital market. The data used is the end of the month data, from January 2013 to December 2017. The reason for selecting this period is that the five-year data enables us to show the fluctuating changes of the JII. Besides, it was shown that during this period, the development of the Islamic capital market did well and has been increasing every year. The variables used in this study are adopted from Pangestu (2018) namely BI interest rates, world gold prices, rupiah / US dollar exchange rates, with the money supply as an independent variable and JII as the dependent variable. Based on the type of data used, the research steps consisted of the unit root test, cointegration test and lag length criteria. The research model was estimated by using VECM. Since all of the variables contain unit root, but are cointegrated, the VECM model can be used for investigation (Rosadi, 2012). This research used five variables, so in VAR/VECM model, there are five equations that can be processed as models for each variable observed. The following equations are obtained in the research of JII:

\[ JII_t = X_0 + X_1JII_{t-1} + X_2\text{exch}_{t-1} + X_3\text{money}_{t-k} + X_4\text{interest}_{t-1} + X_5\text{gold}_{t-m} + \epsilon_t \]
exch_t = X_0 + X_1 JII_{t-1} + X_2 exch_{t-1} + X_3 money_{t-k} + X_4 interest_{t-l} + X_5 gold_{t-m} + \varepsilon_t

money_t = X_0 + X_1 JII_{t-1} + X_2 exch_{t-1} + X_3 money_{t-k} + X_4 interest_{t-l} + X_5 gold_{t-m} + \varepsilon_t

interest_t = X_0 + X_1 JII_{t-1} + X_2 exch_{t-1} + X_3 money_{t-k} + X_4 interest_{t-l} + X_5 gold_{t-m} + \varepsilon_t

gold_t = X_0 + X_1 JII_{t-1} + X_2 exch_{t-1} + X_3 money_{t-k} + X_4 interest_{t-l} + X_5 gold_{t-m} + \varepsilon_t

RESULTS AND DISCUSSION

The following are descriptive statistics of BI interest rates, world gold prices, rupiah / US dollar exchange rates and the money supply and JII. This study uses 5 variables, namely JII, BI interest rate, exchange rate, money supply, and gold price. The growth of 5 variables used in this study in 2013-2017 can be seen in Figures 1, 2, 3, 4 and 5.

From the Figure 1 above, it can be seen that the JII experienced fluctuating growth. The stock development in JII fluctuated. It experienced an increase in 2013, then declined in 2015 and again increased continuously until 2017. The highest JII value during the study period was obtained in December 2017, which amounted to 759,070. The lowest value was 554,432 in September 2015.
Based on Figure 2 above, it can be seen that world gold prices tend to fluctuate during the study period. In January 2013, the world gold price reached a value of 1664.750 (Oz / USD), while the lowest price was in January 2016 of 1111.80 (Oz / USD). In December 2015, the Federal Reserve raised interest rates. An increase in the Fed's interest rate pushed investors away from gold and led to assets with yields, because the precious metal does not charge interest rates (Bank Indonesia, 2015). This has caused the world gold price in January 2016 to reach its lowest point during the 2013-2017 period.
From Figure 3 above it can be seen that the SBI interest rate experienced a fairly rapid growth, from January 2013 (5.75%). In June 2013, there was an increase of 6%. Two months later there was another increase (7%). This situation did not last long, because in November 2011 there was an increase again (7.5%). The interest rate of 7.5% lasted until December 2015. The highest interest rate occurred in November 2011 (7.5%) and the lowest was in September 2017 (4.25%). The reasons for the increase and decrease of interest rates are conditions are explained below.

Indonesia's economic conditions in 2011 showed strong resilience amid rising global economic uncertainty, reflected an even better growth performance and maintained macroeconomic stability. Indonesia's economic growth reached 6.5%, the highest rate in the last ten years, accompanied by inflation at a low level of 3.79%. The improvement in performance was accompanied by improvements in the quality of growth as reflected in the high rate of investment and exports as a source of growth, a decrease in unemployment and poverty, as well as an increasingly equitable growth in inter-regional economic growth (Bank Indonesia, 2011).

The global economic recovery continues to be stronger and evenly distributed in 2017. World GDP grew 3.7% in 2017, higher than the growth in 2016 at a rate of 3.2%. Global growth was supported by accelerating economic recovery in advanced economies and continued economic recovery in developing countries. Sources of economic growth also began to expand into investment, which previously focused more on consumption. The economic dynamics in 2017 indicates that Indonesia's economic recovery continues, though gradually. The momentum of more conducive global conditions and maintenance of macroeconomic stability contributed positively to Indonesia's economic growth in 2017. Indonesia's economic recovery in 2017 continued to be driven gradually, by export and investment improvements.

The dynamics of economic growth shows that the national economy had passed the lowest point of economic growth, which is 4.74%, which occurred in mid 2015. The development shows that economic growth continues to improve slowly. The GDP in 2017 reached 5.07%, an increase compared to the previous year's economic growth, which was 5.03% (Bank Indonesia, 2017).
The exchange rate used in this study is the exchange rate against the US Dollar, the middle exchange rate of the rupiah against the US Dollar issued by Bank Indonesia. It is useful to note the growth of the rupiah against the dollar has increased since 2013. The highest value occurred was in September 2015, that is the rupiah exchange rate against the US dollar reached more than Rp. 14,730.00. Furthermore, the rupiah exchange rate tends to be stable at an interval of Rp. 13,300-13,600.

Based on the 2015 Indonesian economic report (Bank Indonesia, 2015), global economic growth that was lower than the previous year had a less favorable impact on the domestic economy. In 2015, the economic recovery of advanced economies happened to be limited. Meanwhile, economic growth in emerging market countries (EM), which is the main source of global economic growth, tended to slow down. One of the world’s economic motors, which is also Indonesia’s main trading partner, namely China, continued to show an economic slowdown. Overall, Indonesia’s economy in 2015 grew by 4.8% (yoy), lower than in 2014, when it reached 5.0% (yoy) and Bank Indonesia’s estimates at the beginning of the year was 5.4-5.8%. External sector performance declined sharply as indicated by a significant decline in export growth. Since the composition of exports is still dominated by natural resources, the weakening of the rupiah has not been able to improve export performance in general. However, the rupiah exchange rate in 2017 had been stable with low volatility. This development was supported by the fundamental balance of payments in Indonesia (NPI), which recorded a surplus. Micro conditions in the forex market improved, and Bank Indonesia's policy of consistently controlling the exchange rate in accordance with its fundamental values, amid external risks which surfaced in 2017. In general, stability in value of the rupiah was supported
The money supply continued to increase during the study period of 5 years. Bank Indonesia (BI) noted that Money Supply (M2) as of December 2013 reached Rp. 3,727.7 trillion, it was seen that this figure increased from November 2013, which was recorded to be Rp. 3,614.5 trillion. Money supply in December 2013 rose to 12.7% (yoy), relatively stable compared to November 2013. Government financial operations influenced the money supply growth in December 2013. The increase was based on seasonal patterns, while credit growth slowed in line with slowing economic activity.

**Inferential Statistics**

The equation in this study identify used the formula: $K_k = \langle m-1 \rangle$ (Gujarati, 2012), the conditions obtained were over identified because the amount of information held exceeded the number of estimated parameters. The following are the empirical results of the unit root test, results from cointegration, estimation of the VECM, impulse response analysis and variance decomposition.
Table 1. Unit Root Test Result

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level I(0)</th>
<th>First Difference I(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JII</td>
<td>-1.5278</td>
<td>-6.49385</td>
</tr>
<tr>
<td>exch</td>
<td>-2.1752</td>
<td>-8.20364</td>
</tr>
<tr>
<td>money</td>
<td>0.0616</td>
<td>-7.93941</td>
</tr>
<tr>
<td>gold</td>
<td>-2.9636</td>
<td>-7.57494</td>
</tr>
<tr>
<td>interest</td>
<td>0.36107</td>
<td>-5.12795</td>
</tr>
</tbody>
</table>

In the state of all variables contained in the unit root, but cointegrated then we can use the model of VECM (Rosadi, 2012). VECM models are used in non-structural VAR models when the data time series are not stationary in levels, but stationary in the difference level and cointegrated, thereby indicating a theoretical relationship between variables. The existence of cointegration is the VECM models, which are non-structural VAR model is called a VAR model which has restrictions (Widarjono, 2007).

The next stage of data processing is to examine whether there is co-integration on research variables. The co-integration test used in this study is the Johansen test, where Johansen statistics can be used to see, co-integration between variables (Rosadi, 2012). This test can only be done when the data involves all the variables in the research model to be integrated at the same rate (Widarjono, 2007). That is to analyze if the combination of the two series is not stationary, if they are moving in the same direction towards the long-term equilibrium and the differentiation between the two series is constant. The Johansenco integration test results can be seen from Table. 2.

Table 2. Johansen co integration test results

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace</th>
<th>0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of CE(s)</td>
<td>Eigenvalue</td>
<td>Statistic</td>
</tr>
<tr>
<td>None *</td>
<td>0.514249</td>
<td>78.22987</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.306245</td>
<td>36.35047</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.227551</td>
<td>15.14352</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.002902</td>
<td>0.168553</td>
</tr>
</tbody>
</table>

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

The test results through Eviews output shows that there is an indication of cointegration in two equations. Based on the results of the unit root test and cointegration test, it can be concluded that this study can use VECM models. The next step is to determine the maximum order
difference of endogenous variables in the model. In the VAR method, determining the optimal lag level is important. This is because the independent variable used is nothing but the lag of the endogenous variable. In the first stage, we can observe the maximum lag length in a stable VAR system by doing repeated estimates starting from the lowest lag, namely one and so on. When the VAR model is estimated with a lag rate of 9, the modulus range is equal to or more than one. Based on these results, the maximum inaction obtained is 8, which can be produced by a stable VAR system. Based on the value of AIC, the maximum lag obtained is also an optimal lag, namely 8. This result explains that interest rates, world gold prices, money supply, exchange rates will all have an impact on the JII movement optimally for 8 months. The next step is to analyze through the impulse response and variance decomposition. Individual coefficients in VAR models are difficult to interpret, so does the expert econometric analysis of impulse response (Widarjono, 2007). Impulse response analysis is used to track the response of the endogenous variables in the VAR system due to shocks or changes in the disturbance variable(e). Besides impulse response, VAR model also provides an analysis of forecast error variance decomposition. Variance decomposition is useful for predicting the contribution percentage of variance of each variable due to changes in certain variables in the VAR system.

Impulse response analysis is used to track the shock impact of endogenous variables on other variables in the VAR system. Based on Figure. 6 it can be seen that the shock of exchange rate, gold price, interest rate and money supply have an impact on JII. Shock of exchange rate and interest rate make JII decrease.

Figure. 6 The Impulse Response of JII
The shock given by the exchange rate and interest rate both make JII fall in the second month, but in the third month it rises again quite sharply. This can be explained by the fact that it is probable that investors refrain from conducting transactions while paying attention to exchange rate fluctuations and interest rates in the following month. Exchange rate fluctuations and relatively fast changing interest rates will cause worry and uncertainty for investors.

A different response was shown by JII when the gold price put pressure on the JII. The shock given by the gold price makes JII move up for 3 months, then decrease in the fourth month. This can be explained as gold is one alternative investment option that is quite promising, because it provides hedging from inflation. In terms of risk, because it is physical, its ownership of the show (not on behalf of) and when in large numbers requires a place for storage (Yanuar, 2013).

The next analysis is the Variance Decomposition of JII. The VAR model also provides Forecast Analysis of Decomposition of Variance Errors or often called variance decomposition. Previously impulse analysis was used to track the shock impact of endogenous variables on other variables in the VAR system, while this decomposition variance analysis illustrates the relative importance of each variable in the VAR system because of the shock.

<table>
<thead>
<tr>
<th>Period</th>
<th>S.E.</th>
<th>DJII</th>
<th>DECH</th>
<th>DGOLD</th>
<th>DINTEREST</th>
<th>DMONEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23.84101</td>
<td>100.000</td>
<td>0.00000</td>
<td>0.00000</td>
<td>0.00000</td>
<td>0.00000</td>
</tr>
<tr>
<td>2</td>
<td>25.30936</td>
<td>91.97143</td>
<td>0.33645</td>
<td>6.458660</td>
<td>1.214866</td>
<td>0.018597</td>
</tr>
<tr>
<td>3</td>
<td>33.74515</td>
<td>78.77397</td>
<td>1.85064</td>
<td>8.093384</td>
<td>7.858063</td>
<td>3.423933</td>
</tr>
<tr>
<td>4</td>
<td>33.84851</td>
<td>78.53591</td>
<td>1.86367</td>
<td>8.196867</td>
<td>7.842474</td>
<td>3.561068</td>
</tr>
<tr>
<td>5</td>
<td>37.20032</td>
<td>68.80978</td>
<td>5.12892</td>
<td>12.95332</td>
<td>9.687709</td>
<td>3.420266</td>
</tr>
<tr>
<td>6</td>
<td>38.90671</td>
<td>64.15964</td>
<td>6.73074</td>
<td>15.85704</td>
<td>8.909324</td>
<td>4.343253</td>
</tr>
<tr>
<td>7</td>
<td>40.45163</td>
<td>64.88703</td>
<td>6.23662</td>
<td>14.74574</td>
<td>9.874734</td>
<td>4.255867</td>
</tr>
<tr>
<td>8</td>
<td>43.26171</td>
<td>65.57863</td>
<td>6.58890</td>
<td>15.32808</td>
<td>8.746871</td>
<td>3.757521</td>
</tr>
</tbody>
</table>

Table 3 describes the prediction of the percentage contribution of JII to changes in macroeconomic variables, namely the exchange rate, interest and the money supply. Indonesia has the characteristics of a small open country, namely, is the economy with a very high level of dependence on the global economy; a relatively stable economy, with high levels of vulnerability to shocks from abroad; and has a high degree of dependence on the international price changes (Arif, and Tohari, 2006). The results in the table provide information that the JII can be
explained and influenced by the JII variable itself, i.e. with the percentage interval in the range of 64.159% - 91.971%. Based on the information from Table 3, it can be seen that there are two variables that give the largest percentage, namely the variable world gold price of 15.85% (Period 6), and an interest of 9.87% (Period 7). The price of gold is the highest in the fifth month, which is 15.85%. The result is in line with Witjaksono’s (2010) findings, that world gold prices influence and contributes to the movement of the JII. This result is not in line with the research findings Pangestu (2018), Dewanti (2013), Rusbanriadi (2012) which state that world gold prices do not affect JII.

CONCLUSION

Interest rate, money supply, and gold have a role in contribute to JII. When compared to interest rates, exchange rates, money supply, and world gold prices make the greatest contribution to JII movements. It is understandable that when the price of gold rises, investors will tend to invest in gold rather than other forms of investment because of relatively lower risk with substantial returns. Based on these conclusions, the recommendations that can be conveyed are that the government and investors pay greater attention to gold investment and even prioritize their investments in gold. However, the stability of the interest rate and the money supply still need to be controlled so that investors can invest optimally. This research can be further expanded by including other macroeconomic variables, such as inflation and world oil prices.

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