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ISLAMIC STOCK MARKET VERSUS CONVENTIONAL STOCK MARKET

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Abstract

This paper examines the performance of Malaysian Islamic stock market and conventional stock market using risk adjusted return measurements (Sharpe ratio, Treynor ratio, Adjusted Jensen's Alpha Index Performance and Modified Sharpe Ratio) from January 2000 to October 2011. In addition, we also examine the dynamic causality between the two stock markets. Daily data were divided into four periods such as pre-subprime financial crisis, during the subprime financial crisis, post subprime financial crisis and full sample period. This study shows that the Islamic stock market produced more return compared to conventional in all sample periods. Besides, this study also finds that there is significant short-run bidirectional causality between two markets. The findings of this study can provide useful implications for investors and policy makers in Malaysia.

Keywords: Islamic stock market; conventional stock market; risk-adjusted returns; Granger causality

INTRODUCTION

Over the years, investments based on ethical, social and environmental standards have increased significantly. Louche, Arenas, and Cranenburgh (2011) defined that responsible investment is a process through which investors try to influence corporations' behavior on a range of ethical, social, and environmental issues. Albaity and Ahmad (2008) stated that investment in Islamic compliant stocks is based on the Islamic principles of transactions (*Muamalat*), and therefore, in their view, Islamic investments also fall into the category of ethical investment. However, according to the Sadeghi (2008) even though Shariah-compliant investment is similar to social responsible investment (SRI), Shariah-compliant investment does not concern about an environmental issues as SRI funds do. In addition, the subjectivity of Shariah-compliant companies to certain financial ratios tests is not relevant to conventional SRI companies.

The ethical investing is argued to under-perform over the long term because of the lack of appropriate diversification and ethical investment portfolio is subclasses of the market portfolio (Bauer, Otten & Rad, 2006). However, the result from the previous studies on the performance between the ethically screened and unscreened investments are mixed, with severally of these studies reported that there is no differences in their return. For examples, Diltz (1995), Sauer (1997) and Guerard (1997) found that there is no significant difference between SRI and non-SRI. In addition, Samad (2004) and Moin (2008) found no significant difference in Islamic banking and conventional banking. However, Merdad, Hassan and Alhenawi (2010) found that Islamic funds underperform conventional funds during full period and bullish period, but they over-perform conventional funds during bearish and financial crisis period. They also found that both conventional and Islamic funds were unable to achieve at least 50 per cent market diversification levels, though conventional funds are found to have a marginally better diversification level than the Islamic funds. Mallin, Saadouni, and Briston (1995) found that 12 of the ethical funds outperformed the market while 15 of the non-ethical funds performed better than the market portfolio in the UK. In addition, Hussein and Omran (2005) provide evidence that the Islamic index outperformed the non-Islamic index both in the entire and bull periods, while the opposite is true for the bear period however, it was not statistically significant. Elfakhani, Hasan, and Sidani (2005) investigated the performance of the Islamic mutual funds in several emerging countries. They found that there is no statistically significant difference between Islamic and conventional funds. Therefore, they concluded that, the screening mechanism does not affect the performance of Islamic investments.

In the context of Islamic stock market in Malaysia, studies of Ahmad and Ibrahim (2002); Yusof and Majid (2007); and Albaity and Ahmad (2008) are worth to mention. Ahmad and

Ibrahim (2002) compared the performance of Kuala Lumpur Shariah Index (KLSI) with that of Kuala Lumpur Composite Index (KLCI) over the period from 1999 to 2002. They concluded that overall and the declining periods, the return was low for KLSI, while for growing period the KLSI slightly outperformed the KLCI. In addition, in terms of risk, the KLCI was riskier than KLSI and the KLSI reported lower risk-adjusted returns than the KLCI during the growing period of 1999-2000. However, Albaity and Ahmad (2008) found that there are no significant differences in risk-adjusted returns between Islamic stock market and conventional stock market. In addition, they also found that there is a short-run bidirectional causality of this two stock markets. Yusof and Majid (2007) explored the extent to which the conditional volatilities of both conventional and Islamic stock markets in Malaysia are related to the conditional volatility of monetary policy variables. The study found that interest rate volatility affects the conventional stock market volatility but not the Islamic stock market volatility due to the tenet of Islamic principles that the interest rate is not a significant variable in explaining stock market volatility.

We note that the empirical evidence documented in the previous studies were mixed, thus this topic is still open for further empirical examination. In addition, there is inadequate empirical literature examining the performance of Islamic stock market indices vis-à-vis conventional stock market indices particularly in developing countries i.e. Malaysia. Unlike previous studies, this study attempts to partially fill the gap in the literature by examining the performance of Islamic stock market index as compared to conventional stock market index particularly during the United States (US) subprime crisis period. The objective of this paper is therefore to examine the performance of both Islamic and conventional stock market indices. In addition, we also examine the relationship between these two stock markets in both short and long run. The result of this study will be useful for investors and policy makers.

The rest of the paper is structured as follows. Section 2 describes the data and methodology employed. Section 3 presents empirical findings and discussion. Finally, Section 4 presents concluding remarks.

METHODOLOGY

The Data

We use daily closing of Malaysia Dow Jones Islamic Index (DJIM) and FSTE Bursa Malaysia Index (KLCI) from January 2000 to December 2011 to represent both the Islamic and conventional stock markets. In addition, the US Standard & Poor 500 index (S&P 500) and Federal Reserve Treasury Bill rate are used as benchmarks for market return and risk free rate. We divide the sample into four periods namely pre subprime financial crisis (January 2000 to

July 2007), during the crisis (August 2007 until December 2008), post crisis (January 2009 to October 2011) and full sample period. All data were collected from the Bloomberg database.

Estimation Tools

In order to examine the performance of the two stock markets, we use four measurement techniques such as the Sharpe ratio, Treynor ratio, Adjusted Jensen's Alpa Index Performance (AJAI), and modified Sharpe Ratio or knows as excess standard deviation-adjusted return (eSDAR).

In addition, we also use the Johansen (1988) and Johansen and Juselius (1990) cointegration test (henceforth JJ) and Granger causality to examine the relationship between the two stock markets. Since the methods are widely used, to conserve space the mathematical derivations are not reported here but available upon request.

ANALYSIS & FINDINGS

Descriptive Statistics

Table 1 gives the descriptive statistics of the data, including sample mean, maximum, minimum, standard deviation, skewness and kurtosis. During the pre-crisis period, post crisis period and all period, both KLCI and DJIM recorded positive average daily returns, while during the crisis period, both market had negative average daily return.

In terms of standard deviation, the KLCI has greater volatility in the all period and post crisis period which at 1.15 percent and 1.63 percent respectively, while in pre-crisis and during crisis times the DJIM was relatively have greater volatility compared to the KLCI which at 0.92 percent and 1.81 percent respectively. The normality tests suggest that neither of the returns is normally distributed in all sample periods. In addition, all average daily market returns, have excess kurtosis which greater than three, which means that they have thicker tail and a higher peak than a normal distribution.

In terms of correlation, both markets have significant positive relationship in all sample periods. Moreover, to test whether there is a difference between the means of the returns, the *t*-test is used. The results in Table 1 show that there are significance differences in mean between two indices. Therefore, this results are opposite with studies of Ahmad and Ibrahim (2002) and Albaity and Ahmad (2008) which stated that the returns of Islamic investments are not significantly different from those of conventional investments.

Table 1: Descriptive Statistics of Markets Return

	All Period		Pre-Crisis		During Crisis		Post Crisis	
	KLCI	**DJIM**	**KLCI**	**DJIM**	**KLCI**	**DJIM**	**KLCI**	**DJIM**
Mean	0.00017	0.00016	0.0003	0.0002	-0.0011	-0.0011	0.0006	0.0006
Maximum	0.1986	0.0849	0.0450	0.0448	0.0426	0.0849	0.1986	0.0358
Minimum	-0.1925	-0.1283	-0.0634	-0.0718	-0.0998	-0.1283	-0.1924	-0.0393
Std. Dev	0.0115	0.0108	0.0089	0.0092	0.0127	0.0181	0.0163	0.0095
Skewness	-0.2351	-1.0615	-0.6272	-0.5956	-1.2977	-1.2391	0.2105	-0.1245
Kurtosis	91.706	18.154	9.799	9.366	13.342	14.3772	92.125	4.806
J-Bera	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Correlation	0.6788		0.8830		0.8595		0.3740	
Mean diff.	7.3090		3.7850		11.9823		8.5078	
(p-value)	(0.0000)		(0.0000)		(0.0000)		(0.0000)	

Risk-Adjusted Return Performance

Table 2 shows the ranking of risk-adjusted return for each index using four measurements of Sharpe Ratio, Treynor Index, AJAI and eSDAR. The benchmark index is the S&P 500 index. The results seem to show that the Islamic stock market outperformed the conventional stock market in all measurements and in all sample periods. The results are not in line with those of Albaity and Ahmad (2008), Hussein and Omran (2005) and Ahmad and Ibrahim (20002) but consistent with Edward and Doug (2010), Mansor and Bhatti (2011) and Lean and Parsva (2012) which they found that the Islamic indices or ethical investments produced more returns than the non-Islamic or non-ethical investment. Therefore, DJIM appears to provide more adjusted returns than KLCI.

Table 2: Summary of Risk Adjusted Performance of KLCI and DJIM

		Ranking			
Period	**Index**	**Sharpe**	**Treynor**	**AJAI**	**eSDAR**
All	**KLCI**	2	2	2	1
	DJIM	1	1	1	2
Pre-Crisis	**KLCI**	2	2	2	2
	DJIM	1	1	1	1
During Crisis	**KLCI**	2	2	2	1
	DJIM	1	1	1	2
Post Crisis	**KLCI**	1	2	2	2
	DJIM	2	1	1	1

Cointegration Test and Granger Causality Test

For appropriate model specification, we carry out two commonly used unit root tests, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) to determine the orders of integration of the variables. For cointegration, we employ a vector autoregressive (VAR) based approach of Johansen (1988) and Johansen and Juselius (1990). We also implement the Granger causality test to examine the causal nexus among the variables. Engle and Granger (1987) noted that VAR with variables in first differences can be employed when the variables are not cointegrated and non-stationary. However, if the variables are found to be cointegrated, Vector Error Correction Model (VECM) or level VAR can be adopted. In addition, focusing on both of these two variables in bivariate context may not be satisfactory to test their relationship as there are many other factors can influence the stock markets. Thus, in this study we also include S&P500 in the model.

Table 3: Unit Root Tests

Period	Variable	ADF		PP	
		Level	First Difference	Level	First Difference
All	**KLCI**	-2.88	-12.07***	-2.46	-61.38***
	DJIM	-2.56	-48.63***	-2.52	-48.57***
	S&P 500	-2.12	-12.95***	-2.22	-61.22***
Pre-Crisis	**KLCI**	-1.54	-36.70***	-1.54	-36.73***
	DJIM	-1.34	-38.70***	-1.29	-38.69***
	S&P 500	-1.58	-33.26***	-1.64	-46.32***
During-Crisis	**KLCI**	-1.71	-18.25***	-1.77	-18.25***
	DJIM	-1.68	-17.04***	-1.58	-16.92***
	S&P 500	-1.78	-17.70***	-1.94	-23.88***
Post Crisis	**KLCI**	-0.76	-6.40***	-1.67	-46.44***
	DJIM	-0.75	-24.16***	-0.61	-24.17***
	S&P 500	-1.62	-16.65***	-1.83	-29.37***

Note: *** Significance at 1%

Table 3 shows the results of the ADF and PP unit root tests. Both ADF and PP unit root tests suggest that the data series are non-stationary in level but stationary in the first differences.

The result of JJ cointegration test is reported in Table 4. We find evidence of no cointegration for pre crisis, during crisis and all periods. However, one unique cointegrating vector is found for the post crisis period. Following the cointegration, we proceed with the Granger causality. Since the variables are cointegrated in post crisis period, VECM based Granger Causality test is employed to determine the causality relationship among the variables. However, for other sample periods VAR model in the first differencing is employed.

Table 4: Cointegration Test

Null Hypo.	All Period		Pre Crisis		During Crisis		Post Crisis		5 percent critical value	
	Trace	Max	Trace	Max	Trace	Max	Trace	Max	Trace	Max
Ho: r = 0	22.62	16.39	20.02	13.65	14.54	9.12	**32.69***	17.96	29.68	20.97
Ho: r ≤ 1	6.24	5.36	6.37	6.25	5.42	5.29	14.73	9.58	15.41	14.07
Ho: r ≤ 2	0.87	0.88	0.11	0.11	0.13	0.13	3.15	3.15	3.76	3.76

The results of Granger Causality tests are presented in Table 5. We note that there are many dynamic interactions among the variables. Consistent with Albaity and Ahmad (2008), with the exception of post-crisis, we also found that there is bidirectional causality running between the Islamic stock market and conventional stock market in all periods. Both markets are also influenced by the S&P500.

Table 5: Granger Causality Test

Period	Hypothesis	Chi-Sq	p-value	Concluding remarks
Pre Crisis	IS =/=>CS	95.36	0.0000	IS ==>CS
	IS =/=> SP	35.18	0.0000	IS ==> SP
	CS =/=> IS	44.34	0.0000	CS ==> IS
	CS =/=> SP	7.36	0.0252	CS ==> SP
	SP =/=> CS	68.43	0.0000	SP ==> CS
	SP =/=> IS	126.91	0.0000	SP ==> IS
During Crisis	IS =/=>CS	70.95	0.0000	IS ==>CS
	IS =/=> SP	37.18	0.0000	IS ==> SP
	CS =/=> IS	44.71	0.0000	CS ==> IS
	CS =/=> SP	21.87	0.0000	CS ==> SP
	SP =/=> CS	**3.92**	**0.2698**	**SP =/=> CS**
	SP =/=> IS	15.28	0.0000	SP ==> IS
Post Crisis	IS =/=>CS	52.48	0.0000	IS ==>CS
	IS =/=> SP	16.37	0.0000	IS ==> SP
	CS =/=> IS	**3.22**	**0.5210**	**CS =/=> IS**
	CS =/=> SP	161.36	0.0000	CS ==> SP
	SP =/=> CS	**1.78**	**0.7754**	**SP =/=> CS**
	SP =/=> IS	0.80	0.0000	SP ==> IS
All period	IS =/=>CS	166.06	0.0000	IS ==>CS
	IS =/=> SP	16.86	0.0000	IS ==> SP
	CS =/=> IS	13.43	0.0000	CS ==> IS
	CS =/=> SP	209.02	0.0000	CS ==> SP
	SP =/=> CS	22.15	0.0000	SP ==> CS
	SP =/=> IS	43.58	0.0000	SP ==> IS

Note: IS = DJIM; CS = KLCI; SP = S&P 500

=/=> Not Granger cause; ==> Granger cause

CONCLUSION

This paper examines the performance of Malaysian Islamic stock market and conventional stock market using risk adjusted return measurements. In addition, we also examine the dynamic causality between the two stock markets. Daily data from January 2000 to October 2011 were used in this study. The results show that, to some extent, the Islamic stock market performed better than conventional stock market. There exists a dynamic short-run bi-directional causality between both markets. The results are consistent with Edward and Doug (2010), Mansor and Bhatti (2011) and Lean and Parsva (2012) which they found that the Islamic indices or ethical investments produced more returns than the non-Islamic or non-ethical investment. Thus, the Islamic stock market provides opportunity for potential benefits from portfolio diversification even during the sub-prime crisis. The prohibition of *riba*, *gharar* and *maysir* is one of the plausible reasons that make Islamic stock market perform better than conventional.

Further empirical research on this issue can cover broader areas and also explore potential factors that lead to performance of both Islamic and conventional stock markets. Adding more countries to quantify and compare the performance is possible extension in the future research.

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