THE ANALYSES DETERMINANTS OF VOLATILITY ON JAKARTA ISLAMIC INDEX (JII) PERIOD 2011 – 2016

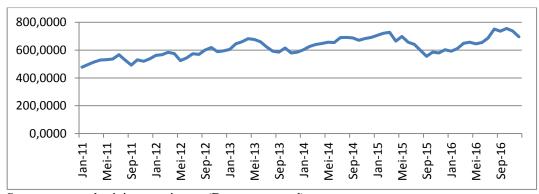
ABSTRACT

This study aims to determine the effect of fed rate, world gold price, inflation and money supply (M2) on jakarta islamic index (JII), this type of research is quantitative by using time series data from 2011 to 2016, data analysis was used multiple regression analysis, The significance level used in this research was 5%, the result of this study shows that the fed rate, gold price, inflation and money supply (M2) influence simultaneously and significantly to JII with F-probability value 0.00000, while partially fed rate had negative and insignificant effect on JII with probability value 0.0862, world gold price had positive and significant influence to JII with probability value 0.6020, and the last amount of money supply probability value of 0.0000 means had a positive and significant influence on JII.

Keywords: The Fed Rate, Gold Price, Inflation, Money supply (M2) And Jakarta Islamic Index (JII)

Introduction

Generally, all stocks that can be categorized as Sharia shares are listed in the List of Sharia Securities (DES). There are several syariah stock indexes, one of them is the Jakarta Islamic Index (JII). JII is a stock index containing 30 stocks that meet the criteria of sharia (List of Sharia Securities issued by Bapepam-LK) taking into account the best market and liquidity. In addition to the criteria of sharia liquidity factor and market capitalization into consideration in choosing the shares included in the JII index. Where liquidity and market capitalization is larger than other sharia shares and each semester is evaluated. Figure1.1 represents the movement of JII, starting from January 2014 until December 2016. JII index experiencing upward movement trend. However, the rising trend of the movement with the turmoil that occurred in JII.



Source: www.duniainvestasi.com (Data processed)

Figure 1.1 JII Movements (Jan 2011- December 2016)

Description: JII is the Jakarta Islamic Index

The movement of JII stock index is influenced by various factors. External factors in the form of monetary indicators have a significant influence for the sustainability of capital market performance. Stable economic conditions are always expected by investors, as stable economic conditions affect the company's performance. For the sake of the creation of a good investment cycle in need of conducive conditions on macroeconomic monetary sector. Unstable economic turbulence could be the cause of less conducive investment cycles. The ability of investors to understand and forecast future economic conditions will be very useful in making profitable investment decisions. For that, an investor should consider some macroeconomic indicators, especially the monetary sector that can help investors in making investment decisions. There are several economic indicators in which the movement has an impact on the Capital market sector, especially the JII index, among which are the fad rate, the price of gold, inflation and the money supply.

In the previous literature research is related to the influence of macroeconomic monetary indicators on capital markets in Indonesia. From the previous research results conclusions that are entirely dissimilar, but there is little difference. Researchers produced several macroeconomic indicators affecting significant and insignificant monetary, so there is a gap of some of these studies. Some earlier researchers concluded that the fed rate affects significantly against JII but some researchers also have different conclusions. Likewise with the monetary variables of gold prices, inflation and the amount of money that occurs significantly different and not significant against the JII. So here the author wants to use several different variables and different years.

This study was conducted to continue the previous study. With the motivation of this research will produce something useful not only for personal authors, but also for the wider community. This research is a development of previous studies. One of the previous studies was a study conducted by Antonio, Hafidhoh and Hilman (2013) entitled "Sharia Capital Market Volatility and Macroeconomic indicators: Comparative Study of Malaysia and Indonesia.

The difference of research that will be done by researcher with research of Antonio, Hafidhoh and Hilman (2013) is dependent variable where chose jakarta islamic index (JII) and FTSE bursa malaysia hijrah shariah index (FHSI), the two variables are compared to how big macro economic indicators affect both variables, the defferences are also found in the independent variables, choose Fed rate, crude oil price, Dow Jones Index, interes rate, exchange rate and inflation as independent variables the data used monthly data from January 2006 to December 2010 while the data in this study used monthly data from January 2011 to December 2016.

Based on the background description of the problems described above, the researchers are interested to examine the movement of JII index. Therefore the researcher intends to continue the previous research entitled "ANALYSES DETERMINANTS OF VOLATILITY ON JAKARTA ISLAMIC INDEX (JII)".

Methodology

Multiple regression is a tool that can be used to create an analysis of the influence of various factors independent of the variable dependent (Basuki, 2017). Meanwhile, according to Winarno (2015) Multiple regression is a regression that is used to analyze the regression with one variable dependent and some independent variables. In this research will be used multiple regression analysis because of more than one independent variables, there are The Fed rate, Gold Price, Inflation and money supply as independent variable while JII as a dependent variable. The equations are as below:

$$Log(JII) = a + b_1TFR + Log(b_2GP) + b_3INF + Log(b_4M2) + e$$

Information :

Jakarta islamic index (JII), constants (a), regression coefficients (b_1, b_2, b_3b_4), the fed rate (TFR), gold price (GP), inflation (INF), money supply (M2), Error term (e).

The linear regression model can be called a good model if it meets the classical assumptions, T test, F Test and Determination Coefficient Test R². Therefore, a classical assumption test is needed before conducting a regression analysis. The classical assumption test consists of:

- 1. Normality test
- 2. Heteroscedasticity test
- 3. Multi-correlation test
- 4. Autocorrelation test

According to Ghazali, (2013) the T test essentially aims to show how far the influence of an individual explanatory or independent variable in explaining the dependent variable. The hypothesis formulation is used as follows:

Ho: The independent variable does not affect the significance of the dependent variable.

Ha: Independent variables significantly influence the dependent variable.

The test criteria as follows:

Ho is accepted if the significance level > 0.05 (5%)

Ha is accepted if the level of significance <0.05 (5%)

Basuki (2017) calculates the value of t arithmetic for independent variables (in this case β_1 and β_2) and looks for the critical t value of the table t with the formula

$$t = \frac{\beta'_i - \beta *_1}{se(\beta'_1)}$$

Where $\beta *_1$ is hipotesis nol.

According to Ghazali, (2013) the F test is basically aimed to show whether all independent or independent variables included in the model have a mutual influence on dependent or dependent variables. Test F is done by using the value of significance. The hypothesis formula is as follows:

Ho: The independent variable simultaneously has no effect on the dependent variable.

Ha: Independent variables simultaneously affect the dependent variable.

Ho accepted if the significance level> 0.05 (5%)

Ha is accepted if the level of significance <0.05 (5%)

Basuki (2017), F test can be used with Analysis of Varian (ANOVA). Here is the exposure to the test formula F:

TSS = ESS + RSS

TSS has df = n-1. ESS has df of k-1 whereas RSS has df = n-k.

With the hypothesis that all independent variables have no effect on the dependent variable ie $\beta_1 = \beta_2$ $\beta_k = 0$

then the F test can be formulated as follows: $F = \frac{ESS/(k-1)}{RSS/(n-1)}$

Where:

n = number of observations and

k = number of estimation parameters including intercepts or constants.

This F statistic test formula can be compared with other formulas by manipulating equation that is:

$$F = \frac{ESS/(k-1)}{(TSS-ESS)/(n-k)}$$

$$F = \frac{ESS/TSS(k-1)}{(TSS-ESS/TSS)/(n-k)}$$

Because EES/TSS is R^2 then equation can be written as follows:

$$F = \frac{R^2/(k-1)}{1 - R^2/(n-k)}$$

According to Ghazali, (2013), the coefficient of determination R^2 measures the extent of the model's ability to explain the variation of the dependent variable. The small value of R^2 means the ability of the independent variable to explain the variation of the dependent variable is very limited. A value close to one means that the independent variable provides almost all the information needed to predict the variation of the dependent variable. In this study, the measurement uses R^2 because it is more accurate to evaluate the regression model.

Basuki (2017) The formula of Coefficient of Determination Test \mathbb{R}^2 as follows:

$$R^{2} = \frac{ESS}{TSS} = 1 - \frac{RSS}{TSS}$$

$$= 1 - \frac{\left(\sum \grave{e}_{i}^{2}\right)}{\left(\sum y_{i}^{2}\right)} = 1 - \frac{\left(\sum \grave{e}_{i}^{2}\right)}{\sum \left(Y_{i} - Y_{i}\right)^{2}}$$

RESULT AND DISCUSSION

Descriptive Statistics

This study shows the regression results as contained in table 4.1 below:

Table 5.1 Statistic Descriptive

Variable	Coefficient	t-Statistic	Prob.
THE_FED_RATE	-0.160751	-1.741341	0.0862
LOG(GOLD_PRICE)	0.262046	2.894905	0.0051
INFLATION	0.007167	0.524064	0.6020
LOG(M2)	0.597157	8.006880	0.0000
C	-4.461045	-2.649339	0.0101
R-squared	0.870722		

Source: (data using eviews 9)

From the above regression equation can be concluded:

The fed rate has a negative and insignificant relationship to JII with coefficient (-0.160751) and confidance level (0.0862), while Gold Price has a significant positive effect on JII with coefficient (0.262046) and confidance level (0.0051), in varible Inflation shows that varible this is not signifikant positive influence to JII with coefficient (0.007167) and confidance level (0.6020) and last independent variable is Money Supply which has significant positive relation to JII with coefficient (0.597157) and confidance level (0.0000). Based on the results shown in the above table 87.07 percent R-Square free variable can explain related variables, the remaining 12.93 is explained by variables outside the model.

Classic Assumption

Test In this study used the classical assumption test to determine whether there is interference in normality, multicollinearity, heteroscedasticity, and autocorrelation. The regression model can be said to be a good model if it meets the classical assumptions. Here are the results of the classical assumption test:

Normality test

Below is a Normality Test Table:

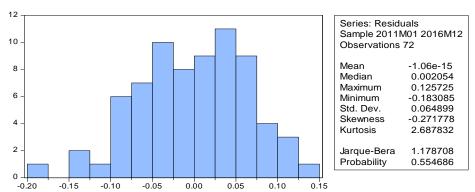


Figure 5.1 normality test (data processed)

Based on the results of the normality table above shows that the probability value is 0.554686 (> 0.05) so it can be said that the probability value of this model is not significant, while based on normality test results can be seen from the probability value jargue-bera (JB), if the probability> 0.05, then the model in normal state, based on this parameter is known that the value of probability value at JB is 0.554686, greater than the value of 0.05 Thus It can be concluded that the regression model meets the assumption of normality.

Heteroskedasticity Test

Below shows the table Test heteroskedasticity:

Table 5.2 heteroskedasticity test (processed data)

Heteroskedasticity Test: Harvey			
F-statistic	1.722919	Prob. F(4,67)	0.1552
Obs*R-squared	6.715246	Prob. Chi-Square(4)	0.1517
Scaled explained SS	4.729685	Prob. Chi-Square(4)	0.3162

Based on the output table above, shows that nila OBS * R Square 0.1517> 0.05 Then it can be concluded that the above model does not contain heteroskedasticity.

Multicollinearity test

The following table shows the Multicollinearity Test:

Table 5.3 Multicollinearity test (processed data)

		, <u>1</u>		
	THE_FED_RATE	GOLD_PRICE	INFLATION	M2
THE_FED_RATE	1.000000	-0.260541	-0.124848	0.611353
GOLD_PRICE	-0.260541	1.000000	-0.067625	-
				0.779888
INFLATION	-0.124848	-0.067625	1.000000	0.000800
M2	0.611353	-0.779888	0.000800	1.000000

In this study using multicollinearity test by looking at the correlation between the independent variables because the way is felt most easy and practical and the value of multicollinearity test benchmark. Based on output results if the data in the table above the correlation value between the free variables < 0.8 means no symptoms Multicollinearity on the free variables.

Autocorrelation Test

Autocorrelation Test Results are listed in the table below:

Table 5.4 Correlation test (processed data)

Variable	Coefficient	t-Statistic	Prob
AR(1)	0.791208	9.307664	0.0000
SIGMASQ	0.001552	5.186588	0.0000
Durbin-Watson stat			1.786827

Based on table 4.4 above shows the results of correlation test that has been improved by using model AR (1) there is a DW value of 1.786827 means that the value of DW is between the value of dU (1.54) and dL (2.46) then According to the table (4.4) DW test in this case data is free from autocorrelation problems or in other words there is no autocorrelation.

Partial Test (T Test)

T test statistics basically show how far the influence of one independent variable individually in explaining the variation of the dependent variable (Ghozali, 2011). In this study researchers will use the T test to see how far the fed rate, gold price, inflation, M2 affect the JII index. Here is a table of T test values.

Table 5.5 T test value

Variable	Coefficient	Std.Error	T - Statistic	Prob.
THE_FED_RATE	-0.160751	0.092314	-1.741341	0.0862
LOG(GOLD_PRICE)	0.262046	0.090520	2.894905	0.0051
INFLATION	0.007167	0.013675	0.524064	0.6020
LOG(M2)	0.597157	0.074580	8.006880	0.0000
C	-4.461045	1.683833	-2.649339	0.0101

1. The influence of the fed rate Toward JII

Based on Table 4.5 obtained the results with The t-statistical value of the fed rate of -1.741341 with a value of significance of 0.0862, the value of this probability shows greater than 0.05 (0.0862> 0.05). From the result, it can be concluded that the fed rate has negative effect not significant to JII index. In other words, the independent variable of the fed rate does not significantly affect the dependent variable JII, meaning that Ho is accepted and Ha is rejected.

2. The Influence of Gold Price toward JII

While on the variable Gold Price obtained with the results of the t-statistical value is 2.894905 with a significance value of 0.0051, the value of this probability shows smaller than 0.05 (0.0051 < 0.05). From these results can be concluded that the price of gold has a significant positive effect on the index JII. In other words independent gold price variable significantly influences the dependent variable JII, meaning Ha received and Ho rejected.

3. Influence of Inflation Toward JII

Furthermore, the Inflation variable is obtained with the result of the t-statistic value is 0.524064 with the significance value of 0.6020, in this probability value shows greater than 0.05 (0.6020> 0.05). From these results can be concluded that Inflation positively insignificant impact to index JII. In other words, independent variable inflation does not have a significant effect on JII dependent variable, meaning that Ho is received and Ha is rejected.

4. Influence Money Supply (M2) Toward JII

The last independent variable is money supply (M2). In variable M2 obtained with result of t-statistic value equal to 8.006880 with significance value 0.0000, at this probability value show smaller than 0,05 (0.0000 <0,05). From the result, it can be concluded that M2 has a significant positive effect on JII index. In other words, the independent variable M2 has a significant effect on the dependent variable JII, meaning Ha is received and Ho is rejected.

Simultaneous Test (F Test)

Based on the table 4.6 shows the value of the F test results as follows:

Table Test scores F

_		0.010 1 0.00 0.001 0.0 1
]	F-Statistic	31.67509
]	Prob (F-Statistic)	0.000000

Based on the result from table 4.6 the value of F statistic is 31.67509 with probability value 0,000000. Since the probability value is well below 0.05 (0.000000 < 0.05), the regression model can be used to predict the JII index. Or in other words that The fed rate, gold price, inflation and money supply together or simultaneously affect the JII index.

Determination Coefficient Test (R2)

Table Coefficient of Determination (R²)

R- Squared	0.870722
Adjusted R- Squared	0.858788

Based on the results shown in the above table 87.07 percent of R-Squared free variables can explain related variables, the remaining 34.59 is explained by variables outside the model (100% - 87.07% = 12.93%).

Discussion

1. The influence of the fed rate to JII

The first analysis result that is the independent variable fed rate to JII obtained the result with the t-statistical value of the fed rate equal to -1.741341 with value significant 0.0862, at this probability value show bigger than 0,05 (0,0862>0,05). From the result, it can be concluded that the fed rate has the negative effect not significant to JII index. The results of this study are not in accordance with the hypothesis proposed by researchers because the fed rate has no significant effect on JII. The reason why the fed rate variable is insignificant to JII is as follows:

First, if we refer to the theory the Fed by Wongswan (2005) that if interest rates rise then the stock market tends to weaken. But in reality that happens when we look at the events of 2015 when the fed raised market interest rates did not respond significantly, even the stock market has strengthened, This is also happening on the JII index. The reason is that investors have already anticipation the increasing of interest rate, so that after the interest rate increase, the market tends to strengthen.

Second, the psychological factor of investors about JII return expectation. investors still choose to invest in companies listed in index JII because as we know that index JII is the most 30 liquid stock, means the companies that listed in JII is a stock that has a good performance, from the good performance will create the result of the return is a good too. meaning people think rationally.

Third, investor avoid the risk about Global uncertainty or economics uncertainty either national or international area. Investors consider when the rate of the fed rate rises and they choose to move their investment funds in the form of deposits may not necessarily be more profitable for investors, in addition to switching investment from JII index to deposit must go through various considerations whether it is in terms of cost as well as the value of the currency, therefore investors prefer to keep investing in a liquid Index in this case is the JII index.

this study is different from previous research by Wijayaningsih, Rahayu dan Saifi (2016), which states that the fed rate influences sihnifikant against JII. this is because the data used in the study in 2008-2015.

2. The influence of Gold price toward JII

The second analysis result is the Gold Price variable obtained with the result of the t-statistic value is 2.894905 with the significance value of 0.0051, the value of this probability shows smaller than 0.05 (0.0051 <0.05). From these results can be concluded that the price of gold has a significant positive effect on the index JII. The results of this study in accordance with the author's hypothesis that the price of gold has a significant positive effect on JII. The reasons for this case are:

Firstly, when the gold price rises then investors tend to sell gold with the aim of profit and switch investment to the capital market, this is in accordance with the reality that occurred in 2011 until 2014 which shown the movement of gold price increased and many investors has sold the gold. This is supported by previous research by Utoyo (2016).

Secondly, Invest in JII stock more profitable. when gold prices rise and investors sell their gold, they (investors) are more confident to allocate their funds to Index JII, because JII is an index consisting of 30 sharia companies with the largest capitalization. Therefore, when there is an increase in gold price then there is also an increase in index JII.

3. Influence of Inflation to JII

The third variable is Inflation obtained with the result of the t-statistic value of 0.524064 with the significance value of 0.6020, in this probability value shows greater than 0.05 (0.6020> 0.05). From these results can be concluded that Inflation positively insignificant positive to index JII. The results of this study are not in accordance with the hypothesis proposed by the researcher because inflation has no significant effect on JII. The reason why inflation has no significant effect on JII are:

First, Based on the theory of type of inflation by Boediono (1982) The type of inflation in Indonesia is included in the category of mild inflation, this is accordance If we look at the economic conditions, especially in Indonesia inflation rate data in 2011 with 2016 is in normal condition, meaning there is no

crisis during the research period, so the variable inflation does not significantly affect JII.

Secound, The reason is that investors already believe when they choose to invest in a liquid stock company (Index JII) that the company has already anticipation (just in case) to mitigate the risks when there will be an increase in inflation. therefore the increase in inflation during this study period has no significant effect on JII.

this study is supported by previous research by Maqdiyah (2014), Nimran dan Musadieq (2013), and Hasanah and Panjawa (2016) which states that inflation has no significant effect to the JII.

4. The influence of Money supply to JII

And the last independent variable is money supply (M2). In variable M2 obtained with result of t-statistic value equal to 8.006880 with significance value 0.0000, at this probability value show smaller than 0,05 (0.0000 <0,05). From these results can be concluded that M2 has a significant positive effect to the JII index.from the results of this analysis in accordance with the author hypothesized that the money supply has a significant positive effect on JII. This is caused by:

firstly, when the money supply in the community is increasing then the society is having surplus money, means there is a tendency of society to increase their consumption and investment. This is supported by the John MajorKeynes theory about Money Demand Theory.

Secondly, when public consumption increases, the demand for the company will increase as well, so that the company can increase its production amount and earn higher profits, in this case, trigger the investors to invest. This is supported by data in middle of 2013 until the end of 2014 which shown the increasing in the money supply effect on the rise of JII index. This research is supported by previous research by Hasanah and Panjawa (2016). which states that the money supply has a significant effect on JII.

CONCLUSION

Based on data analysis and discussion that has been done by the researcher in the previous chapter, then obtained some conclusion as follows:

- 1. Variable the fed rate obtained results with the coefficient value of the fed rate is -0.160751 means If there is a change in the fed rate one point then it will lower the JII Index of -0.160751. besides the significance value is 0.0862, in this probability value shows greater than 0.05 (0.0862> 0.05). From the result, it can be concluded that the fed rate has a negative and not significant effect to the JII index.
- 2. Gold Price variable obtained with the coefficient value is 0.262046 means that if there is an increase in the gold price of one point then it will raise the JII

Index of 0.262046, the value of the gold price is 0.0051, the value of this probability show smaller than 0.05 (0.0051 < 0.05). From these results can be concluded that the price of gold has a significant and positive effect to the index JII.

- 3. Variable Inflation obtained with the coefficient value is 0.007167means that if there is an increase in inflation of one point of so will raise the JII Index of 0.007167, in this study the significance value 0.6020, the value of this probability shows greater than 0.05 (0.6020 > 0.05). From these results can be concluded that Inflation positively insignificant positive to index JII.
- 4. Variable money supply (M2). In variable M2 obtained with the result of coefficient value equal to 0.597157 means if variable M2 rise by one point hence will raise also variable index JII equal to 0.597157, in this research value of significance 0.0000, at this probability value show smaller than 0,05 (0.0000 <0.05). From the result, it can be concluded that M2 has a significant positive effect on JII index.
- 5. And the last is the result of F-statistic 0.0000 means the fed rate, gold price, inflation and money supply simultaneously significant impact toward JII.equal to 0.597157, in this research value of significance 0.0000, at this probability value show smaller than 0,05 (0.0000 <0.05). From the result, it can be concluded that M2 has a significant positive effect on JII index.

RECOMMENDATIONS

Based on this research, the authors will give suggestions as follows:

For Investors

For investor who want to invest the money by the stock, especially those listed in the JII index category, should consider the state of the economy first, especially with regard to macroeconomic and monetary variables. Because these variables have been shown to affect the JII index. This variable can be used as consideration to determine future investment strategy. Because the movement of the fed rate, gold price, inflation and money supply will affect the movement of index and stock price.

For Further Research

For further research who want to continue this research should add an independent variable or replace some with other independent variables in the research. Because the movement of the JII index is not only influenced by the fed rate, gold price, inflation and money supply, The evident from the coefficient of determination R² is still relatively small. So it is possible to other variables that can influence the movement of JII. In addition to adding research variables, for further research should make research with different periods so the selected variables can better reflect the movement of JII index.

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