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Performance of Islamic Indices in Malaysia FTSE Market: Empirical Evidence from CAPM

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Abstract: The Capital Asset Pricing Model (CAPM) has been examined extensively for common stock return and index return. However, the examination with Islamic stocks is limited. This paper investigates the relationship between return and market risk for the Islamic stocks in Malaysia Financial Times Stock Exchange (FTSE) market. FTSE Bursa Malaysia EMAS Shariah Index (FBMSHA) and FTSE Bursa Malaysia Hijrah Shariah Index (FBMHS) are proxy for the Islamic portfolio. The finding provides some new insights on the performance of Islamic stocks in Malaysia FTSE market through stating the hypothesis that the risk of the Islamic indices is high in a downturn economic status in comparison with a normal period.

Key words: Shariah compliant stocks, capital asset pricing model, Islamic index, Malaysia, financial times stock exchange

INTRODUCTION

Evaluating the behavior of stock market returns has been a challenging and complex task to investors and researchers, since there is a conflict over the predictability of stock indices performance (Senol and Ozturan, 2008; Gunasekaran and Ramaswami, 2011). The willingness of investors for determining the linkages between market risk and expected return has been one of the most crucial factors in developing the Capital Asset Pricing Model (CAPM). Sharpe (1964) and Lintner (1965) are among the first who extended asset pricing theory by using the CAPM. Since, then evidences show that the CAPM is generally applicable in major stock markets (Wong and Tan, 1991). This study employs CAPM owing to its power in examining the relationship between risk and return of any risky asset. Estimating beta is very important since it is applicable for pricing stocks, determining the cost of capitals and explaining returns (Bruner *et al*., 2008; Hasan *et al*., 2011). The condition for the Islamic stocks is different from its conventional counterparts, due to the prohibition of charging interest on deposit in Islamic transactions.

Islamic stocks are traded based on the Islamic principles rules (Shariah) which prohibits dealing in interest (Riba). Moreover, sell and purchase of any firm's stocks which produce or deal liquor, pork, gambling, pornography and any other unlawful things (Haram) are absolutely forbidden in accordance with the Islamic transaction (Muamulat). Additionally, Islamic financial instrument follows the Profit/Loss Share (PLS) contract while the conventional finance is based on debt and return (Echchabi and Olaniyi, 2012). That is why the hypothesis that Islamic stocks bear higher risk than the conventional stocks is still remained.

Over the last decades, a huge number of investors look for environmental-social issues and ethical funds in their financial investment. Socially Responsible Investing (SRI), therefore, has become increasingly defined as a mean to promote environmentally sustainable development (Ferruz *et al*., 2007). According to the 2007 Report on socially responsible investing trend (www.socialinvest. org), the size of these funds has grown from USD 1.18 trillion to USD 2.16 trillion between 1997 and 2000 alone. Since its climbing from USD 2.29 trillion in 2005, SRI enjoyed a growth rate of 18% until 2007. Investment in the Islamic finance can be recognized as a SRI because both consider the investor's financial return and the impact of investment to the society. Islamic finance is based on keeping in view certain social goals intended for the benefit of society (Venardos, 2005).

The Kuala Lumpur Composite Index (KLCI) was introduced in 1986 as a capitalization-weighted stock index. In addition, the Kuala Lumpur Shariah Index (KLSI) was launched in 1999 that represents an average price of Islamic compliant stocks, while the KLCI indicates the average price of 100 stocks comprising both Islamic and non-Islamic compliant stocks (Albaity and Ahmad, 2008). In 2006, Bursa Malaysia with the collaboration of FTSE group launched FTSE Bursa Malaysia index. Two FTSE Islamic indices, FTSE Bursa Malaysia Hijrah Shariah index (tradable) and FTSE Bursa Malaysia EMAS Shariah index (benchmark) are launched in 2007 due to the growing interest in Shariah-compliant portfolio. According to Securities Commission Malaysia, the updated list features a total of 847 securities which are classified by the Shariah

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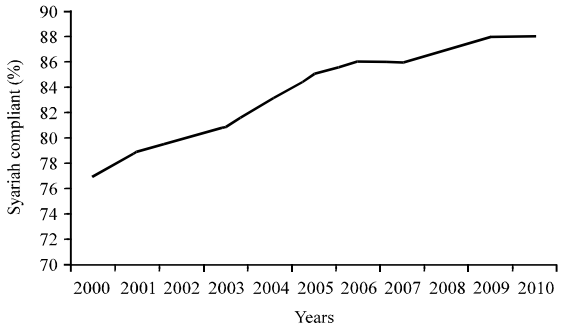

Fig. 1: Percentage of Syariah-compliant securities in total securities, Source: The Syariah advisory council of the securities commission

Advisory Council (SAC) as Shariah-compliant securities. These counters constitute 88% of the listed securities on Bursa Malaysia in 2010.[1] Figure 1 indicates the upward trend of Islamic-based investment in Malaysia since 2000.

While Malaysia as one of the leading country in terms of Islamic financial market plays a vital role in enhancing the Islamic investments in the Muslim world, further studies and researches are certainly the requisites of this enhancement via variety of methods and samples. This study evaluated the performance of Islamic stocks using the CAPM to find any authenticity as reported by earlier researches. To encourage the investors using the CAPM in managing return-risk nexus is the main purpose of the study. Particularly, the study investigated the return and risk characteristics of Shariah-compliant indices of Malaysian stock market to find out whether or not the Islamic indices are as risky as the conventional portfolios. It also analyzed the impact of 2008 global financial crisis on the performance, risk-return relation and the volatility in return for the above-mentioned indices.

LITERATURE REVIEW

Recently, several studies have been conducted to find the risk-return relationship using CAPM model (Rahman *et al*., 2006a, b; Rhaiem *et al*., 2007; Chang *et al*., 2011). Despite the growing of Islamic stocks, the literature on Islamic market is still thin compared to the conventional stocks. Some studies analyzed the performance of Islamic funds and compared the performance with the conventional funds. The other group examined the Islamic stocks with some Islamic indices as proxy and compared with the non-Islamic indices. Some of these studies are reviewed as follows.

Ismail and Shakrani (2003) examined the relationship between return and beta for Islamic unit trusts in Malaysia with both unconditional CAPM and conditional CAPM[2]. They found a flat unconditional and insignificant relationship between beta and risk premium, while with the conditional CAPM analysis, there is a significant positive relationship between beta and returns. Their results also indicated that investors in Islamic unit trusts are risk averse because of their willingness to invest in the indices that have a lower level of risk.

Abdullah *et al*. (2007) observed the differences in terms of performance between Islamic and conventional mutual funds in Malaysia through employing 51 conventional and 14 Islamic funds, respectively. Their findings suggested that the Islamic funds have a better performance compared to their conventional counterparts in the bear market, while the latter performs much better than the former during bullish economic trend. They also concluded both kinds of funds have a performance below than the market portfolio.

On contradict, Hayat and Kraeussl (2011) found Islamic equity funds underperform both their Islamic and conventional benchmarks and this underperformance has increased during the 2008 financial crisis. They concluded that this underperformance might lead to increase some specific risks in the Islamic equity funds, while the conventional investments typically are free from these types of risks.

Hakim and Rashidian (2004) investigated the linkages between risk and return on Dow Jones Islamic Market (DJIM) and Wilshire 5000 which represent Islamic index and non-Islamic index, respectively. They found that DJIM has unsystematic characteristics reflected in the risk-return tradeoffs, while the Wilshire 5000 is out of this characteristic.

Hussein (2004) utilized the CAPM to estimate if there is a significant different on returns earned between the investors who purchase equities in the FTSE Global Islamic index and their counterparts who invest in the FTSE All World index. He also compared the performance of the mentioned indices with a socially responsible index (FTSE4Good index). The sample period is divided into two sub-periods, namely bull period and bear period. Hussein (2004) suggested the performance of Islamic index is as good as its conventional counterpart. Moreover, the Islamic index performs better during the economic growth than when the economy suffers a bearish pattern. Hussein (2004) also pointed out that the ethical investment outperforms the unscreened portfolio in the bull market period.

Reviewing studies of the Islamic indices in the Malaysian stock market, Sadeghi (2008) investigated the impact of the launch of Shariah-compliant index on the

[1]List of securities approved by the Syariah Advisory Council of the Securities Commission, 31 May 2010.

[2]Conditional CAPM was proposed by Pettengill *et al*. (1995). It considers the weak relationship between risk and return as a potential explanation of the observed positive risk-average portfolio returns relation

financial performance and liquidities of securities involved in this index via an event study methodology.[3] The findings of the author's study reveal that despite finding negative abnormal returns from immediately prior and after the event day, the market has been a positive reaction against the launch of the index. In line with Sadeghi (2008) suggestion regarding to further investigations, we use the two newly-launched indices, namely the FTSE Bursa Malaysia Hijrah Shariah Index (FBMHS) and FTSE Bursa Malaysia EMAS Shariah Index (FBMSHA) as tradable index and a benchmark index, respectively.

Ahmad and Ibrahim (2002) compared the performance of Kuala Lumpur Syariah Index (KLSI) and Kuala Lumpur Composite Index (KLCI) for the period of 1999 to 2002. They found the risk-adjusted return of the KLSI is lower than the KLCI; however the latter bears higher risk than the former. Similarly, Albaity and Ahmad (2008) compared the performance of the KLSI and the KLCI for the period of April 1999 to December 2005. They provided evidence that the KLSI is marginally underperformed KLCI. It might be due to the existence of positive linkages between size and return in developing countries. Their result is consistent with Hakim and Rashidian (2004) which stated that investor who choose Islamic securities experienced as worse as those who invest in the non-Islamic securities. The concentration of the two above-mentioned studies is on the linkages between the screened investment (KLSI) and non-screened investment (KLCI). Nevertheless, the present study evaluated the performance of the Islamic indices through involving the conventional indices in the models and investigating risk-return relation.

Hashim (2008) documented that the FTSE Global Islamic index bears higher risk than the market; however, the realized return is fair and appropriate, also the risk of the Islamic index is less than the socially responsible index (FTSE4Good). He confirmed this hypothesis that the risk of the Islamic index is tolerable, although the level of risk achieved is appropriate for this level of risk. In other words, he considered a pure risk-oriented approach to evaluate the issue of risk opposition in the Islamic investment. However, ours attempt was to detect the behavior of risk-adjusted return using CAPM.

As discussed above literatures, most authors and researchers have made the comparison studies between the performances of the Islamic investments and non-Islamic portfolios. None of them have addressed the presence of volatility clustering in stock return of the Islamic indices. Meanwhile, these studies mainly have been conducted in the periods when the stock markets are operating under normal conditions, while investigation on the volatility and return of the asset markets is probably more interesting when the asset markets are under stress (Abdulnasser and Roca, 2005). The present study covered these absences by using the GARCH test and re-estimating all models for the 2007 global financial crisis period (Angabini and Wasiuzzaman, 2011).

MATERIALS AND METHODS

The sample data consists of three FTSE Bursa Malaysia indices which indicate the market portfolio such as FTSE Bursa Malaysia KLCI Index (FBMKLCI), FTSE Bursa Malaysia 100 Index (FBM100) and FTSE Bursa Malaysia EMAS Index[4] (FBMEMAS) and two other indices which represent the Islamic portfolio such as the FTSE Bursa Malaysia Hijrah Shariah Index (FBMHS) and FTSE Bursa Malaysia EMAS Shariah Index (FBMSHA). Daily closing prices of these indices have been collected. In addition, we obtained the daily three months Kuala Lumpur Inter-bank Offer Rate (KLIBOR) representing the risk-free rate in the model. All data are retrieved from DataStream.

Our entire sample period is from 1 March 2007 to 28 February 2011, it is restricted by the availability of data owing to the launching of both FBMHS and FBMSHA in 2007. Furthermore, in order to capture the impact of the 2008 global financial crisis on the behavior of the indices, a sub-period (from 1 March 2008 to 31 March 2009) has been determined which indicates as the crisis period.

The descriptive statistics for each FTSE index returns for entire sample period and crisis period are shown in Table 1 and 2, respectively. As shown in Table 1, the average daily returns for all indices are positive. FBMHS has the highest mean return while FBMKLCI shows the lowest mean return. The standard deviation of different indices return shows that the dispersion of the Islamic indices is larger than the market portfolio. We note that both Islamic indices have larger standard deviation than the market indices consistent with the common argument that the Islamic stocks bear higher risk than the conventional stocks. The skewness implies that all of the data are negative skewed which indicates that they are non-symmetric. The large values of kurtosis states that

Table 1: Descriptive statistics of FTSE Bursa Malaysia indices return (entire period)

	FBMHS	FBMSHA	FBMKLCI	FBM100	FBMEMAS
Mean	0.000284	0.000228	0.000224	0.000244	0.000256
SD	0.01052	0.010069	0.009596	0.009843	0.009883
Skewness	-1.27818	-1.68293	-1.31498	-1.25153	-1.28954
Kurtosis	17.37439	20.83775	16.47628	15.92556	15.68156

[3]He defined the day which the Shariah-compliant index was launched as the event

[4]FTSE Bursa Malaysia EMAS index represents all the ordinary securities which are listed on the main board of the Bursa Malaysia that qualified for the rules of eligibility, free floating as well as liquidity (Lean and Tan, 2010, p. 5)

the distribution of return for all indices has thicker tails than the normal distribution.

On the other hand, Table 2 expresses that the average daily return for all sample indices are negative. Therefore, the 2008 global financial crisis has had a significant effect on both conventional and Islamic stock indices in Malaysian FTSE market. However, the values of standard deviation indicate that the Islamic indices still bear higher risk compared with their conventional counterparts.

Figure 2 represents the daily price movements of our sample indices. As it can be obviously seen, the indices have been moved together. Moreover, the indices have achieved the highest point in January 2008 and then they have experienced a downward trend due to the subprime and global financial crisis at the end of 2008 and start to rebound from the beginning of 2009 due to the stimulus packages by the government.

This study uses the Sharpe-Lintner CAPM version which is based on some variables such as expected return on stock as the dependent variable and beta of stock, risk-free rate and expected return of market as the independent variables:

$$E(R_i) = R_f+\beta_i [E(R_m)-R_f] \quad (1)$$

where, $E(R_i)$ is the expected return on stock i, R_f is the risk-free rate, $E(R_m)$ is the expected market return and β_i is the measure of risk and is defined as:

Table 2: Descriptive statistics of FTSE Bursa Malaysia indices return (crisis period)

	FBMHS	FBMSHA	FBMKLCI	FBM100	FBMEMAS
Mean	-0.00173	-0.00171	-0.0015	-0.00161	-0.00164
SD	0.014345	0.01336	0.012667	0.013124	0.012811
Skewness	-1.47824	-1.90998	-1.46036	-1.31712	-1.39445
Kurtosis	15.01754	20.00041	15.78891	14.73246	15.30168

$$\beta_i = Cov (R_i, R_m)/Var [R_m] \quad (2)$$

While (R_m-R_f) is defined as the market premium, we have R_{S1} and R_{S2} which represent the return of FBMHS and FBMSHA, respectively. On the other hand, R_{M1}, R_{M2} and R_{M3} are the return of market indices for FBMKLCI, FBM100 and FBMEMAS, respectively.

The adjusted return is used in this analysis instead of the closing index itself. This choice is the transformation of non-stationary to stationary data. The daily returns are calculated as the natural log differences in prices as follow:

$$R_t = \ln (P_t-P_{t-1}) \quad (3)$$

where, R_t is the daily return in period t, P_t is the closing price at t and P_{t-1} is the closing price at t-1. Then, the daily return is adjusted by risk free rate (r_f) as below:

$$r_t = R_t-r_f \quad (4)$$

For each of the Islamic indices in our sample, an estimate of beta, can be obtained by running an Ordinary Least Square regression (OLS) using the following model:

$$r_{S_{it}} = \alpha + \beta r_{M_{jt}} + e_t, i=1, 2, j=1, 2, 3 \quad (5)$$

where, r_{S1} and r_{S2} are the risk premium (excess return) of FBMHS and FBMSHA, respectively and r_{M1}, r_{M2} and r_{M3} are the risk premium of FBMKLCI, FBM100 and FBMEMAS,, respectively. In CAPM, alpha (α) and beta (β) are two estimated parameters. Alpha is known as the risk-adjusted return and is used to identify the ranking of indices performance. Alpha measures the extent by which

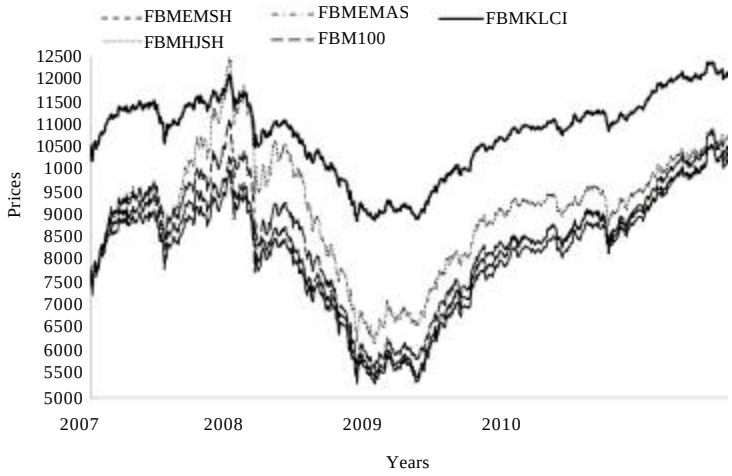

Fig. 2: Price movement of FTSE Bursa Malaysia indices

the stock index beats the performance expected from an index of its same level of risk. Beta as an independent unit is the systematic risk or the risk level of an investment in relation to the risk level of the market. In fact a firm's beta reflects the sensitivity of the stock's return to the market's overall return (Madura, 2008). When beta is more than one, it will indicate a risky investment and more sensitive to the movement in the market. However, if beta is less than one, it means a low risk investment and less sensitive to the market movement and lastly when beta is equal to one, there is an equally risky investment. As usual practice, some diagnostic tests such as Durbin Watson (DW), Ramsey RESET and heteroskedasticity white tests will be conducted after the estimation to determine the specification of the model.

It is well known that the presence of volatility clustering in stock return. Hence, taking time varying volatility and leverage effect into account is important for better estimation. However, most of the earlier literature does not take this into consideration in their studies. To encounter this shortcoming, we employ the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model for the estimation. This study utilizes the simplest GARCH model, namely GARCH (1, 1) model. The model considers the impact of previous conditional variance on the conditional variance equation as follows:

$$r_{S_p} = \alpha + \beta r_{M_p} + e_t,\ e_t \sim N(0, h_t) \quad (6)$$

$$h_t = \tau_0 + \tau_1 \varepsilon^2_{t-1} + \tau_2 h_{t-1} \quad (7)$$

where, τ_1 and τ_2 are the estimated coefficient of the lagged value of the squared residual term (ARCH term) and the lagged value of the conditional variance (GARCH term), respectively.

RESULTS AND DISCUSSION

The results of OLS estimation of two Islamic indices against each of the market indices for the entire period have been shown in Table 3 and 4. As can be seen in Table 3 and 4, the alphas for all models are almost zero with positive sign except for the FBMSHA on FBM100 and FBMSHA on FBMEMAS which are negative signs. However, all alpha are not significantly different from zero.

Beta for all models are positive and significant infers that the Islamic stocks are moving at the same direction with the market. Moreover, the beta is less than one except those on FBMKLCI. The beta of less than one is significant for all the models. The beta of less than one inferring that the Islamic index is less risky and less sensitive to the movement of market. However, FBMHS on FBMKLCI bears higher systematic risk than other Islamic indices.

Table 3: Statistical results of FBMHS based on the OLS and AR(1) Model

Independent variable	Parameter/test	Entire period	Crisis period
OLS model			
FBMKLCI	α	5.85×10^{-5} (0.4803)	-0.0001 (-0.4092)
	ß	1.0169*** (80.1568)	1.0689***(47.7412)
	R-squared	0.8607	0.8909
	DW	1.9919	1.8363
	Ramsey RESET	5.7427**	1.4936
	Heteroskedasticity	30.6879***	3.7747
FBM100	α	4.13×10^{-5} (0.3349)	-7.05×10^{-5}(-0.2418)
	β	0.9895*** (79.034)	1.0290***(46.6136)
	R-squared	0.8573	0.8862
	DW	1.9924	1.8087
	Ramsey RESET	8.1862***	3.6520*
	Heteroskedasticity	34.1385***	7.2551**
FBMEMAS	α	3.20×10^{-5} (0.2447)	1.30×10^{-5} (0.0044)
	β	0.9753*** (73.8098)	1.0535***(46.7317)
	R-squared	0.8397	0.8851
	DW	2.02	1.8133
	Ramsey RESET	6.9260***	2.2561
	Heteroskedasticity	49.6247***	4.4251
AR(I) model			
FBMKLCI	α	6.02×10^{-5} (0.4916)	-0.0001 (-0.4182)
	β	1.0166*** (79.9291)	1.0689***(47.7434)
	AR(1)	0.0039 (0.1281)	0.0788 (1.3122)
	R-squared	0.8604	0.8916
	DW	1.9929	1.9751
	Ramsey RESET	5.7823**	1.6184
FBM100	α	4.40×10^{-5} (0.3552)	-8.33×10^{-5}(-0.2593)
	β	0.989*** (78.8014)	1.0295***(46.6892)
	AR(1)	0.0034 (0.1105)	0.0927 (1.5447)
	R-squared	0.8571	0.8872
	DW	1.9934	1.967
	Ramsey RESET	8.2164***	3.7260*
FBMEMAS	α	3.42×10^{-5} (0.2643)	-9.57×10^{-6}(-0.0297)
	β	0.9752*** (73.7029)	1.0543***(46.4097)
	AR(1)	-0.0105 (-0.3379)	0.09 (1.4976)
	R-squared	0.8394	0.8861
	DW	1.987	1.9683
	Ramsey RESET	6.9076***	2.2347

Values are statistically significant at ***1, **5 and *10% levels, Values in the parentheses are t-statistic, DW: Durbin Watson, AR: Autoregressive

Based on the DW statistics as displayed, we found serial correlation in the error term for all models. Results also show that the presence of heteroskedasticity and specification errors in the models. As the original models are not correctly specified with the serial correlation and heteroskedasticity problem, an AR(1) is added in the model and correct the standard error term by the White Heteroskedasticity-Consistent Standard Errors and Covariance. The estimation results for the AR(1) model are reported in Table 3 and 4. Nonetheless, no special difference is observed between AR(1) and OLS models in terms of alpha and beta.

The results of GARCH model are reported in Table 5. These coefficients are statistically significant. Moreover, these results show that the ARCH effect and the GARCH effect are both positive and their sum is between zero and one, as required by the theory of GARCH (1, 1). This suggests that the shocks to the volatility have low persistent effect.

Table 4: Statistical results of FBMSHA based on the OLS and AR(1) Model

Independent variable	Parameter/test	Entire period	Crisis period
OLS model			
FBMKLCI	α	2.58×10^{-6} (0.0327)	-0.0002 (-0.8829)
	β	1.0152*** (123.4114)	1.0265*** (70.7295)
	R-squared	0.9361	0.9472
	DW	1.9091	1.7926
	Ramsey RESET	34.1258***	14.9795***
	Heteroskedasticity	149.9429***	62.6923***
FBM100	α	-1.50×10^{-5} (-0.1945)	-0.0001 (-0.6154)
	β	0.9912*** (126.3982)	0.9894*** (68.9255)
	R-squared	0.9389	0.9445
	DW	1.8788	1.7208
	Ramsey RESET	43.3407***	22.9659***
	Heteroskedasticity	196.6030***	105.2887***
FBMEMAS	α	2.62×10^{-5} (-0.3619)	-4.13×10-5 (-0.2293)
	β	0.9909***(135.1645)	1.0166***(72.9042)
	R-squared	0.9461	0.9501
	DW	1.8901	1.6919
	Ramsey RESET	40.1411***	18.5542***
	Heteroskedasticity	209.7734***	91.7074***
AR(I) model			
FBMKLCI	α	3.40×10^{-6} (0.0411)	-0.0002(-0.8302)
	β	1.0146*** (122.3367)	1.0276*** (71.0554)
	AR(1)	0.0451 (1.4528)	0.1006* (1.6785)
	R-squared	0.9361	0.9477
	DW	1.9962	1.9833
	Ramsey RESET	34.4557***	15.0872***
FBM100	α	-1.31×10^{-5} (-0.16)	-0.0001 (-0.5645)
	β	0.9906*** (125.7605)	0.9915*** (69.7657)
	AR(1)	0.0603* (1.9466)	0.1371** (2.2951)
	R-squared	0.9391	0.9455
	DW	1.9929	1.9675
	Ramsey RESET	42.837***	22.2229***
FBMEMAS	α	-2.49×10^{-5} (-0.3248)	-4.59×10^{-5} (-0.2183)
	β	0.9907*** (134.3996)	1.0195*** (74.0291)
	AR(1)	0.0548* (1.7690)	0.1510** (2.5275)
	R-squared	0.9462	0.9512
	DW	1.9961	1.9656
	Ramsey RESET	39.4157***	17.2767***

Values are statistically significant at ***1, **5 and *10% levels, Figures in the parentheses are t-statistics, AR: Autoregressive, DW: Durbin Watson

Table 5: Estimation Results of the Islamic Indices Based on GARCH Model

Entire period Index/Model	Parameter	FBMKLCI	FBM100	FBMEMAS
FBMHS				
Mean equation	α	-5.18×10^{-5} (-0.4841)	-8.31×10^{-5} (-0.7903)	-8.93×10^{-5} (-0.8273)
	β	-0.0237* (-2.5602)	-0.0461*** (-5.0159)	-0.0666*** (-6.7464)
	Constant	7.16×10^{-8}** (2.2566)	4.49×10^{-8}* (1.7480)	7.75×10^{-8}** (2.0858)
	τ_1	0.0424*** (7.2917)	0.0385*** (7.4235)	0.0495*** (6.9356)
	τ_2	0.9533*** (149.7530)	0.9587*** (171.2210)	0.9464*** (123.7597)
FBMSHA				
Mean equation	α	1.41×10^{-5} (0.1831)	-6.96×10^{-5} (-0.9768)	-3.99×10^{-5} (-0.6736)
	β	0.0143*** (3.0207)	-0.0145*** (-3.3797)	-0.0258*** (-5.2619)
Variance equation	Constant	3.02×10-6*** (3.6941)	1.19×10^{-8}* (1.7855)	1.46×10^{-8}** (2.0790)
	τ_1	0.1412*** (4.2507)	0.0167*** (3.8523)	0.0232*** (5.0928)
	τ_2	0.4013*** (2.8608)	0.9805*** (210.2112)	0.9745*** (189.6809)
FBMHS				
Mean equation	α	-0.0002 (-0.5679)	-0.0001 (-0.3553)	-5.06×10^{-5} (-0.1680)
	β	0.0733*** (4.1824)	0.0360** (2.1973)	0.0602*** (3.3868)
Variance equation	Constant	2.52×10-6 (0.7172)	3.07×10^{-5}** (2.2118)	2.88×10^{-5} (1.5250)
	τ_1	-0.0273 (-1.0493)	0.0806 (1.1983)	0.0749 (1.1884)
	τ_2	0.9163*** (6.6091)	-0.3952 (-0.6952)	-0.2948 (-0.3766)
FBMSHA				
Mean equation	α	-0.0001 (-0.6648)	-0.0001 (-0.6568)	-4.57×10^{-5} (-0.2588)
	β	0.0121 (0.9956)	-0.0354*** (-2.8660)	-0.0050 (-0.4099)
Variance equation	Constant	2.53×10-7* (1.8160)	6.52×10-7** (1.9641)	6.27×10-7 (1.6230)
	τ_1	-0.0453*** (-5.9156)	-0.0099 (-0.5784)	-0.0119 (-0.6791)
	τ_2	1.0165*** (55.5322)	0.9372*** (25.1838)	0.9357*** (21.0258)

Values are statistically significant at ***1, **5 and *10% levels, Figures in the parentheses are t-statistics

In order to examine the impact of global financial crisis, we re-estimate all models for the crisis period. The results for the crisis period are shown in Table 3 and 4. In contrast with the results of the entire period, the sign of alphas in all models are negative. However, all the alphas are still not significantly different from zero. Moreover, in similar with the entire sample period the beta for all the models is positive and significant, while its value is more than one. The beta is less than one only for FBMSHA on FBM100 in both OLS and AR(1) models. Obviously, in the crisis period, the Islamic indices have become more risky to the market in comparison with the entire sample period. Meanwhile, R-squared statistics in the crisis period are higher than entire sample period confirming the above result. This result weakens the hypothesis that the Islamic indices are less risky during the crisis period.

The result probably implies that the Islamic index promises higher return in the crisis period. The FBMHS on FBMKLCI has the highest beta among the models in the crisis period. On the other hand, The FBMHS on FBMEMAS has the lowest beta among the models which means it experiences lower systematic risk than others in the entire period. In fact, the values of betas indicate that the Islamic indices bear higher systematic risk in the crisis period compared with the entire period.

Furthermore, as can be seen in Table 5 the result of crisis period indicates that some of the ARCH effect and GARCH effect are not positive. However, their sum is still between zero and one with the exception of FBMHS on both FBM100 and FBMEMAS which are negative. A negative sign on the squared error term in the previous time period (ARCH [1]) or on its conditional variance in the previous time period implies that bad news in the market will increase the volatility more than good news of an equal magnitude.

CONCLUSION

This study investigated the performance of the Islamic indices in the Malaysia FTSE stock market. For this purpose, we employed the data of five FTSE Bursa Malaysia indices in the study as the proxy for Islamic index and market portfolio. We followed the traditional CAPM which has been developed by Sharpe (1964) and Lintner (1965) to form six models. Ultimately, we pointed out that the proposed model is appropriate and applicable in examining the relationship between risk and return in the Malaysian Islamic stock market.

In the entire period the Islamic indices have earned excess return in comparison with the expectation from an investment at the same level of risk, while the excess return have been lost during the global financial crisis. The results indicate that the Islamic indices have high risk-adjusted returns and low risks, while after the crisis all the Malaysian Islamic indices have been converted into the risky and sensitive indices. Hence, following Hashim (2008) the result of this study approves the hypothesis that the risk of the Islamic indices is tolerable and high.

Excluding some uncertainty elements from the Islamic investment (e.g., gambling) is perhaps the cause of this lower degree of risk exposure (Abdullah *et al*., 2007). Nevertheless, the low-volatility effect has been captured using GARCH. In addition, in line with Ismail and Shakrani (2003), this study states that in the entire sample period the Islamic securities perform very well in terms of lowness in the risk level which is adorable for Muslim investors. Despite of this low level of risk, investors yield higher return compared with the crisis period. Therefore, Shariah-compliant securities might attract and preoccupy the attention of risk-averse investors. This is consistent with the Hayat and Kraeussl (2011).

Malaysia FTSE market has the potential to attract more Muslim and non-Muslim investors. In such scenario, more companies which possess high working capital (blue chip stocks) would be attracted to the securities.

REFERENCES

Abdullah, F., T. Hassan and S. Mohamad, 2007. Investigation of performance of Malaysian Islamic unit trust funds: Comparison with conventional unit trust funds. Managerial Finance, 33: 142-153.

Abdulnasser, H.J. and E. Roca, 2005. Exchange rates and stock prices interaction during good and bad times: Evidence from the ASEAN4 countries. Applied Financial Econ., 15: 539-546.

Ahmad, Z. and H. Ibrahim, 2002. A study of performance of the KLSE Syariah index. Malaysian Manage. J., 6: 25-34.

Albaity, M. and R. Ahmad, 2008. Performance of Syariah and composite indices: Evidence from Bursa Malaysia. Asian Acad. Manage. J. Accounting Finance, 4: 23-43.

Angabini, A. and S. Wasiuzzaman, 2011. GARCH models and the financial crisis-A study of the Malaysian stock market. Int. J. Applied Econ. Fin., 5: 226-236.

Bruner, R.F., W. Li, M. Kritzman, S. Myrgren and S. Page, 2008. Market integration in developed and emerging markets: Evidence from the CAPM. Emerging Markets Rev., 9: 89-103.

Chang, M.C., J.C. Hung and C.C. Nieh, 2011. Reexamination of capital asset pricing model (CAPM): An application of quantile regression. Afr. J. Bus. Manage., 5: 12684-12690.

Echchabi, A. and O.N. Olaniyi, 2012. Using theory of reasoned action to model the patronisation behaviour of Islamic banks? customers in Malaysia. Res. J. Bus. Manag. (In Press)

Ferruz, L., I. Marco and C. Ortiz, 2007. Socially responsible investment: Mutual funds. Global and local trends. The Int. J. Applied Econ. Finance, 1: 120-125.

Gunasekaran, M. and K.S. Ramaswami, 2011. A fusion model integrating ANFIS and artificial immune algorithm for forecasting Indian stock market. J. Applied Sci., 11: 3028-3033.

Hakim, S. and M. Rashidian, 2004. Risk and return of Islamic stock market indexes. Proceedings of the international seminar of nonbank financial institutions: Islamic alternatives, March 1-3, 2004, Kuala Lumpur, Malaysia.

Hasan, M.Z., A.A. Kamin, A. Mustafa and M.A. Baten, 2011. A validity test of capital asset pricing model for Dhaka stock exchange. J. Applied Sci., 11: 3490-3496.

Hashim, N., 2008. The FTSE Global Islamic and the risk dilemma AIUB Bus Econ Working Paper Series, No. 2008-08.

Hayat R. and R. Kraeussl, 2011. Risk and return characteristics of Islamic equity funds. Emerg. Markets Rev., 12: 189-203.

Hussein, K.A., 2004. Ethical investment: Empirical evidence from FTSE Islamic index. Islamic Econ. Stud., 12: 21-40.

Ismail, A.G. and M.S. Shakrani, 2003. The conditional CAPM and cross-sectional evidence of return and beta for Islamic unit trusts in Malaysia. IIUM J. Econ. Manage., 11: 1-31.

Lean, H.H. and V.K.M. Tan, 2010. Existence of the day-of-the-week effect in FTSE Bursa Malaysia. J. Pengurusan, 31: 3-11.

Lintner, J., 1965. The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. Rev. Econ. Stat., 47: 13-37.

Madura, J., 2008. Financial Institutions and Markets. 8th Edn., Mason, O.H. Thomson South-Western..

Pettengill, G.N., S. Sundaram and I. Mathur, 1995. The conditional relation between beta and returns. J. Fin. Quant. Anal., 30: 101-116.

Rahman, M., A. Baten and A.U. Alam, 2006a. An empirical testing of capital asset pricing model in Bangladesh. J. Applied Sci., 6: 662-667.

Rahman, M., A. Baten, B. Uddin and M. Zubayer, 2006b. Fama-French's CAPM: An empirical investigation on DSE. J. Applied Sci., 6: 2297-2301.

Rhaiem, N., S. Benammou and A.B. Mabrouk, 2007. Estimation of capital asset pricing model at different time scales application to french stock market. Int. J. Applied Econ. Finance, 1: 79-87.

Sadeghi, M., 2008. Financial performance of Shariah-compliant investment: Evidence from Malaysian stock market. Int. Res. J. Finance Econ., 20: 15-26.

Senol, D. and M. Ozturan, 2008. Stock price direction prediction using artificial neural network approach: The case of Turkey. J. Artif. Intell., 1: 70-77.

Sharpe, W.F., 1964. Capital asset prices: A theory of market equilibrium under conditions of risk. J. Fin., 19: 425-442.

Venardos, A.M., 2005. Islamic banking and finance in South-East Asia: Its Development and Future. World Scientific Publishing Co. Pte. Ltd, Singapore.

Wong, K.A. and M.L. Tan, 1991. An assessment of risk and return in the Singapore stock market. Applied Financial Econ., 1: 11-20.