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Did Islamic Equities Outperform Conventional Equities In the Gulf Cooperation Council (GCC) Region During and After the Global Financial Crisis?

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Abstract

The study attempts to investigate whether the Islamic equities outperform the conventional equities during and after the Global Financial Crisis (GFC) in the GCC by employing some statistical techniques and Risk-adjusted Return Performance Variables. The study reveals that even though the two types of equities are adversely affected by the global financial crisis, the mean return of conventional equities is statistically significantly higher than that of Islamic equities during and after the crisis, but the differences in volatility and sensitivity between the two types of equities are not statistically significant. When returns are adjusted for risk, the study further reveals that during the financial crisis the Islamic equities perform better than the conventional equities by minimizing losses; hence more resilient while the conventional equities outperform the Islamic equities after the crisis by being more profitable and diversified.

Keywords: Volatility, Sensitivity, Global Financial Crisis, Risk-adjusted returns, Sharpe ratio, Treynor ratio, Jensen Alpha, Information ratio, Islamic equity, conventional equity, GCC, Shari'ah

1. Introduction

Islamic investment is based on Shariah principles which prohibit activities with elements of usury (riba), gambling (maisir), and ambiguity (gharar). Shariah also prohibits producing, selling and delivering goods and services which are against Islamic teaching such as pornography, alcohol, casino etc. Therefore, all equities listed on an Islamic Index have to be Shari'ah compliant. Reddy and Fu (2014) indicate that the first Islamic Index was established in the Dow Jones Market in December 1995 to enable Islamic fund managers list businesses in the capital markets; and that since the establishment of the Index, investment in Islamic stocks has experienced remarkable growth to the extent that by the end of 2002, there were 105 Islamic equity funds worth approximately US$5 billion with 48 percent located in the Middle East, 30 percent in Europe and North America, and 22 percent in Asia. Also, according to Walkshäusl and Lobe (2012), Shariah-complaint assets were in excess of $939 billion worldwide and over 600 Islamic funds were available by the end of 2011.

The global financial crisis of 2007/2008 had a devastating impact on the stock markets around the world. The crisis led to the decline in stock prices which subsequently affected returns to investors. Bartram et al (2009) indicate that by the end of February 2009, global equity market capitalization dropped to $22 trillion compared to $51 trillion as at October 2007, representing a drop of 56 per cent, thus indicating the huge magnitude of the crisis on global stock markets. The degree of impact however varied according to the different regions of the world as Cherif and Gammoudi (2013) posited that the less integrated countries, either by capital controls or the lack of access to international financing, were relatively immune to contagion while the more globally integrated markets were more susceptible to the contagion effects of a shock of another country. According to Onour (2011) the stock markets in the Gulf Cooperation Countries (GCC), mainly Saudi Arabia, Kuwait, UAE, and Qatar reacted sharply to the downfall of stock markets in developed economies, as these countries held part of their financial wealth in foreign assets particularly in US bonds and other securities. Furthermore, Cherif and Gammoudi (2013) state that after the insolvency of Lehman Brothers was announced, on September 15th 2008, the Saudi Arabian stock market fell by 6.5%, Doha 7%, Kuwait 3% and Abu Dhabi 4.35%.

It is obvious from these developments that evaluating the performance of conventional and Islamic stocks is paramount and hence the need for investigation. According to Miniaoui et al (2015) there is a widely spread belief that shariah compliant stocks are relatively less risky than their conventional counterparts as compliance with Shariah principles makes them forgo activities which might be considered risky like derivatives. However, their research findings indicate that the GCC Islamic index has similar risk profile as its conventional

counterparts. This contrast of opinions makes further research in this area in the GCC region worthwhile.

This study attempts to investigate whether the Islamic equities outperform the conventional equities during and after the Global Financial Crisis (GFC). To achieve this, the study employs Descriptive Statistics, Mann Whitney U-test, Independent Samples T-test as well as Risk-adjusted Return Performance Variables for its analysis. The remaining of the paper is structured as follows: Section 2 presents a brief review of related literature, Section 3 describes the Data and Methodology of the study, Section 4 discusses the results while Section 5 concludes the paper.

2. Literature Review

A number of researches on the impact of the GFC on both the Islamic and conventional stock indices in different regions of the world had been conducted. The findings of these researches were mixed; while some of the studies found the Islamic indices to be less risky and volatile compared to the conventional indices, other researchers found exactly the opposite.

Reddy and Fu (2014) investigate whether Shari'ah Compliant Stocks perform better than Conventional Stocks on the Australian Stock Exchange by employing the Mann Whitney U-test, Independent Samples T-test and the Risk-adjusted Return Performance variables as tools for analysis. The study covers a period 2001 to 2013 which is further subdivided into pre-, during and post- crisis periods. They find that the difference of the mean returns and standard deviations for the two types of stocks is not large. Additionally, before the GFC period, Islamic stocks had a higher Sharpe ratio but it is not much different from the Treynor or Jensen's Alpha compared to the conventional stocks. However, during the GFC period the performance of both portfolios were worse than their performance before the GFC period and Islamic stocks tend to have larger ratios compared to the conventional stocks. Moreover, the results after GFC period show that both Islamic and conventional stocks have recovered and showed a slight increase in the risk adjusted performance measures and that Islamic stocks continue to perform better than the conventional stocks, and is more diversified as the Sharp ratio has a negative relationship between risk and return.

In a related study Sukmana and Kholid (2012) examine the impact of the GFC on Islamic and Conventional stocks in emerging markets with particular reference to Jakarta Islamic Index(JAKISL) and its conventional counterpart (Jakarta Composite Index(JCI) in Indonesia by measuring the risk adjusted performance of the stocks in the two indices using both the Auto Regressive Conditional Heteroskedasticity (ARCH) and the Generalized Auto Regressive Conditional Heteroskedasticity (GARCH) techniques over the period January 3, 2001 to 30 December 2009. The study finds that even though volatility of both indices was affected by the financial crisis, the magnitude of volatility in the two indices is different with volatility of JCI being greater than volatility of JAKISL which shows that Islamic stock index is more resilience towards the crisis compared to conventional stock index.

Arshada, S. and Rizvi, S. A.R. (2014) study the volatility of four conventional global indices and five Islamic indices from the Dow Jones Indices family over a period of twelve years from January 3, 2000 to December 30, 2011 by utilizing Multivariate General Autoregressive Conditional Hetroskedasticity Dynamic Conditional Correlation (MGARCH DCC) technique. The study finds strong evidence that conditional correlations between Islamic Indices and conventional indices show a negative trend during the times of recent crisis and finally suggest that Islamic equity investments though they follow a similar return pattern as conventional equity in times of economic growth, are a safer alternative during downturns.

Bhatt, V. and Sultan, J (2012) compare leverage risk and stock returns among Islamic, conventional and socially responsible stocks by using a sample of 3704 globally traded stocks for the period January 2000- April 2009 and constructing a risk factor based on firm-specific leverage. The study indicates that, compared to the conventional stocks, Shari'ah Complaint stocks display substantially lower risk premium and that Islamic stocks are similar to the conventional stocks by being sensitive to the leverage factor, thus, leading the Authors to suggest that a leverage based screening of Islamic stocks may not be ideal for wealth preservation especially during a credit crisis.

Kassim (2010) investigates the impact of the GFC on the integration of Islamic stock markets by selecting seven Islamic stock markets based on the countries' level of development. The seven stocks markets comprised four from developing countries; namely Malaysia, Indonesia, Turkey and Kuwait while the other three stocks from developed economies were: USA, UK and Japan. The Author divides the period of analysis into two: pre-crisis

period spans from January 9, 2005 to July 22, 2007 and during the crisis period spans from July 29, 2007 to January 10, 2010 and employs the Auto Regressive Distributed Lag (ARDL) and multivariate Vector Error Correction Mechanism (VECM) based on Generalized Methods of Moments (GMM) to determine the existence of long-run integration among the stock markets as well as providing robust analysis of short and long-run dynamic causal linkages among the stock markets. The findings of the research reveal that Islamic stock markets are not spared from the global financial crisis as the Islamic stock markets exhibit lower returns and high volatility during the crisis period than the non-crisis period.

Miniaoui ,Sayani and Chaibi, (2015) study the performance of Islamic and conventional indices of the Gulf Cooperation Council (GCC) countries in the wake of the global financial crisis of 2008 in order to determine whether Islamic indices are less risky than conventional indices. They use data from the six GCC markets as well as the Dow Jones Islamic Market Index over the period 04 January 2006 to 26 December 2012 and employ the GARCH model for their analysis. Their findings reveal that the financial crisis impacted volatility in some GCC markets (Kuwait, Bahrain, and the UAE), while the impact on the remaining markets (Saudi Arabia, Oman, and Qatar) and the Dow Jones Islamic index is insignificant. Moreover, the findings indicate that the Islamic index exhibits similar attributes of the conventional indices in all the periods of analysis as the Islamic index has similar risk profile with its conventional counterparts.

Thus, it is clear from the literature that there is a consensus on the fact that both the conventional and Islamic equities were impacted upon by the GFC, however, on which of the equity type performs better during and after the crisis, there appears to be divergent views among researchers.

3. Data and Methodology

The study focuses on the Gulf Cooperation Council (GCC) region (UAE, Saudi Arabia, Kuwait, Bahrain, Qatar and Oman) where there is a reasonable integration between the financial systems of the region with that of the rest of the Western financial systems where the financial crisis of 2007/2008 began. Since the study is interested in investigating the performance of shari'ah compliant equities vis-a-visa the conventional equities, equities of commercial banks from the following indices: FTSE NASDAQ DUBAI INDEX 20, FTSE NASDAQ KUWAIT INDEX 15, FTSE NASDAQ QATAR INDEX 10, TADAWUL and Bahrain Stock Exchange (BSE), representing UAE, Kuwait, Qatar, Saudi Arabia and Bahrain, respectively are used while Oman is omitted because it has no Islamic bank equity listed during the larger part of the period of the study. This was confirmed by Oman Islamic Finance Report 2015 which stated that the first Islamic bank in Oman was established in 2013. For simplicity and consistency of comparison, this study considers only equities of the same industry and hence the choice of only commercial banks' equities for the purpose of the study.

The study employs the approach used by Reddy and Fu(2014) and considers 2007/2008 to be period of the global financial crisis as suggested by Kassim(2010), Arshada and Rizvi (2014) and Onour(2011) while the period January 2009 – December 2014 is taken as the post-crisis period. A total of eighteen (18) conventional banks' equities and twelve (12) Islamic banks' equities are identified from the five indices based on availability of data over the study period. The monthly stock prices for the two equities were collected from Bloomberg over the period 2006 - 2014.

The monthly return (Rt) is determined by Ln (Pt/Pt-1) where Pt is the monthly stock price for the period t, Pt-1 is the price of stock in the period t-1 and Ln is the natural log.

Standard deviation (σ) and beta (β) are the proxies for the stocks total risk (volatility) and systematic risk (sensitivity), respectively. To determine whether the differences between the average return, standard deviation and the beta of the Shariah and conventional stocks are significant, Mann Whitney U-test (for data that is not normally distributed) and Independent Samples T-test (for normally distributed data) are used. The testable null hypotheses in the two periods (during and after the crisis) are stated as follows:

Hypothesis 1: H_0: $\mu_c = \mu_s$ (shariah stocks' returns are not significantly different from the returns of the conventional stocks).

Hypothesis 2: H_0: $\sigma_c = \sigma_s$ (shariah stocks are not significantly riskier than the conventional stocks).

3.1 Risk-Adjusted Return Measurement

Since risk is positively related to return, portfolio performance measurement needs to include both return and

risk. According to Capital Market Theory, the risk adjusted return incorporates risk in computing the returns. The following four popular risk adjusted performance measures are determined for both conventional and shariah compliant stocks. These are: Sharpe ratio, Treynor ratio, Jensen's Alpha and Information ratio.

The Sharpe ratio can be computed as follows:

$Sp = (Ri - Rf) / \sigma$

where

Sp is the Sharpe ratio, Ri equals the t period portfolio return, Rf is the return on three months treasury bills or its equivalent during t period (proxy for the risk-free rate), and the standard deviation of the portfolio is σ. The higher the Sharpe ratio, the better the performance

There are some similarities between Treynor ratio and Sharpe ratio except that Treynor uses beta to measure risk instead of standard deviation. The formula for calculating the Treynor ratio is as follows:

$Tp = (Ri - Rf)/\beta$

where

Tp is the Treynor ratio and β is portfolio beta

The formula for calculating Jensen's Alpha is as follows:

$\alpha j = (Rj - Rf) - \beta (Rm - Rf)$

where

αj is Jensen's Alpha, Rj is the average equity returns over t period, Rm is the average market return over t period. The higher the Jensen alpha the better.

The Information ratio of a portfolio measures the excess returns per unit of residual risk and is calculated as follows:

$IR = \alpha p / \sigma(Rp - Rm)$

where αp is the excess return of the portfolio and σ(Rp – Rm) is the residual risk. The higher this ratio is for a portfolio the better.

Two portfolios (shariah compliant and conventional portfolios) are constructed for each of the five countries (by employing conventional and Islamic equities in each country's selected index) using each year in the two periods (during and after crisis) as investment horizon. The four risk-adjusted performance measures are then determined for each type of the portfolio for each year in the study period and for each country in the GCC and analyzed. Finally, two more portfolios (conventional and shariah compliant) - the conventional portfolio comprises of the 18 conventional equities and the shariah portfolio comprises the 12 shariah compliant equities are constructed for each of the periods (during and after crisis) to represent the portfolios of the entire GCC region and the risk adjusted performance measures are determined and analyzed.

4.0 Results and Discussion

4.1 Descriptive Statistics

The descriptive statistics of the stocks' returns for the two types of stocks (conventional and Islamic) for the five different markets are generated and tabulated as follows:

Table 1: Stocks' returns Descriptive Statistics for the five markets

		During Crisis						After Crisis					
Country	**Equity Type**	**Mean**	**Stdv**	**Min**	**Max**	**Skewness**	**Kurtosis**	**Mean**	**Stdv**	**Min**	**Max**	**Skewness**	**Kurtosis**
UAE	Conventional Equities	-0.0266	0.1423	-0.4704	0.3159	-0.7025	1.1281	0.0196	0.0924	-0.2841	0.3465	0.1783	1.5119
	Shariah Comp. equities	0.0014	0.1564	-0.4788	0.2870	-1.0323	1.9525	0.0121	0.1106	-0.2819	0.3547	0.2222	0.6693
Saudi	Conventional Equities	-0.0199	0.1354	-0.3676	0.2980	-0.1416	-0.2873	0.0071	0.0730	-0.1907	0.3214	0.8696	2.2701
	Shariah Comp. equities	-0.0344	0.1404	-0.3704	0.2766	0.0448	-0.2256	0.0083	0.0779	-0.3676	0.3163	0.5906	1.7563
Kuwait	Conventional Equities	-0.0183	0.0966	-0.3409	0.1782	-1.0397	2.2435	0.0023	0.0852	-0.5108	0.3791	-0.5115	7.9580
	Shariah Comp. equities	0.0017	0.0886	-0.2578	0.2048	-0.5227	1.6062	-0.0016	0.0631	-0.1756	0.2889	0.5603	3.9039
Qatar	Conventional Equities	-0.0058	0.1751	-0.4643	0.3455	-0.8163	1.0313	0.0058	0.0696	-0.2902	0.2025	-0.9561	2.7734
	Shariah Comp. equities	0.0053	0.1419	-0.2734	0.2550	-0.4581	-0.3770	0.0043	0.0710	-0.2916	0.2527	0.2433	6.6317
Bahrain	Conventional Equities	-0.0115	0.0981	-0.3079	0.2324	-0.4680	1.7506	0.0052	0.0842	-0.3361	0.4605	1.1371	7.2343
	Shariah Comp. equities	-0.0210	0.1142	-0.2982	0.2707	-0.1290	0.4620	-0.0113	0.1276	-0.3105	-0.0188	1.3009	6.7449
Average	**Conventional Equities**	**-0.0164**	**0.1295**	**-0.3902**	**0.2740**	**-0.6336**	**1.1733**	**0.0080**	**0.0809**	**-0.3224**	**0.3420**	**0.1435**	**4.3496**
	Shariah Comp. equities	**-0.0094**	**0.1283**	**-0.3357**	**0.2588**	**-0.4195**	**0.6836**	**0.0024**	**0.0900**	**-0.2854**	**0.2387**	**0.5835**	**3.9412**

It is obvious from the above table that the shariah compliant equities are not spared by the GFC. Similar to the conventional equities where the return is either low or even negative, the shariah compliant equities are also adversely affected by the GCF as clearly reflected by the low and sometimes negative mean returns of all the shariah compliant equities in the five different financial markets. However, during the crisis period, the shariah compliant equities in UAE, Kuwait and Qatar financial markets show some resilience by returning positive mean returns as opposed to the negative returns by the conventional equities. Generally, during the crisis period, the shariah compliant equities seem to have outperformed the conventional equities in terms of returns; the volatility of both types of equities is however similar across the markets. After the crisis, both equities perform better by returning positive mean returns except in Bahrain and Kuwait financial markets where shariah compliant equities return negative mean returns. This implies that the impact of the global financial crisis on the shariah compliant equities is huge in these countries, with Bahrain market being peculiar as the shariah compliant equities are most volatile despite their negative mean returns. Overall, after the crisis, the conventional equities seem to have outperformed their shariah compliant counterparts since they have higher mean returns.

On the average, the analysis presented in the table displays negative mean returns during the financial crisis and positive mean returns after the crisis, with skewness towards negative returns during the crisis and positive returns after the crisis for both types of equities. The maximum and minimum statistics reveal the likelihood of making extreme gains despite relatively higher extreme loss possibilities.

Interestingly, the shariah compliant equities seem to have outperformed the conventional equities during the crisis period since they minimize loss and also appear to be less risky. This preliminary finding is in line with expectations as the shariah compliant financial institutions underlying these equities are prohibited from taking excessive risk such as investment in derivatives. However, after the crisis the shariah compliant equities return less than their conventional counterparts and also appear to be more volatile thereby implying that the conventional equities outperform the shariah compliant equities. This result also seems to support what Hassan(2004) concludes when he states that the Islamic indices underperformed relative to the Conventional indices.

4.2 Risk Adjusted Return Performance Result in the five Countries

Risk-adjusted return is used to provide a comprehensive analysis of the risk and returns for both Shariah and conventional portfolios for each of the five countries' financial markets for the period 2007 to 2014. Table 2 below reports Sharpe Ratio, Treynor Ratio, Information Ratio and Jensen's Alpha for Shariah and conventional portfolios in UAE, and compares their performance during the two different periods, that is, during and after the GFC.

Table 2: Risk-Adjusted Return Performance of Shariah and Conventional Portfolio in UAE

Period		**Year**	**Conventional Portfolio**				**Shariah Compliant Portfolio**			
			Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio	Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio
		2007	-0.1863	0.2101	-0.0244	-0.1749	0.0836	0.0796	0.0129	0.1090
		2008	-0.7390	-0.2485	-0.0896	-0.6097	-0.6165	-0.1621	-0.0592	-0.4783
During Crisis	Average		-0.4627	-0.0192	-0.0570	-0.3923	-0.2664	-0.0412	-0.0231	-0.1846
		2009	0.1591	0.6011	0.0182	0.0851	-0.1473	0.2059	-0.0169	-0.0751
		2010	-0.0191	0.0189	-0.0040	-0.0285	-0.2155	0.1251	-0.0158	-0.1180
		2011	-0.0561	0.0248	-0.0065	-0.0685	-0.8734	-0.1866	-0.0124	-0.1955
		2012	0.1703	-0.0249	0.0077	0.0819	-0.3536	0.1072	-0.0077	-0.0998
		2013	0.6392	0.2112	0.0331	0.4263	0.4860	0.0598	0.0141	0.2259
		2014	-0.0206	0.1042	-0.0011	-0.0085	0.0197	-0.0424	0.0018	0.0145
After Crisis	Average		0.1455	0.1559	0.0083	0.0813	-0.1807	0.0448	-0.0062	-0.0413

The results reported in Table 2 show that the performance of Shariah and conventional portfolios in UAE is mixed in the two periods. Although the average values of shariah and conventional portfolios' performance ratios are negative during the crisis period, it shows that the Sharpe, Jensen and Information ratios of Shariah portfolio are greater than that of the conventional portfolios and this suggests that the Shariah portfolio perform better compared to the conventional portfolio and appears to be more diversified than the conventional portfolio; and this is expected because the business transactions of the financial institutions underpinning this type of equity are asset based and devoid of excessive risk taking, hence the resilience of the shariah portfolio during the crisis. This finding also seems to support what Arshada and Rizvi (2014) found when they suggested that Islamic equity investments though they follow a similar return pattern as conventional equity in times of economic growth, but in downturns, are a safer alternative. However, the Treynor ratio of the conventional portfolio is greater than that of the shariah portfolio suggesting that the conventional portfolio is probably less sensitive to the systematic risk and therefore more stable relative to the market. The average values of the performance ratios after the crisis indicate that all the values for conventional portfolio are greater than that of shariah portfolio thus implying that the conventional portfolio has better risk-adjusted returns and is more diversified than the shariah portfolio after the period. This result is similar to what Reddy and Fu(2014) obtained in Australia when they concluded that Islamic companies tend to be smaller and are relatively undiversified

Table 3 below reports similar ratios for Kuwait financial market as follows:

Table 3: Risk-Adjusted Return Performance of Shariah and Conventional Portfolio in Kuwait

Period		Year	Conventional Portfolio				Shariah Compliant Portfolio			
			Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio	Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio
		2007	-1.0097	-0.0743	-0.0279	-0.7572	-0.4428	-0.7966	-0.0249	-0.3293
		2008	-0.6762	-0.0708	0.0025	0.0504	-0.4711	-0.0669	0.0031	0.0436
During Crisis	Average		-0.8430	-0.0725	-0.0127	-0.3534	-0.4569	-0.4317	-0.0109	-0.1428
		2009	-0.2685	-0.0386	-0.0142	-0.1609	-0.3420	-0.0695	-0.0146	-0.1588
		2010	0.4216	0.0380	0.0183	0.5578	-0.4003	-0.4274	-0.0109	-0.1289
		2011	-0.4180	-0.0187	0.0178	0.5059	-0.5582	-0.0952	-0.0162	-0.3189
		2012	-0.5261	-0.0272	-0.0022	-0.0848	-0.6548	0.0857	-0.0255	-0.4789
		2013	-0.1699	-0.0072	-0.0011	-0.0478	-0.1007	0.0209	-0.0045	-0.0809
		2014	-0.3381	-0.0133	0.0011	0.0533	-0.3895	-0.0267	-0.0048	-0.1540
After Crisis	Average		**-0.2165**	**-0.0112**	**0.0033**	**0.1372**	-0.4076	-0.0854	-0.0128	-0.2201

Similarly, the results reported in Table 3 above show that the performance of Shariah and conventional portfolios in Kuwait is quite similar during the crisis while it is mixed after the crisis. On the average basis, during the crisis, the shariah compliant portfolio outperform the conventional portfolio on Jensen Alpha, Sharpe and Information ratios while the conventional portfolio outperform the shriah compliant portfolio on Treynor ratio, thus suggesting better performance by the shariah portfolio over the conventional portfolio during this period. After the crisis, the conventional portfolio outperforms the shariah compliant portfolio on all the performance ratios. This implies better performance by the shariah portfolio during the crisis period and better performance by the conventional portfolio after the crisis.

Table 4 below reports the risk-adjusted returns performance ratios of Saudi financial markets as follows:

Table 4: Risk-Adjusted Return Performance of Shariah and Conventional Portfolio in Saudi Arabia

Period		Year	Conventional Portfolio				Shariah Compliant Portfolio			
			Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio	Sharpe Ratio	Treynor Ratio	Jensen Alpha	Information Ratio
		2007	0.1638	0.0178	-0.0067	-0.1194	0.0333	0.0033	-0.0285	-0.5122
		2008	-0.5736	-0.0698	0.0025	0.0590	-0.6214	-0.0730	-0.0004	-0.0136
During Crisis	Average		-0.2049	-0.0260	-0.0021	-0.0302	-0.2941	-0.0348	-0.0144	-0.2629
		2009	0.0802	0.0071	-0.0120	-0.2167	0.0518	0.0040	-0.0149	-0.7155
		2010	-0.1326	-0.0090	-0.0078	-0.2127	-0.1307	-0.0095	-0.0061	-0.1677
		2011	-0.1119	-0.0069	-0.0010	-0.0268	-0.2375	-0.0139	-0.0053	-0.1962
		2012	-0.1234	-0.0070	-0.0068	-0.3859	0.1782	0.0097	0.0138	0.3947
		2013	0.6854	0.0288	0.0092	0.3607	0.5912	0.0165	0.0022	0.0790
		2014	0.1839	0.0138	0.0185	0.5603	0.0041	0.0003	0.0061	0.2146
After Crisis	Average		**0.0969**	**0.0045**	**0.0000**	**0.0131**	0.0762	0.0012	-0.0007	-0.0652

Again, the above table clearly shows that the impact of the financial crisis is mixed on the two types of portfolios during and after the crisis. On the average, while the performance ratios for all the portfolios are negative during the crisis, those of the conventional portfolio show better performance than the shariah compliant portfolio.

Similarly, after the crisis, the average of each of the performance ratios of the conventional portfolio is greater than those of the shariah portfolio which also signifies better performance of the conventional portfolio. It is apparent that unlike the markets in UAE and Kuwait, the shariah portfolio in this market is not resilient during the crisis period. This type of result is also expected as sometimes the underlying Islamic financial institutions are accused of mimicking the conventional financial institutions just as Olson and Zoubi(2008) pointed out that Islamic banks have often repackaged conventional products based on semantics and thereby losing their true Islamic sprit in transactions; and this could make them more vulnerable to shocks.

Table 5 below reports the risk-adjusted returns performance of Bahrain financial market as follows:

Table 5: Risk-Adjusted Return Performance of Shariah and Conventional Portfolio in Bahrain

Period		**Year**	**Conventional Portfolio**				**Shariah Compliant Portfolio**			
			Sharpe Ratio	**Treynor Ratio**	**Jensen Alpha**	**Information Ratio**	**Sharpe Ratio**	**Treynor Ratio**	**Jensen Alpha**	**Information Ratio**
		2007	-0.6222	-0.0316	-0.0007	-0.0221	-0.6026	-0.0346	-0.0052	-0.0864
		2008	-0.7966	-0.0482	0.0162	0.3768	-0.6193	-0.0379	0.0308	0.6712
During Crisis	**Average**		-0.7094	-0.0399	0.0077	0.1773	-0.6109	-0.0362	0.0128	0.2924
		2009	-0.3794	-0.0178	0.0137	0.3555	-0.2019	-0.0089	0.0619	0.5589
		2010	-0.1112	-0.0043	0.0106	0.5402	-0.7330	-0.0547	-0.0376	-0.6170
		2011	-0.7049	-0.0499	-0.0089	-0.2591	-1.2161	-0.5077	-0.0474	-1.0165
		2012	-0.2757	-0.0080	0.0183	0.3970	0.0908	0.0020	0.0989	0.9864
		2013	0.3963	0.0128	0.0236	0.5096	-0.0285	-0.0009	-0.0025	-0.0444
		2014	-0.0754	-0.0025	-0.0005	-0.0197	-0.2783	-0.0114	-0.0174	-0.2828
After Crisis	**Average**		**-0.1917**	**-0.0116**	**0.0095**	**0.2539**	-0.3945	-0.0969	0.0093	-0.0692

The above table shows similar mixed pattern of impact on both types of portfolios during and after the crisis as already discussed in the previous section. On the average, during the crisis period the shariah portfolio outperforms the conventional portfolio on all the risk-adjusted performance measures while after the crisis performance indicates that the conventional portfolio outperforms the shariah portfolio and this is quite similar with the results of UAE and Kuwait as already discussed.

Table 6 below reports the risk-adjusted returns performance ratios of Qatar financial market as follows:

Table 6: Risk-Adjusted Return Performance of Shariah and Conventional Portfolio in Qatar

Period		**Year**	**Conventional Portfolio**				**Shariah Compliant Portfolio**			
			Sharpe Ratio	**Treynor Ratio**	**Jensen Alpha**	**Information Ratio**	**Sharpe Ratio**	**Treynor Ratio**	**Jensen Alpha**	**Information Ratio**
		2007	-0.0385	0.0184	-0.0033	-0.0281	0.1346	-0.1449	0.0125	0.0824
During Crisis		**2008**	-0.3166	0.0874	-0.1228	-0.4108	-0.5001	0.1317	-0.0999	-0.4330
	Average		-0.1776	0.0529	-0.0631	-0.2194	-0.1827	-0.0066	-0.0437	-0.1753
		2009	-0.1373	0.0420	-0.0113	-0.0596	-0.0442	0.0090	-0.0119	-0.0506
		2010	0.0366	0.0033	0.0062	0.0684	-0.3042	0.0778	-0.0149	-0.2033
		2011	-0.3904	-0.0253	-0.0099	-0.1763	-0.9208	0.1608	-0.0246	-0.4284
		2012	-0.0529	-0.0043	0.0040	0.0861	-1.2300	0.0728	-0.0204	-0.6503
		2013	0.0861	0.0714	0.0046	0.1251	0.1222	0.0092	0.0062	0.1251
After Crisis		**2014**	-0.1994	-0.0338	-0.0139	-0.1563	0.0353	0.0139	0.0017	0.0110
	Average		**-0.1096**	**0.0089**	**-0.0034**	**-0.0188**	**-0.3903**	**0.0573**	**-0.0107**	**-0.1994**

The above table also shows the mixed pattern of impact of the financial crisis on the two types of portfolios during and after the crisis period. It is thus clear that on the average, the conventional portfolio performs better than the shariah portfolio on Sharpe and Treynor ratios suggesting possibility of better diversification and less sensitivity to systematic risk than the shariah portfolio while it underperforms on Jensen Alpha and Information ratio implying that shariah portfolio has better excess return for a given level of risk and also returns more per residual risk. It appears there is no significant difference in performance between the two types of portfolio during the crisis period. After the crisis period the conventional portfolio outperforms the shariah portfolio on Sharpe ratio, Jensen Alpha and Information ratio while the shariah portfolio has better Treynor ratio than the conventional portfolio, thus implying better performance of conventional portfolio over sharia portfolio after the crisis.

4.2 Summary of Risk Adjusted Return Performance Result in the GCC Region

To obtain an overall picture of the risk adjusted performance in the GCC region, the average of the five countries' performance ratios as well as the descriptive statistics are determined and used to approximate the performance of the 18-equity conventional portfolio and the 12-equity shariah portfolio that are constructed based on a hypothetical financial market which serves the entire GCC region. The results are displayed as follows:

Table 7: Summary of Risk Adjusted Performance in the GCC

AVERAGE DESCRIPTIVE STATISTICS AND PERFORMANCE RATIOS OF BOTH CONVENTIONAL AND SHARIAH COMPLIANT PORTFOLIO								
PERIOD		**CONVENTIONAL PORTFOLIO**	**SHARIAH COMPLAINT PORTFOLIO**	**MEAN DIFFERENCE OF RETURNS**	**T/U-STATISTICS**	**Critical Values at 1%**	**Critical values at 5%**	**DECISION**
	MEAN	**-0.0136**	**-0.0230**	**0.0094**	**0.3117**	**1.6450**	**1.96**	**Reject Null Hypothesis**
	STDV	**0.1045**	**0.1001**	**0.0043**	**85**	**39**	**52**	**Accept Null Hypothesis**
	BETA	**0.5182**	**0.5543**	**-0.0361**	**52**	**24**	**34**	**Accept Null Hypothesis**
	MIN	-0.4704	-0.4788					
	MAX	0.3455	0.2870					
	SKEWNESS	-0.5728	-0.3579					
	KURTOSIS	1.2323	0.5553					
	SHARPE RATIO	-0.4795	-0.3622					
	TREYNOR RATIO	-0.0210	-0.1101					
	JENSEN ALPHA	-0.0254	-0.0159					
During Crisis	INFORMATION RATIO	-0.1636	-0.0947					
	MEAN	**0.0083**	**0.0025**	**0.0058**	**0.2831**	**1.6450**	**1.96**	**Reject Null Hypoyhesis**
	STDV	**0.0624**	**0.0591**	**0.0033**	**80**	**42**	**58**	**Accept Null Hypothesis**
	BETA	**0.7112**	**0.6694**	**0.0418**	**67**	**42**	**55**	**Accept Null Hypothesis**
	MIN	-0.5108	-0.3747					
	MAX	0.4605	0.6931					
	SKEWNESS	0.3495	1.0003					
	KURTOSIS	4.3719	7.1408					
	SHARPE RATIO	-0.0551	-0.2594					
	TREYNOR RATIO	0.0293	-0.0158					
	JENSEN ALPHA	0.0035	-0.0042					
After Crisis	INFORMATION RATIO	0.0934	-0.1190					

Table 7 indicates that during the crisis period, both types of portfolios in the GCC are adversely affected by the GFC as the mean returns are negative. Although the mean returns are negative, that of conventional portfolio which is -0.0136 is higher than that of the shariah portfolio which is -0.0230. This represents a difference of 0.0094 between the two mean returns which is statistically significant at both the 1% and 5% confidence levels, thus, implying that conventional portfolio minimized losses better than shariah portfolio. The volatility of the portfolio as measured by the standard deviation indicates that conventional portfolio which has an average standard deviation of 0.1045 seems to be more volatile than the shariah portfolio with an average standard deviation of 0.1001, however, the difference between the two volatilities is not statistically significant at both the 1% and 5% confidence levels, thus, suggesting that the two types of portfolio are at the same level of volatility during the crisis period. The sensitivity of the portfolios to the market as measured by the beta indicates that the shariah portfolio which has a beta of 0.5548 is higher than the conventional portfolio with a beta of 0.5182; however, the difference between the two is also not statistically significant at both the 1% and 5% confidence levels.

When returns are adjusted for risk, during the crisis results indicate that the performance of the two portfolios is quite similar as all the performance measures of the two portfolios are negative. Even though they are negative, the shariah portfolio outperforms the conventional portfolio on Sharpe ratio, Jensen Alpha and Information ratio with the values of -0.3622, -0.0199 and -0.0947, respectively, as opposed to the conventional portfolio which has values of -0.4795, -0.0254 and -0.1636, respectively. This result suggests that the shariah portfolio appears to be minimizing losses better than the conventional portfolio during the crisis possibly at the same level of volatility and sensitivity with the conventional portfolio.

After the crisis period results indicate that both equities pick up as mean returns are positive. However, conventional portfolio outperforms the shariah portfoilio on mean returns, volatility and sensitivity with values of 0.0083, 0.0624 and 0.7112, respectively as against 0.0025, 0.0591 and 0.06694, respectively for the shariah portfolio by returning more and appearing to be riskier. The difference between the mean returns of the portfolios is statistically significant at the 1% and 5% confidence levels while that of volatility and sensitivity is statistically insignificant at both the confidence levels. This result indicates that, after the crisis, conventional portfolio is more profitable but with the same of level of volatility and sensitivity with the shariah portfolio. This finding is consistent with the findings of Minaiaoui, Sayani and Chaibi (2015) when they conclude that Islamic index exhibits similar attributes with the conventional attributes as the GCC Islamic index has similar risk profile with its conventional counterpart.

When the return is adjusted for risk, the conventional portfolio seems to have outperformed the shariah portfolio on all the performance ratios, thus implying that conventional portfolio appears to be more diversified and profitable to investors while maintaining the same level of volatility and sensitivity with the shariah portfolio.

5. Conclusion

The impact of the recent GFC on the financial markets is quite huge with adverse effect on both conventional and shariah compliant stocks. This has generated a lot of interest which triggered a substantial research effort into different financial markets across the globe as to the effect of the impact.

The objective of this analysis is to determine whether shariah compliant equities outperform the conventional equities in the GCC during and after the global financial crisis of 2007 and 2008. To achieve this, the study employs descriptive statistics, Mann Whitney U-test, Independent Samples T-test and four risk adjusted performance variables. These variables are computed for the two categories of the equities for each year of the two different periods; during crisis period (2007 – 2008) and after the crisis period (2009 – 2014). The descriptive statistics, Mann Whitney U-test and Independent Samples T-test analysis results indicate that during and after the crisis periods, the mean returns of the two types of equities are statistically significantly different at both the 1% and 5% confidence levels with mean return of conventional equities being higher than that of shariah compliant equities. It further shows that even though there exist differences in the volatility and sensitivity between the conventional and the shariah compliant equities, the differences are not significant at both the 1% and 5% confidence levels.

The risk adjusted performance measures indicate that the shariah portfolio appears to be minimizing losses better than the conventional portfolio during the crisis while after the crisis period reveal that both types of equities pick up and that the conventional portfolio appears to be more diversified and profitable to investors while maintaining the same level of volatility and sensitivity with the shariah portfolio.

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