Sharia stock index and economic activity in Malaysia: Is there a connection?

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Abstract

The purpose of this study is to investigate whether stock market can predict economic activity in Malaysia, with the Industrial production index as proxy for real economic output and 3-month Malaysian Treasury-bill rate as a proxy for the interest rate and monetary policy. The underlining motivation is to ascertain the levels of influence, Shariah index has on real sector growth and to see at what level Conventional index has influential power, greater or smaller than Shariah index to policy makers who are concerned with real sector growth. The data used are the monthly closing of the selected stock market indices for the period of 31 October 2006 to 30 March 2012. This study employs a time series technique, in particular, co integration, error correction modeling, and variance decomposition. Result show that Shariah Index is a better predictor of the real economic activity as compared to the Conventional index. Therefore, policy makers should be more cautious about the stock market dynamics in Malaysia, especially the Shariah index, which could be vital to the improvement and state of the economy.

Keywords: Economic activity, Real sector, Shariah index, Conventional index, Predictive capacity, Malaysian stock market dynamics

1. Introduction

Islamic Finance has experienced rapid growth in recent years, showing significant innovation and sophistication, and producing a broad range of investment products which are not limited to the complete replication of conventional fixed-income instruments, derivatives and fund structures. Islamic Finance represents an elemental departure from traditional interest-based and speculative practices, relying instead on real economic transactions, such as trade, investment based on profit sharing, and other solidary ways of doing business, and aims to incorporate Islamic principles, such as social justice, ecology and kindness, to create investment products and financial markets which are both ethical and sustainable (Hassan & Mahlknecht, 2011).

In the present day economic systems, the financial markets play an imperative role. Most of the financial variables can indicate and predict the economic activity. For

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that reason, the role of financial markets in economic systems has become significantly paramount. Stock market is considered as an indispensable part of financial market and hence can be acknowledged as an economy barometer.

In the recent past, a lot of research is been conducted in the area of financial economics, which covers and examines the relationship between performance of stock markets, central banks and the real economic activity. So far, most of the studies in this particular area have focused conventional indices. Due to the emergence of Islamic capital markets and financial integration, in this study, Sharia index has been included alongside the conventional index of Malaysia. Intriguingly, the Islamic capital markets are slowly becoming polestar for omnipresent financiers and investors.

Empirical research on the predictive capacity of stock market performance on real economic activity has given mixed results. In some of the initial studies by Peek (1988) and Baro (1989), it was found that occasionally the economy in the US could be predicted by the stock market. Further, Peek (1988) observed that six out of eleven instances of a dwindling stock market performance were followed by recessions. Similarly, Baro (1989) identified eight recessions through the stock market performance. In a different study by Muradoglu (2000) on India and Mexico, it was identified that stock market led economic activity in the two countries.

Accordingly, researches that can forecast the real economy of these markets are valuable for the local and international investors. Moreover, if it is justified that stock market returns can predict the economy, policy makers can have some insights regarding policy implementation in order to achieve a desired result.

The purpose of the paper is to investigate the lead-lag relationship of the Conventional stock index and Sharia stock index, with the Industrial production index, as proxy for real economic output, and 3-month Malaysian Treasury bill rate, as a proxy for the interest rate and monetary policy. The underlining of motivation is to ascertain the levels of influence the Shariah index has on real sector growth and to what level conventional index has influential power, greater or lesser than Shariah index to policy makers who are concerned with real sector growth. This study employs a time series technique, in particular, co-integration, error correction modeling and variance decomposition, in order to find empirical evidence of the nature of relations between the chosen variables.

Our results show that Shariah index is the leader/independent variable and is a better predictor of the real economic activity as compare to the Conventional index, while the remaining variables, Interest rate and Industrial production index are the followers. Another important finding of the study is that the Interest rate is not a

leading variable and does not explain the real economy. Thus, based on the findings of this study the policy makers should be more cautious about the stock market dynamics in Malaysia, especially the Shariah index, which could be vital to the improvement and state of the economy. Respectively, the investors should also be more reactive to the movements of the Shariah and Conventional stock markets in Malaysia.

The study is organized as follows. First, section 2 briefly discusses the theoretical and empirical framework. Second, section 3 presents the data and methodology. Section 4 shows empirical results and discussion, and lastly, section 5 concludes the paper.

2. Theoretical and Empirical Framework

Islamic stock market, mainly in Malaysia; has gone through diverse development and occurrence. With the supports of the Government and private sector, Malaysia has been known as one of the potential region for the Islamic finance and banking hub. Thus, considering the more sophisticated and well-informed investors, Islamic stock market is seen as the platform for investors to invest in a more ethical way.

Theoretically, the stock valuation model and the wealth effect suggest that the stock market predicts economic activity. The stock valuation model argues that the stock market is forward-looking; thus, current prices reflect the future earnings potential or profitability of corporations. Since stock prices picture the expected profitability, and profitability itself is directly linked to economic activity, fluctuation in stock prices is implied to lead the economic direction. For instance, if the economy is expected to enter into a booming (recession) stage, the stock market will anticipate this by bidding up (down) the prices of stocks. Stock prices will be influenced by expectations about future economy because a firm's profit has a direct relationship with the behavior of the real economy. For instance, if investors predict an economic growth in future, then expected profits will improve and value of the stock will increase; and vice versa for the opposite scenario. Thus, if predictions by investors are fruitful, stock price movements will lead the direction of the economy. According to Fama (1990), the level of real economic activity is expected to have a positive effect on future cash flows and thus is related to stock prices. His study showed that stock returns were actually significant in explaining future real activity in US for the whole period from 1953 to 1987. Correspondingly, Hassan (2001) empirically tested a large sample of developed and developing countries including MENA countries. Results showed that an efficient stock market may play a key role in economic growth and can contributes to economic growth in various ways.

To examine the interaction between macroeconomic variables and the stock May Sami and Sims (2002) conducted number of studies for Singapore, Hong Kong,

Malaysia, Thailand, Korea, and Japan. They used the Error Correction technique and their results showed the interaction between those variables, though the impact was different for every country based on the associated financial structure. In another study, Islam (2003) confirmed the same results for Malaysia. It showed that there is an existence of short and long run relationships between KLSE stock returns and the macroeconomic variables.

To assess the integrating relationship between the financial and real sector of India, Voyeur (2005) used inflation rate, interest rate, exchange rate, stock returns, and industrial production index. By employing the Johansen (1988) multivariate integration test, Voyeur (2005) showed the long-term interaction between the real and financial sectors of the Indian economy.

Additionally, the economic theory also indicates that future corporate performance should be reflected and mirrored by the stock prices. Provided, that the stock prices truly show the basic fundamentals, then it can be used as an indicator of the future economic direction. Henceforth, the relation between stock prices and macroeconomic variables is valuable for any country's macroeconomic policy.

The stock market to predict economic activity can also be explained by the 'wealth effect' through the result of wealthy investors' consumptions. Pearce (1983) argues that fluctuations in stock prices have a direct effect on aggregate spending. When the stock market is rising, investors are wealthier and tend to spend more. This will increase the demand for goods and thus expand the economy.

Compared to the conventional stock markets, there is a general belief that the Islamic stock markets are relatively more stable to financial shocks and closer to real economy due to the shariah rules governing the Islamic stock markets. In general, any financial dealings in the Islamic context are subject to adhere to the basic rules of trading as outlined by the Islamic law or the shariah with the objective of ensuring justice, fairness and avoidance of exploitation. In particular, the shariah provides a clear guideline that financial dealings that involve the elements of interest (riba), excessive uncertainties (gharar) and gambling (maysir) are strictly prohibited. Trading is not allowable for goods that are prohibited (haram) such as alcohol and non- halal food items (Shabri and Salina, 2010).

3. Data and Methodology

In Malaysia, the Securities Commission (SC) introduced the Kuala Lumpur Stock Exchange Shariah Index (KLSESI) in 1997 as a vital mechanism in order to accelerate the achievement of an Islamic capital market (ICM) plan. The ICM refers to the market where activities are carried out in ways that do not conflict with the conscience of Muslims and the religion of Islam. In other words, the ICM represents

an assertion of religious law in capital market transactions where the market should be freed from the involvement of prohibited activities by Islam (AA Rahman, Yahya and Nasir, 2010)

The data used in this study are monthly data starting from October 2006 to March 2012. The length of the data is limited by the Shariah index, as the FTSE Bursa Malaysia EMAS Shariah index only goes back to 2007 and the data point couldn't have increased by increasing the frequency to daily data but rather used monthly as the Industrial production index ,which is the proxy for real sector growth comes only in monthly data. Concerning the other two variables in the study, there were no limiting factors as interest rates and the FTSE Bursa Malaysia KLCI have daily data spanning back more than two decades. The source of data was DataStream and Micro Fit is the software used for analysis. The variables used for the study are:

No	Variable	Symbol	Logarithm Form
1	Bursa Malaysia KLCI – Conventional Price Index	FTSE	LFTSE
2	Bursa Malaysia EMAS – Shariah Price Index	FTSHA	LFTSHA
3	Industrial Production Index	IPI	LIPI
4	3 Month T-Bill Rate	IRI	LIRI

Table 1 below presents the attributes of the two stock indices.

Table 1: Attributes of Shariah and Conventional Index Malaysia

Attributes	EMAS Bursa Malaysia Shariah(FTSHA)	KLCI Bursa Malaysia(FTSE)
Number of constituents	200	30
Net Market Cap (RM)	386,988	481,799
Constituent Sizes (Net Market Cap RM)		
Average	1,935	16,060
Largest	43,815	47,822
Smallest	25	2,573
Median	255	12,136
Weight of Largest Constituent (%)	11.32	9.93
Top 10 Holdings (% Index McCaw)	58.97	68.2

*source ftse.com

This study employs a time series technique, in particular, co-integration, error correction modeling and variance decomposition, in order to find empirical evidence of the nature of relations between the chosen variables. By using time series technique, this study will try to find out what factors are co integrated with Shariah index. The co integration test may select any variable, which move together with

Shariah Index in the long-term equilibrium. The vector error correction model (VECM) will identify the causal relationship between co-integrated variables. While the variance decomposition (VDC) and impulse response function (IRF) try to find the significant leading variable, the persistence profile (PP) may inform us about the duration required for co-integrated variables to return to their equilibrium when the external shock occurs.

4. Empirical Results

4.1 Unit Root Test

We begin our empirical testing by determining the stationary of the variables used. In order to proceed with the testing of co-integration later, ideally our variables should be I (1), i.e. non-stationary in their level form and stationary in their first differenced form. The differenced form for each variable used is created by taking the difference of their log forms. For example,

$DFTSE = LFTSE_t - LFTSE_{t-1}$

We then conducted the Augmented Dickey-Fuller (ADF) test on each variable in both level and differenced form. Relying primarily on the Akaike information criterion (AIC) and Schwarz Bayesian criterion (SBC), the results in Table 2, shows that all the variables are I(1), and thus we may proceed with testing of co integration.

Table 2: Non-stationary test

Variable in Level Form			
Variable	Test Statistic	Critical Value	Implication
LFTSHA	-2.2370	-3.4875	Variable is non-stationary
LFTSE	-1.5447	-3.4875	Variable is non-stationary
LIPI	-2.0756	-3.4875	Variable is non-stationary
LIR	-1.6000	-3.4875	Variable is non-stationary
Variable in differenced Form			
DFTSHA	**-5.9746**	**-2.9127**	**Variable is stationary**
DFTSE	-5.9507	-2.9127	Variable is stationary
DIPI	-14.3689	-2.9127	Variable is stationary
DIR	-7.2307	-2.9127	Variable is stationary

4.2 Determining the order or lags of the VAR

Before proceeding with test of Co-integration, we need to determine the order of the vector auto regression (VAR), that is, the number of lags to be used. As per table 3, results show that AIC recommends order of 1 whereas SBC favors zero.

Table 3: Order of VAR

VAR(Choice Criteria)		
	SBC	AIC
Optimal Order	0	1

Although the test shows these results we will move further in with the study using ***2 lags*** because using a lower order, we may encounter the effects of serial correlation. The disadvantage of taking a higher order is that we risk over-parameterization. Nevertheless, with the amount of data point available taking into consideration we decided to go with ***VAR order of 2.***

4.3 Test for Co-integration

The co-integration test is very important in the sense that it will check whether all variables are theoretically related. If they are co-integrated, it means that there is a co-movement among these variables in the long term reaching the equilibrium, although they move differently in the short term. As it is previously established, the variables in this study are I(1) and the optimal VAR order is 2, now the test of co-integration can be conducted. As depicted in the table 4, the Maximal Eigenvalue, Trace, and SBC indicate that there are two co-integrating vectors. Whereas, AIC and HQC indicate four co-integrating vectors.

Table 4: Co-integration

Criteria	**Number of Co-integrating Vectors**
Maximal Eigenvalue	2
Trace	2
AIC	4
SBC	2
HQC	4

We are inclined to believe, that there is at least two co-integrating vector as intuition. The contemporary equity markets and economics tells us that stock markets are typically “connected” or “integrated” in a way that the performance of one market tends to have an effect on other markets. Further, interest rates have co-integration with stock markets as well in some way or other, to varying degrees. Based on the

above statistical result as well as insight, for the purpose of this study, we continue with two co-integrating vectors or relationships since that is the papers focal point.

4.4 Long Run Structural Modeling (LRSM)

This step will attempt to quantify apparent theoretical relationship among the chosen variables. We do this in order to compare our statistical findings with theoretical or intuitive expectations. In other words, this step will test the coefficients of our variables in the co-integration equations against our theoretical expectation. Further, LRSM also test the coefficients of our variables whether they are statistically significant. Since we have two co-integration equations, then in LRSM the minimum restriction will be four. In this case, the author will refer to the two stock indices and their relationship with the macroeconomic variables. The first one is the relation between the Shariah stock index LFTSHA, Industrial production index LIPI and Interest rate LIR. The second one is the relationship Conventional stock index LFTSE and Industrial production index LIPI and Interest rate LIR. Results are shown in table 5.1.

Table 5.1: Exact identification

Equation-1				
Variable	**Coefficient**	**St-Error**	**T-Ratio**	**Implication**
LFTSHA	--	--	--	--
LIPI	-4.7545	2.2702	-2.094	*Variable is significant*
LIR	0.1380	0.3668	0.376	Variable is insignificant
TREND	-0.0016	0.0018	-0.908	Variable is insignificant
		Equation-2		
LFTSE	--	--	--	--
LIPI	-2.4736	2.0871	-1.1851	Variable is insignificant
LIR	-0.22632	0.3372	-0.6709	Variable is insignificant
TREND	-0.00402	0.0016	-2.4088	*Variable is significant*

The two equations after exact identification shows that Interest rate LIR and TREND in first equation are not significant. While in second equation Industrial production LIPI and interest rate LIR are not significant. The insignificance of interest rate and industrial production is counter intuitive. Therefore, the over-identifying restriction on the coefficient of TREND=0 will only be employed. Table 5.2 shows the result with restrictions.

Table 5.2: Over identification

Equation-1				
Variable	**Coefficient**	**St-Error**	**T-Ratio**	**Implication**
LFTSHA	--	--	--	--
LIPI	-6.5052	1.7897	-3.6601	*Variable is significant*
LIR	0.42700	0.25425	1.6794	Variable is insignificant
TREND	--	--	--	--
Equation-2				
Variable	**Coefficient**	**St-Error**	**T-Ratio**	**Implication**
LFTSE	--	--	--	--
LIPI	-3.7418	1.6102	-2.32	*Variable is significant*
LIR	-0.017182	0.24026	-0.0715	Variable is insignificant
TREND	-0.0028338	0.000927	-3.0569	*Variable is significant*

The null hypothesis is that our restriction is correct. The Log-likelihood Ratio test of restriction has a ***P-Value 43.51%.*** It means that we have to accept the null that our over-identifying restriction coefficient of TREND equals to zero, is correct. The result in the above table also indicates that the coefficient of Interest rate (LIR) for both equations is still statistically insignificant since its t-ratio is lower than 2. However, the author will not impose the over-identifying restriction by imposing the coefficient of interest rate (LIR) equals to zero. We would like to keep it in both equation because of the critical relationship between monetary policies, economic activity and the financial markets. For that reason, we retain interest rate LIR in both of equations. Since the remaining variables are statistically significant in two co-integration equations, then we do not have to impose any over-identifying restriction. We can write the final two-co-integration equations as following.

Co-integration equation 1:

1 LFTSHA - 0.65 LIPI + 0.43 LIR

(significant) (insignificant)

Co-integration equation 2:

1 LFTSE -3.74 LIPI - 0.02LIR

(significant) (insignificant)

4.5 Vector Error Correction Model (VECM)

From the analysis thus far, it can be established that the variables are co-integrated to a significant degree. However, the co-integrating equations reveal nothing about causality, that is, which variable is the leading variable and which is the laggard variable. In light of this, the next part of our analysis involves the use of VECM. Upon analyzing the error correction term, e_{t-1}, for each variable in both equations, and inspecting whether they are significant, the result shows that there are only two exogenous variables and two endogenous variables in the first equation, and there are three exogenous variables and one endogenous variable in the second equation. Following table 6, provide the results.

Table 6: VECM table

1st Co-integrating Equation			
Variable	Ecm1(-1) P-Value	Implication	Number of Periods to return to equilibrium
LFTSHA	0.781	*Exogenous/Leader*	43.4 months
LFTSE	0.914	*Exogenous/Leader*	117 Months
LIPI	0.033	Endogenous/Follower	8 Months
LIR	0.000	Endogenous/Follower	1.8 Months
2nd Co-integrating Equation			
LFTSHA	0.419	*Exogenous/Leader*	10.20 Months
LFTSE	0.351	*Exogenous/Leader*	9.48 Months
LIPI	0.517	*Exogenous/Leader*	19 Months
LIR	0.000	Endogenous/Follower	1.43 Months

From the table above, the independent (leading) and dependent (following) variables both in the first and the second co-integration equations are identified. Interestingly our results indicate that Shariah and Conventional index in both equations are leading variables, while industrial production index is leading only in second equation. However, VECM does not show relative degree of endogeneity or exogeneity Thus, this issue is tackled in the next step by the use of VDC technique.

4.6 Variance Decomposition (VDC)

As discussed before, VECM is not able to assist us in relative degree of endogeneity or exogeneity; we turn our attention to variance decomposition (VDC). We started out by applying generalized VDCs and obtained the results presented in table 7.1. Generalized VDC is chosen over Orthogonalized VDC. In addition, two different time horizons are used to test if the level of exogeneity changes over. In this case, the paper uses 12 months and 24 months' time horizon.

Table 7.1: Variance Decomposition

	LFTSHA	LFTSE	LIPI	LIR
Forecast Horizon=12 Months				
LFTSHA	48.80%	44.47%	6.26%	0.47%
LFTSE	47.16%	47.70%	4.88%	0.27%
LIPI	37.82%	38.58%	20.63%	2.97%
LIR	38.38%	49.77%	3.92%	7.93%
Forecast Horizon=24 Months				
LFTSHA	49.19%	44.05%	6.44%	0.32%
LFTSE	47.38%	47.47%	4.98%	0.17%
LIPI	42.16%	42.22%	13.94%	1.68%
LIR	42.51%	51.87%	3.29%	2.33%

Interestingly, both time horizons provide us with the same results in terms of ranking of variables. It can be seen that the most significant leading variable in our two co-integration equations is the **Sharia Index (LFTSHA)**. The proportion of the variance that is explained by its own past shocks is ***49.19 %(24 Months)*** and ***48.80 %(12 Months).*** It means that this variable has the highest percentage of own-path dependence compared to that of other variables. The more the variable depends on its own, the stronger the variable is and is significant leader. Table 7.2 provides the ranking of indices by degree of exogeneity.

Table 7.2: Variable Relative Exogenity

	12 Months Horizon	*24 Months Horizon*
1	Shariah Index (LFTSHA)	Shariah Index (LFTSHA)
2	Conventional index (LFTSE)	Conventional index (LFTSE)
3	Industrial production index (LIPI)	Industrial production index (LIPI)
4	Interest rate (LIR)	Interest rate (LIR)

In the first co-integration equation, by observing the percentage of own-path dependence in the matrix above for the 24 month horizon, the rank of the leading variable from the stronger to the weaker leader will be Shariah Index LFTSHA (49.19%), LIPI (13.94%) and LIR(2.33%).

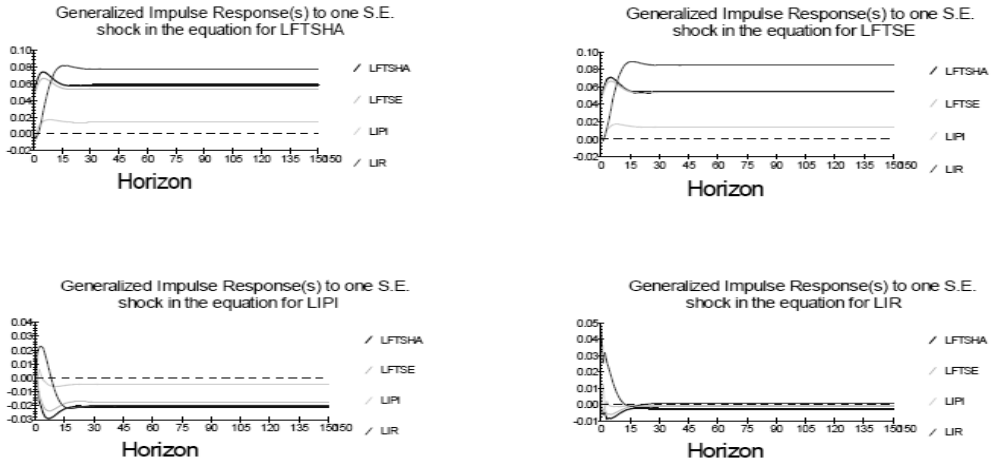
In the second co-integration equation, the rank of the leading variable will be Shariah index LFTSHA (49.19%), Conventional index LFTSE (47.47%), Industrial production index LIPI (13.94%), and Interest rate LIR (2.33%). Before, we have imposed the identifying and over-identifying restrictions that the coefficients of LFTSHA are equal to zero. Therefore, our leading variable in the second equation are LFTSE and LIPI. In addition, LIPI and LIR are dependent variables in the first equation and, LIR is the only dependent variable in the second equation.

Rank	*Leading Variable in 1st Equation*	*Dependent Variable in 1st Equation*	*Leading Variable in 2nd Equation*	*Dependent Variable in 2nd Equation*
1	LFTSHA	LIPI	LFTSE	LIR
2		LIR	LIPI	

4.7 Impulse Response Functions (IFR)

The impulse response functions (IRFs) essentially produce the same information as the VDCs, except that they can be presented in graphical form. For the sake of completeness, we have included the various graphs of IRFs in figure 1.

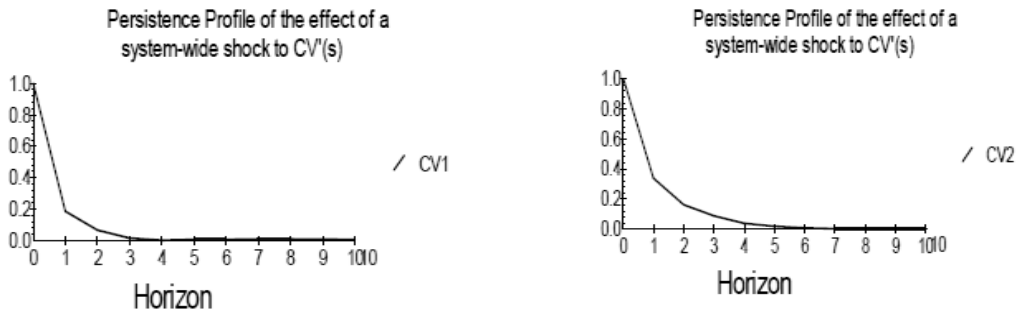
Figure1: Impulse Response Functions



4.8 Persistence Profile

The persistence profile illustrates the situation when the entire co-integrating equation is shocked, and indicates the time it would take for the relationship to get back to equilibrium. Here the effect of a system-wide shock on the long-run relations is the focus instead of variable-specific shocks as in the case of IRFs. Figure 2 shows that all variables in the first equation will require approximately 3 periods (months) and the variables in equation 2 will require approximately 5 periods (months), to co-integrate again and return to the long run equilibrium.

Figure 2: Persistence Profile



Interestingly, based on Persistence Profile, the Shariah index is more stable as compare to the conventional index as it gets back to equilibrium after 3 months as compare to 5 months of period of conventional index.

Conclusion and Policy Implication

In this study, we examine whether stock market can predict economic activity in Malaysia. For the whole economy, the Johansen co-integration and VDC tests appears to justify the earlier findings of Fama (1990), and others who found evidence that stock market can lead changes to the economic activity.

Our results show that in the first equation the Shariah index (FTSHA), is co-integrated with Interest rate (IR) and Industrial production index (IPI). The Shariah index is the leader/independent variable, while the remaining variables Interest rate and Industrial production Index are the followers. Further, in the second equation the Conventional index (FTSE), is co-integrated with Interest rate and Industrial Production Index. The conventional price index and Industrial production are the leaders, while the Interest rate is the follower.

The relationships in both equations may give some rough idea for policy makers, investors and practitioners when they want to make a particular decision. Firstly, VDC analysis shows that Shariah index is the strongest leader and better predictor of the real economic activity as compare to the Conventional index. The justification can be based on the fact, that Shariah price index contains less number of financial institutions as compare to conventional index and hence the firms included in Shariah index are low on leverage. In addition, the Shariah index contains list of companies, which are closer to the production and real economy as compare to major chunk of financial institutions. Therefore, it can be assumed that Islamic finance caters for real economy as opposed to bubble economy. Hence, it shows the growing importance and influence of Islamic finance in Malaysia.

Another interesting finding of the study is that the Interest rate in our analysis is a follower in both equations and does not explain the real economy. This can be attributed to the fact that a decrease in interest rates means low cost of borrowing for the private sector. Hence, this will drive private sector to have more investments in the business opportunities and which in turn will transform into increased profits and a better growth of the future economy. Considering, stock prices mirror the expectations of the investors, and this favorable scenario of future is showed in the increased value of stock prices. Correspondently, increase in the interest rate should transform into decrease in stock market growth.

Nevertheless, in our findings, we observe the opposite. Based on empirical findings, it can be assumed that the policy maker can react to the stock market and follow it. Example can be given here of United States; During times, when the stock market shows a rise and reach a certain level, the policy makers in the US, try to cool down the 'over heating engine' by gently increasing the interest rates. The same strategy was employed at the end of ICT bubble, when the fed rates were increased to 6.5%. Further, an identical kind of increase in fed rates was also witnessed during the period 2004 to 2007.Similarly, when the there is a considerable drop in the stock, the policy makers tends to decrease the rate. The reason is to control the losses of the stock market, because these losses will have a bad effect on the real economy through the wealth effect.

Consequently, based on the results of this study the policy makers should be more cautious about the stock market dynamics in Malaysia, especially the Shariah index, which could be vital to the improvement and state of the economy. Correspondently, the investors should also be more reactive to the movements of the Shariah and Conventional stock markets in Malaysian.

In the end it can be assume that as a part of financial market, Shariah index can be considered a much better and key barometer or predictor of economy in Malaysia, as

compare to Conventional index. It shows the growing importance and force of Islamic finance in the region. In addition, monetary policy and economic activity is not independent of stock markets.

Islamic capital markets are expanding at a quickening pace, and stakeholders are starting to realize their potential. Development of institutional infrastructure, such as accounting standards and regulatory bodies, is a step in the right direction. However, the market needs host governments to undertake strong leadership and constructive policy actions. Well-developed Islamic capital markets will not only benefit borrowers and institutional investors, they also can enhance the stability of Islamic banks, providing them with improved portfolio, liquidity, and risk management tools. Ultimately, these developments will help to integrate Islamic financial markets, as well as the institutions that form them, into the broader conventional international financial system (Iqbal, 2007).

The close relationship and association among economic activity and the real financial transactions has the potential to position Islamic capital market at the top level. Successively, Islamic capital markets can serve the real economy, which provides the basis for financial endurance and sustainable economic growth.

References

AA Rahman, Yahya, Nasir., "Islamic norms for stock screening: A comparison between the Kuala Lumpur Stock Exchange Islamic Index and the Dow Jones Islamic Market Index", *International Journal of Islamic and Middle Eastern Finance and Management, Vol. 3 Iss: 3,2010, pp.228 – 240*

Barro, R.J., "The Stock Market and the Macro economy: Implications of the October 1987 Crash", *Black Monday and Future of Financial Market, New York: Irwin, 1989.*

Engle, R.F & Granger, C. W. J., "Cointegration and error correction representation, estimation and testing", *Econometrica 55, 1987, pp. 251-276.*

Fama, E. F., "Efficient Capital Market: II" , *Journal of Finance, No 46, 1991, pp.1575-1617.*

Fama, E.F., "Stock Returns, Expected Returns and Real Activity", *Journal of Finance, No 45, 1990, pp.1089-1108.*

Fama, E. F., "Stock returns, real activity, inflation and money", The *American Economic Review, 71(4), 1981, pp. 545-565.*

Granger, C. J., "Investigating Causal Relationships by Econometrics Models and Cross Spectral Methods", *Econometrica, Vol. 37, 1969, pp. 425-435.*

Islam M., "The Kuala Lumpur stock market and economic factors: a general to specific error correction modeling test", *Journal of the Academy of Business and Economics, 2003*

Iqbal, Z., "Challenges Facing Islamic Financial Industry", *Journal of Islamic Economics, Banking and Finance . 3, 2007, pp. 1-14*

Johansen, S. & K. Juselius., "Maximum Likelihood Estimation and Inference on Cointegration-With Application to Demand for Money", *Oxford Bulletin of Economics and statistics, No 52, 1990, pp. 169-210.*

Maysami, R. C. & Sim H. H., "Macroeconomic forces and stock returns: a general-to-specific ECM analysis of the Japanese and South Korean markets", *International Quarterly Journal of Finance 1(1), 2002, pp. 83-99.*

M. Kabir Hassan and Michael Mahlknecht (Editors), "Islamic Capital Markets: Products and Strategies", *John Wiley and Company, March 2011.*

M. Kabir Hassan.,"Financial Structure, Creditworthiness and Stock Market Development: A Cross-Country Analysis," *Working Papers 0140, Economic Research Forum, revised Dec 2001.*

M.Masih, A. Hodgson and R. Masih., "Short Term Futures Trading Volume as a Determinant of Price Changes", *International Review of Financial Analysis 15 (1), 2004, 68-85.*

M. Shabri Abd. Majid and Salina Hj. Kassim., "Potential Diversification Benefits across Global Islamic Equity Markets", *Journal of Economic Cooperation and Development, 31(4), 2010, pp 103-126.*

Muradoglu G., H. Berument, K. Metin., "Financial crisis and changes in determinants of risk and return: An empirical investigation of an emerging market (ISE) ", *Multinational Finance Journal No.3, 1999, pp. 223-252.*

Pearce, D. K., "Stock Prices and the Economy", *Federal Reserve Bank of Kansas City Economic Review, 1983, pp. 7-22.*

Pesaran, H.M., Y. Shin, R.J. Smith., "Bounds testing Approaches To The Analysis Of Long-Run Relationships", *Journal of Applied Econometrics No 16, 2001, pp. 289-326.*

Peek, J., E.S. Rosengren., "The Stock Market and Economic Activity", *New England Economic Review* No May/June*, 1988, pp. 39-50.*

Vuyyuri, S., "Relationship between real and financial variables in India: A co-integration analysis", *2005, Available at http://ssrn.com/abstract=711541.*