Does islamic stock index lead or lag conventional stock index ? Malaysian case

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Does islamic stock index lead or lag conventional stock index ? Malaysian case

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Abstract:

The main purpose of this paper is to investigate whether the Islamic stock index leads or lags the conventional stock index. The standard time series techniques are used for the analysis and Malaysia is taken as a case study. The interest rate and industrial production variables are used as control variables. All the variables appear to be bound together by a long run theoretical relationship as evidenced in their being cointegrated. The variance decomposition analysis tends to indicate that the Islamic index has relatively an edge over the conventional index in terms of being the leader in the Malaysian context. This is an interesting finding and contains important implications for the policy makers.

Keywords: Islamic stock, conventional stock, lead-lag, VECM, VDC, Malaysia

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1. INTRODUCTION

Financial markets play a more and more important role in the economic system. Many financial variables have predictive power for output or inflation of the real economy. Financial markets are becoming increasingly important to the real economy due to their impact on output growth and inflation, among others. As an important part of financial markets, stock markets can be considered as the economy's barometer. In addition, monetary policy, which is usually based on inflation target and sometimes unemployment goals, is not independent of stock markets. There is a large number of financial economic literature that is concerned with the impact of and relationship between the monetary policy of central banks, real economic activity and the performance of stock markets. In this project we will try to find 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 3Month Malaysian Treasury-Bill Rate as a proxy for the interest rate and monetary policy.

Empirical researches with respect to the stock market performance as a predictor of the economy yield mixed results. Earlier studies such as Peek and Rosengren (1988) and Barro (1989) found that stock market sometimes does predict the economy in the US. Peek and Rosengren (1988) found that out of eleven cases of a declining stock market, only six were followed by recessions. Barro(1989) found that stock market performances successfully predicted eight out of nine recessions. Another study by Muradoglu et al. (2000) found evidence that stock returns lead economic activity in India and Mexico.

Most of the studies cited above examined data for developed countries or the industrialized countries. With the increase of financial integration and the emergence of Islamic capital markets, we have included Sharia stock index alongside the conventional stock index of Malaysia. These new stock markets have become the focus of international investors. Therefore, studies that can predict the economy of these markets are useful for the local and international investors. In addition, if it is proven 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 objective of this paper is to examine and compare Conventional and Shariah stock indices as a predictor of the economic activity in Malaysia. By using the standard Time Series technique, this study will try to find out what factors are cointegrated with the two stock indices. The cointegration test may select any variable which move together with Stock indices in the long term equilibrium. The VECM will identify the causal relationship between cointegrated variables. While the VDCs and IRF try to find the most leading variable, the persistence profile may inform us of the duration required for cointegrated variables to return back to their equilibrium when the external shock occurs.

The variables that are used in this study are;

1. FTSE Bursa Malaysia KLCI - Price Index **(FTSE)**
2. FTSE Bursa Malaysia EMAS Shariah - Price Index **(FTSHA)**
3. Industrial Production Index **(IPI)**
4. 3 Month T-Bill Rate **(IR)**

2. OBJECTIVES AND MOTIVATION

The objective of this paper is to examine the role of Conventional and Shariah stock indices as a predictor of the economic activity in Malaysia. The study will be tackled by the following research questions:

1. Do the key macroeconomic variables included in this study share long-run equilibrium relationships with the Malaysian stock market proxied by the general price index, FTSE and FTSHA?
2. To investigate either FTSE Index is a leader or lagging variable?
3. To investigate either FTSHA Index is a leader or lagging variable?
4. Do these indices predict the economic activity?

This study is expected to offer some insights for Malaysian policymakers, shareholders, and investors. Policymakers are mainly interested in exploring the determinants of the stock market, and its relation with real economic activity.

3. THEORETICAL AND EMPIRICAL FRAMEWORK

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 are 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.

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.

4. METHODOLOGY

This study employs the standard time series techniques, in particular, cointegration, error correction modelling and variance decomposition, in order to find empirical evidence of the nature of relations between the chosen variables. This method is favored over the traditional regression method for the following reasons.

Firstly, most finance variables (including stock market indices, as will be evident below) are non-stationary. This means that performing ordinary regression on the variables will render the results misleading, as statistical tests like t-ratios and F statistics are not statistically valid when applied to non-stationary variables.

Performing regressions on the differenced form of these variables will solve one problem, at the expense of committing an arguably even graver mistake. When variables are regressed in their differenced form, the long term trend is effectively removed. Thus, the regression only captures short term, cyclical or seasonal effects. In other words, the regression is not really testing long term (theoretical) relationships.

Secondly, in traditional regression, the endogeneity and exogeneity of variables is pre-determined by the researcher, usually o the basis of prevailing or a priori theories. Cointegration techniques are advantageous in that it does not presume variable endogeneity and exogeneity. In the final analysis, the data will determine which variables are in fact exogenous, and which are exogenous. In other words, with regression, causality is presumed whereas in cointegration, it is empirically proven with the data.

Thirdly, cointegration techniques embrace the dynamic interaction between variables whereas traditional regression methods, by definition, exclude or discriminate against interaction between variables. Economic intuition tells us that the interaction between stock markets is dynamic in nature.

The data used here are the monthly closing of the selected stock market indices for seven years starting with the period of 31 October 2006. The start date is dictated by the inception of the FTSHA Shariah index. An earlier start date was not possible given that an index measuring Shariah compliant equity investment in Malaysia was not available prior to that. A total of 65 observations were obtained. The source of data was DataStream.

5. EMPIRICAL RESULTS

This section will perform the eight steps of the time series technique.

5.1. UNIT ROOT TEST

A variable is stationary if it always has a constant mean, a constant variance and a constant covariance throughout the time. Time series data are often assumed to be non-stationary and thus it is necessary to perform a pretest to ensure there is a stationary cointegrating relationship among variables to avoid the problem of spurious regression. Based on the error correction mechanism as indicated by Johansen (1990), it is necessary for the variables to be of the same order of integration.

The tests for stationarity or unit roots employ the augmented Dickey-Fuller (ADF) and Phillips-Peron (PP) test performed on the variables in levels and first differences.

We begin our empirical testing by determining the stationarity of the variables used. In order to proceed with the testing of cointegration later, ideally, our variables should be I(1), in that in their original level form, they are non-stationary and in their first differenced form, they are stationary. The differenced form for each variable used is created by taking the difference of their log forms. For example: **$DFTSE = LFTSE - LFTSE_{t-1}$.**

We then conducted the Augmented Dickey-Fuller (ADF) test on each variable (in both level and differenced form). ***The null hypothesis is that the variable is non-stationary.*** The table below summarizes the results.

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

Variable	Test Statistic	Critical Value	Implication
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

Relying primarily on the AIC and SBC criteria, the conclusion that can be made from the above results is that all the variables we are using for this analysis are ***I(1),*** and thus we may proceed with testing of cointegration. Note that in determining which test statistic to compare with the 95% critical value for the ADF statistic, we have selected the ADF regression order based on the highest computed value for AIC and SBC.

5.2. ORDER OF VAR

The next empirical result is the determination of the Order of VAR model. The differenced log form of variables is taken in consideration, due to their stationary characteristic. The unrestricted VAR post estimation menu with an arbitrarily high order of 6 for estimation, gives a varying result for Alkaline Information Criterion and Schwarz Bayesian Criterion.

As per the table below, results show that AIC recommends order of 1 whereas SBC favors zero lag

VAR(Choice Criteria)		
	SBC	**AIC**
Optimal Order	0	1

The AIC result shows only 1 lag but we will take 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. Hence with the amount of data point available taking into consideration we decided to go with VAR order of 2.

5.3. TESTING COINTEGRATION

The cointegration test is very important in the sense that it will check whether all variables are theoretically related. If they are cointegrated, 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. Cointegration also means that a linear combination of our variables in their original form will lead to a stationary error term. This test is very useful because it will prove the untested hypothesis or theory. According to Hodgson, Masih and Masih (2006) , as long as the variables have common trends, causality in the Granger sense, must exist in at least one direction either unidirectional or bidirectional. In addition, cointegration shows that the relationship among the variables is not spurious like what is being assumed in regression. Johansen Method is able to take more than cointegration as compared to the Engle Granger Method which can take only one cointegration. Cointegration implies that these variables are interdependent and highly integrated (Masih, Al-Sahlawi and Demello, 2010).

Once we have established that the variables are **I(1)** and determined the optimal VAR order as 2, we are ready to test for cointegration. As depicted in the table below, the maximal Eigenvalue, Trace, SBC and HQC indicate that there are two cointegrating vectors whereas according to AIC, there are 4 cointegrating vectors, respectively. In the case of Maximal Eigenvalue and Trace, the test statistic for null of r = 0 is greater than the 95% critical value whereas for other null hypotheses, statistic is less than the critical values. For AIC, SBC and HQC, the number of cointegrating vectors is obtained by locating the highest numbers.

Criteria	Number of Cointegrating Vectors
Maximal Eigenvalue	2
Trace	2
AIC	4
SBC	2
HQC	4

Statistically, the above results indicate that the variables we have chosen, in some combination, result in a stationary error term. The economic interpretation, in our view, is that the 4 variables are theoretically related, in that they tend to move together, in the long term. The two cointegration equations means that there are two sub-groups in which each group has variables that are cointegrated with each other. However, we still do not know whether the coefficient of each variable in the equation is in line with our theoretical expectation. Therefore, we have to go to the next step to address this problem.

5.4. LONG RUN STRUCTURAL MODELLING (LRSM)

This step will estimate theoretically meaningful cointegrating relations. We impose on those long-run relations and then test the over-identifying restrictions according to theories and information of the economies under review. In other words, this step will test the coefficients of our variables in the cointegration equations against our theoretical expectation. This LRSM step also can test the coefficients of our variables whether they are statistically significant.

Since we have two cointegration 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.

For the first equation, we impose the restriction one for coefficient of Sharia Stock Index LFTSHA and zero for coefficient of Conventional stock index LFTSE. For the second equation, we impose the restriction zero for coefficient of LFTSHA and one for coefficient of LFTSE. The result shows with restrictions A2=1; A5=0; B2=0; B5=1. 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				
Variable	**Coefficient**	**St-Error**	**T-Ratio**	**Implication**
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 show 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, we will only impose the over-identifying restriction on the coefficient of TREND equals to zero.

The following tables shows the result with restrictions A1=1; A2=0; B1=0; B2=1; A5=0.

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 A5=0 (coefficient of TREND equals to zero) is correct. The above tables result also shows that the coefficient of interest rate LIR in 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 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 cointegration equations, then we do not have to impose any over-identifying restriction. The final two cointegration equations can be written as following.

Cointegration equation 1:

1 LFTSHA	**- 0.65 LIPI**	**+ 0.43 LIR**
	(1.79)	**(0.25)**

Cointegration equation 2:

1 LFTSE	**-3.74 LIPI**	**-0.02LIR**
	(1.61)	**(0.24)**

We should be aware that the equations above do not give the information about which variable is exogenous and which variable is endogenous. There is no "equality sign" and the equations do not tell the causal relationship. Therefore, we have to go to another step which is VECM to address this problem.

5.5. Vector Error Correction Model (VECM)

Error-correction term (ECT) is the stationary error term, in which this error term comes from a linear combination of our non-stationary variables that makes this error term to become stationary if they are cointegrated. It means that the ECT contains long term information since it is the differences or deviations of those variables in their original level form. VECM uses the concept of Granger causality that the variable at present will be affected by another variable at past. Therefore, if the coefficient of the lagged ECT in any equation is insignificant, it means that the corresponding dependent variable of that equation is exogenous. This variable does not depend on the deviations of other variables. It also means that this variable is a leading variable and initially receives the exogenous shocks which results in deviations from equilibrium and transmits the shocks to other variables. On the other hand, if the coefficient of the lagged ECT is significant, it implies that the corresponding dependent variable of that equation is endogenous.

It depends on the deviations of other variables. This dependent variable also bears the brunt of short-run adjustment to bring about the long term equilibrium among the cointegrating variables.

By examining the error correction term for each variable in both equations, and checking whether it is significant, we found 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 tables provide the details.

1st Cointegrating 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 Cointegrating Equation

Variable	Ecm2(-1) P-Value	Implication	Number Of Periods To Return To Equilibrium
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, we know the independent(leader) and dependent(follower) variables both in the first and the second cointegration equations. However, VECM does not tell the relative degree of endogeneity or exogeneity among the variables. It does not tell which one is the most leading variable and which one is the most dependent variable. Therefore, we have to go to the VDCs to address this problem.

5.6. Variance Decomposition (VDC)

The forecast error variance decomposition presents a decomposition of the variance of the forecast error of a particular variable in the VAR at different horizons. It will break down the variance of the forecast error of each variable into proportions attributable to shocks in each variable in the system including its own. The variable which is mostly explained by its own past shocks is considered to be the most leading variable of all. There are two methods to do VDC analysis. First is the Orthogonalized Variance Decomposition Analysis. The orthogonalized VDCs are not unique and depend on the particular ordering in the VAR. It also assumes that when a particular variable is shocked, all other variables in the system are switched off.

But in this study we decided to rely instead on Generalized VDCs, which are invariant to the ordering of variables. In interpreting the numbers generated by the Generalized VDCs, we need to perform additional computations. This is because the numbers do not add up to 1.0 as in the case of orthogonalized VDCs. For a given variable, at a specified horizon, we add up the numbers of the given row and we then divide the number for that variable (representing magnitude of variance explained by its own past) by the computed total. In this way, the numbers in a row will now add up to 1.0 or 100%. The tables below show the result:

Forcast Horizon=12 Months

	LFTSHA	LFTSE	LIPI	LIR
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%

Forcast Horizon=24 Months

	LFTSHA	LFTSE	LIPI	LIR
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%

No.	Variable Relative Exogeneity	
	12 Months	24 Months
1	LFTSHA	LFTSHA
2	LFTSE	LFTSE
3	LIPI	LIPI
4	LIR	LIR

We shall be using the 24 month horizon for our analysis as both the horizon periods provides us with the same results in terms of ranking of variables. It can be seen that the most leading variable in our two cointegration equations is the **Sharia Stock Index LFTSHA**. The proportion of the variance that is explained by its own past shocks is ***49.19 %.*** 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.

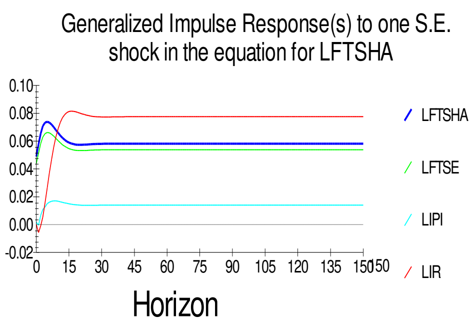
In the first cointegration equation, by observing the percentage of own-path dependence in the matrix above for the 24 month horizon, the rank of the leading variable from the stronger to the weaker leader will be LFTSHA (49.19%), LIPI (13.94%) and LIR(2.33%).

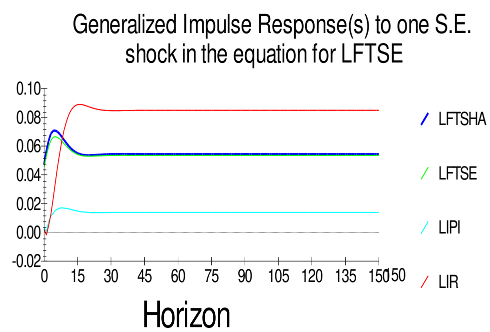
In the second cointegration equation, the rank of the leading variable will be LFTSHA (49.19%), LFTSE (47.47%), LIPI (13.94%), and LIR (2.33%). Before, we have imposed the identifying and over-identifying restrictions that the coefficients of LFTSHA is equal to zero. Therefore, our leading variable in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

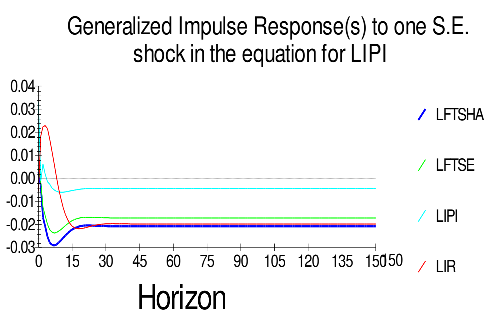
Rank	Most Leading Variable in 1st Equation	Dependent Variable in 1st Equation	Most Leading Variable in 2nd Equation	Dependent Variable in 2nd Equation
1	**LFTSHA**	**LIPI**	**LFTSE**	**LIR**
2		**LIR**	**LIPI**	

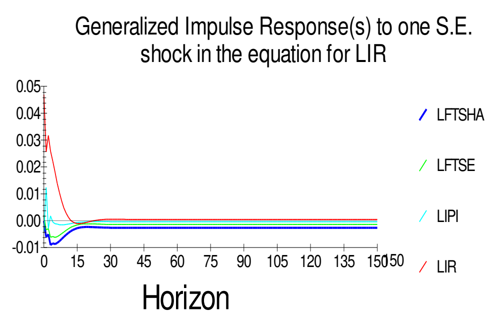
8.7. IMPULSE RESPONSE FUNCTIONS (IFR)

The information which is presented in the VDCs also can be equivalently represented by Impulse Response Functions (IRFs). IRFs will present the graphical expositions of the shocks of a variable on all other variables. In other words, IRFs map the dynamic response path of all variables owing to a shock to a particular variable. The IRFs trace out the effects of a variable-specific shock on the long-run relations. The IRFs are normalized in which the zero will represent the steady-state value of the response variable. The Appendix 7 shows the graphs. We shock each variable and see the response of other variables in the graph.









The IRFs result shows the relationship between Shariah index FTSHA and conventional index FTSE, when we shock each Index individually the effects are not similar, if we shock Shariah index it has more effect on itself than conventional index but on the other hand if we shock the conventional index we find that still the Shariah index is more affected than the conventional index, this may be down to size of the two indexes. This effect is commonly known as small size effect, where a shock to the conventional index which is bigger in can have effects on the Shariah index but a shock to the smaller Shariah index seems to have little effect on the bigger conventional index due to the presence of some huge blue-chip companies that are capable of absorbing the smaller shocks initiating from the Shariah index.

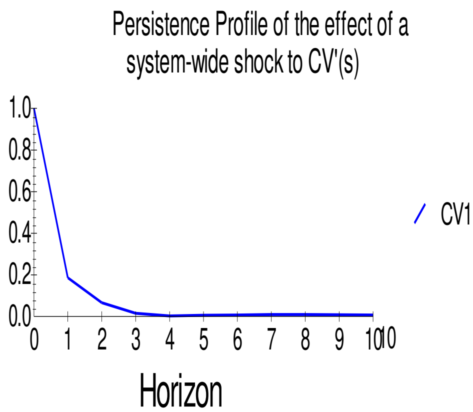
Using IFRs when we shock industrial production index LIPI, we notice Shariah index FTSHA has a higher response when compared with the conventional Index FTSE. It shows that Shariah price index is closer to LIPI and it also follows LIPI to equilibrium faster than conventional index FTSE. So our result shows us that in Malaysia the real sector shocks tend to return to equilibrium fast we expect Shariah index to follow it closer. So for investors who emphasize more on real sector or economic performance as a expectation of future profits the Shariah index can be a better asset class in their portfolio if there is a disruption in the real sector as it follows real sector to equilibrium faster and closer.

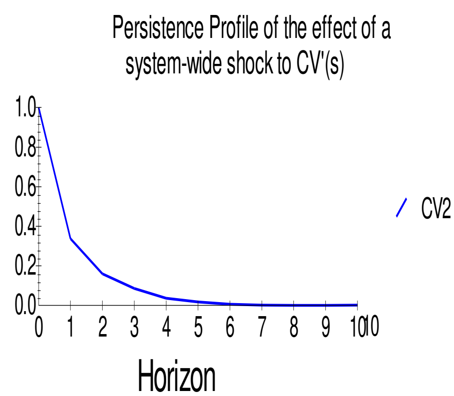
Now when we shock interest rate LIR, we can see the Shariah index FTSHA having a higher response when compared with the conventional Index FTSE. It shows that Shariah price index is closer to LIPI and it also follows LIPI to equilibrium faster than conventional index FTSE. So as empirical evidence has shown us in Malaysia the real sector shocks tend to return to equilibrium fast we expect Shariah index to follow it closer. So for investors who emphasize more on real sector or economic performance as a expectation of future profits the Shariah index can be a better asset class in their portfolio if there is a disruption in the real sector as it follows real sector to equilibrium faster and closer.

8.8 PERSISTENCE PROFILE

The persistence profile will indicate the time horizon required for all variables to get back to equilibrium when a system-wide shock occurs. The main difference between the persistence profiles and IRFs is that the persistence profiles trace out the effects of a system-wide shock on the long-run relations. On the other hand, the IRFs trace out the effects of a variable-specific shock on the long run relations. In the persistence profiles, we shock our whole equation whereby this shock comes from external factor outside our equation or our system. Then, we see how many periods it takes for all variables to get back to the equilibrium.

When we give the external shock to our first equation, the result shows that all variables will deviate from the equilibrium, meaning that each of variables will move differently in the short run. They are temporarily not cointegrated. However, all variables in the first equation will require approximately 3 periods (months) for them to cointegrate again and return to the long-run equilibrium. On the other hand, if we give the external shock to our second equation, all variables in this group will require approximately 5 periods (months). It simply shows that Shariah stock index is more stable than the conventional stock index





CONCLUSION AND POLICY IMPLICATIONS

In this study we examine whether stock market can predict economic activity in Malaysia. For the whole economy, the Johansen cointegration and VDC tests seem to confirm previous findings of Fama (1990) and others who found evidence that stock market can lead changes to the economic activity.

In the first equation the **FTSHA Shariah price index** is cointegrated with **Interest rate** and **Industrial Production Index**. The Shariah price 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 **FTSE Conventional price index** is cointegrated 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, it is shown in VDC analysis that **Shariah price Index** is the most leader and better predictor of the real economic activity as compared to the **Conventional price index.** Hence, it shows the growing importance and influence of Islamic Finance in Malaysia. The justification can be based on the fact that Shariah price index contains less number of financial institutions as compared 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 compared to major chunk of financial institutions.

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. Indeed, according to the standard story, a lower interest rate means lower costs of borrowing for the private sector, implying that the private sector is going to profit from this opportunity by increased investments in innovations and entrepreneurial opportunities, leading (with some lag) to an improved outlook for the future growth of the economy. Since stock market prices reflect the anticipation of investors, this better outlook for the future economy should be soon reflected in the appreciation of the stock market.

Reciprocally, an increase in the interest rate should, according to the standard story, translate soon into a drag on the growth of stock markets.

But 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; when the stock market exhibits rises, the policy makers in US tends to progressively increase its rates as an attempt to calm down the “overheating engine”, as occurred towards the end of the ICT bubble in the US when the Fed rate was increased to 6.5%. A similar increase of the Fed rate occurred from 2004 to 2007. Similarly, when the stock market plunges, the policy maker tend to decrease the rates, in the hope of putting a brake on the stock market losses that negatively feedback onto the real economy via the wealth effect.

Hence, based on the results of this study the policy makers should be increasingly mindful of the stock market behavior in Malaysia especially Shariah index, which could be seen as key to the recovery and health of the economy. The investors should also be more reactive to the signals provided by the Shariah and Conventional stock markets than the Malaysian central bank.

In the end we can assume that as a part of financial market, **Shariah index** can be considered economy’s barometer in Malaysia as compared to Conventional index. It shows the growing importance and force of Islamic finance. In addition, monetary policy and economic activity are not independent of stock markets.

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

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