Is islamic stock related to interest rate ? Malaysian evidence

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Abstract

This study aims to examine the dynamic relationship of Islamic stock price with interest rate and other monetary policy variables by using the standard time series approach. The main objective is to test the Islamic principle whether interest rate (or riba in Islamic term) influences the movement of Islamic stock price. Malaysia is taken as a case study. In addition, the extent of the influence of other variables namely, money supply and inflation in explaining Islamic stock return could be captured. The findings tend to suggest that Islamic stock price appears to be significantly affected by the interest rate and inflation in the long run, but insignificantly affected by broad money supply. Islamic stock price is relatively more sensitive to inflation rate, compared to other variables. The finding implies that Islamic stock is a good hedge against inflation as it tends to react positively to inflation rates

Keywords: Islamic stock, interest rate, VECM, VDC, Malaysia

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1.0 Introduction – Issue motivating the study

Islamic stocks in Malaysia are represented by companies that have passed through the *shariah* screening criteria set by the Security Commission Malaysia. This indicates that those companies' operations are not directly related to the main prohibitions in *shariah,* thus one of them is *riba.* Therefore, since interest or *riba* in Islamic term is prohibited under Islamic law, it is important that Islamic investment to be free from the influence of interest either direct (in the operations) or indirect (reflecting in the stock's price). In addition, Proper understanding of the affecting factors of Islamic stock prices (interest rate, money supply and inflation) is highly crucial for economist, policy makers and investor. Therefore, the exact patterns, interaction and which variable is dominant in the interaction need to be analysed empirically. By this, Islamic investor could justify their source of income, and the industry could somehow measure to what extent Islamic Finance is different from the conventional finance. This study is also meant to contribute further to the literature since empirical study for Islamic equity investment is limited.

2.0 Objectives

This study intends to examine the dynamic relationship of Islamic stock price with interest rate and other monetary policy variables. The main objective of this study is to identify whether interest rate influences the movement of Islamic stock price in Malaysia. In addition to interest rate, other monetary policy variables will also be incorporated in the model. The additional variables will act as the controlled variables, thus the second objective is to capture the degree of influence of other variables namely, money supply and inflation in explaining Islamic stock return.

3.0 Theoretical framework

The incorporation of the selected variables in the analysis is consistent with theoretical foundation that stock price returns are calculated through the stock valuation model which is represented by the discounted present value of future cash flows. Therefore, any changes in monetary variables such as, interest rates and money supply may affect the firm's cash flows and thus, influence the stock price specifically by affecting the discount factors (Ibrahim and Yusoff,

2001). In addition, changes in stock price may also reflect real economic activities which lead to an increase in demand for real money and interest rate.

Expected relationships among the variables are; **first, interest rate** is expected to have a negative relationship with stock returns. This is clearly understood based on the stock valuation model that interest rate should act as a discounting factor which will lessen the value of cash flows.

Second, money supply could have either negative or positive relationship with stock return. According to Ibrahim and Yusoff (2001), money supply exerts a positive effect on the stock price in the short run but negatively in long run. The negative relationship is channelled through the impact of increasing interest rate. If the increase in money supply generates inflation as well as contributes to inflation uncertainties then it might exert a negative influence on the stock price. Increase in money supply leads to increase in interest rate and therefore a decrease in stock price. Therefore, money supply can have a positive impact on stock price if the increase in money supply leads to an expansion in economic activities. If this the case, cash flow and stock price will increase.

Third, inflation is like money supply could have either positive or negative relationship with stock price. Previous studies in Malaysia such as Ibrahim (1999), Ibrahim and Yusuff (2001) and Ibrahim and Hassanudden (2003) found that inflation is positively related to stock prices. According to these papers, the positive relationship between stock price and inflation suggest that stock prices are a good hedge against inflation.

4.0 Literature review

Various empirical researches have been done in analysing factors that may impact stock prices. In the case of emerging market such Malaysia several research have add in this line of literature among them are Ibrahim (1999), Ibrahim and Yusuff (2001), Ibrahim and Hassanudden (2003) and Asmy et.al (2009). These four papers investigate the dynamic interactions between

macroeconomic variables and the stock prices for an emerging market such Malaysia, using cointegration and Granger causality tests.

The first paper Ibrahim (1999) analyse the interaction between stock price and seven macroeconomic variables. Industrial production, consumer price index (CPI), narrow and broad money supply M1 and M2, domestic credit aggregates, official reserve and exchange rate as independent variables and Kuala Lumpur Composite Index (KLCI) as the proxy for stock prices. Results from this study suggest cointegration between the stock prices and three macroeconomic variables namely consumer prices, credit aggregates and official reserves.

In the next paper, Ibrahim and Yusoff (2001) analyses dynamic interaction among three macroeconomic variables (real output, price level, and money supply), exchange rate, and equity prices in Malaysia. With the addition of stronger techniques such as impulse response and variance decomposition, their result finds that movements in the Malaysian stock market are driven more by domestic factors, particularly the money supply, than by the external factor (such the exchange rate).

In the third paper, Ibrahim and Hassanudden (2003) analyses dynamic linkages between stock prices (KLCI) and four macroeconomic variables (money supply (M1), consumer price index, industrial production and exchange rate). With the attempt to capture international market effect, two major international stock market indexes were integrated in the research namely US S&P 500 and Japan Nikkei 255 indices from 1977 to 1998 on monthly basis. Empirical results suggest the presence of a long-run relationship between these variables and the stock prices and substantial short-run interactions among them. In particular, suggest positive short-run and long-run relationships between the stock prices and two macroeconomic variables. The exchange rate, however, is negatively associated with the stock prices. For the money supply, documents immediate positive liquidity effects and negative long-run effects of money supply expansion on the stock prices.

Asmy et.al (2009) examine the short-run and long-run causal relationship between Kuala Lumpur Composite Index (KLCI) and selected macroeconomic variables namely inflation, money supply and nominal effective exchange rate during the pre and post crisis period from 1987 until

1995 and from 1999 until 2007 by using monthly data. Consistence with the previous paper, the findings shows that there is cointegration between stock prices and macroeconomic variables. The results suggest that inflation, money supply and exchange rate seem to significantly affect the KLCI. These variables considered to be emphasized as the policy instruments by the government in order to stabilize stock prices.

All of the above papers only focus on conventional stocks market and try to investigate its relationship with selected macroeconomics variables. Currently, Islamic financial system especially in Malaysia is operating side by side with conventional system, therefore as addition and complementary to the above researches, Yusof and Majid (2006, 2007) had explored the stock market volatility in Malaysia for both Islamic and conventional market.

Using the same technique (cointegration and vector autoregression) and with the addition of regression, Yusof and Majid (2007) analyse the stock market volatility in Malaysia and how they are affected to the volatility in monetary policy variables for both Islamic and conventional market. The variables used to measure conventional and Islamic stock market index are Kuala Lumpur Composite Index (KLCI) and Rashid Hussain Berhad Islamic Index (RHBII). While the monetary policy variables used in their study are the narrow money supply (M1), the broad money supply (M3), interest rates (TBR), exchange rate (MYR), and Industrial production Index (IPI). This study finds that stabilizing interest rate would have insignificant impact on the volatility of the Islamic stock market. This study was inline and supports their earlier study (Yusof and Majid, 2006) which finds that interest rate volatility affects the conventional stock market volatility but not the Islamic stock market volatility. Both of these studies highlight the Islamic principles that interest rate is not a significant variable that explain stock market volatility.

In relation to the above, as the theory and empirical answer are controversial, and as another contribution to this line of literature, this paper seeks to explore Islamic stock price movement in case of Malaysia and how it is affected to the monetary policy variables by analysing the newly develop Islamic index which is FTSE Bursa Malaysia Emas Shariah Index (FBMSHA).

5.0 Methodology

This study adopts the standard time series technique in order to serve the research objective of finding empirical evidence in the nature of relations between Islamic stock and interest rates. In short, the methodology employed will begin with (i) unit-root tests (testing the stationarity of variables), (ii) determine the order of the VAR, (iii) applying the Engle-Granger and Johansen cointegration tests, (iv) examines the long run structure modelling (LRSM), (v) conducting the test of vector error correction model (VECM), (vi) applying variance decomposition (VDC) technique, (vii) applying impulse response function (IRF), (viii) and persistence profile (PF).

As explained by Masih (2010), the cointegrating estimated vectors will be subjected to exact identifying and overidentifying restrictions based on theoretical and a priori information of the economy. The test of cointegration is designed to examine the long-run theoretical or equilibrium relationship and to rule out spurious relationship among the variables. VECM is then employed to indicate the direction of Granger causality both in the short and long run. Afterwards, the variance decomposition technique is applied to indicate the relative exogeneity/endogeneity of a variable. The proportion of the variance explained by its own past shocks can determine the relative exogeneity/endogeneity of a variable. The variable that is explained mostly by its own shocks (and not by others) is deemed to be the most exogenous of all. The impulse response function (IRF) will then be applied in order to map out the dynamic response path of a variable due to a one period SD shock to another variable. The IRF is a graphical way of exposing the relative exogeneity or endogeneity of a variable. Finally, the persistence profiles will be applied. They are designed to estimate the speed with which the variables get back to equilibrium when there is a system-wide shock.

5.1 Data

Data employed in this research are time series data, with 62 observations, taken form DataStream which consist of monthly data from 2006 – 2012. FTSE Bursa Malaysia Emas Shariah Index (FBMSHA) had only been introduced starting from 2006 as a replacement to previous shariah index (KLSI). Quoted from Bursa Malaysia, *"as announced on 22nd Jan 2007 during the launch of FTSE-Bursa Malaysia Emas Shariah Index (FBMSHA), the KLSI will be deactivated on 1st*

November 2007, making the FBMSHA the singular benchmark index for Malaysian Shariah-compliant investments."

The variables are defined as follows:

FBMSHA : FTSE Bursa Malaysia Emas Shariah Index monthly price, will act as a Proxy for Islamic stock price.

INT : Interest rate (Malaysia KLIBOR one month - offered rate)

M3 : Broad money supply which represents by (M1) currency in circulation and demand deposits, plus (M2) savings deposits, fixed deposits, NIDs, Repos, foreign currency deposits, plus deposits placed with other banking institutions.

INF : Inflation (Monthly CPI)

6.0 Estimations and Discussions

6.1 Testing Stationarity of Variables

Before testing the stationarity of variables, all of the variables will be transformed into log form except for INT (interest rate), as it is naturally in percentage form. Conducting augmented Dickey Fuller (ADF) test on each variables, the result shows that all variables are non-stationary in their level form and, stationary after taking the first difference of their log form (eg: DFBMSHA = LFBMSHA – LFBMSHAt-1). Table 1 below summarizes the results.

Table 1: Augmented Dickey Fuller Stationary test result

Variables	Test Statistic	Critical Value	Implication
Variables in Level Form			
LFBMSHA	-2.1081 (AIC)	-3.489	Non-Stationary
	-1.6944 (SBC)	-3.489	Non-Stationary
INT	-1.6624 (AIC)	-3.489	Non-Stationary
	-1.3488 (SBC)		Non-Stationary
LM3	-1.8918	-3.489	Non-Stationary
LINF	-2.8266	-3.489	Non-Stationary

Variables in Differenced Form			
DFBMSHA	-3.2843 (AIC)	-2.9137	Stationary
	-4.9386 (SBC)	-2.9137	Stationary
DNT	-3.3537	-2.9137	Stationary
DM3	-4.5569	-2.9137	Stationary
DINF	-4.2638	-2.9137	Stationary

The highest ADF regression order based on computed value for AIC and SBC were used in determining which test statistic to compare with the 95% critical value for the ADF statistic. As described in the above results, all of the variables used for this analysis are I(1). Note that in some cases, AIC and SBC produce different orders, therefore, we have taken different orders and compared both (for example, this applies to the variable DFBMSHA). This is not an issue as in all cases as the implications of both are consistent.

ADF test of stationary only correcting autocorrelation problem. To take care of heteroscedasticity, a more stringent test of stationary which is Phillips Perron (PP) test of stationary has been conducted. (Table 2) Results indicate consistency with ADF test, whereby all variables are non-stationary in their level form and stationary after taking the first difference of their log form. For INT in its level form, the rejection criterion is at 5% significant level.

Table 2: Phillips Perron Stationary test result

Variables	Coefficient (S.E)	T-Ratio [P-Value]	Implication
Variables in Level Form			
LFBMSHA	-.070053 (.046434)	-1.5086[.137]	Non-Stationary
INT	-.035036 (.020851)	-1.6803[.098]	Non-Stationary
LM3	.1853E-3 (.010642)	.017412[.986]	Non-Stationary
LINF	-.016565 (.020954)	-.79056[.432]	Non-Stationary
Variables in Differenced Form			
DFBMSHA	-.90300 (.16600)	-5.4397[.000]	Stationary
DINT	-.57781 (.065835)	-8.7766[.000]	Stationary
DM3	-.85317 (.088666)	-9.6223[.000]	Stationary
DINF	-.54812 (.061553)	-8.9048[.000]	Stationary

6.2 Determination of the order (or lags) of the VAR model

The next task is to determine the order of VAR, which the number of lag to be used. As presented in table 3, based on the p-value of adjusted LR and the highest AIC and SBC, the result suggest that the optimum order of VAR is 1. (See Appendix 2 for details)

Table 3: Determination of order of VAR

Order	AIC	SBC	Adjusted LR Test
0	496.39	492.34	113.68 [0.105]
1	501.28	481.03	90.55 [0.197]
2	492.36	455.91	82.71 [0.058]
3	496.84	444.18	108.46 [0.114]

6.3 Testing Cointegration

Cointegration is the test to see whether all variables move together or integrated in the long term. This indicates the theoretical relationships among variables. Applying Engle-Granger cointegration test (Table 4), result indicates that all of the variables are cointegrated in the long run. However Engle-Granger test could only identify one cointegrating vector. To strengthen the result, standard Johansen cointegration test was applied, (Table 5) the result shows that the variables have one cointegrating vector at 95% confidence level on the basis of maximal Eigen value and trace statistics.

Table 4: Engle-Granger result for cointegration

Specification	$\mathrm{LINF_t} = \alpha + \beta_1 \mathrm{LFBMSHA_t} + \beta_2 \mathrm{LINT_t} + \beta_3 \mathrm{LM3_t} + e_t$		
	Test Statistics	**Critical Value**	**Implication**
ADF(2)	-4.5141	-4.3064	Cointegrated

Table 5: Johansen ML result for multiple cointegration

Ho	*H1*	Test Statistic	95% Critical	90% Critical
Maximum Eigenvalue Statistics				
r = 0	r>= 1	49.9264	31.7900	29.1300
r<= 1	r>= 2	18.1494	25.4200	23.1000
Trace Statistics				
r = 0	r>= 1	83.5191	63.0000	59.1600
r<= 1	r>= 2	37.5927	42.3400	39.3400

An evidence of cointegration implies that the relationship among the variables is not spurious, which suggest that there is a theoretical relationship among the variables and that they are in equilibrium in the long run. This result has a strong implication on this study, whereby it indicates that the Islamic stock price and interest rate together with other monetary variables (money supply and inflation) are theoretically integrated in the long run. However, to make the coefficient of the integrating vector consistent with the theory, the next procedure which is LSRM need to be applied.

6.4 Long Run Structural Modelling (LRSM)

In line with the objective of this paper, which to identify the relationship of Islamic stock price, interest rate and monetary variables, we first imposed a normalizing restriction of unity on the FBMSHA variable at the 'exactly identifying' stage (see Panel A of Table 6). As tabulated, in exact identification, M3 proves to be insignificant among all other variables in explaining FBMSHA. Experimented with a restriction of unity on the broad money supply (M3) variable at the 'overidentifying' stage (Panel B of Table 6) by imposing overindentifying restriction on the coefficient of M3, the result which presented by chi-square statistics (0.0254[.873]) indicates that the null is accepted thus the restriction is correct. This indicates that only interest rate and inflation has significant role in explaining Islamic stock price.

Table 6: Exact and over identifying restriction on the cointegrating vector

Variable	Coefficient	Standard Error	t-Ratio
Panel A: Exact Identification			
LFBMSHA	1.0000	None	None
INT	-0.0955	0.0356	-2.6826*
LM3	0.1985	1.2492	0.1589
LINF	7.4280	1.5738	4.7198*
Trend	-0.0204	0.0089	2.2728*
Panel B: Over-identification			
LFBMSHA	1.0000	None	None
INT	-0.0949	0.0354	-2.6835*
LM3	0.0000	None	None
LINF	7.5121	1.4800	5.0757*
Trend	-0.0191	0.0032	5.9839*
Chi-Square	**0.0254[.873]**		

6.5 Vector Error Correction Model (VECM)

The analysis thus far, had established that there are three variables cointegrated to a significant degree (Islamic stock price, interest rate, and inflation). The next aim is to proceed with VECM in order to identify the direction of Granger causality as to which variable is leading and which variable is lagging (i.e. which variable is exogenous and which variable is endogenous). (Table 7) Looking at the significant of error correction coefficient, FBMSHA, INT and INF appeared to be endogenous and M3 is exogenous. That tends to indicate that Islamic stock price response to broad money supply, but not by the opposite. The error correction term in the FBMSHA equation is significant. It implies that the deviation of the variables (INT, M3 and INF), which represented by the error correction term, has a significant effect on the Islamic stock price variable that bears the burden of short-run adjustment to bring about the long-term equilibrium.

Table 7: Error correction model (See Appendix 5.1 -5.4 for details)

	DFBMSHA	DINT	DM3	DINF
ECM (-1)	-4.7556[.000]*	3.6006[.001]*	-.46788[.642]	2.2060[.031]*
Implication	Endogenous	Endogenous	Exogenous	Endogenous
Chi Sq Serial Correlation (1)	.31469[.575]	4.0031[.045]	1.3705[.242]	10.0232[.002]
Chi Sq Functional Form (1)	5.4457[.020]	11.0761[.001]	.02375[.878]	.004198[.948]
Chi Sq Normality (2)	9.5584[.008]	289.813[.000]	2.5297[.282]	2046.0 [.000]
Chi Sq Heteroscedasticity (1)	1.4982[.221]	14.1930[.000]	.33214[.564]	0.23331[.629]

Notes: Due to the chosen order of VAR equal to 1, the equations do not capture the short term coefficient among variables. P-values are given in parenthesis. * Indicates significant at 5%

The diagnostics of all the equations of the error correction model (testing for the presence of autocorrelation, functional form, normality and heteroskedasticity) tend to indicate that the equations contain some problems, but we decided to proceed with estimation. We also checked the stability of the coefficients by the CUSUM and CUSUM SQUARE tests (Figure 1), which indicate that they are stable.

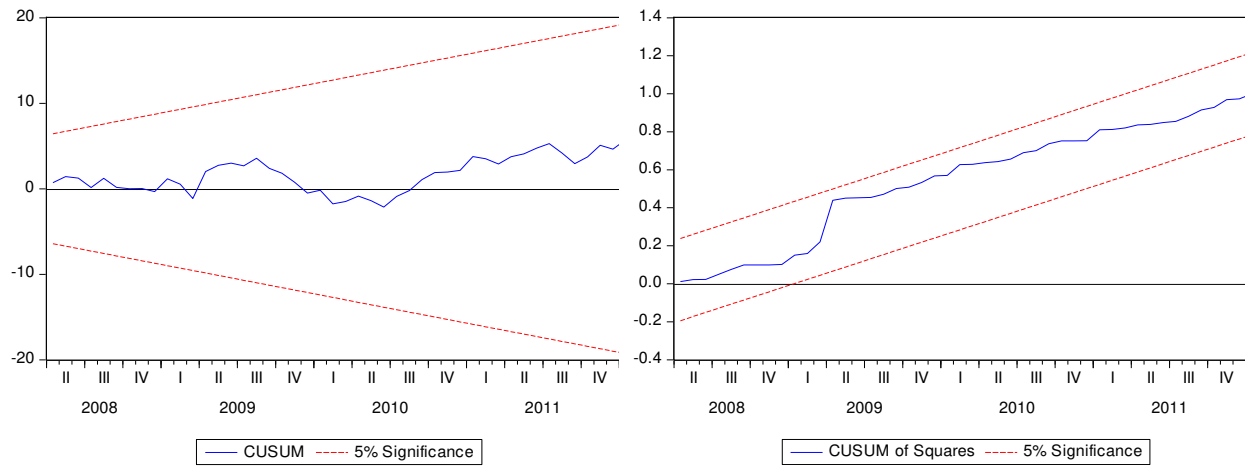

Figure 1: Plot of cumulative sum of recursive residuals and plot of cumulative sum of squares of recursive residuals

6.6 Variance Decompositions (VDCs): Orthogonalized and Generalized

Even though VECM has indicated the endogeneity/exogeneity of a variable, it does not able to screen out the relative degree of endogeneity or exogeneity of the variables. To detect this, variance decomposition technique will be used. The relative exogeneity or endogeneity of a variable can be determined by the proportion of the variance explained by its own past. The variable that is explained mostly by its own shocks (and not by others) is deemed to be the most exogenous of all. In table 7 for orthogonalized and table 8 for generalized, at the end of the forecast horizon number ten, the contributions of own shocks towards explaining the forecast error variance of each variable are indicating a consistence result. M3 is the most exogenous, the rank of three endogenous variables are INF, followed by INT and FBMSHA. The result depict that M3 is the most exogenous thus comply with VECM result as the leading variable.

Table 7: Percentage of forecast variance explained by innovations in Orthogonalized variance decompositions

	Month	DFBMSHA	DINT	DM3	DINF
DFBMSHA	1	0.83174	0.13340	0.01773	0.01711
	5	0.54535	0.13593	0.01483	0.30388
	10	0.26976	0.08578	0.00782	0.63662
DINT	1	0.18078	0.79613	0.00294	0.02013
	5	0.31767	0.57520	0.00426	0.10285
	10	0.37860	0.46200	0.00477	0.15461
DM3	1	0.01613	0.00235	0.97943	0.00208
	5	0.00898	0.00179	0.98225	0.00696
	10	0.00544	0.00144	0.98136	0.01175
DINF	1	0.04132	0.00227	0.00062	0.95578
	5	0.10081	0.00436	0.00016	0.89465
	10	0.13733	0.00558	0.00014	0.85694

Table 8: Percentage of forecast variance explained by innovations in Generalized variance decompositions

	Month	DFBMSHA	DINT	DM3	DINF
DFBMSHA	1	0.97088	0.00195	8.10E-05	0.02708
	5	0.58818	0.02763	0.001146	0.38304
	10	0.27867	0.04841	0.002007	0.67092
DINT	1	0.22013	0.76831	3.45E-05	0.01152
	5	0.42875	0.48673	2.52E-04	0.08426
	10	0.52443	0.33953	4.06E-04	0.13563
DM3	1	0.01646	9.02E-06	0.98332	2.08E-04
	5	0.00909	1.22E-04	0.98867	0.00210
	10	0.00547	2.71E-04	0.98986	0.00439
DINF	1	0.04300	0.00100	0.00285	0.95314
	5	0.10832	0.00350	2.65E-03	0.88552
	10	0.14976	0.00522	0.00252	0.84249

The main difference between orthogonalized and generalized is, in orthogonalized it depends on the particular ordering of the variables in the VAR and assumes that when a particular variable is shocked, all other variables in the system are switched off, whereby in generalized, no such assumption are made. Intuitively, generalized method is more coherent with the real world. As for that, the result for generalized VDC the percentage of variable explained by its own shocked are: FBMSHA (29%), INT (34%), M3 (99%), and INF (82%). As the main focus of the paper, FBMSHA only explained by INT by 4.8%, where most of the Islamic stock index is explained by INF (67%) and the least is M3 (0.2%).

6.7 Impulse Response Functions (IRFs)

In VDC, the purpose is to see the degree of dependency of the variable to itself to determine relative endogeneity and exogeneity of the variables. While, in IRF, the main concern is to see the impact on others when one variable is shock. As in VDC, the shock can be orthogonalized and generalized. Referring to the IRF graphs (figure 1 and figure 2), the result is consistent with VDC, which indicates FBMSHA is relatively more sensitive to a 1% SD shock to the inflation compared to interest rates and broad money supply.

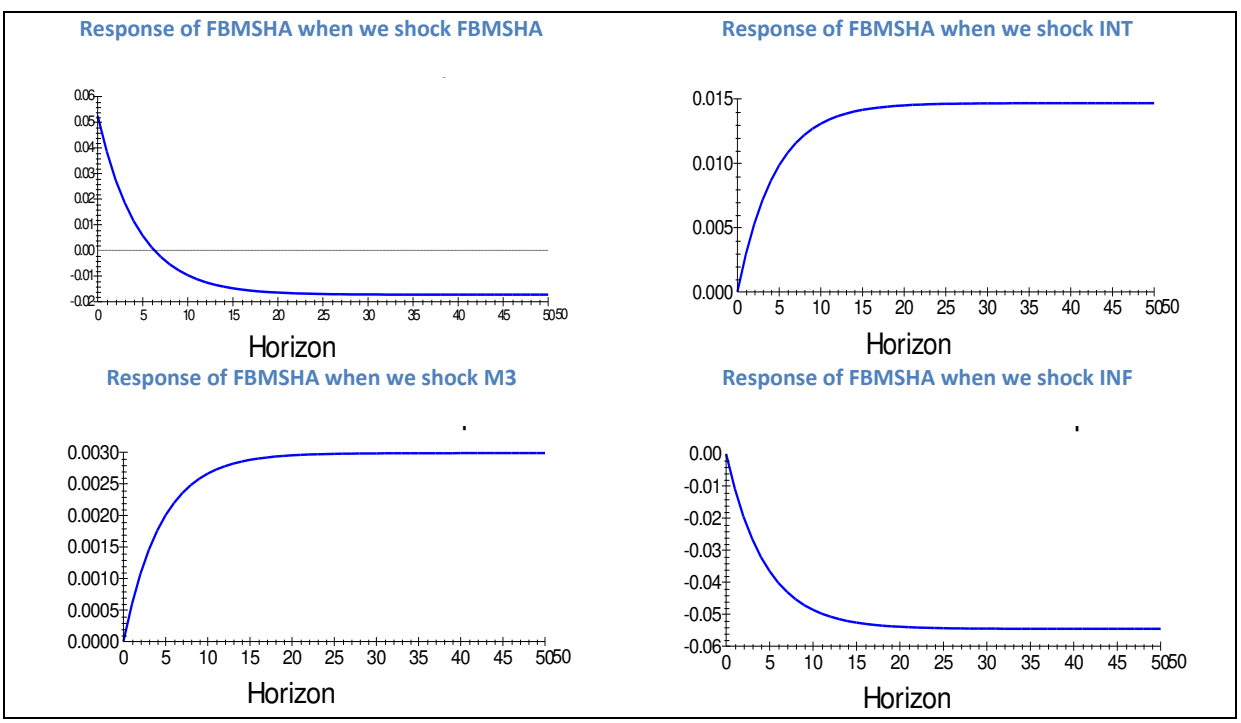

Figure 2: Orthogonalized impulse Response of FBMSHA to one S.E shock in the equation for FBMSHA, INT, M3 and INF (See Appendix 7.1 for details)

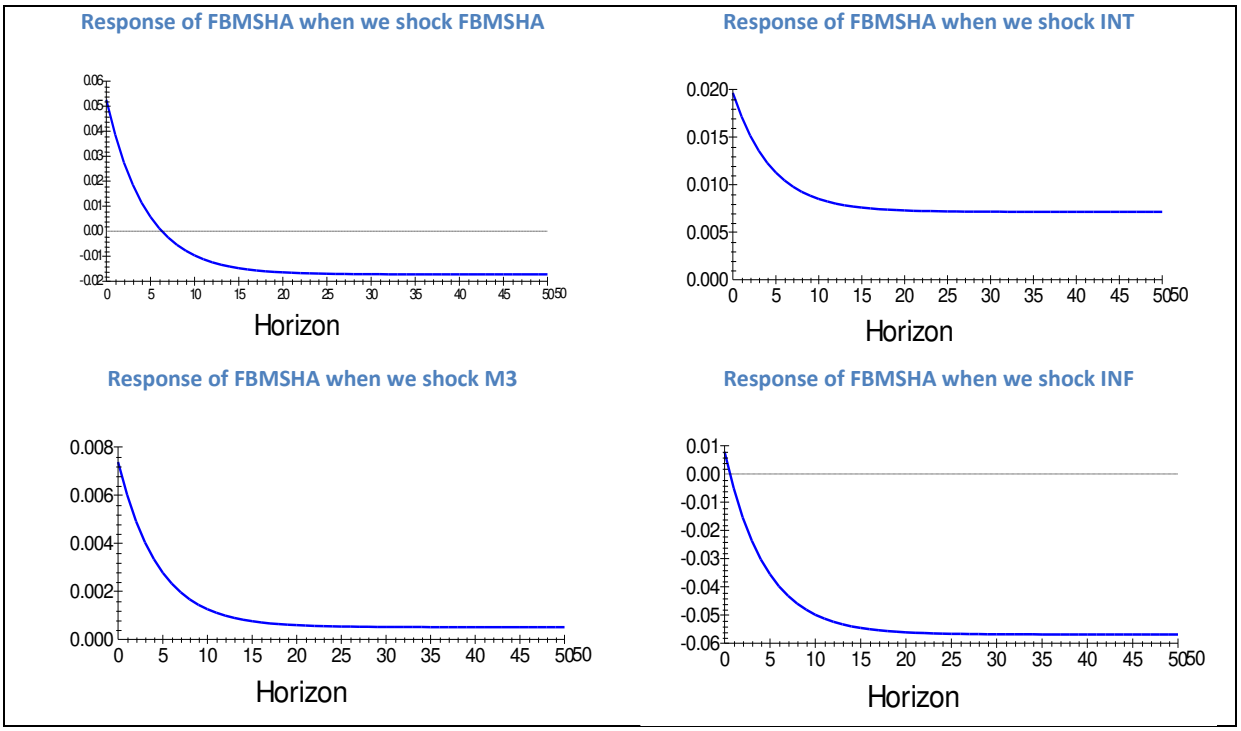

Figure 3: Generalized impulse Response of FBMSHA to one S.E shock in the equation for FBMSHA, INT, M3 and INF (See Appendix 7.2 for details)

However, when we shock FBMSHA, the highest impact would be towards INT, and the same case implies when we shock INT the highest impact is towards FBMSHA as compared to the others (figure 4 and 5). This implies a strong relationship between those two. The orthogonolized and generalized IRF tend to implies identical results.

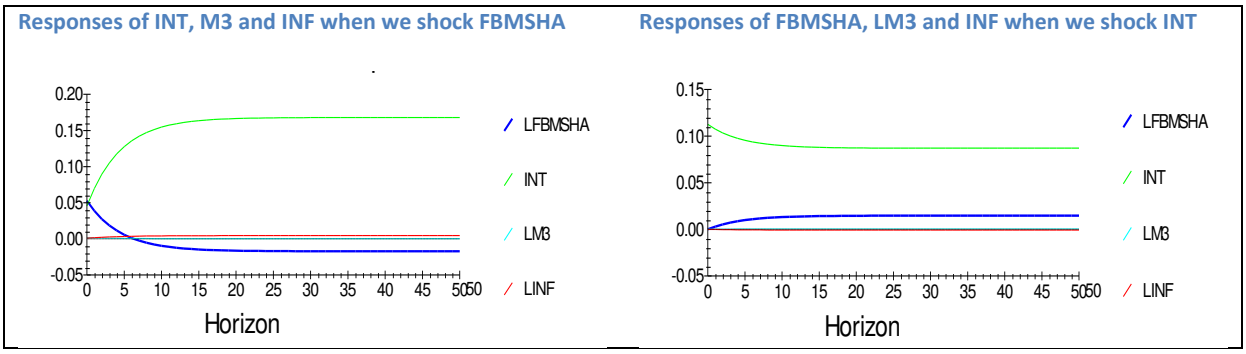

Figure 4: Orthogonalized impulse Response to one S.E shock in the equation for FBMSHA and INT (See Appendix 7.1 for details)

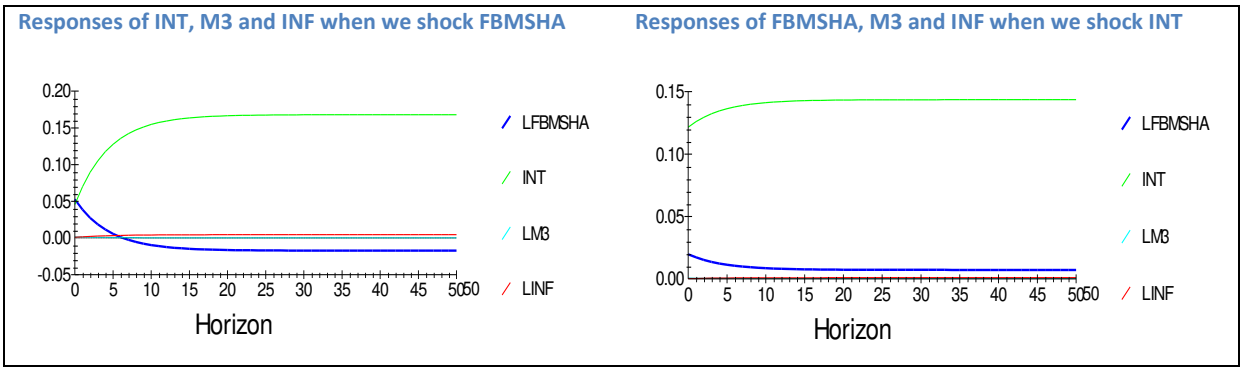

Figure 5: Generalized impulse Response to one S.E shock in the equation for FBMSHA, INT, M3 AND INF (See Appendix 7.2 for details)

6.8 Persistence Profiles (PF)

Persistence Profiles is a system-wide shock, where the shock comes from the external source to the cointegrating vectors, and it shows the time horizon required for variables to get back to equilibrium. Referring to the graph, it indicates that the system would take approximately 13 months for the cointegrating relationship to return to equilibrium.

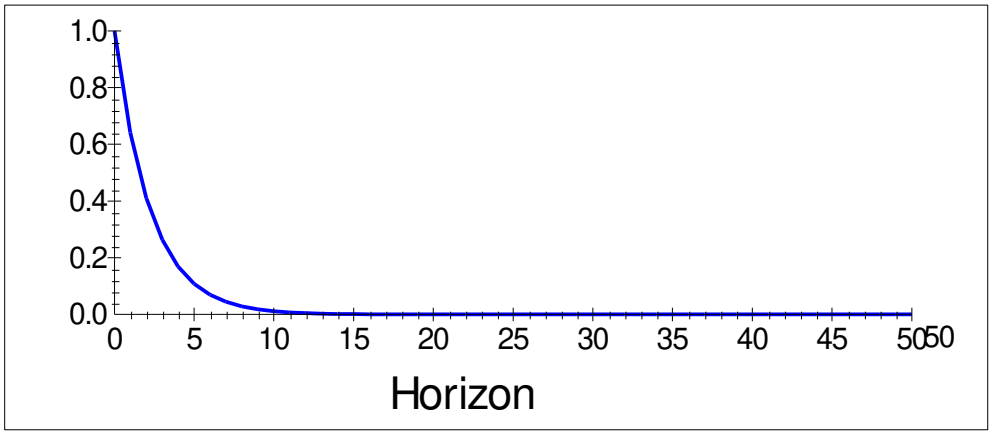

Figure 6: Persistence profile of the effect of a system-wide shock

7.0 Conclusions

7.1 Main findings

This study attempts to establish the link between Islamic stock price, interest rate and other two monetary policy variables (money supply and inflation rate) in Malaysia. To realize this, the time series method is employed.

The study suggests that interest rate and inflation appear to have significantly affected Islamic stock price in the long run. This study also suggests that interest rate is not the causation in explaining Islamic stock price, since both of them appeared to be endogenous in the estimation. However Islamic stock price and interest rate tend to respond the most if either one of them is shocked. This implies a sort of relationship between the two.

In addition, broad money supply appeared to have an insignificant relationship in explaining Islamic stock price, this is evidenced by LRSM. However, Islamic stock price tends to be relatively more sensitive to inflation rates as compared to the others with positive relation. This is evidenced by VDC and later supported by IRF. Numerically in VDC, Islamic stock price is only explained by interest rate by 4.8%, whereas most of the Islamic stock price is explained by inflation (67%) and the least is M3 (0.2%).

7.2 Policy Implications

The finding of this study is to contradict Yusof and Majid, 2006 and 2007 in highlighting the tenet of Islamic principles that interest rate is not a significant variable in explaining stock market return. As a result, the uniqueness of the Islamic stock which is represented by Shariah-compliant companies does not suffice. The investors need to be cautious with interest rate movement as it is statistically significant in affecting Islamic stock price, thus act as a discount factor to the return. The finding also implies that Islamic stock is a good hedge against inflation as it tends to react positively to inflation rates (Ibrahim, 1999, 2003).

7.3 Limitations

This study contains some limitations mainly due to the limitations on the availability of data. As mentioned before, analysis conducted in this paper taking data starting from the introduction of FMBSHA (March 2006 - January 2012), which is roughly five years. Five years in the industry can be considered as the infancy stage of development. Almost all research paper in this literature (Ibrahim, 1999, 2003) collect data for at least 20 years. The implication of this, may lead to the bias of result, where the result may only represent the current economic situation. As mentioned by Ibrahim (1999), changes in the stock price will depend not only on the changes in macroeconomics variables but also on the long term relationship between them. Therefore the

actual trend which involves long term relationship could not be captured. Therefore it is suggested here that further research needs to be done to capture the real interaction after 10 or 15 years from now.

On top of that, this paper only focuses on Islamic stock price, hence, further research is suggested to analyse both Islamic and conventional stocks return. This is for the purpose of making comparison, thus the whole picture and the uniqueness of Islamic stock if any, could be pictured. In addition to this, to capture international market effect, major international Islamic stock market indexes such as, Dow Jones Islamic Index could be integrated into the research.

References

Engel, R. F., and Granger, C. W. (1987), Cointegration and error-correction representation, estimation, and testing, Econometrica, 55(2), 251–276.

Hussin, M., Muhammad, F., Abu, M. and Awang, S. (2012), Macroeconomic Variables and Malaysian Islamic Stock Market: A time series analysis, *Journal of Business Studies Quarterly,* 3(4), 1-13.

Ibrahim, M. H. (1999), Macroeconomic variables and stock prices in Malaysia: An empirical analysis. *Asian Economic Journal, 13*(2), 219-231.

Ibrahim, M. H. and Aziz, H. (2003), Macroeconomic Variables and Malaysian Equity Market: A View through Rolling Subsamples. *Journal of Economic Studies, 30*(1), 6-27.

Islam, M. (2003), The Kuala Lumpur stock market and economic factors: a general to specific error correction modelling test, Journal of the Academy of Business and Economics, 1(1), 37-47.

Johansen, S. and Juselius, K. (1990), Maximum Likelihood Estimation and Inferences on Cointegration With Application to the Demand for Money, *Oxford Bulletin of Economics and Statistics*, 52, 169-210.

Masih, M., Al-Elg, A. and Madani, H. (2009), Causality between financial development and economic growth: an application of vector error correction and variance decomposition methods to Saudi Arabia, *Applied Economics*, 41, 1691 – 1699.

Masih, M. and Algahtani, I. (2008), Estimation of long-run demand for money: An application of long-run structural modelling to Saudi Arabia, *Economia Internazionale* (International Economics), **61**(1), 81 – 99.

Maysami, R. and Koh, T. (2000), A Vector Error Correction model of the Singapore stock market, *International Review of Economics and Finance*, 9(1),79-96.

Maysami, R. and Sim, H. (2002), Macroeconomics variables and their relationship with stock returns: error correction evidence from Hong Kong and Singapore, *The Asian Economic Review,* 44(1), 69-85.