# **CHAPTER IV**

# **RESEARCH FINDING AND DISCUSSION**

In this chapter, there are a number of tests on factors influencing Jakarta Islamic Index (JII) price in Indonesia. The dependent variable is Jakarta Islamic Index and the independent variables are exchange rate, oil price, FTSE Malaysia, and gold price. The variables are taken from November 2013 until March 2016. The approach is using Vector Error Correction Model (VECM). E-Views 7 will be used to run the data.

# A. Research Variable Overview



#### 1. Jakarta Islamic Index.

Source: Fusion Media.Ltd

# FIGURE 4.1

## JII Movement October 2012-March 2016

According to the graph above, the price of Jakarta Islamic Index (JII) is almost stagnant from December 2012 until December 2013. It starts with point of 594.79 in December 2012. In 2013 the price fluctuates. In March, the point increases to 660.34 and in December slumps to 585.11 point. Going into March 2014, the price increases to 640.41 point. As for December 2014 the price tips to 691.04. For 2015, the price goes to 728.20 point in March and reaches to 603.35 point. Lastly, in March 2016 the price goes to 652.59.

### 2. Exchange Rate.

Exchange rate becomes one of the indicators to show the strength of one country's economic.



Source: University of British Columbia

## FIGURE 4.2

Exchange Rate Movement October 2012-March 2016

Referring to the earlier graph, in December 2012 the rate listed in Rp9.642. Rupiah depreciates to Rp9.709 in March 2013 and in the end of the year it goes to Rp12.085. Coming into March 2014, Rupiah appreciates to Rp11.412 and depreciates to Rp12.433 in December. Along in March 2015 it depreciates to Rp13.071 and went to Rp13.831 in December. On December 2015 it appreciates to Rp13.197.

# 3. Oil Price.

As a widely used commodity, oil price is a benchmark in a company performance. As well in stock market performance, it has important impact in it. Brent oil price is one of the international standards for oil industry.



Source: U.S Energy Information Administration

### FIGURE 4.3

Oil Price Movement October 2012-March 2016

In December 2012 the price is set Rp1.459.064/barrel. The price in March the following year drops to Rp1.445.471 and increases a little to Rp1.475.988 in December 2013. However in March 2014 the price flops to Rp1.432.278 and drops dramatically to Rp830.743 in December. It can be seen that in March 2015 the price continuously to slump with Rp744.790 and in the end of 2015 goes down to Rp506.521. Even in March 2016 the price downs to Rp509.186.

# 4. Gold Price.

One of the important commodities is gold. The price of gold is relatively stagnant. It doesn't fluctuate frequently. The following graph is the price movement for gold.



Source: World Gold Council

### FIGURE 4.4

Gold Price Movement October 2012-March 2016

Gold price is commonly set per/ounce. Initially, the price in December 2012 is Rp16.264.068/ounce. The price weaken to Rp15.463.845 in March 2013 and goes to Rp14.780.146 in the end of 2013. Moreover, in March the following year the price increases to Rp15.253.877 and drops back to Rp14.942.203 nine months later. As for March 2015, the price surges toRp15.399.076 and flops to Rp14.813.554 in December. In March 2016, the price ups to Rp16.434.524

## 5. FTSE Malaysia

As for the regional Islamic Index, FTSE Malaysia is one of the leading indices. The price is higher than Jakarta Islamic Index (JII). Below is the movement since October 2012 until March 2016.





# FIGURE 4.5

FTSE Malaysia Movement October 2012-March 2016

FTSE Malaysia fluctuates for the past four years. Kicking off in December 2012, the prices recorded in 1.673.07 point. The price decreases to 1.671.63 in March the following year. In the end of 2013 the price surges to 1.866.96. As for March 2014, the price downs to 1.849.21 and continuously slumps to 1.761.25 by the end of 2014. In March 2015 the price increases to 1.830.78 and flops back to 1.692.51 in December. FTSE strengthen to 1.717.58 in March 2016.

# **B. VECM Estimation Process**

# 1. Unit Root Test.

The method which is used to test the stationarity is ADF Test (Augmented Dicky Fuller) by using  $\alpha$ =5%. If the value of ADF Test lower than MacKinnon critical value, it can be concluded that the data is stationary or having no unit root. The test will be conducted from level until first difference (Basuki 2017)

## TABLE 4.1

Test		ADF					
	Level			1st Difference			
Variables	Trend &	Prob	Note	Trend &	Prob	Note	
	Intercept			Intercept			
III	1 864437	0 3452	Non	5 020507	0.0000	Stationary	
J11	-1.804437	0.3452	Stationary	-3.920307	0.0000	Stationary	
ED	1 25763	0.6300	Non	1 0158/18	0.0003	Stationary	
	-1.23703	0.0399	Stationary	-4.913040	0.0003	Stationary	
0	-0.468177	0 8860	Non	-1 226651	0.0010	Stationary	
0	-0.400177	0.0007	Stationary	-4.220034	0.0017	Stationary	
G	-2 523773	0 1 1 7 8	Non	-5 572037	0.0000	Stationary	
U	-2.525775	0.1178	Stationary	-3.372937	0.0000	Stationary	
FTSF	-1 681015	0.4327	Non	-7 0/0001	0.0000	Stationary	
TISE	-1.001915	0.4327	Stationary	-7.049091	0.0000	Stationary	

#### **Unit Root Test-Augmented Dickey-Fuller**

Source: Data processed

The result from table 4.1 concludes that all variables namely; Jakarta Islamic Index (JII), exchange rate, oil price, gold price, and FTSE Malaysia are all not stationary at level. Thus, the unit root test continues to *First Difference* Level. According to the result, all variables are stationary at first difference, due the *p*-value (probability) less than 5%.

Because all variables are stationary in first difference; therefore the relationship among all variables will be conducted in VECM estimation.

# 2. Lag Length Criteria.

After conducting the unit root test, then it will continue to the lag length test. The lag optimum test is highly needed to reduce any autocorrelation in VAR model. The lag optimum test in VAR model can be recommended by *Final Prediction Error* (FPE), *Akaike Information Criterion* (AIC), *Schwarz Criterion* (SIC) and *Hannan-Quin* (HQ). Lag optimum occurs when a certain lag has the most stars sign (Basuki and Prawoto 2016)

# **TABLE 4.2**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1841.988	NA	9.39E+34	94.71731	94.93059	94.79384
1	-1672.834	286.2593	5.86E+31	87.32484	88.60450*	87.78397
2	-1638.25	49.65955	3.83E+31	86.83334	89.17939	87.67508
3	-1605.788	38.28877*	3.12e+31*	86.45066*	89.86309	87.67501*

#### Lag Length Criteria

Source: Data processed

The optimum lag is 3 due to the sign stars which lie in LR (sequential modified LR test statistic (each test at 5% level), Final prediction error (FPE), Swachrz information criterion (SIC), and Hannan-Quin information. Due the most recommendation, lag 3 is the optimum lag.

## 3. Stability VAR Model Test.

To test the stability in VAR estimation, it will be the test for roots of characteristics polynomial. A VAR system is stable if all of the roots have modulus less than 1.

On the table below, the VAR model is already stable on its optimum lag, which is 1. So, the VAR estimation that will be estimated for the IRF and FEVD analysis is valid.

### **TABLE 4.3**

Root	Modulus
0.938848 - 0.060210i	0.940777
0.938848 + 0.060210i	0.940777
0.586029 - 0.397577i	0.708165
0.586029 + 0.397577i	0.708165
0.661301 - 0.172586i	0.683451
0.661301 + 0.172586i	0.683451
0.147559 - 0.499832i	0.521158
0.147559 + 0.499832i	0.521158
-0.112336 - 0.153049i	0.189851
-0.112336 + 0.153049i	0.189851
	1

Test of VAR Stability

Source: Data Processed

# 4. Co-Integration Test.

The determination of co-integration can be seen from the value of trace statistic and max eigen statistic. When the value of trace statistic and max eigene statistic is higher than the critical value, it indicates that there is a co-integration in the model.

# TABLE 4.4

Hypothesized	Figonyoluo	Trace	0.05	Droh **
No. of CE(s)	Ligenvalue	Statistic	<b>Critical Value</b>	1100.**
None *	0.582392	107.4465	69.81889	0
At most 1 *	0.537323	73.39118	47.85613	0
At most 2 *	0.511506	43.33289	29.79707	0.0008
At most 3	0.246724	15.39219	15.49471	0.0518
At most 4 *	0.105373	4.342581	3.841466	0.0372

# **Co-Integration Test**

Hypothesized	Eigenvalue	Max- Eigen	0.05	Prob.**	
No. of CE(s)		Statistic	<b>Critical Value</b>		
None *	0.582392	34.0553	33.87687	0.0476	
At most 1 *	0.537323	30.05829	27.58434	0.0236	
At most 2 *	0.511506	27.9407	21.13162	0.0047	
At most 3	0.246724	11.04961	14.2646	0.1517	
At most 4 *	0.105373	4.342581	3.841466	0.0372	

Source: Data processed

Table 4.4 displays that trace statistic value and maximum eigenevalue at r=0 is higher than critical value with significance level at 1% and 5%. It shows  $H_0$  that states there is no cointegration rejected and  $H_1$  that states there is a co-integration accepted. In conclusion, the result indicates that among the movement from all variables have stability relationship and the long-term equal movement. In other words, on each short-term period, all variables tend to adjust to reach the long term equilibrium.

# 5. Vector Error Correction Model Estimation.

VECM shows the short-term and long-term relationship. On short-term relationship, one variable tend to adapt with other variables to form the long-term equilibrium. This estimation uses lag 3 based on lag length criteria.

# TABLE 4.5

<b>Cointegrating Eq:</b>	CointEq1
JII(-1)	1
O(-1)	0.000262
	-1.20E-05
	[ 21.7305]
G(-1)	-6.78E-05
	-3.70E-06
	[-18.1313]
FTSE(-1)	-0.968418
	-0.03477
	[-27.8538]
ER(-1)	0.066434
	-0.00308
	[ 21.5448]
С	1000.517

# **VECM Estimation Result**

Error					
Correction:	D(JII)	D(O)	D(G)	D(FTSE)	D(ER)
CointEq1	-0.512443	-142.784	4377.579	0.56724	3.257696
	-0.13629	-549.965	-3484.21	-0.26109	-2.07257
	[-3.75989]	[-0.25962]	[ 1.25640]	[ 2.17255]	[ 1.57181]
D(JII(-1))	0.425862	-1360.718	-5438.445	0.225016	-3.536736
	-0.17574	-709.131	-4492.58	-0.33666	-2.6724
	[ 2.42330]	[-1.91885]	[-1.21054]	[ 0.66838]	[-1.32343]

# Cont Table 4.5

D(JII(-2))	0.221371	232.1751	-6838.023	0.827726	-2.475437
	-0.17132	-691.307	-4379.66	-0.3282	-2.60523
	[ 1.29215]	[ 0.33585]	[-1.56131]	[ 2.52205]	[-0.95018]
D(JII(-3))	-0.549396	207.8514	3339.737	-0.315444	2.709048
	-0.17877	-721.389	-4570.24	-0.34248	-2.7186
	[-3.07313]	[ 0.28813]	[ 0.73076]	[-0.92106]	[ 0.99649]
D(O(-1))	7.26E-05	0.118017	-1.384835	3.45E-05	-4.15E-05
	-5.50E-05	-0.22267	-1.4107	-0.00011	-0.00084
	[ 1.31500]	[ 0.53000]	[-0.98166]	[ 0.32677]	[-0.04941]
D(O(-2))	-9.22E-05	-0.017684	-1.780018	-5.67E-05	-0.000788
	-5.40E-05	-0.21679	-1.37341	-0.0001	-0.00082
	[-1.71592]	[-0.08157]	[-1.29606]	[-0.55053]	[-0.96460]
D(O(-3))	0.000133	-0.111089	0.060026	-4.49E-05	0.000734
	-4.80E-05	-0.19532	-1.23744	-9.30E-05	-0.00074
	[ 2.74224]	[-0.56874]	[ 0.04851]	[-0.48372]	[ 0.99676]
D(G(-1))	-1.75E-06	0.061991	0.455575	5.96E-05	0.000119
	-1.10E-05	-0.04344	-0.27523	-2.10E-05	-0.00016
	[-0.16242]	[ 1.42690]	[ 1.65523]	[ 2.88755]	[ 0.72384]
D(G(-2))	-2.42E-05	0.053484	0.28252	1.33E-05	2.97E-05
	-1.30E-05	-0.05068	-0.32106	-2.40E-05	-0.00019
	[-1.93008]	[ 1.05538]	[ 0.87997]	[ 0.55298]	[ 0.15549]
D(G(-3))	-2.74E-05	-0.02399	0.271418	1.16E-05	0.000265
	-9.00E-06	-0.03651	-0.2313	-1.70E-05	-0.00014
	[-3.02587]	[-0.65710]	[ 1.17346]	[ 0.67014]	[ 1.92819]
D(FTSE(-1))	0.051689	285.4714	-4316.982	0.387012	-0.430143
	-0.11805	-476.344	-3017.8	-0.22614	-1.79513
	[ 0.43787]	[ 0.59930]	[-1.43051]	[ 1.71136]	[-0.23962]
D(FTSE(-2))	-0.102988	1025.991	6706.966	0.188143	2.958194
	-0.11712	-472.592	-2994.03	-0.22436	-1.78099
	[-0.87936]	[ 2.17099]	[ 2.24011]	[ 0.83857]	[ 1.66098]
D(FTSE(-3))	-0.093591	448.1875	6568.744	0.000706	-1.187615
	-0.11199	-451.891	-2862.88	-0.21453	-1.70298
	[-0.83572]	[ 0.99180]	[ 2.29445]	[ 0.00329]	[-0.69737]
D(ER(-1))	0.023403	-65.85116	-208.5527	-0.011874	0.070643
	-0.0157	-63.3598	-401.406	-0.03008	-0.23878
	[ 1.49048]	[-1.03932]	[-0.51956]	[-0.39475]	[ 0.29585]
D(ER(-2))	-0.008579	-21.1647	-120.9877	-0.024503	-0.147797

Cont Table 4.5

	-0.01573	-63.4586	-402.032	-0.03013	-0.23915
	[-0.54554]	[-0.33352]	[-0.30094]	[-0.81331]	[-0.61802]
D(ER(-3))	0.015768	-28.1425	-458.6889	-0.004101	-0.109304
	-0.01603	-64.6756	-409.742	-0.0307	-0.24373
	[ 0.98379]	[-0.43513]	[-1.11946]	[-0.13355]	[-0.44846]
С	-1.929404	-13327.87	28278.75	5.291293	128.6298
	-4.62987	-18682.4	-118360	-8.86944	-70.4059
	[-0.41673]	[-0.71339]	[ 0.23892]	[ 0.59658]	[ 1.82697]
R-squared	0.715813	0.475305	0.585025	0.533761	0.486916
Adj. R-					
squared	0.499289	0.075537	0.268853	0.178531	0.095995

Source: Data Processed

### **TABLE 4.6**

Variable	Coefficient	t-Statistic
Coinnt Eq1	-0.512443	[-3.75989]
D(JII(-1))	0.425862	[ 2.42330]
D(JII(-3))	-0.549396	[-3.07313]
D(O(-3))	0.000133	[ 2.74224]
D(G(-2))	-2.42E-05	[-1.93008]
D(G(-3))	-2.74E-05	[-3.02587]
Source: Data	processed	

Factors Influencing JII in Short Term

Source: Data processed

According to table 4.6, in the short-term relationship, there are three variables significant in  $\alpha$ =5%.

In the short-term relationship, oil price in lag 3 is positively influencing on  $\alpha$ =5% for about 0.00013. Meaning when there is an increase in oil price on the previous three months, it will increase the stock market price for 0.00013 unit. The next significant variable is gold in lag 2 which negatively influencing for about - 2.42. It explains that an increasing of gold price on the previous two months will decrease the stock price for -2.42 unit. The last variable which significant is gold price in lag 3 which explaining an increase of gold price on the previous three months will decrease the price for -2.74.

## **TABLE 4.7**

Factors Influencing JII in Long Term

Variable	Coefficient	t-Statistic
O(-1)	0.000262	[ 21.7305]
G(-1)	-6.78E-05	[-18.1313]
FTSE(-1)	-0.968418	[-27.8538]
ER(-1)	0.066434	[ 21.5448]

Factors Influencing JII in Long Term

Source: Data processed

Meanwhile in the long term estimation, all variables are influencing JII at  $\alpha$ =5%. Oil price has a positive impact on stock market. An increase in price will increase price for 0.000262. Gold price has negative impact on stock price. An increase in gold price will reduce the stock market price for -6.78. FTSE Malaysia also has negative impact on stock market. An increase of FTSE Malaysia price will reduce the stock market for -0.96. As for exchange rate, it positively impact JII for 0.066. When exchange rate increases the stock price increases for about 0.066.

### 6. Impulse Response Function (IRF).

This test may describe the response from a certain variable due to the shock from other variables. Thus, the length of afterward shock effect until the effect is gone or return to the balance point can be seen from here. This test shows how long the time is needed from one variable to response the shock from other variables.

## a. JII Response on Exchange Rate.



Source: Data processed

# FIGURE 4.6

### **Response of JII on Exchange Rate**

JII starts to response the shock at the first period. JII tends to respond exchange rate negatively. From the third period until the fifth period, the shock is relatively unstable. However in sixth period until the tenth period which response is quite stable. The graph explains that the increasing in exchange rate will decrease the price of stock market.

# b. JII response on Oil Price.



Source: Data Processed

# FIGURE 4.7

# **Response of JII on Oil Price**

JII is positively response on oil price. However on the third period, it negatively responses on the shock from oil price. Since the fourth period until the tenth period, the response back to normal. Although in the eight period, the shock quite slumps.

# c. JII Response on FTSE Malaysia.



Source Data Processed

# **FIGURE 4.8**

# **Response of JII on FTSE Malaysia**

According to table 4.8, JII starts to response on FTSE since the first period. In contrary, from the third period until the tenth period, the response tends to decrease dramatically. An increasing price from FTSE will be responded by an increasing price from JII.

# d. JII Response on Gold Price.



Source: Data Processed

# FIGURE 4.9

#### **Response of JII on Gold Price**

Table 4.8 shows that JII starts to response on gold price positively since the first period. It keeps increasing until the third period. Meanwhile on the fourth period the response slumps a bit. The response keeps increasing since the fifth period until 8<sup>th</sup> period. Since then, the shock is decreasing until 10<sup>th</sup> period.

# 7. Variance Decomposition.

This test aims to know how the variance from variable is determined because of the other variables' variances. Variance decomposition is used to arrange the forecast variance from a certain variable. How much is the differences between variances after and before the shock. It shows the percentage of forecast error of variation that is explained by another variable in the short-run dynamics and interactions.

# **TABLE 4.8**

	Variance Decomposition of JII:							
Period	S.E.	JII	0	G	FTSE	ER		
1	18.0262	100.000	0.00000	0.00000	0.00000	0.00000		
2	34.247	86.0118	5.34792	3.87757	4.39021	0.37254		
3	54.5372	84.8263	2.16288	9.21593	2.15663	1.63824		
4	66.85	85.7515	1.64258	8.36985	2.2984	1.93766		
5	79.5901	85.4039	1.3275	8.32094	2.25752	2.69019		
6	90.1214	85.1433	1.27936	8.60417	2.16126	2.8119		
7	100.359	84.4062	1.08088	9.70581	2.04773	2.75936		
8	110.718	84.1438	0.90108	10.192	1.97339	2.78972		
9	118.83	84.5144	0.81908	9.93371	1.99487	2.73799		
10	126.107	84.9379	0.9063	9.39198	2.05931	2.70456		

# The Result of Variance Decomposition

Source: Data Processed

Table 4.8 displays the result of variance decomposition of Jakarta Islamic Index. In the first period JII is 100% effected by its own variable. However in the tenth period the impact of JII to its own variable decreases to 84.93%. The other variable tends to impact the movement of JII. Furthermore, JII is 0% impacted by oil price in the first period. The impact is increasing until tenth period. In the tenth period, oil price impacts JII by 0.90%. Another explanation is for gold price which 0% effected JII in the first period, while in the tenth period it effect JII by 9.39%. For FTSE Malaysia, it 0% affects JII in the first period and in the tenth period it impacts on JII by 2.05%. Lastly, exchange rate is 0% affected JII while in the tenth period it impacts JII by 2.70%.

# C. Discussion

# 1. VECM in Short Term.

In the short term, the estimation indicates that oil price in 3<sup>rd</sup> lag is significantly influencing JII with the positive relationship by 0.000133. Meaning an increase in oil price will increase JII by 0.000133 unit. The positive relationship on the short period triggers the positive confidence of investors of mining sectors that significantly affect JII. The positive relationship might happen because Indonesian capital market is dominated by the mining sector with 39.7 percent. Because the stock market is dominated by the foreign investors with mostly invested in mining sector, thus an increasing in oil price will increase the stock price in mining sector and impact to the stock market in Indonesia. It is in line with the research from Rusbariand, et al. (2012) and Antonio, Hafidhoh and Fauzi (2013).

Another significant variable in short term estimation is gold price in  $2^{nd}$  and  $3^{rd}$  lag. It has negative relationship with the value of -2.42 and -2.74 respectively. The negative relationship is supported by the study from Putra and Darmansyah (2015). It might occur because gold is one of the safe haven and alternative investment with free risk, so when economic instability occurs in the short run, investors tend to pick out gold as an investment.

FTSE Malaysia is 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> lag has insignificant effect JII. The result is found in the study conducted by Husin, et al. (2013). This might happen because the changes in unit of FTSE Malaysia in short term do not give huge effect to the investors on putting their assets in JII. Their confidence level can still be maintained pretty well. It might also be caused of the regional market which has the same investors' characteristics.

As for the exchange rate variable, in the short term insignificant on JII. The finding contradicts with the research from Hsing (2011) and Barakat, Elgazzar and Hanafy (2016). The previous studies show that exchange rate is significantly influencing the stock market. However the fluctuation of exchange rate in the short run is not fluctuating dramatically. So, exchange rate will insignificantly influencing the stock price. This finding, however, is in line with the study conducted by Gay (2008). On the research, the reason why exchange rate is insignificantly effecting stronger stock market is because there are domestic macroeconomic influences such as; inflation, production, trade balance and rate structure.

### 2. VECM in Long Term.

In the long-term all variables are significantly influencing JII. Starting from oil price, gold price, FTSE Malaysia, and exchange rate all are influencing JII with the coefficient 0.000262, -6.78, -0.968418, 0.066434 respectively.

Oil price is positively influencing JII by 0.000262. Meaning an increase in oil price will increase JII by 0.000262 unit. The positive response might happen because Indonesian capital market is dominated by the mining sector with 39.7 percent. Because the stock market is dominated by the foreign investors with mostly invested in mining sector, thus an increasing in oil price will increase the stock price in mining sector and impact to the stock market in Indonesia. It is in line with the research from Rusbariand, et al. (2012) and Antonio, Hafidhoh and Fauzi (2013).

Gold price is negatively influencing JII by -6.78. This negative relationship is backed up by the study conducted by Putra and Darmansyah (2015). However it is in contrary with the finding from Irianto (2002). The reason why gold is negatively influencing JII is because gold can be chosen as an alternative investment when the economic instability occurs. So that in the long run, investors prefer to gold as the investment instrument.

The next significant variable is FTSE Malaysia which negatively influencing JII by -0.968418. An increase in FTSE

Malaysia will reduce JII by -0.968418. In the short run, this variable is insignificantly affecting JII. This result is supported by the research from Darsono, Muqorobin and Yudhi (2016). This finding is not in line with the research from Jayanti, Darmanto and Sudjana (2014). Negative relationship may happen because Indonesia stock market is still following the regional market condition. If the crash happens in the abroad, it will trigger a crash in Indonesia capital market as well. Another important point from this relationship is when FTSE condition is better than JII, investors prefer to put their assets in FTSE to get higher return.

The last significant variable is exchange rate. This variable is positively influencing JII by 0.066434. An increasing value in exchange rate is positively increasing JII by 0.066434. This finding rejects the finding from Hsing (2011) and confirms the finding from Barakat, Elgazzar and Hanafy (2016). Rupiah depreciation will increase the export value of a certain company. An increasing in export value will increase the company's revenue, leads to the increasing profit that in the end will increase JII. When one company has higher profit, overall stock market will also have increasing value.

## 3. IRF Analysis.

IRF shows the response of changing from one variable to another. In this study, the IRF graph varies from one variable to another. Below is the explanation of each variable.

For oil variable, the positive relationship on the short period triggers the positive confidence of investors of mining sectors that significantly affect JII, where mining sectors dominate the trade in the stock market. It is in line with the research from Rusbariand, et al. (2012).

As for gold price, the positive relationship is in line with the research from Irianto (2002). The situation might happen because the gold purchasing by society is not for investment motive but for the consumptive motive that also can be used as jewelry. So that, the stock investment and the gold purchasing is substitution.

The positive result from JII shocks to FTSE is in accordance with the theory of economic integration in financial market. The relationship between global stock market is positively influencing each other. The result is in line with the study from Jayanti, Darminto and Sudjana (2014).

In the graph, JII responds negatively to the stock market. This might happen because the exchange rate is importantly influencing the cost of production in a company. It also effecting the amount of transaction in stock market. Exchange rate which fluctuates a lot can reduce investor confidence on stock market. That leads to the negative effect on capital market. For the foreign investor, they tend to take out the capital market and capital flow occurs in this situation that leads to the decreasing point of JII. It is line with the study from Hsing (2011).

## 4. FEVD Analysis.

The summary result for FEVD as the dependent variable for JII shows that variable gold price is the most shocking variable to JII, followed by exchange rate, FTSE Malaysia and oil price. Gold price gives shock for 9.39 % followed by exchange rate by 2.7%, followed by FTSE Malaysia by 2.05% and oil price by 0.9%.

In case of JII, gold price comes as the most shocking variable to JII. It might happen because gold regard as the important alternative investment when an economic instability happens. So that investors should be more cautious and aware on the increasing price of JII. For exchange rate variable, the government should do the right decision on maintaining the strength of Rupiah on other currencies. As for FTSE Malaysia impacts meaning that our policy maker and people involving in stock market have to be aware on the changing in the regional market. Lastly for oil price which contributes the least for the changing in JII. It should also be a point when a fluctuation on oil price happens and lately when the price keeps decreasing and the increasing price happens in stock market.