Risk Adjusted Performances of Conventional and Islamic Indices

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RISK ADJUSTED PERFORMANCES OF CONVENTIONAL AND ISLAMIC INDICES

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Abstract

The paper examined the risk-adjusted performance of Dow Jones and FTSE conventional and Islamic indices. The daily closing stock prices of 22 indices from January 2006 to December 2017 were selected from 11 countries comprising US, Europe, Canada, Japan, Turkey, Malaysia, China India, Qatar, Kuwait, and Taiwan. The returns of the series were first computed and then Sharpe ratio and Treynor index were used to analyze the data. It was clear that in some countries conventional indices out performed Islamic indices (US, Malaysia and Taiwan) whereas in others Islamic indices were better (EU, Kuwait, China and Qatar). The last category had inconclusive result this was because whereas the Sharpe ratio suggests a better performance of the conventional indices, on the contrary the Treynor ratio suggested that the Islamic indices performed better (Canada, Japan, Turkey and India).

1. Introduction

The search for alternatives to conventional stock markets has been given added impetus amongst investors by the turmoil in Asian financial markets in 1997, the ensuing meltdown in emerging equity markets worldwide, and the bearish market in US and European equities since March 2000. These crises gave leverage to the Islamic financial industry as a veritable alternative for portfolio diversification opportunity. The growing demands for the Islamic investment products are evident in both developed as well as developing countries in the US, UK, Japan, Malaysia, Egypt, Sudan etc. (Yahya et al, 2013). For instance many financial institutions such as Citibank, Barclays, Morgan Stanley, Merrill Lynch and HSBC sell Islamic financial products while the New York and London Stock Exchanges launched Islamic indices to attract Islamic investors to their markets (Ho et al, 2014). Global index providers have shaped these new indices in slightly different ways to take into account different expectations of regulators of both Islamic and conventional markets. Assets in the Islamic industry have grown 500% reaching $ 1.6 trillion in 2013 from $1.46 in 2012 and $1.3 trillion in 2011 respectively (Ajmi et al 2014; Nazlioglu, Hammoudeh and Gupta, 2013:1).

The strong resilience showed by Islamic indices during the global financial crisis, made investors regard it as an alternative financial portfolio that can probably endure financial crises better than their conventional counterparts. The financial crisis did increase volatility, volatility spillover and contagion among global financial markets including equity markets. Some argued that Islamic equity markets are not supposed to transmit risk and volatility to and from conventional equity markets because they are fundamentally different (Dridi and Hassan, 2010; Dewi and Ferdian, 2010; Chapra, 2008). As discussed in Rehman (2009), Islamic and conventional markets differ in several ways. The Islamic markets prefer growth and small cap stocks, while conventional markets favor value and mid cap stocks. Furthermore, Islamic finance restricts investments in some industries such alcohol, tobacco, arms, gambling, nuclear power and military-weapons activities. It also restricts speculative financial transactions such as financial derivatives which have no underlying real transactions like futures and options, government debt issues with a fixed coupon rate, and hedging by forward sale, interest-rate swaps and any other transactions involving items not physically in the ownership of the seller (e.g., short sales) (Nazlioglu, 2013:1-2)

Other related studies in recent times found Islamic indices to perform better than their conventional counterparts (Ho et al, 2014: Shubbar, 2010: Reddy and Fu, 2014). Arshad and Raza (2013) found conventional indices to perform better. Those that discovered no difference between the two classes of indices include (Ajmi et al 2014; EL-Mosaid and Boutti, 2014; Miniaoui et al). In terms of returns, Hussein (2004) reported that Islamic index yields positive abnormal returns in bullish period and underperforms its conventional counterparts in bearish period. Ridwan (2009) came up with an inconclusive result as to which is riskier between Islamic and conventional indices.

Thus, this study intends to contribute to the literature by examining the risk-adjusted performance of 22 Islamic and conventional stock indices selected from 11 countries. The rest of the paper is organized as follows: section two contains the literature review, section three is the methodology, section four presents the data analysis and section five entails the conclusion and recommendations.

2. Literature Review

Some of prominent studies that examined the risk-return performance of conventional and Islamic indices include Ho et al (2014), Albaity and Mudor (2012), Merdad (2012), Hooi and Parsva (2012), Hassan and Girard (2011), Hoepner et al (2011), Aka (2009), Hussein (2005), Hakim and Rashidian (2004), Hussein (2004). Even though some of the findings in these studies differ they however used similar methodologies employing the widely used performance measures of Sharpe ratio, Treynor index and Jensen's alpha. Ho et al (2013), Hussein (2005), Hussein and Omran (2005) and Hussein (2004) used four, three, and two sub-periods in their respective studies to reflect bearish and bullish market conditions. This was useful in capturing the effect of structural changes in the data which is an edge over the rest of the studies. In their findings Al-Rifai (2012), Hakim and Rashidian (2004), Aka (2009), and Hoepner et al (2011) found Islamic indices perform better in terms of lower risk and higher returns during the study periods. This may be due to the Shari'ah compliant screens that removed all highly leveraged firms and placed more weights on certain industries including technology, oil and gas as well as healthcare relative to financial services, entertainment and media which were more drastically affected by the business cycle

Hassan and Girard (2011), Albaity and Mudor (2012), Hussein (2005) and Hussein (2004) discovered no significant difference between the performances of Islamic and conventional indices during different crises periods and were both poorly integrated. Also using Sharpe ratio and Treynor index as in the above researches Shubbar (2010) had a mix result. He found no significant difference between Islamic and conventional indices; however Islamic indices were more stable than conventional ones since they slightly had lower volatility and good ability to adapt with the market fluctuations and changes. Conventional indices were found to perform quite better than Islamic ones in terms of gained returns which might be due to arbitrage opportunities and other business activities which are forbidden under Islamic finance

Ho et al (2013) and Merdad (2012) have very interesting and unique results. Whereas the former found Islamic indices to outperform their conventional counterparts during crises periods, the result was however inconclusive in non-crises period; the later discovered Islamic funds underperform conventional funds during overall and bullish periods, but outperform conventional ones in bearish and financial crises period. Though Abdullahi et al (2007) obtain a similar result, Hussein and Omran (2005) however reported a contrary finding as Islamic index outperform conventional indices in bullish market and underperforms in bearish market conditions. In other words, the first two studies found Islamic indices to be more resilient during the financial crises than their conventional counterparts. This suggests that including Islamic indices in one's portfolio could make one reap the benefit of diversification by risk-hedging and increased returns on investments.

Reddy and Fu (2014) examined whether there were differences in the performance between Shariah compliant stocks and conventional stocks listed on the Australian Stock Exchange (ASX). Using OLS regression and Sharpe Ratio they found a statistically significant difference in risk, with the Islamic stocks being more risky. The results suggest that performance of Shariah stocks tends to be better compared to the conventional portfolio returns.

Shubbar (2010) investigated the performance of two key Islamic indices Dow Jones Islamic Market Index and FTSE Shariah All-World Index in the 2008 credit crisis with S&P 500 Index as a reference for all other indices. Trend analysis and performance measures Sharpe Ratio,

Capital Asset Pricing Model (CAPM), Jensen.s Alpha, Market Timing Ability, Appraisal Ratio, Treynor Ratio, and Modigliani & Modigliani Measure were the methodologies employed in the study. He found no significant difference between Islamic and conventional indices.

Boujelbene-Abbes (2012) analysed the return and volatility characteristics of a large set of international data including 35 Islamic stock market indices and their conventional counterparts of developed markets, emerging markets, Arab and GCC markets over the period of June 2002 to April 2012. Using differences in Sharpe ratio test and the CAPM model to study the risk adjusted performances of Islamic stock market indices versus their conventional counterpart indices, the author showed that in the entire period as well as in the crisis period there was no difference between performance the types of indices in risk adjusted return basis. Consequently, Muslim investors can pursue passive stock investments in conformity to their religious beliefs without sacrificing financial performance.

3. Methodology

In order to effectively test the return performances of conventional and Islamic indices, this study employed Sharpe ratio (Sharpe, 1966) and Treynor Index (Treynor, 1965) which were the suitable methodologies widely applied in the literature. According to the Capital Market Theory, the risk adjusted return incorporates risk in computing the returns and it is assumed that investors are holding diversified portfolios (Reddy and Fu, 2014:159).

This study made used of the daily closing stock prices of 22 major global Islamic and conventional indices from eleven countries comprising, US, EU, Canada, Kuwait, Qatar, Malaysia, Japan, China, Turkey, India, and Taiwan (See Table 3.1) In order to enable equitable comparisons, a pair of conventional and Islamic indices was selected from each country and the data was obtained from the official website of Wall Street Journal at for the period 1st January 2006 to 31st December 2017. The Dow Jones Composite Index was chosen as the market benchmark for both indices and was used as proxy for the market return. Furthermore, US Treasury-bill was used as proxy for the risk free rate of interest. This methodology was adopted from the works of Hakim and Rashidian (2014), Hassan and Girard (2011), Hussein (2004) and Ho et al (2013).

The arithmetic returns were estimated by subtracting the previous day's index value from the current day's index value and dividing it by the previous days's index value as shown in equation (3.1), where Rt is the return at time t, P_t is the index at time t (current period) and P_{t-1} is the index at time t-1 (previous period).

$$R_t = Ln(P_t - P_{t-1})/P_{t-1} \qquad\qquad \textbf{(3.1)}$$

The first performance measure was Sharpe ratio (SR) which indicates if an investment's high return was a result of excessive risk. It measures the performance of an index by dividing the amount of excess return to total risk, measured by standard deviation. High SR is consistent with high probability that the index return exceed the risk-free return. The SR is calculated as in equation (3.2) where AR_i is the average return for the index over the period, ARFR is average of the risk free rate (US T-bill) and σ_i is standard deviation of index return.

$$SR_{it} = [(AR_{it} - ARFR)]/\sigma_i \qquad\qquad \textbf{(3.2)}$$

The second performance measure is Treynor index (TI) which measures the index performance for its given level of market risk (CAPM) and is associated with the general market fluctuations as in equation (3.3) This performance measure differs from SR because it applies beta or systematic risk, whereas Sharpe ratio uses standard deviation of returns as a measure of total risk in examining index performance (Shubbar, 2010:62; Reddy and Fu, 2014:159). High SR and TI indicate superior performance. Both these measures produce relative performance rankings. For TI calculation, AR is the average return of the index, ARFR is the average risk free rate and β is the beta coefficient computed using market model.

$$TI_{it} = (AR_{it} - ARFR)/\beta \qquad\qquad \textbf{(3.3)}$$

Table 3.1 Conventional and Islamic Indices

SN	Country	Conventional Indices	Code	Islamic Indices	Code
1.	United States	Dow Jones Industrial Average (DJIA)	US1	Dow Jones Islamic Market small cap index (IMUSS)	US2
2.	Europe	FTSE/ATHEX Top 20 Index	EU1	Dow Jones Islamic Market Europe Index (DJIEU)	EU2
3.	Canada	Dow Jones Canada Index (CADOWD)	CA1	Dow Jones Islamic Market Canada Index (DJICA)	CA2
4.	Japan	Dow Jones Japan Index USD (JPDOWD)	JP1	Dow Jones Islamic Market Japan Index (DJIJP)	JP2
5.	Turkey	Dow Jones Turkey Titans 20 Index TRY (TR20)	TKY1	Dow Jones Islamic Market Turkey Index (DJIMTR)	TKY2
6.	Malaysia	Dow Jones Malaysia Index USD (MYDOWD)	MLY1	Dow Jones Islamic Market Malaysia Titans 25 Index (DJMY25D)	MLY2
7.	China	Dow Jones China Offshore 50 Index (DJCHOF50)	CHN1	Dow Jones Islamic market China/Hong Kong Titans Index (DJICHK)	CHN2
8.	India	FTSE All-World India Index GBP (WIIND)	IND1	FTSE Shariah India Index (SWIND)	IND2
9.	Qatar	FTSE DIFX Qatar 10 Index (DQAT)	QTR1	FTSE DIFA Qatar 10 Sharia Index (DQAS)	QTR2
10.	Kuwait	FTSE DIFX Kuwait 15 Index (DKUW)	KWT1	FTSE DIFX Kuwait 15 Index (DKUS)	KWT2
11.	Taiwan	FTSE World Taiwan Index USD (WITWN)	TWN1	FTSE Shariah Taiwan index (TWSH)	TWN2

Source: Wall Street Journal website www.wsj.com

4. Presentation and Discussion

Table 4.1 presents the descriptive statistics of the stock indices returns of Canada, China, EU and India. For each country the statistics for both the conventional and Islamic indices were reported. At this level the ones of interest are the mean, the maximum and minimum values, and the standard deviation. The other statistics comprising skewness, kurtosis and the Jarque-Bera were discussed in detail in section *4.5 Testing for ARCH Effect.* From the results it's clear in Canada whereas as the mean, maximum and minimum values for conventional index were 0.006582, 9.143706, and -12.54695, those of the Islamic index were -0.000966, 11.30819 and -13.39210. Their standard deviations were 1.475336 and 1.782999 respectively. This shows dissimilarity in the statistics of the conventional and Islamic stock indices returns even in the same country in the period under review. The same kinds of difference between the conventional

and Islamic indices were observed for China, EU and India. This suggests that whole time series could be treated as heterogeneous

Table 4.1 Descriptive Statistics of Stock Indices Returns in Selected Countries

	RTCA1	RTCA2	RTCHN1	RTCHN2	RTEU1	RTEU2	RTIND1	RTIND2
Mean	0.006582	-0.000966	0.024885	0.018591	0.000339	0.007109	0.030818	-0.005273
Median	0.042663	0.015168	0.000511	0.001232	0.027720	0.022740	0.070497	0.000000
Maximum	9.143706	11.30819	14.08842	13.67998	9.593682	12.04912	5.481889	19.82435
Minimum	-12.54695	-13.39210	-13.21961	-12.61474	-8.933000	-9.714265	-8.229563	-16.08202
Std. Dev.	1.475336	1.782999	1.732570	1.514377	1.384748	1.358374	1.263702	1.664482
Skewness	-0.750542	-0.733809	0.050580	-0.207155	-0.155816	-0.061969	-0.298481	-0.105360
Kurtosis	12.04621	12.30713	11.74960	11.65021	8.949328	11.98836	5.401172	17.25756
Jarque-Bera	10962.87	11574.25	9979.072	9768.471	4233.854	10531.70	498.1771	22390.88
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	20.59402	-3.023131	77.83988	58.11417	0.971293	22.23636	60.18788	-13.93695
Sum Sq. Dev.	6808.454	9944.179	9386.622	7166.684	5487.960	5769.879	3117.233	7319.658
Observations	3129	3129	3128	3126	2863	3128	1953	2643

Source: Computed by authors.

Table 4.2 presents the descriptive statistics of the stock returns of the conventional and Islamic indices of Japan, Kuwait, Malaysia and Qatar. The statistics of conventional and Islamic indices of Japan seemed to have close values except for the maximum values (9.143706 and 12.34636) in which the difference was highest. There was no substantial difference in the means (0.006446 and 0.004582), the minimum values (-12.54695 and -12.46948) and the standard deviations (1.475543 and 1.306473). This corroborates what was observed on the graphs. In Kuwait there was a noticeable difference between the statistics of the conventional (KWT1) and Islamic (KWT2) indices. For instance, the maximum values were 9.565600 and 22.66322, and the minimum values were -12.89144 and -26.06601 respectively. However, the statistics of the indices of Malaysia were closely knitted together as in their graph presented earlier except for the mean of the Islamic index that was negative (-0.013107) while that of the conventional was positive (0.014728). On a similar note, the conventional and islamic indices of Qatar had similar

maximum (12.17554 and 12.36284) , minimum (-14.57039 and -16.22179)   and standard deviation (1.665562 and 1.724765) statistics.

Table 4.2 Descriptive Statistics of Stock Indices Returns in Selected Countries

	RTJP1	RTJP2	RTKWT1	RTKWT2	RTMLY1	RTMLY2	RTQTR1	RTQTR2
Mean	0.006446	0.004582	-0.015868	-0.030162	0.014728	-0.013107	0.018602	0.015972
Median	0.042584	0.021169	0.013708	0.009222	0.003669	0.000000	0.039455	0.036723
Maximum	9.143706	12.34636	9.565600	22.66322	5.272028	5.982614	12.17554	12.36284
Minimum	-12.54695	-12.46948	-12.89144	-26.06601	-10.93052	-11.97518	-14.57039	-16.22179
Std. Dev.	1.475543	1.306473	1.513245	1.764565	0.947060	0.976604	1.665562	1.724765
Skewness	-0.750201	-0.598181	-0.998553	-1.129501	-0.815330	-0.712181	-0.476150	-0.558223
Kurtosis	12.04301	14.05681	13.79125	43.70151	13.02112	15.15219	16.37913	16.55971
Jarque-Bera	10951.55	16120.19	11230.99	142630.6	13430.72	16292.83	16326.66	17631.95
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	20.16362	14.33402	-35.51294	-62.13317	46.05408	-34.23652	40.51514	36.51289
Sum Sq. Dev.	6808.193	5337.389	5122.527	6411.088	2803.783	2490.255	6039.206	6797.449
Observations	3128	3128	2238	2060	3127	2612	2178	2286

Source: Computed by authors.

The descriptive statistics of the stock returns of the conventional and Islamic indices of Turkey, Taiwan and US are given in Table 4.3. In all the three countries it appeared there were more differences than similarities in the statistical values of the conventional and Islamic indices. In Turkey the mean return of Islamic index (0.023693) is higher than the mean return of the conventional index (0.003648) while the conventional index had higher maximum return (15.99203) than the Islamic index (10.90822). This result is similar to that of Taiwan. In US however the Islamic index had higer mean (0.032110) and maximum returns (11.83571) though its standard deviation was wider (1.46) while that of the conventional was (1.14).

Table 4.3 Descriptive Statistics of Stock Indices Returns in Selected Countries

	RTTKY1	RTTKY2	RTTWN1	RTTWN2	RTUS1	RTUS2
Mean	0.003648	0.023693	0.017673	0.035775	0.026800	0.032110
Median	0.036076	0.000232	0.011496	0.059758	0.053523	0.022179
Maximum	15.99203	10.90822	8.243062	6.450488	10.50835	11.83571
Minimum	-14.80654	-9.082121	-8.525886	-5.609285	-8.200513	-11.83571
Std. Dev.	2.246290	1.356781	1.403329	1.105233	1.141514	1.460181
Skewness	-0.247123	-0.488127	-0.250293	-0.113246	-0.111459	-0.373088
Kurtosis	7.346250	9.248743	6.933843	5.823567	14.28121	10.56663
Jarque-Bera	2489.036	5211.648	1940.814	751.5655	15909.11	7532.253
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	11.38804	74.08935	52.34824	80.42207	80.37308	100.4093
Sum Sq. Dev.	15748.00	5754.516	5831.193	2744.802	3906.558	6665.034
Observations	3122	3127	2962	2248	2999	3127

Source: Computed by authors.

The risk-adjustment return performances of the stock indices were measured using Sharpe Ratio and Treynor Index as presented in Table 4.4

Table 4.4 Result for Risk - Adjusted Return

	Conventional		Islamic	
INDEX	Sharpe Ratio	Treynor Index	Sharpe Ratio	Treynor Index
Dow Jones Industrial Average (DJIA)	-47.23	288.42.	-68.65	139.16
FTSE/ATHEX Top 20 Index	-68.65	-66.01	-56.52	-49.14
Dow Jones Canada Index (CADOWD)	-68.21	-66.01	-77.11	640.76
Dow Jones Japan Index USD (JPDOWD)	-44.9	64.18	-74.03	180.92
Dow Jones Turkey Titans 20 Index TRY (TR20)	-106.24	-46.70	-102.6	5.83
Dow Jones Malaysia Index USD (MYDOWD)	-57.69	-26.29	-66.12	-61.52
Dow Jones China Offshore 50 Index (DJCHOF50)	-39.27	0.84	-60.19	8.14
FTSE All-World India Index GBP (WIIND)	-37.53	-44.37	-37.58	-33.16
FTSE DIFX Qatar 10 Index (DQAT)	-39.25	-29.66	-36.16	-20.47
FTSE DIFX Kuwait 15 Index (DKUW)	-72.51	66.71	-73.67	-75.19
FTSE World Taiwan Index USD (WITWN)	-44.02	-498.53	-42.72	0.83

Source: Computed by authors.

The results of the risk-adjusted returns in Table 4.4 show that the Sharpe ratio for both the conventional and Islamic indices for US had negative values for the period 2006 – 2017. But Dow Jones conventional US was less negative and therefore performed better. Similarly the Treynor index shows that the conventional Dow Jones had higher returns than its Islamic counterpart in the US.

In EU the Islamic index had less negative Sharpe ratio than the conventional one which is an indication of better returns. The Teynor index corroborates this result with the Islamic index having a higher performance. The return performance for Canada indices were both negative though the conventional index seemed to outperform the Islamic counterpart based on the Sharpe ratio. However, the Treynor index indicates that the adjusted return of the Islamic index was better. In Japan whereas the Sharpe ratio showed the return performance of the conventional index was better, on the contrary the Treynor index showed that the Islamic index was better.

Both the Sharpe ratio and the Treynor index revealed that the Islamic index had better return performance than its conventional counterpart. In Malaysia all the performance ratios were negative though the conventional index was less negative than the Islamic one which is an indication of better performance. In Turkey whereas the Sharpe ratio showed the return performance of the conventional index was better, on the contrary the Treynor index showed that the Islamic index was better. A similar result was obtained for India. In China the return performance of the Islamic index was better as indicated by both ratios which are a similar result for Qatar. On the contrary, in Taiwan the performance of the conventional index was better in both cases.

The results for all indices in Table 4.4 indicates that there is mixed results in the return performances of both conventional and Islamic indices in the selected countries. It was clear that in some instances conventional indices out performed Islamic indices and in some others the reverse was the case. Similar results were obtained by Jawadi, Jawadi & Louhichi (2014) and Ho et al (2013).   In summary, with the latest data and the increase in the number of indices in recent years, empirical evidence has indicated that conventional indices may not continue to achieve more superior return performances than Islamic indices.

5. Conclusion

The aim of this study was to examine the risk-adjusted return performance of 22 Islamic and conventional stock indices selected from 11 countries. This was achieved through employing performance indicators of Sharpe ratio and Treynor index. The results for all indices indicates that there was mixed results in the return performances of both the conventional and Islamic indices in the selected countries. It was clear that in some instances conventional indices out performed Islamic indices and in others the reverse was the case.

Thus, in line with the Markowitz theory investors could reap the benefit of diversification by including both indices in their portfolios. Losses or low returns in one set of indices could be augmented by gains or higher returns in the other. Therefore, diversification of investment is the optimum strategy as means of hedging risk and making higher returns by investors.

Reference

Abdullah, F., Mohamed, S. & Hassan, T. (2007). Investigation of Performance of Malaysian Islamic Unit Fund Trusts, comparison with conventional unit fund trusts. Managerial Finance, 33, 142-153.

Aka, J. (2009). Shari'ah Investing: Through Bull and Bear Markets? SEI investments (Middle East), October 2009. Retrieved Dec 4th, 2015 at www.seic.com/_enME/about/Middle East/SEI-Shariah-BullAndBearMarkets.pdf

Albaity, M.S and Mudor, H. (2012). Return Performnace, Cointegration and Short run Dynamics of Islamic and Non-Islamic Indices: Evidence from the US and Malaysia During the Subprime Crises. Atlantic Review of Economics 1

Al-Rifai, T. (2012). Why have shari'ah compliant indexes outperformed conventional indexes since the crisis? Business Islamica. Retrieved on Jan 2nd, 2016 at http://businessislamica.com/2012/05/02/why-have-shariah-compliant-indexes-outperformedconventional-indexes-since-the-crisis/

Arshad , S .and Raza, S.A.R. (2013). Interactions between Islamic Stock Indices And Business Cycles: Focusing On Asia Pacific. Australian Journal of Basic and Applied Sciences, 7(9), 1-9.

Boujelbene A., M. (2012). Risk and Return of Islamic and Conventional Indices. International Journal of Euro-Mediterranean Studies, 5(1), 1-23.

Chapra, M. U. (2008). The Global Financial Crisis: Can Islamic Finance Help Minimize the Severity and Frequency of Such a Crisis In The Future? Paper presented at the Forum on the Global financial Crisis, Islamic Development Bank (Vol.25).

Dewi M. and Ferdian. I. R. (2010). Islamic finance: A therapy for healing the global financial crisis. Retrieved on 28/07/2016 from http://ebookpdf.Net/islamic-finance-a-therapy-for-healing-the-global-finncial-crisis.html

Hasan, M., & Dridi, J. (2011). The effects of the global crisis on Islamic and conventional banks: A comparative study. Journal of International Commerce, Economics and Policy, 2(02), 163-200.

EL Mosaid, F and Boutti, R. (2014). Sukuk and Bond Performance in Malaysia. International Journal of Economics and Finance, 6(2), 226 – 234.

Hakim, S., & Rashidian, M. (2002, October). Risk and return of Islamic stock market indexes. In 9th Economic Research Forum Annual Conference in Sharjah, UAE (pp. 26-28).

Hassan, K. M., & Girard, E. (2010). Faith-based ethical investing: The case of Dow Jones Islamic indexes. Islamic Economic Studies, 17(2).

Hoepner, A.G.F., Rammal, H.G., and Rezec, M. (2011). Islamic Mutual Funds' Financial Performance and International Investment Style: evidence from 20 countries. European Journal of Finance. 17 (9–10), 829–850.

Hooi, H.L., Parsva, P. (2012). Performance of Islamic Indices in Malaysia FTSE Market: Empirical Evidence From CAPM. Journal of Applied Science, 12 (12), 1274–1281.

Hussein, K. and M. Omran, (2005). Ethical Investment Revisited: Evidence from Dow Jones Islamic Indexes. The Journal of Investing, 14(3), 105-124.

Hussein, K. A. (2007). Islamic investment: evidence from Dow Jones and FTSE indices. Islamic Economics and Finance, 387.

Hussein, K.A.(2004). Ethical Investment: Empirical Evidence from FTSE Islamic Index. Journal of Islamic Economics, 12 (1), 21–40.

Jawadi, F., Jawadi, N and W, Louhichi. (2014). Conventional and Islamic stock Price Performance: An empirical investigation. International Economics 13, 73–87

Merdad, H,J. (2012). Two Essays in Islamic Finance and Investment. University of New Orleans Theses and Dissertations. Paper 1467

Nazlioglu, S., Hammoudeh, S., & Gupta, R. (2015). Volatility transmission between Islamic and conventional equity markets: Evidence from causality-in-variance test. Applied Economics, 47(46), 4996-5011.

Reddy, K. and Fu, M. (2014). Does Shariah Compliant Stocks Perform Better than the Conventional Stocks? A Comparative Study of Stocks Listed on the Australian Stock Exchange. Asian Journal of Finance & Accounting 6(2), 155 – 170.

Rahman, A. (2009). The relevance of Islamic finance principles to the global financial crisis. Islamic Finance Project, Harvard Law School, Panel Discussion, 16, 2009.

Mohammed, A. R. (2009). Analysis of Islamic stock indices (Master's thesis, University of Waterloo).

Shubbar, S. A. (2010). Empirical performance of Islamic stock market indices in 2008 credit crisis (Master's thesis, University of Twente).

Yahya, M.M.H., Anis, Y.Y., Muhammad, F., Abdul, A.R., Hashim, E., and Fakhzan, N.M. (2013). The Integration of Islamic Stock Markets: Does a Problem for Investors? Labuan e-Journal of Muamalat and Society, 7, 17-27.