ISLAMIC STOCK MARKET AND MACROECONOMIC VARIABLES: A COMPARISON ANALYSIS

Mohd Yahya Mohd Hussin, Fidlizan Muhammad
Faculty of Management and Economics,
Universiti Pendidikan Sultan Idris, Malaysia.
E-mail: yahya@fpe.upsi.edu.my

Salwah Amirah Awang
Department of General Studies
Polytechnic of Sultan Azlan Shah, Malaysia.

Mohd Faisol Ibrahim
Faculty of Economic and Muamalat,
Universiti Sains Islam Malaysia, Malaysia.

Abstract

This research will focus on the relationship between the development of stock market and macroeconomic variables in Malaysia. Generally, the purpose of this research is to observe this relationship in the Malaysian context. In order to achieve the objective, Vector Auto Regression (VAR) estimation method was applied on the created research model. The variables involved in this research were the FBM Emas Shariah index (FBMES) used as proxy for Islamic stock market, FBM Kuala Lumpur Composite Index (FBMKLCI) used as proxy for conventional stock market, Industrial Production Index (IPI), Consumer Production Index (CPI), Aggregate Money Supply (M3), Islamic Inter Bank Rate (IIR), Treasury Bill Rate (TBR) and Exchange Rate of Malaysian Ringgit-United States Dollar. This research utilised monthly data from January 2007 to December 2011 taken from authorized sources. The findings showed that stock prices in Malaysia (Islamic and conventional) are co-integrated with the selected macroeconomic variables in which the stock prices is related positively and significantly with IPI and CPI variables but related negatively and significantly with M3, IIR, TBR and MYR variables. From the aspect of Granger causal relationship, it is found that variables of IPI and IIR are the Granger cause for FBMES in the short term. On the other hand, no variables can be proved as granger cause for FBMKLCI.

Keywords Cointegration, vector error correction mode (VECM), Islamic stock market, macroeconomic variables.

Introduction

Over the past few decades, the interaction of share returns and the macroeconomic variables has been a subject of interest among academics and practitioners. Previous studies have documented existence of significant relationship between stock markets with selected macroeconomic variables in certain countries. Since economic conditions provide an impact on the fluctuation of the stock market, this instability condition builds uncertainty towards many parties. The interactions between stock market and macro economic variables have become the primary focus in the research between academicians and practitioners (Kwon and Shin, 1999).

Stock market is a suitable place for investors to avoid the threat of inflation and at the same time works as an indicator towards the development of the nation in the aspect of economics (Khil and Lee, 2000). In other words, The FTSE Kuala Lumpur Composite Index (FBMKLCI) comprises of 30 largest companies in the FTSE Bursa Malaysia EMAS Index by full market capitalization and The FTSE Bursa Malaysia Emas Shariah index (FBMES), which is a weighted-average index with its components made up of Main Board companies designated as Shariah approved securities by the Shariah Advisory Council of the Securities Commission, are indeed related to the movement of economic growth in Malaysia. This can be proved by looking back to the history of FBMES and FBMKLCI in the year 2010 where the movement of Shariah Index increased about 18.2% and 19.1% for Composite Index. This increase was in line with the movement in actual GDP in Malaysia in the year 2010 with 7.2%. Similarly, in 2011 when FBMES recorded a slow growth of about 2% and FBMKLCI around 1% respectively, that was in line with the actual GDP in 2011 which was recorded by 5%. This result proved that in general the growth of Malaysian Economy is related to the growth of indexes in Bursa Malaysia. As a result, fund managers and investors will need to consider all economy factors that will influence their Islamic stock return before choosing or making certain investment.

Many studies had been published about the relationships between stock returns and macro variables in well-developed countries such as the US, Japan and European countries. However, regional stock markets such as Malaysia have not been fully explored because of their small sizes and geographic locations. In this paper, we analyzed the comparison of relationships between the Islamic and conventional stock market in Malaysia on a set of five macroeconomic variables from January 2007 to December 2011 using Vector Autoregressive (VAR) model.

The remainder of the paper is organized as follows. Section 2 will review previous literature on the relationships between macroeconomic variables and stock returns. Section 3 will provide an overview of the Islamic Stock Market in Malaysia and Section 4 will describe the data used in the research. The econometric methodology and results will be discussed in Sections 5 and 6, respectively. The paper will be concluded in Section 7.

Review of the Relationship between Macroeconomic Variables and Stock Returns

The dynamic relationship between macroeconomic variables and share returns have been widely discussed and debated. The basis of these studies is the use of models which states that share prices can be written as the expected discounted cash flow.

Thus, the determinants of share prices are the required rate of return and expected cash flows (Elton and Gruber, 1991). Economic variables which impact future cash flows and required returns can therefore be expected to influence share prices. By using this research, the researchers indicate that there is a foundation for the belief that there is a stable relationship between stock price and related macroeconomics variables.

The relationship between stock prices and real GDP shows a positive relationship. According to Fama (1986), Mukherjee and Naka (1995), Maysami and Koh (2000), Ibrahim and Aziz (2003), Sohail and Hussain (2009), Aljafari (2011) and Hsing (2011) the increase in the real GDP will affect the price of the stock through the impact towards corporate profit. This happens because when there is an increase in the real GDP, the expected future cash flow in company will increase and the price of the stock increases.

The relationship between inflation and stock price can exist either positively or negatively. According to Fama and Schwert (1977), Chen et al (1986), DeFina (1991) and Sohail and Hussain (2009), these two variables have a negative relationship. They indicated that inflation will increase the cost of production and at the same time it will also decrease the expected future cash flow and profit of the company. While Geske and Roll (1983) and Mukherjee & Naka (1995) pointed out that this negative relationship can be detected by looking at the increase of the inflation rate which will result in a strict economic policy. When this thing happens, the free risk nominal rate will increase and at the same time the rate of discount will also increase. This will in turn cause an increase in the stock price.

However, other researchers suggested that these two variables have a positive relationship. Khil and Lee (2000), Ibrahim and Aziz (2003), Shabri et al (2001), Ibrahim (2003) Rasiah (2010) and Rad (2011) specified this relationship through the concept of protection value. Equities serve as a hedge against inflation as they represent claims on real assets.

The relationship between money supply aggregate and stock price can exist either positively or negatively. Dhakal et al (1993), Mukherjee and Naka (1995), Rasiah (2010) and Rad (2011) opined that this positive relationship can be noticed through economic encouragement feature. This is a basis for money supply to increase towards the increase of the corporate profit and this will further increase the future cash flow and result in an increase in stock price.

The negative relationship can be observed by looking at direct relationship (positive) between money supply and inflation. In this direct relationship, the increase in the money supply will increase the discount rate and further decrease the price of stock market (Fama, 1981; Abdul Rahman, 2009)

The relationship between interest rate and stock price is in the negative form. The increase in interest rate will increase the free risk nominal rate and at the same time will increase the discount rate (Abdullah and Hayworth, 1993). As a result, the price of the stock will decrease (Mukherjee and Naka, 1995). On the other hand, Coleman et al (2008) and Abdul Rahman (2009) proved that interest rate can influence the level of corporate profit through expectation where the investor will get higher dividend in the future. Most of the companies support their equipment and inventory through loans. Reduction in the interest rate will cut down the cost of borrowing and at the same time it provides an incentive to the company to expand their operation. Consequently, the future expected value of the company will increase.

Maysami et al (2004) explained that most of the stock is bought through the money the investor borrowed from financial institutions. The increase in interest rate will increase the cost of buying stocks. The investor will try to find the stock that can give higher rate of return to balance the cost of borrowing, which they borrow from financial institution. When this happens, the demand towards the stock will decrease and at the same time decrease the price of the stock.

Stock prices can have either positive or negative relationship with the foreign exchange rate. Any changes in value of exchange rate will give a big impact towards the price of the stock. Mukherjee and Naka (1995), Maysami and Koh (2000) Ibrahim and Aziz (2003) and Rasiah (2010) proposed that the relationship between these two variables is in positive form. Looking at the situation where there is a decrease in value of the currency can prove this. This causes the product that is being exported from this country to become cheaper in the international market. As a result, if the products experience elasticity, the volume of the export from that country will increase. The flow of cash will increase in line with the profit and local stock price.

Soenen and Hennigar (1988) Ibrahim and Wan (2001) Abdul Rahman (2009) and Rad (2011) shared a different perspective. They believed that the relationships between these two variables are negative. They believed that if the country depends on the export, the decrease in currency value will increase the growth of export. Nevertheless, the decrease in currency value will increase the cost of production impact as well as to increase the domestic price. As a result, the profit margin in the company will decrease.

Islamic Stock Market in Malaysia

The stock market in Malaysia generally consists of two types of market namely Islamic and conventional stock market. The difference between these two markets is that the Islamic stock market is based on Shariah principles while the conventional stock market is in adverse.

The Islamic stock market can be considered one of the important branches of the Islamic capital market whereby its components and activities are based on Islamic law, which is based on venerable sources and approved by the Fiqh Ulama (Mohd Hussin and Muhammad, 2011). The Islamic stock market has been established based on 5 main principles of operation: preventing any practice of usury, sharing risks, preventing widespread speculation, compliance of the akad with the stated contract and the activity implemented must be legal in the Shariah aspect (Bacha, 2002).

In April 17, 1999, the Kuala Lumpur Syariah Index (KLSI) was launched by the Kuala Lumpur Stock Exchange, now Bursa Malaysia. This was the first step in facilitating participation in equity investments that are compatible with the Islamic principles of Shariah. The KLSI provides a benchmark for investors seeking for investments based on Shariah principles and this helps them to make better informed decisions.

The first move in facilitating the development and innovation of Islamic financial products in Malaysia was to establish the Shariah Advisory Council (SAC) in the Security Commission (SC) immediately after its own establishment in 1993. This provided the most important first step for the development of KLSI and other Islamic capital market products and services that followed. Since then, Malaysia has established itself as a key player in the global Islamic sphere, where the Islamic capital market is

specifically recognized as a hallmark of international financial success. Mohd Hussin and Muhammad (2011) reported in 2009 that there were over 88 percent of total listed Islamic equity companies in Malaysia. In the latest development, Bursa Malaysia, in co-operation with FTSE, introduced a new series of tradable equity indices called FTSE-Bursa Malaysia Emas Shariah Index and FTSE-Bursa Malaysia Hijrah Shariah Index. This development helped to create more opportunities for investors seeking Shariah investments to benchmark their portfolios, and the asset managers to create new products serving the investment community.

The selection of Shariah-compliant companies takes place through a screening process based on qualitative and quantitative parameters. Therefore, in the qualitative criteria, the SAC has applied a standard criteria in focusing on the activities of the companies listed on Bursa Malaysia. The companies whose activities are not contrary to the Shariah principles will be classified as Shariah-compliant securities. According Mohd Hussin and Borhan (2009), the companies will be classified as Shariah non-compliant securities if they are involved in the following core activities:

(a) Financial services based on *riba* (interest); (b) Gambling and gaming; (c) Manufacture or sale of non-halal products or related products; (d) Conventional insurance; (e) Entertainment activities that are non-permissible according to Shariah; (f) Manufacture or sale of tobacco-based products or related products; (g) Stock broking or share trading in Shariah non-compliant securities; and (h) Other activities deemed non-permissible according to Shariah.

To determine the tolerable level of mixed contributions from permissible and non-permissible activities towards turnover and profit before tax of a company, the quantitative parameters are mainly used by the SAC. If the contributions from non-permissible activities exceed the benchmark, the securities of the company will be classified as Shariah non-compliant. According Securities Commission (2011), the benchmarks are:

(a)The five-percent benchmark to the activities that are clearly prohibited such as *riba* (interest-based companies like conventional banks), gambling, liquor and pork; (b) the 10-percent benchmark to the activities that involve the element of *"umum balwa"* which is a prohibited element affecting most people and difficult to avoid such as contribution of the interest income from fixed deposits in conventional banks; (c) the 20-percent benchmark to assess the level of contribution from mixed rental payment from Shariah non-compliant activities such as the rental payment from the premise that involved in gambling, sale of liquor etc and (d) The 25-percent benchmark to the activities that are generally permissible according to Shariah and have an element of *maslahah* to the public, but there are other elements that may affect the Shariah status of these activities such as hotel and resort operations, share trading, stock-broking and others, as these activities may also involve other activities that are deemed non-permissible according to the Shariah.

Data Description

A total of six macroeconomic variables, FBMES and FBMKLSI indices were used in the analysis. The definitions of each variable and time-series transformation are described in Table1.

Table.1 Definitions and Transformation of Variables

No	Variable	Description	Duration	Time Series Data Transformation Variable	Source
1	FBMES	FBMES used as the proxy for Islamic stock market in Malaysia	Monthly data (Januari 2007 to December 2011)	$\Delta LNFBMES = Log\left[\frac{FBMES_{(t)}}{FBMES_{(t-1)}}\right]$	Bloomberg
2	FBMKLCI	FBMKLCI used as the proxy for Islamic stock market in Malaysia	Monthly data (Januari 2007 to December 2011)	$\Delta LNFBMKLCI = Log\left[\frac{FBMKLCI_{(t)}}{FBMKLCI_{(t-1)}}\right]$	Bloomberg
3	IPI	IPI used as the proxy for Gross Domestic Product	Monthly data (Januari 2007 to December 2011)	$\Delta LNIPI = Log\left[\frac{IPI_{(t)}}{IPI_{(t-1)}}\right]$	International Financial Statistics (IFS)
4	MYR	MYR used as the benchmark for foriegn exchange in Malaysia.	Monthly data (Januari 2007 to December 2011)	$\Delta LNMYR = Log\left[\frac{MYR_{(t)}}{MYR_{(t-1)}}\right]$	Monthly Statistical Bulletin, Bank Negara Malaysia
5	CPI	CPI used as the proxy for the inflation rate in kadar Malaysia	Monthly data (Januari 2007 to December 2011)	$\Delta LNCPI = Log\left[\frac{CPI_{(t)}}{CPI_{(t-1)}}\right]$	International Financial Statistics (IFS)
6	M3	M3 used as the proxy for the money supply in Malaysia.	Monthly data (Januari 2007 to December 2011)	$\Delta LNM3 = Log\left[\frac{M3_{(t)}}{M3_{(t-1)}}\right]$	Monthly Statistical Bulletin, Bank Negara Malaysia
7	IIR	IIR used as the proxy for the interest rate in the Islamic financial system in Malaysia.	Monthly data (Januari 2007 to December 2011)	$\Delta LNIIR = Log\left[\frac{IIR_{(t)}}{IIR_{(t-1)}}\right]$	Statistical Data from Islamic Banking Money Market Website

8	TBR	TBR used as the proxy for the interest rate in the conventional financial system in Malaysia.	Monthly data (Januari 2007 to December 2011)	$\Delta LNTBR = Log\left[\frac{TBR_{(t)}}{TBR_{(t-1)}}\right]$	Monthly Statistical Bulletin, Bank Negara Malaysia

Methodology

We adopted a vector autoregressive (VAR) model to examine the relationship between stock market indices and macroeconomic variables in Malaysia. Models which were developed and applied in this study are as follow:

Model 1 (Islamic)

$$FBMES_t : \alpha_0 + \alpha_1 IPI_t + \alpha_2 CPI_t + \alpha_3 M3_t + \alpha_4 IIR_t + \alpha_5 MYR_t + \mu_t \quad (1)$$

Model 2 (Conventional)

$$FBMKLCI_t : \alpha_0 + \alpha_1 IPI_t + \alpha_2 CPI_t + \alpha_3 M3_t + \alpha_4 TBR_t + \alpha_5 MYR_t + \mu_t \quad (2)$$

It aims to examine the relationship between Islamic and conventional stock market variables, namely FBM Emas Shariah Index (FBMES) and FBM Kuala Lumpur Composite Index (FBMKLCI) with five macroeconomic variables, namely the Industrial Production Index (IPI), Consumer Price Index (CPI), the Financial Aggregate Supply (M3), Islamic Interbank Rate (IIR) for Islamic stock market, Treasury Bill Rate 3-month (TBR) for Conventional stock market and Foreign Exchange Rates of Ringgit Malaysia - United States Dollar (USD) based on discounted cash flow model (Kearney and Daly (1998).

To properly specify the VAR model, we followed the standard procedure of time series analyses. First, we applied the commonly used augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests to determine the variables' stationarity properties or integration order. Briefly stated, a variable is said to be integrated of order d, written 1(d), if it requires differencing d times to achieve stationarity. Thus, the variable is non-stationary if it is integrated of order 1 or higher. Classification of the variables into stationary and non-stationary variables is crucial since standard statistical procedures can handle only stationary series. Moreover, there also exists a possible long-run co-movement, termed cointegration, among non-stationary variables having the same integration order. Accordingly, in the second step, we implemented a VAR-based approach of cointegration test suggested by Johansen (1988) and Johansen and Juselius (1990). Appropriately, the test provides us information on whether the variables, particularly measures of Islamic Stock Market and macroeconomic variables are tied together in the long run. Then the study proceeded with a Granger causality test in the form of vector error correction model (VECM). Granger causality test is performed to identify the existence and nature of the causality relationship between the variables.

This is appropriate to identify relationships between variables because multiple causes simultaneously, especially if the variables involved in the created model more than two variables.

Empirical Results

Table 2 presents the results for the unit-root tests using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for the order of integration of each variable. For the level of the series, the null hypothesis of the series having unit roots cannot be rejected at even 10% level. However, it is soundly rejected for each differenced series. This implies that the variables are integrated of order I(1).

Table 2 Unit Root Test-Summary Statistics

Variables	Level		First Difference	
	ADF	PP	ADF	PP
LNFBMES	-1.591 (1)	-1.636 (4)	-5.500 (0)*	-5.551 (3)*
LNFBMKLCI	-2.123 (3)	-1.531 (3)	-5.812 (3)*	-5.892 (3)*
LNIPI	-1.847 (3)	-2.730 (2)	-4.646 (3)*	-14.992 (3)*
LNCPI	-2.785 (1)	-2.117 (2)	-4.424 (0)*	-4.356 (4)*
LNM3	-2.828 (1)	-2.759 (2)	-6.822 (0)*	-6.802 (3)*
LNIIR	-1.580 (2)	-1.241 (4)	-5.759 (0)*	-5.811 (2)*
LNTBR	-1.794 (2)	-1.378 (3)	-5.838 (0)*	-6.105 (4)*
LNMYR	-1.689 (0)	-1.725 (3)	-7.454 (0)*	-7.452 (2)*

* Denote significance at 1% respectively

Having established that the variables are stationary and have the same order of integration, we proceeded to test whether they are cointegrated. To achieve this, Johansen Multivariate Cointegration test was employed. The results of the Johansen's Trace and Max Eigenvalue tests are shown in Table 3 and 4. At the 5% significance level the Trace and Max Eigenvalue tests suggested that the variables are cointegrated with $r \leq 0$ for model 1 (Islamic stock market). For model 2 (Conventional stock market) the Trace test suggested that the variables are cointegrated with $r \leq 1$ while Max Eigenvalue tests documented the variables are cointegrated with $r \leq 2$. It is common for the estimated test statistics to show different results (Harris, 1995). Therefore, Cheung and Lai (1993) suggested the rank will be dependent on the Trace test results because Trace test showed more robustness to both skewness and excess kurtosis in the residual, which implied that there were at least one cointegration vectors ($r \leq 0$) found in the model 1 and two cointegration vectors ($r \leq 1$) found in the model 2.

Table 3 Johansen-Juselius Cointegration Test (Model 1)

Model	Null Hypothesis	Statistical Trace	Critical Value (5%)	Maximum Eigen Statistical Trace	Critical Value (5%)	Variable	Long-term Coefficient Elasticity	Results
Lag Length=1#	r ≤ 0	126.226*	95.753	58.934*	40.077	LNFBMES	1.000	Statistical Trace showed a one cointegration vectors
	r ≤ 1	67.292	69.818	27.737	33.876	LNIPI	-11.497*	
	r ≤ 2	39.554	47.856	22.839	27.584	LNCPI	-11.688*	
	r ≤ 3	16.714	29.797	12.943	21.131	LNM3	6.651*	
	r ≤ 4	3.7713	15.494	3.660	14.264	LNIIR	2.184*	
	r ≤ 5	0.111	3.841	0.111	3.8414	LNMYR	7.698*	
						C	-3.347	

* :Denote significance at 5% respectively
: Critical Value obtained from Osterwald-Lenum (1992)
#: lag length based on AIC

Table 4 Johansen-Juselius Cointegration Test (Model 2)

Model	Null Hypothesis	Statistical Trace	Critical Value (5%)	Maximum Eigen Statistical Trace	Critical Value (5%)	Variable	Long-term Coefficient Elasticity	Results
Lag Length=2#	r ≤ 0	139.560*	95.753	57.449*	40.077	LNFBMKLSI	1.00000	Statistical Trace showed a two cointegration vectors
	r ≤ 1	82.110*	69.818	36.505*	33.876	LNIPI	-17.235*	
	r ≤ 2	45.605	47.856	31.087*	27.584	LNCPI	-22.735*	
	r ≤ 3	14.517	29.797	9.571	21.131	LNM3	13.032*	
	r ≤ 4	4.946	15.494	4.944	14.264	LNTBR	4.197*	
	r ≤ 5	0.001	3.841	0.001	3.8414	LNMYR	15.830*	
						C	-22.272	

* :Denote significance at 5% respectively
: Critical Value obtained from Osterwald-Lenum (1992)
#: lag length based on AIC

Based on Johansen and Juselius Cointegration test, the first normalized co-integrated vector towards FBMES and FBMKLCI variable using lag period proposed by AIC indicate long run relationship between macroeconomic variables and expected return of stock indices. The result of the cointegration relationship can be summarized in table 3 and 4 above. These values represent long-term elasticity measures, due to logarithmic transformation of FBMES, FBMKLCI, IPI, CPI, M3, IIR, TBR and MYR. Thus the cointegration relationship can be re-expressed as table 5 and 6:

Table 5 Cointegration Relationship (Model 1)

Dependent variable (FBMES)	Independent Variables					
	LNIPI	LNCPI	LNM3	LNIIR	LNMYR	C
Coefficient	11.497*	11.688*	-6.651*	-2.184*	- 7.698*	3.347
t Value	7.376	2.599	-3.225	-5.274	-3.288	

* Denote significance at 1% respectively.

Table 6 Cointegration Relationship (Model 2)

Dependent variable (FBMKLCI)	Independent Variables					
	LNIPI	LNCPI	LNM3	LNTBR	LNMYR	C
Coefficient	17.235*	22.733*	-13.032*	-4.197*	- 15.830*	22.272
t Value	6.455	3.595	-4.655	-6.303	-4.717	

* Denote significance at 1% respectively.

Based on table 5 and 6, the long-term equation shows that the FBMES and FBMKLCI values are positively correlated with the IPI variable. This is in line with the share analysis theory based on the discounted cash flow model which states that the IPI shares a positive correlation with a particular firm's expected future cash flow. This means that the higher the IPI, the higher the expected share price. It should also be pointed out that the positive relationship between the two variables is significant.

The long-term equation also shows that the CPI variable has a positive correlation with the Islamic and conventional share prices and this is a significant relationship. The scholars stressed that share prices should relate positively with the inflation rate via value protection (hedging operation). Studies conducted by the scholars were consistent with the finding of study by Shabri et al (2001), Ibrahim (2003), Rasiah (2011) and Rad (2011) who found that there is a positive relationship between share prices and positive inflation in Malaysia and Indonesia. As such, equity functions as value protection from the threat of inflation and has a claim on a real asset which proves that the higher the inflation rate, the higher the demand for a particular share.

A striking finding in the study pointed towards a negative relationship which is significant between the FBMES, FBMKLCI and the money supply (M3). This finding is in line with the findings discovered by previous researchers like Fama (1981), Bulmash and Trivoli (1991), Ibrahim and Wan (2001) and Ibrahim and Aziz (2003). This negative type relationship is based on the direct relationship in regards to excessive money supply in the market which would cause inflation problems as well as affecting the increase of discount rate and later on, causing a fall in share prices. (Gan et al, 2006).

This study also shows that the relationship between FBMES and IIR is negative and significant. The basis for this type of relationship refers to the rise in interest rates which would cause the share prices to decline via the decrease in future corporate profit due to the increasing borrowing and production costs (Abdullah & Hayworth, 1993; Wongbangpo and Sharma, 2002). In essence, the relationship between the IIR investment rate and Islamic share prices is negative as the higher the IIR rate, the lower the Islamic share price. This is parallel to the relationship between conventional interest rates (TBR) with the conventional share prices (FBMKLCI) in Malaysia.

In regards to the foreign exchange rate (MYR) with the Islamic and Conventional share prices, the findings showed that the variables share a long-term relationship which is negative and significant. The basis for the long-term negative relationship between the variables can be attributed to the negative value of the MYR coefficient. Ibrahim and Wan (2001) stated that this negative relationship could be caused by a few factors, for example, the status of the nation which depends on export value (international trade).

The declining value of the currency would encourage more exports. However, the declining currency value would be the production costs due to the incease in domestic prices as regards to capital goods and imported mediators. This would in turn decease the profit margin for that particular firm and the firm's share prices would decrease.

This negative relationship can also be seen from the investors' point of view pertaining to the currency value of a particular country (Ibrahim and Aziz, 2003). If there is a decrease in currency value, the common presumption is that the country is in the throes of economic recession. This would probably lead investors to withdraw their capital out of the country and affect the firm's profits due to the loss of capital from foreign investors. This in turn would decrease the returns and share prices.

Table 7 Vector Error Correction Model (VECM) for Model 1

Dependent Variables	Independent Variables F-Statistic (Wald Test)						T-Statistic
	ΔLNFBMES	**ΔLNIPI**	**ΔLNCPI**	**ΔLNM3**	**ΔLNIIR**	**ΔLNMYR**	**Ect-1**
ΔLNFBMES		8.771* (0.003)	0.170 (0.679)	0.861 (0.353)	4.437** (0.035)	0.127 (0.720)	-0.062* [-3.789]
ΔLNIPI	0.921 (0.337)		10.697* (0.001)	6.252** (0.012)	4.701** (0.030)	0.648 (0.420)	-0.043* [-3.502]
ΔLNCPI	4.824** (0.028)	0.078 (0.779)		0.495 (0.481)	0.143 (0.704)	1.432 (0.231)	-0.001 [-0.861]
ΔLNM3	0.058 (0.808)	0.750 (0.386)	0.039 (0.842)		0.056 (0.812)	0.058 (0.808)	-0.004 [-1.086]
ΔLNIIR	5.828** (0.015)	14.745* (0.000)	0.098 (0.753)	4.946** (0.026)		0.330 (0.565)	-0.080* [-4.399]
ΔLNMYR	2.317 (0.127)	0.467 (0.493)	0.086 (0.768)	0.468 (0.493)	3.108*** (0.077)		-0.011 [-1.442]

*, ** and ***: Denote significance at 1%, 5% and 10% respectively
( ) probability
[ ] t value

Table 8 Vector Error Correction Model (VECM) for Model 2

Dependent Variables	Independent Variables F-Statistic (Wald Test)						T-Staistic
	ΔLNFBMKLCI	ΔLNIPI	ΔLNCPI	ΔLNM3	ΔLNTBR	ΔLNMYR	Ect-1
ΔLNFBMKLCI		4.436 (0.1088)	0.6025 (0.7399)	0.3588 (0.8358)	0.3537 (0.8379)	2.946 (0.2291)	-0.0391* [-2.577)
ΔLNIPI	2.881 (0.2368)		13.7977* (0.0010)	3.444 (0.1787)	5.8241*** (0.0544)	1.9688 (0.3737)	-0.0256* [-2.489]
ΔLNCPI	6.9121** (0.0316)	1.8128 (0.4040)		0.2257 (0.8933)	1.2656 (0.5311)	4.9403*** (0.0846)	-0.0039* [-2.113]
ΔLNM3	0.3425 (0.8426)	0.7806 (0.6768)	2.8764 (0.2374)		0.2662 (0.8754)	0.0676 (0.9667)	-0.0042 [1.193]
ΔLNTBR	5.3906*** (0.0675)	2.4476 (0.2941)	6.9052** (0.0317)	3.5718 (0.1676)		0.5531 (0.7584)	-0.0558* [-4.359]

ΔLNMYR	0.5448 (0.7615)	0.8598 (0.6506)	0.2750 (0.8715)	1.0692 (0.5859)	1.3430 (0.5109)		-0.0094 [-1.244]

*, ** and ***: Denote significance at 1%, 5% and 10% respectively
( ) probability
[ ] t value

Long term Granger Causal Relationship can be seen based on the value of ECT-1 for every variable in table 7 and 8. Based on the result of VECM test for model 1 and 2, it is found that the value of ECT-1 for FBMES and FBMKLCI variables are significant. This proves that the variables of IPI, CPI, M3, IIR (model 1), TBR (model 2) and MYR are the long term Granger cause for Islamic and Conventional stock returns respectively. In other words, FBMES and FBMKLCI variables in the equations bear the burden of dispersed error correction of short term balance to achieve long term equailbrium as much as 6.2 percent and 3.9 percent respectively in one period and demonstrates endogenuinity towards the formed model.

Short term Granger Causal relationship can be observed through wald test (chi square statistics) on a group of related coefficients. Based on Table 7 and 8, it is proven that only variables of IPI and MYR are the short term Granger cause for FBMES while no variable in model 2 can be Granger cause variable for FBMKLCI. This means, the Islamic share market return in short term is only influenced by economic growth and Islamic interbank rate. Meanwhile no variables can be Granger cause for conventional stock return in the short term. The pattern of this short term Granger causal relationship can be summarised as in figure 1 and 2.

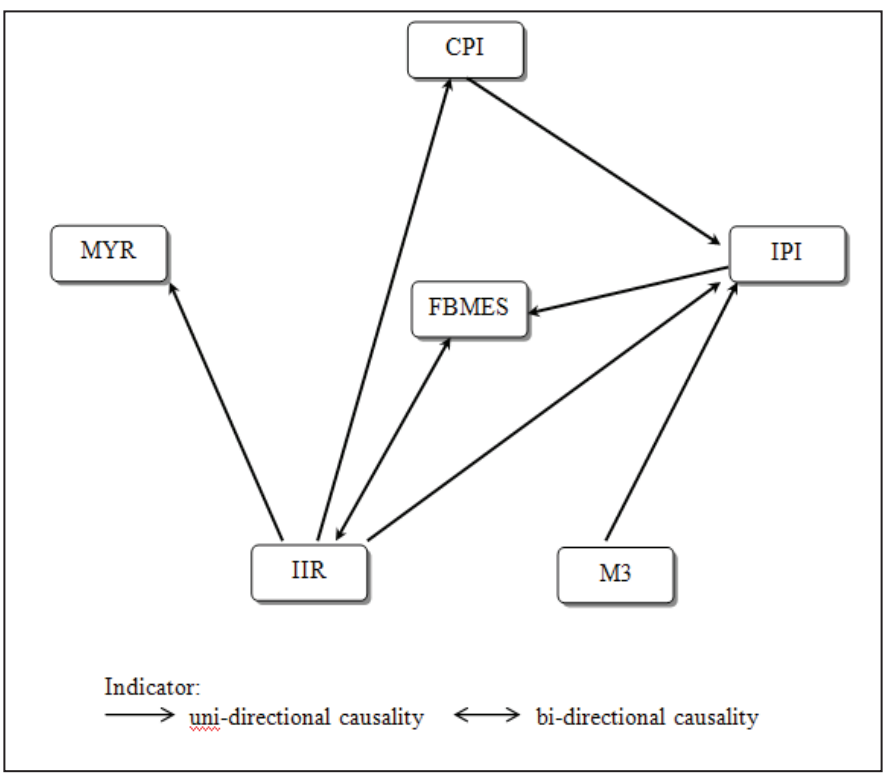

Figure 1 Analysis on Short Term Granger Causal Relationship (Model 1

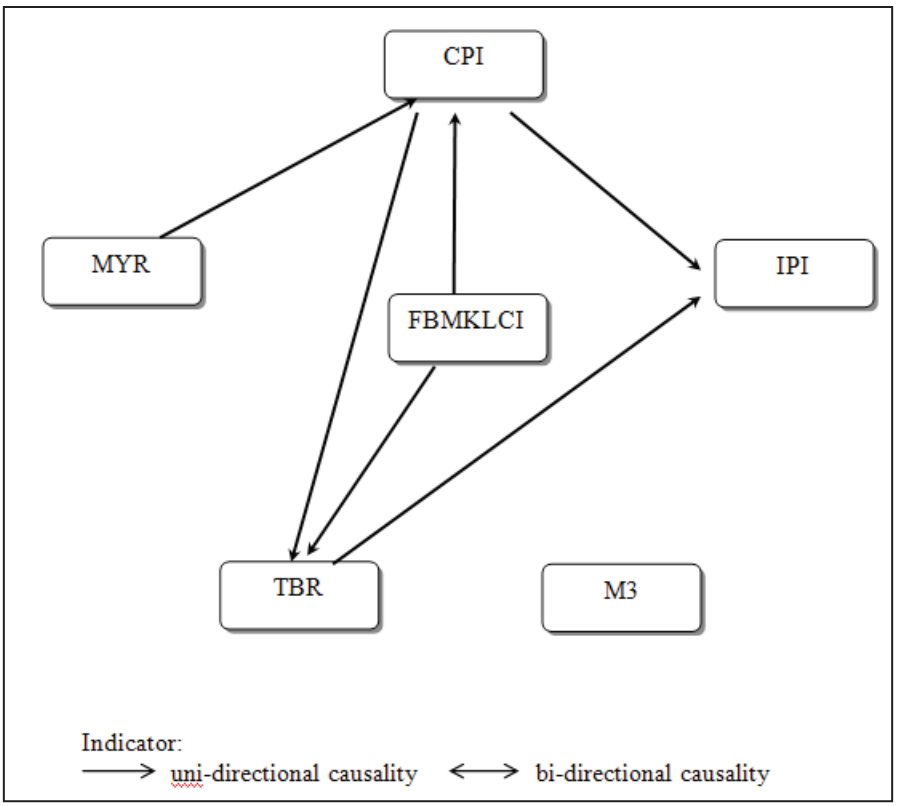

Figure 2 Analysis on Short Term Granger Causal Relationship (Model 2)

Conclusion

The main objective of this study is to investigate comparatively the relationship between Islamic and conventional stock market and macroeconomic variables in Malaysia. From the analysis above, it can be concluded that the Islamic share prices (FBMES) and conventional share price (FBMKLCI) share a positive relationship with the economic growth rate (IPI) and inflation (CPI) but has a negative relationship with money supply (M3), Islamic investment rate (IIR) for model 1, treasury bill rate (TBR) for model 2 and foreign exchange rate (MYR). All these show a significant relationship. These findings imply that the long-term equal relationship between the Islamic and conventional share prices and macroeconomic variables are in line with the findings from Ibrahim (2003), who utilised the conventional stock market data from the Kuala Lumpur Composite Index (KLCI) with a set of almost similar economic variables. This proves that all macroeconomic variables are valid variables for the purpose of predicting changes in Islamic and conventional share prices based on the cointegration tests conducted.

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