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THE ISLAMIC CAPITAL MARKET VOLATILITY: A COMPARATIVE STUDY BETWEEN IN INDONESIA AND MALAYSIA

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Abstract

This study attempts to examine the short-term and long-term relationship among selected global and domestic macroeconomic variables from each country (Fed rate, crude oil price, Dow Jones Index, interest rate, exchange rate and inflation) for Indonesia and Malaysia Islamic capital market (Jakarta Islamic Index (JII) and FTSE Bursa Malaysia Hijrah Shariah Index (FHSI). The methodology used in this study is vector error correction model (VECM) for the monthly data starting from January 2006 to December 2010. The result shows that in the long-term, all selected macroeconomic variables except Dow Jones Index variable have significantly affect in both Islamic stock market FHSI and JII, while in the short-term there is no any selected macroeconomic variables that significantly affect FHSI and only inflation, exchange rate and crude oil price variables seem to significantly affect JII.

Keywords : Islamic Stock Market, Jakarta Islamic Index, FTSE Hijrah Shariah Index, VAR/VECM
JEL Classification: E52, E44

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I. INTRODUCTION

The Islamic capital market has played an important role in the shape of world financial system evolution, and rapidly developing in recent decades. Currently, the Islamic capital market is no longer a trend among Muslim countries only. The development of the Islamic finance industry with 15 percent per year of growth throughout the world is stirring interest to open such capital market services in capitalist and liberal countries.

In every economy, the capital market is a milestone and an indicator of economic growth of a country. The capital market plays an important role as an investment tool that is useful for development. In addition to investing in the capital market, the value of stock prices becomes a very important consideration. However, in line with economic globalization, stock prices are not only influenced by domestic economic conditions and events, but also economic turmoil and external factors. Therefore, it is crucial for the government to create conducive investment climate, which is highly associated to the improvement of domestic macroeconomic conditions. The more stable the macroeconomic conditions, the more investors feel secure and comfortable to invest their funds. This is certainly related to investors' investment options when faced with the return and risk options that will be enjoyed or suffered on the funds invested.

As Muslim-majority countries, Indonesia and Malaysia did take the opportunity to establish Islamic-based capital markets. Malaysia started the Islamic Index in 1992, while Indonesia established the Jakarta Islamic Index (JII) eight years later, in 2000. However, if we look at the Islamic capital market movement in Indonesia and Malaysia, i.e. Jakarta Islamic Index (JII) and the FTSE Bursa Malaysia Hijrah Shariah Index (FHSI), both indexes shared similar patterns of movement during the period 2006 to 2010 (Figure 1.1). This is possible because both indexes were responding to several global macroeconomic variables and events.

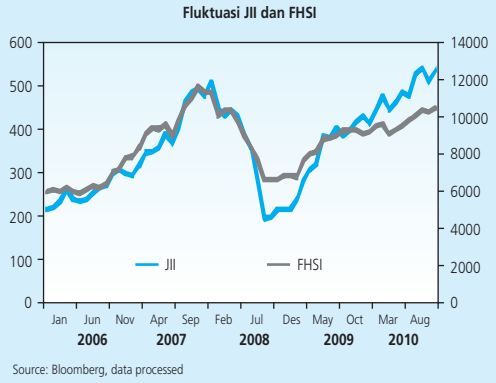


Figure 1.
The pattern of movement of JII and FHSI

This paper is motivated by the different of many empirical researches about the effect of macroeconomic variables on the stock market, and the curiosity of similar movement between Islamic stock price indexes in Indonesia and Malaysia. The purpose of this research is to examine the effects of global and domestic macroeconomic variables on the Islamic capital market in Indonesia and Malaysia. The case study of Malaysian Islamic capital market is included in this study since Malaysia and Indonesia has some similarities in natural resources, geographical location and the use of a dual banking system to supports their economies.

The next section of this paper presents theory and literature study, section three present the data and methodology, while result and analysis is presented on section four. Last section provides the conclusion of this research and the policy implication.

II. THEORY

There are many macroeconomic variables that proven to have great impact on capital market, one of them is world oil price. Fluctuation in world oil prices affects almost all aspects of economic activity, which is transmitted in several ways (Surjadi, 2006). Firstly, fluctuating oil prices affect the term of trade and shift the income from oil importing countries to oil exporting countries. Secondly, through inflation effect where the rise of input cost will lead to price increases.

Wang et al (2010) showed that based on historical data, the fluctuation in oil prices has a huge impact on the economy and capital markets. When the oil price increases, the economy usually falls into recession and stock market collapses. This is in line with Kendall (1953) in his random walk theory that fuel prices increase is bad news for the market in general which will negatively affect the stock prices and companies engaged in that sector (Samsul, 2006: 269).

The second variable is the interbank interest rates, and one with significant them is the Fed rate set by The Federal Open Market Committee (FOMC). Fed rate amount is determined by economic conditions that occur in the United States. The Federal Reserve Publication, states that the said the U.S. economy and the global economy are connected to various channels. Economic development in the United States has a major impact on production, employment and price sectors throughout the world. Similarly, the activities of the Federal Reserve and international economics affect each other. Fed policy considers U.S. international transactions, dollar exchange rate movements, and other economic developments. On the other hand, activities of the Fed also affect the international economy, foreign exchange transactions and the value of dollar, which in turn affects the world's financial stabilization (The Federal Reserve Publication).

Wongswan (2005: 10-11) stated that U.S. monetary policy (the Fed Funds rate) can affect stock prices in other countries through several channels:

1) The increase in the Fed rate will increase the discount rate, which affects the expectations of dividends, and will likely decrease the level of stock prices in the U.S.. Since the Fed rate

affects global interest rates, then it is possible for the Fed rate increase to cause an increase in domestic interest rates, which in turn could lead to lower stock prices.

2) Fed rate changes can be used as a measure of economic activity in U.S. On one hand, the Fed rate increase can result in sluggish economic activity, but on the other hand, a high Fed rate also signals a strengthening U.S. economy. In general, U.S. economic activity will affect global activity allowing for an influence on capital markets.

3) Fed rate changes will affect foreign exchange rates, and the exchange rate in turn can affect stock prices through the components of the discount rate or the expected future cash flow, or through both. The influence depends on the ability to adapt to changing global interest rates.

4) Fed rate changes affect the global stock market through portfolio adjustment in multiple markets that are connected such as global mutual funds, hedge funds and brokerage firms.

Based on interest rate parity theory and portfolio adjustment theory, changes in global interest rates will affect investors' investment decisions. Higher global interest rate than domestic interest rate will lead to capital outflows as investors assess it more profitable to invest abroad than to invest in-country. Therefore, increases in global interest rates accompanied by reduction in domestic interest rates will negatively affect the domestic capital market conditions.

The third macroeconomic variable, the Dow Jones Index, is one of the major indexes in the U.S. covering 30 of the largest multinational companies in the America. This index is able to describe the performance of the American economy. Thus, a strengthening Dow Jones Index reflects improved performance of the U.S. economy. One of the main concerns of Indonesia's exports is the important attention paid to the condition of the U.S. economy. Economic growth in the United States can encourage the growth of Indonesia's economy through exports or in the form of capital inflows from both foreign direct investment or through the capital market.

The process of globalization has increased the level of relations of interdependence among countries, and has even lead to the unification of the world economy, so that the boundaries among countries in a variety of business practices or business are no longer apply. Economic globalization occurred in finance, production, investment and trade activities which then affect the system of economic relations among nations. Globalization is characterized by the depletion of the investment limits or markets, nationally, regionally and internationally (Halwani, 2005: 193-194).

The two keywords in globalization are interaction and integration that refers to the economic interaction between countries and their level of integration. Economic interaction between countries includes trade flows, production and finance; while integration refers to how the local or national economy of each country is effectively connected as an integral part of a single world economy (Thoha in Mustikaati, 2007). In relation to the stock market, economic

integration is the union of stock exchanges of the world. As the index has the largest market capitalization in the United States, fluctuations in Dow Jones Industrial Average Index (DJAI) through economic integration could affect the stock price movement on the stock exchanges around the world. Like when Asian stock exchanges are weakened due to the falling Wall Street shares and world shares because of the effect of the global financial crisis in the U.S. (Hariyanto in Mustikaati, 2007).

Inflation is also one of important macroeconomic variable with great effect both on real and financial sector. It reflects the aggregate increase in prices of goods or services during a given period. The inflation rate is measured using changes in the general price level (where the consumer price is usually used) and the producer price index or implicit gross domestic product deflator (GDP deflator), which measures the average price of all weighted items by the quantity of goods actually purchased (Karim. 2008: 135-136).

Rafiq al-Masri referring to Karim (2008: 139) states that according to Islamic economists, inflation results in a bad impact for the economy because it caused interference on the function of money as a store of value, causing consumptive behavior and direct investment in the things that are non-productive such as land, buildings, precious metals etc. Meanwhile, according to Slifer and Carnes and referring to Sriwardani (2009), theoretically there is a negative relationship between inflation and stock price performance. Inflation is assessed to reduce the real value of a company as well as dividends; so that increasing inflation rate would lead to weakening stock prices. Conversely, if the rate of inflation decreases then share prices will be strengthened (and vice versa).

The next macroeconomic variable is exchange rate; the ratio of two different currencies. The exchange rate system has a variety of forms; however the floating exchange rate system is widely used in many countries. In this system, the exchange rate is set based on demand and supply of foreign exchange (Halwani. 2005: 157-161). The stability of the exchange rate would be obtained if there is no destabilizing speculation. This condition leads to a decrease in exports and negatively affects the balance of payments. The worsening balance of payments will certainly affect the reserves. Reduced reserves will reduce investor confidence in the domestic economy and ultimately have a negative impact on the performance of stocks in the capital market (Octavia, 2007).

Based on interest rate parity and portfolio adjustment theory, it states that exchange rate changes will affect the investor's decision to invest. Expectations of rising exchange on domestic currency for foreign currency will boost stock prices, because investors find it more advantageous to invest in the country compared to invest abroad.

Related to exchange rate and inflation, the interest rate is another macroeconomic variable, which is related directly to the real sector, particularly investment. In investment theory, Keynes stated that the investment function has a negative slope which means that the lower the interest rates, the larger the investment, no matter how low interest rates, if the investment

generates smaller profit than the interest rate, the investment rate will remain lower or limited. Therefore, Keynes described the relationship between interest rate and investment as follows (Putong, 2009: 277):

Although it is normative, interest rate is not the instrument used in Islamic financial transactions but in practice, the influence of the interest rate is still quite large. Several studies conducted by Nazwar (2008) and al-Faizin (2010) showed that significant interest rate negatively affects the performance of Islamic stocks.

2.1. PREVIOUS STUDIES

Sriwardani (2009) observed the comparison between global macroeconomic indicators and the Indonesian Composite Stock Price Index (JCI) and the Jakarta Islamic Index (JII). The macroeconomic indicators used were world oil prices, Fed rate and Dow Jones Industrial Average Index for global indicators; and the exchange rate and inflation as a macroeconomic indicators of Indonesia. With weekly time series data from July 2000 until September 2008 and vector autoregression (VAR) analysis resulted in a conclusion that among the five indicators observed affecting JCI and JII, the one indicator that significantly affects the JCI and JII is the Dow Jones Industrial Average Index.

A second study by Fahrudin (2006) looked at the effects of inflation, money supply, exchange rate and interest rate on the JII. The results showed, inflation has a negative influence on JII; money supply positively affects JII although insignificant; and interest rate has a negative effect on the JII.

Bun Lenny and Edy Sarwo Handoyo (2008) conducted a study on the effect of variable interest rate, exchange rate of Rp / USD and world oil prices on the Composite Stock Price Index (CSPI). They found that during the period January 1, 2006 until June 30, 2008, CSPI was significantly influenced by world oil prices and variable interest rate, while the exchange rate of Rp/USD had no significant effect at a confidence interval of 95 percent.

A similar study conducted by Mu-Lan Wang, Ching-Ping Wang and Tzu-Ying Huang (2010), examined the stock index in the United States, Japan, Germany, China and Taiwan on the impact caused by fluctuations in world oil prices, gold prices and the exchange rate of the dollar against their respective countries. The conclusions found the three macroeconomic variables affect stock indexes in Japan, Germany, China and Taiwan, but have no effect on stock indexes in the United States.

Table 1 Results of Previous Research

No	Researcher	Object	Method	Domestic Macroeconomy			Global Macroeconomy		
1	Fautia Sriwardani	JII	VAR	-	NS	NS	NS	NS	S
2	Muh Fahrudin Z	JII	ARDL	S (-)	NS (-)	S (-)	-	-	-
3	Bun Lenny and Sarwo Edy Handoyo	IHSG	Multiple Regression	S	-	NS	S	-	-
4	Mu-Lan Wang, Ching-Ping Wang and Tzu-Ying Huang	Mu-Lan Wang, Ching-Ping Wang and Tzu-Ying Huang	ECM	-	-	S (China, Japan, German and Taiwan) NS in USA	S (China, Japan, German and Taiwan) NS in USA	-	-

Note: r (interest rate), Inf (inflation), Er (exchange rate), Oil (world oil prices), Fed (Fed rate) dan Dow (Dow Jones Index), NS (Not significant effect), S (Significant effect)

III. METHODOLOGY

There are two models in this research; they are Indonesia's Islamic capital market model represented by Jakarta Islamic Index (JII) and the Malaysian Islamic capital market model represented by the FTSE Bursa Malaysia Hijrah Shariah Index (FHSI). Research for the Indonesia's Islamic capital market used seven variables, so in VAR / VECM model, there are seven equations that can be processed as models for each variable observed. The following equations below are obtained in the research of syari'ah index movement in Indonesia.

$$\mathbf{JII_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (1)$$

$$\mathbf{OIL_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (2)$$

$$\mathbf{FED_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (3)$$

$$\mathbf{DOW_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (4)$$

$$\mathbf{CPII_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (5)$$

$$\mathbf{BIR_t} = A_0 + A_1\, JII_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (6)$$

$$\mathbf{ERI_t} = A_0 + A_1 JII_{t-i} + A_2\, OIL_{t-j} + A_3\, Gold_{t-k} + A_4\, DOW_{t-l} + A_5\, CPII_{t-m} + A_6\, BIR_{t-n} + A_7\, ERI_{t-o} + \varepsilon_t \quad (7)$$

There are also seven equations that are able to identify the seven variables used for the Malaysia Sharia capital market model. Malaysian domestic macroeconomic variables used in the model of the Malaysia Sharia capital market are the Malaysia interest rate, ringgit per US Dollar exchange rate and the Malaysian inflation rate. Associated global macroeconomics variables used are the Dow Jones index, global oil price and the FED rate. Therefore the equations are as follow:

$$\mathbf{FHSI_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (8)$$

$$\mathbf{OIL_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, Bnmr_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (9)$$

$$\mathbf{FED_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (10)$$

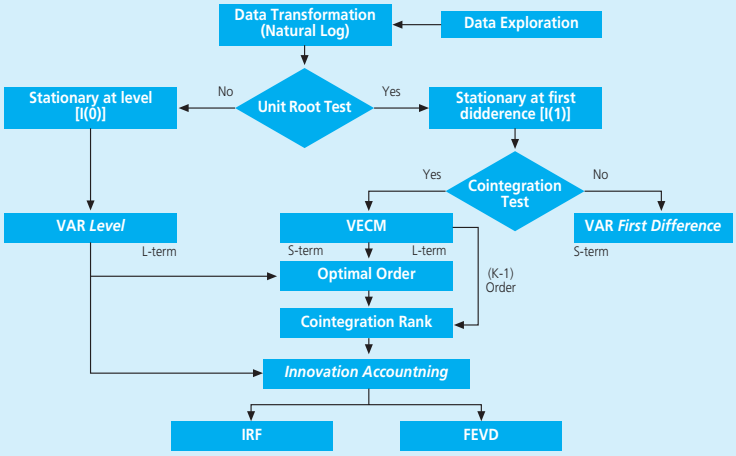
$$\mathbf{DOW_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (11)$$

$$\mathbf{CPIM_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (12)$$

$$\mathbf{MYR_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, FED_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (13)$$

$$\mathbf{ERM_t} = A_0 + A_1\, FHSI_{t-i} + A_2\, OIL_{t-j} + A_3\, Gold_{t-k} + A_4\, DOW_{t-l} + A_5\, CPIM_{t-m} + A_6\, MYR_{t-n} + A_7\, ERM_{t-o} + \varepsilon_t \quad (14)$$

We use VAR/VECM method to test the above model. Below are the steps in testing the VAR/VECM model.



Graph 1
VAR/VECM Analysis Process (Ascarya, 2009: 4)

IV. RESULT AND ANALYSIS

4.1. IMPULSE RESPONSES FUNCTION (IRF) OF SHARIA CAPITAL MARKET IN INDONESIA

Impulse Response Function in the Indonesian sharia capital market showed responses of the JII on shocks that occurred upon Indonesia and global macroeconomic indicators for 150 periods of observation. This analysis showed how long a period is needed for JII to return to long term equilibrium as shocks occurred as shown by the macroeconomic indicators.

Sharia Stocks Price Movement (JII) Response on Oil Price Shock

The JII response to shock in oil prices showed that in first period, JII responded positively to the shock, meaning that when the increase of oil prices occurred in the short term, the JII increased as well. This condition happened because in the short term, the increase of the world oil prices triggered the positive sentiment of mining stocks investors which significantly affect the movement of JII. This is not in accordance with the theory of random walk for the stocks in general, which states that the information on oil prices may push the negative sentiment for the investor in the capital market (Samsul, 2006).

Nevertheless, the occurrence of this positive response from investors can happen in the Indonesian capital market where the mining sector dominates trade transactions in the Indonesian stock market by 39.7 percent, which is much bigger than other sectors. Lenny and Handoyo (2008) agreed with this analysis and stated that investors in the Indonesian capital

market are dominated by foreign investors and most of the investors invest their capital in mining sector, therefore when there is an increase in oil price then stock prices in the mining sector will increase, resulting in an impact to the stock price index in Indonesia.

Sharia Stocks Price Movement (JII) Response on FED Rate Shock

The JII response over the FED shock was different in the short trem and the long term (see diagram 4.4). In the short term, the JII responded negatively to the FED shock. This negative response on the JII was feared due to the actions of speculators in the stock market seeking profits through capital gains. This speculation is responsive to the difference in interest rates at home and abroad. The FED interest rate continued to decline from a range of 5 percent to 0.2 percent to encourage speculators seeking profits in countries with interest rates relatively high, such as Indonesia.

The responsiveness of investors to the foreign interest rate was also against the backdrop of a high percentage of foreign investors in the Indonesia capital market which reached 60 percent of investors in this market. The JII negative response to FED shocks in the short term is in accordance with the theory of portfolio adjustment and interest rate parity which states that if the interest rate in Indonesia is higher than the interest rate abroad it will encourage capital inflow into Indonesia (Halwani, 2005).

Sharia Stocks Price Movement (JII) Response On Dow Jones Index (DOW) Shock

The result showed that the shock that occurred in Dow Jones Index (DOW) was responded positively by the JII, even though it was not rapid, with a standard deviation 0.000386 and stabilized at period 113 (see attachment 7). This means that when there is an increase in the DOW, it will be responded by as increase of the JII. The positive response of the JII is in line with the theory of economic integration in financial market which states that there is a positive correlation and integration of stock exchanges around the world, so if a crash occurs abroad, then it may trigger a crash in the domestic country.

The integration between the Dow Jones Index (DOW) and the Jakarta Islamic Index (JII) can be seen from the fluctuation of both indexes, where the DOW decrease during the global financial crisis in USA was later followed by a weakening JII. After that, the JII strengthened again as the USA economy recovered with a strong Dow Jones Index after global financial crisis in 2008. The results are consistent with the results of research conducted by Sriwardani (2009) which states that a positive response of the JII to DOW shocks is due to the correlation between the two indexes.

Sharia Stocks Price Movement (JII) Response on BI Rate (BIR) Shock

The results showed that the JII responds to shocks on the BI rate (BIR). The JII seems to respond negatively over shock that occurred on the BIR with standard deviation - 0.069935 and stabilized at period 100 (see attachment 7). This result shows that an increase on BIR will in turn push the weaknesses of the JII, except if there is a change in the BIR.

The JII response on BIR shock occurs because the change in interest rate information is important for the investors especially in the relation to investment return. In the random walk theory, a negative response from JII occurs because the increase of BIR is viewed as bad news for the investor in the Indonesian capital market (Samsul, 2006). The negative sentiment from investors naturally occurs because investors argue that the increase of BIR may trigger an increase of banking deposit interest rate, therefore investment in the form of deposit in banking which has minimum risk is considered more favorable than investing in a high risk capital market. This analysis is in line with the theory of capital asset pricing model (CAPM) that explains that the increase of interest rate which is free-risk (deposit interest rate) may decrease the benefit which is expected for the stocks.

Sharia Stocks Price Movement (JII) Response Towards IDR (ERI)

In the first period, the JII positively responded to shock that occurred on the ERI. The positive response of JII is caused because in the short term, IDR depreciation may trigger positive sentiment for the investor in the capital market. According to the random walk theory, IDR depreciation is considered good news because it is able to increase price competitiveness of products that are produced in Indonesia for the international trade. Through the decrease of IDR compared to the international exchange rate (USD), it may cause the price of Indonesian products to drop, making it cheaper and therefore increase export demand of domestic products. In addition, the increase of a company's export will obviously increase the corporate income and eventually increase the dividend (Samsul, 2006).

Sharia Stocks Price Movement (JII) Response On Indonesia Inflation Shock (CPII)

The results showed that the JII positively responds to shocks that occurs on the CPII with a standard deviation of 0.022151, and reaches a long term equilibrium in the period 104 (see attachment 7). The positive response of the JII on the shocks means that when the CPII increases, there will be an increase on the JII as well. This response occurs due to Indonesian inflation that is quite controlled so that it will not generate any worries from domestic or foreign investors. The stability of inflation is pointed out as the increase of Indonesia's economic growth by the investor. Along with this analysis, Maysami et al (2004) explained that the positive response of the stock index on inflation can be occur because the government plays an active role in

anticipating the price escalation as a result of economic conditions in recovering after crisis. Besides, Marshal (1992) also explained that if inflation is caused by a shock of the amount of money in circulation, the monetary authority will block it by decreasing the interest rate. The decrease of interest rate may encourage investors to transfer ownership of their assets in stocks or bonds and increase the demand for equity investments which in turn will raise the price of the stock.

For more details on the response of every domestic and global variables on the movement of sharia capital market price in Indonesia can be seen on the graph below (Attachment 1.1)

4.2. IMPULSE RESPONSES FUNCTION OF MALAYSIA SHARIA CAPITAL MARKET

Sharia Stocks Price Movement Response (FHSI) On World Oil Price (OIL)

The results showed the FHSI negatively responded to shock that occurs in world oil price (OIL). The diagram shows that JII negatively respond to shocks with a standard deviation -0.025049 and starts to reach the equilibrium at period 40 (see attachment 7). The FHSI's negative response to shocks means that when the shocks occur on the world oil price, the FHSI will result in a weakening index.

The FHSI negative response on the world oil price is similar to the JII responses on similar variable shocks. The similar result indicates that the FHSI and JII investor behavior are relatively same where investors consider the increase of the oil price as a bad news for the capital market; therefore investors negatively respond the changes. However, the FHSI response on OIL shock is relatively faster into long term stability compared to the JII response where FHSI is able to reach long-term stability on period 40 with the standard deviation -0.025049, while the JII response can just reach the stability point at period 98 with a higher standard deviation -0.075996.

The result reflects that in the long term, the impact of OIL towards the JII is bigger than the impact on FHSI. The difference in both countries can happen because Indonesia continues imposing a fuel-oil subsidy for diesel and premium fuel, and the subsidies are enjoyed by all - the private sector, public sector, poor communities and the rich, therefore placing a burden on government for larger budgets. The high fiscal burden leads to a budget deficit that may distort the perception of the national economy. The negative response of stock price indexes on world oil price shocks was also obtained by the research of Sriwardani (2009), Wang et al (2010) and IAE (2004).

Movement Response of Sharia Stocks Price (FHSI) on Fed Rate Shock (FED)

From diagram 4.10, it is shown that shock occurring on the Fed rate (FED) is responded positively by the FHSI with a standard deviation of 0.059348, and the response starts to reach long term

stability on period 53 (see attachment 7). The positive response of the FHSI on the FED shocks means when there is an increase in FED, there will be a trigger to strengthen the FHSI. If we see the result of the IRF on the Indonesia sharia capital market, it can also be seen that the result of the IRF is similar between the Indonesia and Malaysia sharia capital markets on FED shocks. The similar response of both sharia indexes indicate investors' behavior on sharia stocks market in Indonesia and Malaysia towards FED shocks are relatively the same, therefore investor behavior reacts to the changes and differences of domestic and foreign countries interest rates.

Nevertheless, the FHSI responds to FED shocks with a higher standard deviation that reaches 0.059348, while the JII reaches standard deviation 0.001829. This means that the movement of FHSI in the long term towards changes of the FED is relatively more reactive than the JII. The higher response of FHSI than JII occurs because Malaysia has a higher degree of economic integration (closer to USA) than Indonesia. Malaysia is an important trade partner for USA. The USA private investment cumulative value in Malaysia reached over USD 10 billion which is 60 percent of investment on oil, gas, and petrochemicals; while the rest is in the manufacturing sector. In line with the research, Wongsman (2005) stated that the change in Fed interest rate is representative from the USA economic condition and would affect the world economy. However, Yusuf and Majid (2007) have a different result indicating that the FED is a variable that does not significantly influence the stock price index in Malaysia.

Sharia Stocks Price Movement (JII) Response (FHSI) Towards Dow Jones index (DOW) Shock

The results showed that shock occurring in the Dow Jones Index (DOW) was responded positively by the FHSI with the standard deviation 0.016231 and stabilized at period 54 (see attachment 7). The FHSI positive response in the shock that occurred on the DOW means that when an increase happens it will be responded by an increase of the FHSI; and vice-versa, a decrease on the DOW would result in a weakening FHSI.

Even the responses of the JII and FHSI on DOW shocks were relatively similar; and the response of the FHSI is higher than the JII. This situation is possible because FHSI and DOW have a level of integration in the financial sector that is stronger than the level of integration between the JII and DOW. The higher integration of the FHSI and the DOW occurred because the investment of foreign investors in the Malaysia sharia capital market, one of the world's major Islamic capital market. Changes in the Dow jones index which is representative of the condition of the world economy and the stock market would have more of an impact on the Malaysia Sharia Capital Market (FHSI) compared to the Indonesia Sharia Capital Market (JII). This analysis differs from the research of Achsani (2000) that examined the market response to shocks from other markets, which showed that if there was a shock in US stock exchange, the regional stock exchanges would not be influenced in responding to it, and that minor responses would be seen in Singapore, Hongkong Japan, Taiwan, and New Zealand. Conversely,

if a shock occurs in Singapore, Australia, or Hongkong, it would be transmitted to virtually all stock exchanges in the Asia Pacific region, including Malaysia.

Sharia Stocks Price Movement (JII) Response (FHSI) Towards Shock Interest Rate (MYR)

The results showed that a shock that occurs on the Malaysian interest rate (MYR) is responded negatively by the FHSI with a standard deviation -0.026704, and it tends to stabilize in period 41 (see attachment 7). This result means a decrease that occurs on MYR would push a strengthening FHSI. The IRF FHSI result of a domestic interest rate shock is equal to the IRF JII result. Similarly, interest rate shocks have a big influence on sharia capital markets in Indonesia and Malaysia. In accordance with these results, Keynesian theory states that investment is negatively related to the interest rate. Furthermore, the theory of capital asset pricing model (CAPM) also explains that the increase in the risk-free interest rates would reduce the expected rate of return on stock investments, so that rising interest rates will cause a decline in interest in investing in the stock market.

Normatively, variable interest rates should not have a significant effect on the movement of Islamic capital markets as researched by Yusof Majid (2007) who found that the interest rate does not significantly influence the Malaysian Islamic capital market (RHBII). But contrary to this notion, some researchers still found results showing a strong influence of interest rate shocks on Islamic capital market movements, e.g. al-Faizin (2010) and Sriwardani (2009) who examined the impact of interest rates on the Indonesian Islamic capital market.

Sharia Stocks Price Movement (JII) Response (FHSI) Towards Ringgit Exchange rate Shock (ERM)

The results showed shocks that occured on the ringgit exchange rate (ERM) was responded positively by FHSI with a standard deviation 0.006248 and remained stable in the period 43 (see attachment 7). This result shows that when ringgit depreciation occurs, it will be respond with a stronger FHSI stock price index. A positive response of FHSI on the ERM shock occurs because the variation on the exchange rate has a strong relationship with a company's import-export activities. The fall in the exchange rate of the ringgit compared to foreign currencies caused a decline in export commodity prices in foreign currency, so that this condition increased the demand for Malaysian exports. The increase in the value of exports would eventually result in increased corporate income, thus increasing the dividend investor section and ultimately have an impact on the stock price increases. The positive response of stocks price on the exchange rate shock can also be seen from research by Dimitrova (2005) in USA, Yusof and Majid (2007) in the UK, and Aydemir and Demirhan (2009) in Turkey on KLCI and RHBII in Malaysia. However,

these results contradict the results of research by Ibrahim and Yusoff (2001) which showed significant negative exchange rate effects on the KLCI in Malaysia.

Sharia Share Price Movement Response (FHSI) Against Malaysia Inflation Shock (CPIM)

The results showed that a shock in Malaysia domestic inflation (CPIM) was responded positively by the FHSI with standard deviation 0.030762 and stabilized at period 43 (see appendix 7). This means that when there is an increase in the inflation then it will respond with the strengthening of the FHSI. The IRF FHSI results from the domestic inflation shock is similar to the results of IRF JII, and this condition occurs because the rate of inflation in Indonesia and Malaysia are relatively stable and in line with the monetary policy objectives of each central bank where inflation information is rated as good news by investors (random walk theory).

Positive responses can also be caused by many other variables that affect the stock price index that are not included in the model, making this model an imperfect representation of the actual conditions of the capital markets. It can be seen from R-square value results of JII and FHSI VECM models, where the R-square value of JII models is 0.641391, that the independent variable in the model is only able to describe 64 per cent of model while the rest is explained by other variables. Similarly, where the R-square value of the FHSI model is 0.291445, it means a variety of domestic and global macroeconomic variables in the model only explains 29 percent of FHSI variation.

4.3. ANALYSIS RESULT OF FORECAST ERROR VARIANCE DECOMPOSITION (FEVD)

Variance decomposition analysis explains how large a role or a portion of an economic variable to other economic variable shocks, thus indirectly the strengths and the weaknesses of each variable in influencing other variables can be known in a long term period.

Results of the FEVD in Indonesia showed that global and domestic macroeconomic variables influenced forecasting on the Jakarta Islamic Index (JII) in 150 observed periods. From the FEVD result above, it showed that the dominant influence was the world oil price (OIL) and Bank Indonesia interest rate (BIR) against the JII. OIL was the most dominant influential variable reaching 38.99871 or by 39 percent by the end of the observation period. It showed, in the long run, that the oil price still has a large influence on the movement of the JII. The huge effect of OIL is caused by the dominance of foreign investors in Indonesia with investments in the mining industry. BI variable rate (BIR) took second place with a dominant influence at 33.34662 or 33 percent by the end of the observation period. This shows the Islamic capital market even in the long term is not free from interest rate influence that is a normative transactions instrument prohibited under Sharia.

The huge ERI influence is caused by the export and import activities done by companies classified in the JII; and dominance of foreign investors in the Indonesia capital market further strengthens the influence of the exchange rate variable on stock price movements. As for the other variables, the Dow Jones index, Fed's rate and domestic inflation (DOW, FED and CPII) have a relatively small effect on the JII. At the beginning, these variables increased to the eighth period, but on the ninth period the influence of these variables declined, and the influence of each variable is 0.039708, 0.084288 and 3.657258, respectively. See Figure 4.1 below:

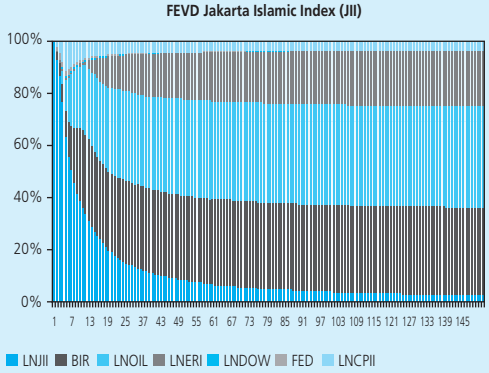


Figure 2.
Forecast Error Variance Decomposition (FEVD)
of Sharia Capital Market in Indonesia

Meanwhile, the results of the FEVD FTSE Hijrah Shariah Index (FHSI) prove that FHSI is really influenced by its own variables. This indicates that there are many other variables that are not included in model that causes significant changes on FHSI movements. The most dominant macroeconomic variable in Malaysia's sharia capital market that influences the FHSI is the global interest rate called Fed rate (FED). This effect continuously rose from the beginning until the last study period (period 150), i.e. reaching the point of influence 33.76132 or in the other words, 34%. In a long-term, the FED's high influence made the FHSI more responsive to the fluctuation of global interest rates. One of the triggers that causes this situation is the high dominance of foreign investors in Malaysia's sharia capital market.

The other macroeconomic variables are the world oil price (OIL), the Malaysian Ringgit (MYR), the Malaysia domestic inflation (CPIM), and the Dow Jones index (DOW). Those variables have influences that kept increasing from the beginning of study period until each of them reached 6.094735 (6%), 6.929383 (7%), 9.120171 (9%) and 2.491735 (2,5%), respectively in the end. As for the influence of Malaysian Ringgit exchange rates (ERM), it kept falling down from the first period until its influence was 0.378664 (0,4%) at the end of study period.

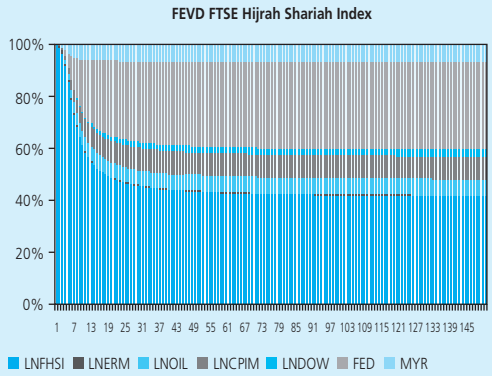


Figure 3.
Forecast Error Variance Decomposition (FEVD)
of Sharia Capital Market in Malaysia

V. CONCLUSION

According to the analysis and explanations in the previous chapter, there are several conclusions that:

a. The VECM analysis shows 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. However, there are resulting effects on FED to JII and FHSI. FED has a negative significant influence on the movements of JII, yet a positive significant influence to FHSI. This phenomenon can occur due to different responses of the two countries' monetary policy to US economic policy.

b. As for the influence of domestic macroeconomic variables (money exchange rates, interest rates, and inflation), both Indonesia and Malaysia actually experience the same effects to the sharia capital market in their respective country. Furthermore, those macroeconomic variables are also significantly influenced by each country's capital market.

c. From all of the variables studied in a short-term, there are only OL, ERI, CPII, and JII which have effects on the movements of the Jakarta Islamic Index (JII). While in a long-term, global macroeconomic variables such as the DOW do not significantly influence the movements.

d. For Malaysia's sharia capital market, there are no significant variables that have a short term influence , but the DOW, significantly influences movement on the FHSI.

Based on the study results above, there are several recommendations :

a. Since there is only one variable, the Fed rate variable, which has a different influence on the Islamic capital market in Indonesia and Malaysia, this indicates different responses are taken by these two countries on economic policy adopted by other countries. Therefore, it is recommended that policymakers be cautious about responding the changes of other countries' policies. Furthermore, capital outflow is very vulnerable to events in Indonesia due to policy changes in other countries. Therefore, the money exchange rates are in need of strict supervision because a large variation in exchange rates will affect the trade balance and foreign exchange reserves.

b. Domestic investors in sharia capital market should be increased. One of the responsive causes in terms of policy changes in other countries that occurs in both Indonesia's and Malaysia's sharia capital market is the high percentage of foreign investors compared to domestic investors. There is more than 60% of foreign investors in Indonesia's capital market. Psychologically, these investors tend to move their funds easily to other countries when it is considered more profitable.

c. Regarding the variables that influence sharia capital market, further research about technical and fundamental variables that affect sharia capital market is needed, in order to get more comprehensive results about the influence factors of sharia capital market movements.

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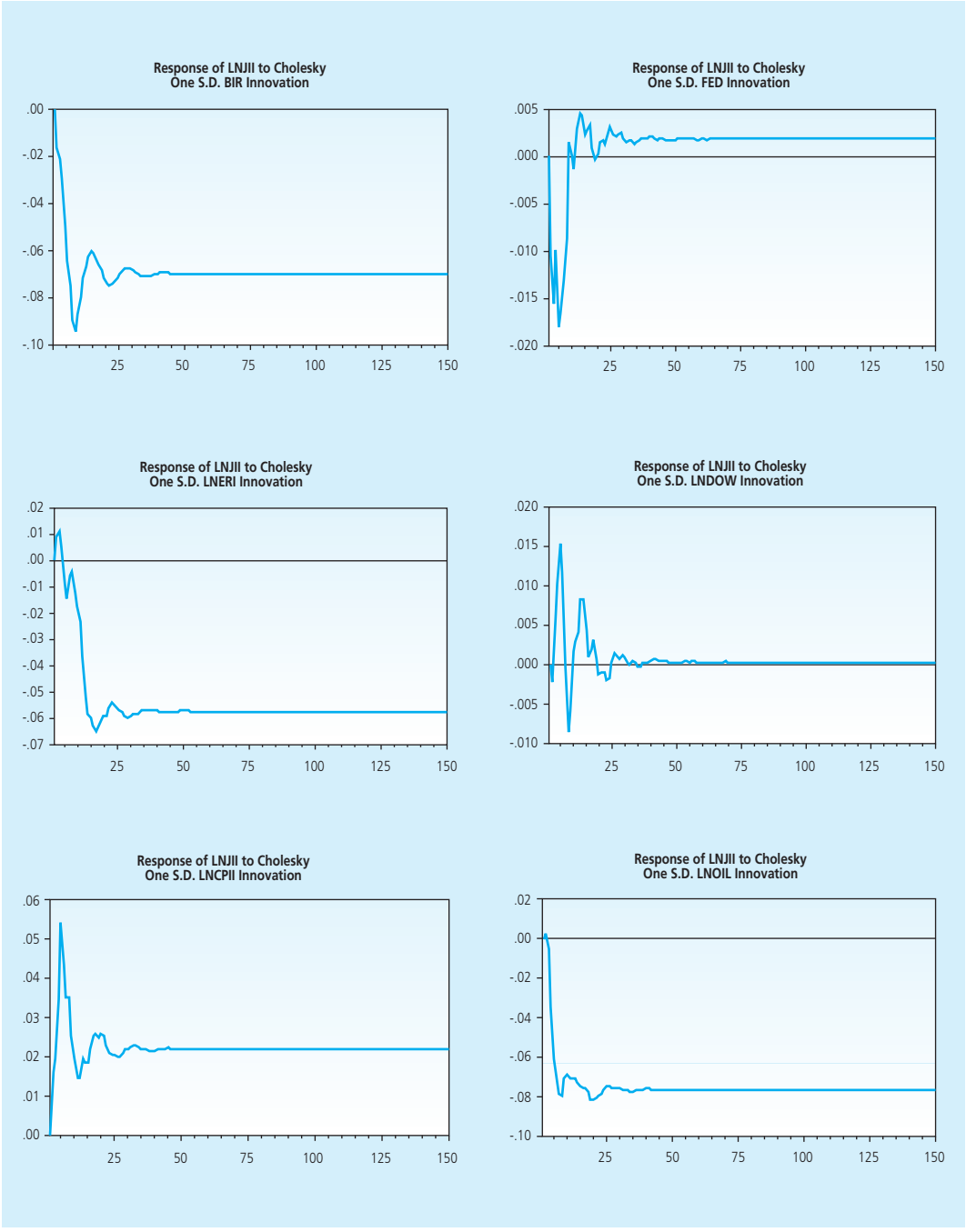
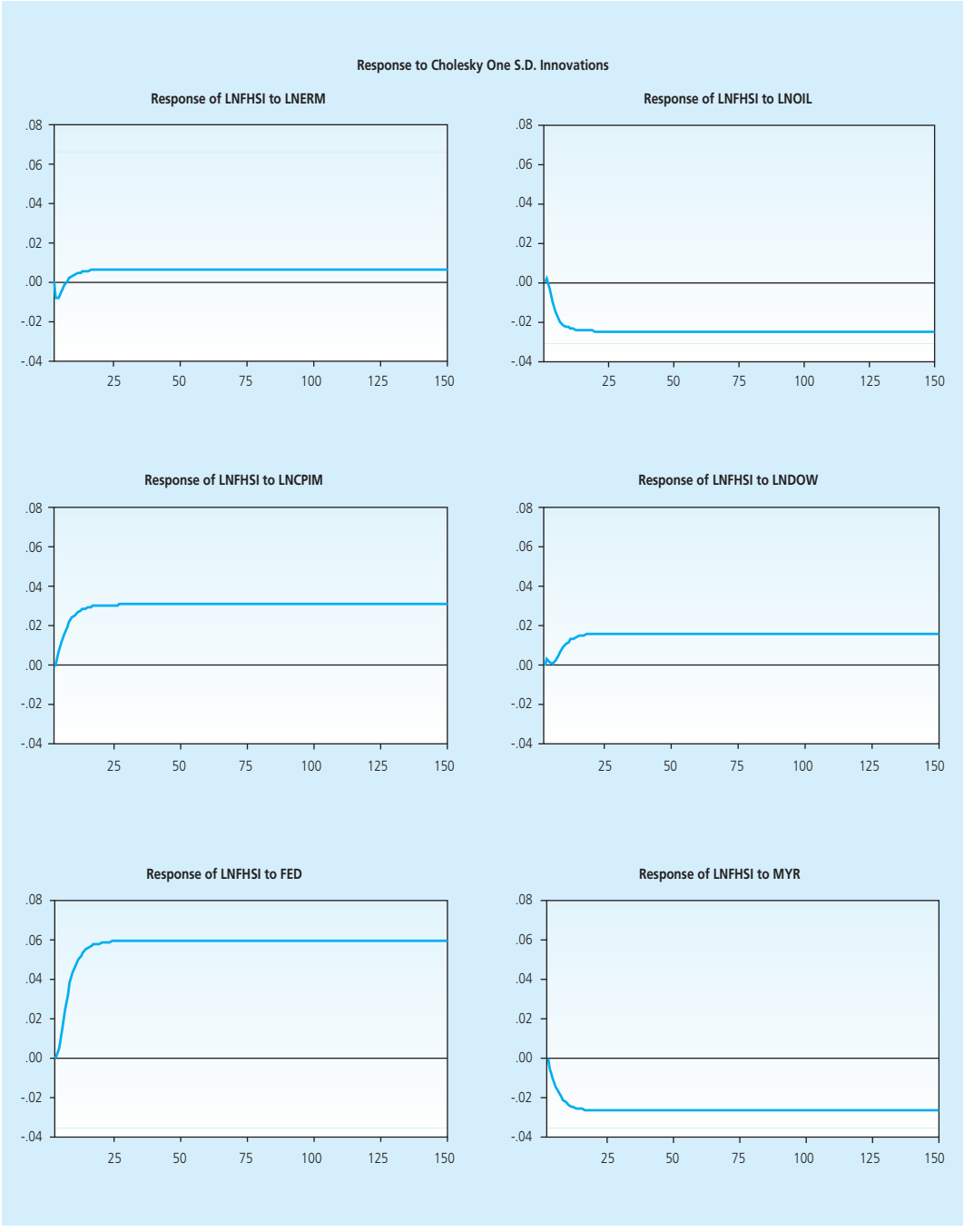
APPENDIX 1.1

Impulse Responses Function (IRF) Syariah Capital Market in Indonesia



APPENDIX 1.2

Impulse Responses Function (IRF) Syariah Capital Market in Malaysia



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