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The performance of Shariah-compliant companies during and after the recession period - Evidence from companies listed on the FTSE All World Index

Abstract

Purpose – The purpose of this study is to investigate the relative performance of Shariah-compliant companies compared to conventional companies. We focus on two periods, the first being the recession period of 2007-2010 and the second the non-recession period of 2011-2014.

Design/methodology/approach – A quantitative approach is adopted using an ordinary least square regression model. The chosen variables are those used by previous researchers in conventional studies of corporate performance. Data are selected from individual companies listed on the FTSE All World Index. We examine two periods of time: the recession of 2007-2010 and the post-recession years of 2011-2014 to analyse performance measured by Accounting Returns (ROE, ROA, EPS) and Market Returns (RET and PE).

Findings – We find that Shariah-compliant companies *outperformed* non-Shariah compliant companies, in terms of both Accounting and Market Returns during both periods. We also find that size has a negative effect on performance during both periods. The degree of risk, leverage and growth have no significance in either period, but cash flow from operations (CFO) has a positive effect on performance in both.

Research limitations/implications – The study could beneficially be extended by the inclusion of corporate governance variables to assess how these affect performance in Shariah-compliant companies.

Originality/value – In contrast to previous research carried out on indices, this study uses data from individual companies listed on the FTSE All World Index. It provides insight into the way Shariah ethics can influence performance and suggests that some of the features could be useful if adopted by conventional companies.

Keywords – Shariah, company performance, financial recession, accounting return, stock return

Paper type – Research paper

1. Introduction

Although there has been a high growth in Islamic investments during the past few decades, theoretical and empirical research on the subject has been limited. However, the financial crisis of 2007-2010 focused attention on the weaknesses of existing corporate structures, which culminated in the collapse of market economies and mistrust of the banking system. The Islamic financial model was seen as a possible panacea. Aglietta and Rigot (2009) recognise the need for finance systems to be overhauled and financial markets to be modernised and Jouini and Pastré (2009) proposes that the Islamic finance model provides an alternative that overcomes the deficiencies which created the crisis. Prior research on performance of Shariah-compliant investments tends to focus on the banking sector (e.g. Altarawneh and Lucas, 2012; Dewi and Ferdian, 2010) or on comparing performance of Shariah and non-Shariah-compliant indices (e.g. Girard and Hassan, 2008; Boujelbene Abbes, 2012). This study extends the research by examining how performance of Shariah-compliant companies, following Shariah Law, differed from that of other companies during and after the financial crisis.

In the West, Shariah is often regarded as oppressive and divisive and contrary to established national laws and traditions. On the other hand, in Islamic countries Shariah is believed to give freedom to individuals, uniting them in a common faith following ethical rules set out in the Quran, Sunna and other holy books.

Shariah Law is based on a code of conduct that guides Muslims in all aspects of social, economic and political life. The fundamental principles involve justice, equality and fairness, both in personal behaviour and business practice.

The development of Islamic Financial Institutions (IFIs) began during the early 1960s and was further developed over the following two decades. In 2012, global Islamic financial assets increased to \$1.3 trillion, which was twice the amount of that in 2007 (Sergie, 2014). Unlike conventional financial models, Islamic finance is based on the religious principles set out as Shariah Law, which include prohibition of interest, sharing of profits and losses, asset-backing, risk sharing and reduction of excessive uncertainty. In this way, the new IFIs not only observe religious law but also take into account moral, ethical and social considerations (El Khamlichi et al. 2014).

In the follow-on of the financial collapse in 2007-2010, investors sought low-risk, medium return stocks and Islamic finance, based on ethical and moral values was seen as more attractive than conventional finance. Jouini and Pastré (2009) suggest that Islamic finance provides a favourable, secure investment climate with moderate risk.

Although Shariah Law has guided business conduct in Muslim countries for centuries, recent literature has focused on investors and the development of Islamic Banking and Finance Instruments and stock market indices of Shariah-compliant companies. Little attention has been given by academic researchers to empirical studies on the performance of individual Shariah-compliant companies. The purpose of this study is to assess whether investment in Shariah-compliant companies provides an advantageous alternative to conventional investment, both in times of financial crisis and during periods of stability. It is suggested that the distinctive ethical values of Islamic Law, guiding Shariah-compliant organisations, may result in improved performance making them more attractive to investors who have become disillusioned with conventional types of investments.

With this background the present study investigates whether Shariah-compliant companies outperform conventional equities during the global financial crisis of 2007-2010 and also the period immediately after (2011-2014). Companies in both categories are selected from the FTSE All World Indices and performance data is extracted from company annual accounts. Shariah-compliance as defined by the FTSE All World Indices follows the Islamic system of financial management. This is described as 'faith-based, underpinned by the Qur'anic proscription on *riba* (interest) and *gharar* (intentional incomplete disclosure). As such, a core component of the Islamic system of financial management is Shariah compliance.'¹

Performance is measured by both Accounting Returns (ROE, ROA, EPS) and Market Returns (PE, RET). In a sample of 2,584 observations, we find that Shariah-compliant companies *outperform* non-Shariah compliant companies in both the crisis period as well as the period following the crisis. These results hold true even after controlling for other factors that can influence performance.

This study continues as follows: section 2 reviews the extant literature on Islamic Law and its application to financial systems as well as Shariah-screening. Section 3 describes the methodology used. Section 4 presents the results and sensitivity analysis and section 5 summarises the main findings.

2. Literature Review and Hypotheses Development

2.1- Shariah Screening

The use of faith-based screening in selecting ethical investments began with the introduction of the Dow Jones Islamic Market Index in 1995 (Hassan and Girard, 2011). Companies are included in the index based on Shariah-compliance as judged by Shariah boards comprised of Islamic scholars. Following that, several other stock exchanges introduced their own indices and screening methodologies.

The major index providers use similar criteria to determine Shariah-compliance and these are based on revenue source, business activity, financial screening and dividend purification (Ashraf, 2016). In the case of FTSE Indexes the screening for this index is undertaken by Yasaar Limited, a leading and impartial consultancy. The FTSE Shariah Index is fully certified as Shariah-compliant by the issue of a Fatwa by Yasaar's principles. The first approach is to screen for business activities by excluding companies engaged in finance (non-Islamic banking, finance and insurance), alcohol, pork products and other non-halal food, tobacco, arms and defence and entertainment (gambling, casinos and pornography). The process of business activity screening is followed by the screening of financial ratios where defined criteria must be met. These are: debt to be less than 33.33% of total assets; cash and interest bearing items to be less than 33.33% of total assets; accounts receivable and cash to be less than 50% of total assets; and total interest and income from non-compliant activities not to exceed 5% of total revenue. Therefore, the screening would eliminate from the index any companies that are too risky, leverage-dependent, and are highly involved in risky businesses (e.g. tobacco companies who have high litigation losses).

¹ Definition provided by Yasaar Ltd, which classify companies as Shariah-compliant in the FTSE All World Index. This can be found at: <http://www.yasaar.org/rationale.htm>.

Although FTSE screening criteria is quite strict there are screenings for other indices which are more relaxed. These may encourage fund managers to adopt a less stringent attitude towards benchmarks which could affect performance (Ashraf, 2016). There has been criticism that the present systems of screening do not reflect the true spirit of Islam (El-Gamal, 2006). In addition, it has been found that inclusion in a Shariah index is often based on what firms say rather than what they actually do and there is no attempt to track their compliance over a period of time (Alsaadi et al. 2017). There has also been considerable disagreement over the classification of assets between Halal and Haram and calls for a common and standardised Shariah screening norm (Derigs and Marzban, 2008).

2.2 Performance of Shariah and non-Shariah compliant indices

Comparisons have been made between the performance of Islamic stock market indices and conventional stock market indices. For example, Hakim and Rashidian (2004), using the CAPM (capital asset pricing model), compare the Dow Jones Islamic Market Index (DJI) to the Dow Jones World Index (DJW) and Dow Jones Sustainability World Index (DJS), or Green index during 2000-2004. They find that over this period DJI outperform DJW but underperforms DJS. They conclude that investors in the Islamic index are not disadvantaged by Shariah restrictions. However, Hassan and Girard (2011) find that the Dow Jones Islamic indices outperform their conventional counterparts in some periods but underperform them in other periods.

Hussein (2004) uses FTSE Indices in his research and compares the FTSE Global Islamic Index with FTSE All World Index. Using CAPM, Treynor index and Sharp and Jensen ratios for the bull period July 1996-March 2000 and the bear period April 2000-August 2003, he finds that the performance of the FTSE Global Islamic Index is equivalent to the FTSE All World Index during the overall period. However, the Islamic Index outperforms for the bull period and only underperforms during the bear period.

Other researchers support the argument that Islamic indices have the same characteristics as conventional indices and are just as efficient. Girard and Hassan (2008), using a multivariate cointegration analysis, and studying the pre-recession period (1999-2006) find no significant differences between the two types of indices, saying they have similar risk and diversification benefits. Guyot (2011) confirms that the efficiency of DJI indices during 1999-2008 is not compromised by Shariah restrictions.

Boujelbene Abbes (2012) studies the volatility and returns of a large selection of international indices including 35 Islamic stock market indices, comparing them with conventional counterparts in developed and emerging markets over the period of June 2002 to April 2012. His research shows that there is no difference of performance on a risk adjusted return basis between Islamic indices and others. He concludes that Muslim investors can acquire Shariah-compliant investments in accordance with their religious belief without having to accept lower financial performance.

Arouri et al. (2013) examine both conventional indices (MSCI World, MSCI Europe and MSCI United States) and Islamic indices (FTSE TII Global Islamic Index, FTSE TII Europe Islamic Index and the FTSE TII American Islamic Index) over the period August 2006 to June 2008, covering the lead up and the earlier part of the recession period, and find evidence that Islamic funds offer higher returns coupled with lower risk which, particularly in times of economic stress, helps to stabilise financial

markets. They report that as a consequence of the recent economic turmoil there has been a considerable switch to Islamic funds in many parts of the world.

2.3- Islamic financing and the financial crisis

Following the identification of the shortcomings in the conventional banking sector and its role in the financial crisis 2007-2010, researchers began considering Islamic financing as an alternative. Ahmed (2009) goes as far as to say that if the strict principles of Islamic finance had been followed, the crisis would not have occurred. In particular, conventional financial organisations charged interest and engaged in risky investments not backed by real assets (Altarawneh and Lucas, 2012; Dewi and Ferdian, 2010). These policies would not be allowed under Shariah Law; therefore, Islamic organisations were less risky and more stable during the crisis.

There are other reasons why foundations of Islamic financing could have helped in alleviating the losses during the financial crisis. In Shariah-compliant companies, it is important that Islamic principles should govern all business practices and promote fairness as outlined in the Quran and other Holy Books. This inspires trust both for investors and other stakeholders dealing with Shariah-compliant companies and rather than reduce performance it should encourage it. This is especially evident in the financial sector. Mispriced securities might not be part of the bank's portfolio, given the observance of ethical principles which would require close communication and relationship with the bank's clients (Javad and Aliasghar, 2016).

Furthermore, the risk-bearing nature of Islamic financing differs from conventional financing. Islamic banks are based on providing funds through profit-sharing as well loss-bearings investment accounts (Ariffin et al., 2009). Therefore, risk-bearing should be considered more carefully. In fact, risk is to be avoided based on the concept of the prohibition of *gharar* (uncertainty).² However, prior research does show that Islamic banks face similar risks to conventional banks such as credit liquidity and currency risks (Ariffin et al., 2009).

From the above discussion, it can be seen that most researchers support the argument that Shariah-compliant companies perform better or at least equally as well as non-Shariah companies, with a small reservation that they underperform during bear periods. However, evidence of Shariah-screening is not compelling in determining if risk has been eliminated via the screening methodologies. Furthermore, no empirical evidence of major underperformance/over performance has been put forward in previous research and consequently the following null hypotheses are proposed to examine the performance of Shariah-compliant companies:

H1: In times of recession, the performance of Shariah-compliant companies does not differ from that of conventional companies.

H2: In times of economic stability, the performance of Shariah-compliant companies does not differ from that of conventional companies.

² 'Gharar according to Shariah law is any element of chance involving asymmetric information, uncertainty, risk or even speculation, and any resultant profits are illicit and to be excluded according to the religious, and consequently the moral, precepts of Islam' (Ariffin et al., 2010, p.154).

3. Sample Selection and Methodology

It is noted from the above literature that previous research has been restricted to the analysis of indices. However, the present study uses data of individual companies from within the FTSE All World Index (3,026 companies, including 1,429 Shariah-compliant). Companies with no available performance data are excluded, as are companies not trading for the full period. The final sample comprises 1,299 Shariah-compliant (SCC) and 1,285 non-Shariah compliant (NSCC) companies (see appendix 1). The final sample consists of 2,584 observations. This is considered a novel approach not previously adopted.

Two periods are examined - recession (2007-2010) and post-recession (2011-2014). Financial information of individual companies is collected from the Bloomberg and Thomson Reuters databases. To assess the performance of SCC against NSCC, appropriate variables are selected, which are those used by previous researchers in conventional studies of corporate performance (e.g. Zhou, 2012; Margaritis and Psillaki, 2010 and Anderson and Reeb, 2003).

In this study, the following ordinary least square regression model is employed using SPSS to evaluate the relative performance of SCCs compared to NSCCs:

$$PERF_{it} = \beta_0 + \beta_1 (SCC) + \beta_2 Size_{it} + \beta_3 Risk_{it} + \beta_4 Growth_{it} + \beta_5 Leverage_{it} + \beta_6 CFO_{it} + \sum \beta_k Industry_{it} + \varepsilon_{it} \quad (1)$$

Where:

PERF _{it}	Accounting Return (ROR, ROA, EPS) or Market Returns (RET, PE) for company <i>i</i> in year <i>t</i>
ROE	Return on equity measured as net income divided by the book value of shareholder equity
ROA	Return on asset measured as net income divided by the total assets at the beginning of the year
EPS	Earnings per share measured as net income divided by outstanding shares
PE	Price/earnings ratio measured as market value per share divided by earnings per share
RET	Annual return measured as current year-end adjusted closing price divided by previous year-end adjusted price
SCC	Indicator variable that takes the value of 1 if the company is Shariah-compliant, and 0 otherwise
Size	Firm size measured as the natural log of the book value of total assets at the beginning of the year
Risk	Firm Risk is return volatility and is defined as the standard deviation of stock returns for the previous 36 months
Growth	Market-to-book-ratio
Leverage	Leverage measured as total liabilities divided by the book value of shareholder equity
CFO	Cash flow from operating activities divided by beginning of period total assets
Industry	Dummy variable to control for industry effect

In order to make the data distribution normal, outliers are removed from all the dependent variables (top and bottom 2% of the distribution). Accounting Returns (ROE, ROA, EPS) are used to measure the performance of SCC against NSCC and these are considered to be the most appropriate for assessing the efficiency of a company (Atrill and McLaney, 2016 and Thomas and Ward, 2009). For market measures, Stock Return (RET) and PE are used as the dependent variables. Both are based on stock market price adjusted by cash and stock dividends.

The control variables used in the model are those adopted by most researchers, as they have been shown to have significant effect on performance. Firm size has considerable influence, as noted by Dyer, 2006. Risk, measured by volatility, is also a relevant factor (Zhou, 2012). Growth and performance are very closely associated (Wiklund, 2006). The level of leverage is often regarded as an important factor in assessing the stability of a company (Jensen and Meckling, 1976). Cash flow from operations (CFO) is seen as a relevant indicator of firm performance (Dechow, 1994).

4. Discussion of Results

4.1- Distribution of Sample

Table 1: Industrial Distribution of SCC and NSCC companies

Industry Sector	SCC COs.	NSCC COs.	Total	Weight %
Oil & Gas	119	43	162	6.27%
Basic Materials	192	58	250	9.67%
Industrials	301	165	466	18.03%
Consumer Goods	218	136	354	13.70%
Health Care	107	37	144	5.57%
Consumer Services	98	244	342	13.24%
Telecommunications	39	47	86	3.33%
Utilities	69	81	150	5.80%
Financials	58	403	461	17.84%
Technology	98	71	169	6.54%
Final Number of Firms	1,299	1,285	2,584	100.00%

The above table shows the selection of SCC and NSCC companies by industry and the resultant weighting. As anticipated, financial companies are more prominent in the NSCC list (403=31.36%), than in the SCC list (58=4.46%). This is because SCC companies have strict limitations on interest and lending.

4.2- Descriptive Statistics – 2007-2010

Table 2 details the descriptive statistics for SCC (1,299 companies), NSCC (1,285 companies) over the period 2007-2010. Data for univariate statistics is based on time-series averages for each company, and then averaged across companies.

Table 2: Recession Period 2007-2010

SCC	Mean	Median	Standard Deviation	Min.	Max.
ROE	14.24	13.01	9.67	-0.24	35.62
ROA	6.66	5.85	4.72	-0.09	17.54
EPS	16.26	2.08	32.36	0.00	123.86
PE	20.23	16.63	14.00	0.00	62.77
RET	0.14	0.08	0.22	-0.12	0.92
Size	4.50	4.32	1.08	0.00	7.22
Risk	0.53	0.52	0.18	0.00	0.82
Growth	2.21	1.65	1.53	0.00	12.52
Leverage	1.24	1.00	1.17	0.01	12.23
CFO	0.10	0.10	0.07	-0.52	0.42

NSCC	Mean	Median	Standard Deviation	Min.	Max.
ROE	13.75	12.13	10.26	-1.91	39.95
ROA	4.96	3.20	5.20	-0.37	19.83
EPS	11.32	1.64	23.96	-0.27	101.43
PE	20.63	15.98	18.75	0.00	86.84
RET	0.10	0.04	0.19	-0.16	0.61
Size	4.71	4.42	1.19	0.07	8.22
Risk	0.40	0.43	0.31	0.02	0.89
Growth	2.23	1.52	3.50	0.17	42.42
Leverage	4.10	1.42	6.59	-10.22	55.23
CFO	0.08	0.07	0.09	-0.27	0.67

Table 2 presents the descriptive statistics for the recession period and reveals that SCCs have relatively high performance in terms of Accounting Returns (ROE 14.24, ROA 6.66 and EPS 16.26) compared with NSCC (ROE 13.75, ROA 4.96 and EPS 11.32). With regard to performance measured by PE, a slightly better performance is noticed for NSCC where the mean value is 20.63 compared with 20.23 for SCC. A significantly higher performance is seen with regard to RET for SCC where mean value is 0.14, as against 0.10 for NSCC. The statistics for company size show that NSCC are slightly larger than SCC. Contrary to expectations, risk in SCC is considerably higher, 0.53 against 0.40. There is increased growth in NSCC. As expected, leverage is higher in NSCC than in SCC, where there are strict rules on borrowing. Shariah-compliant companies have higher CFO (0.10) than others (0.08).

Although there are quite large differences between maximum and minimum values of variables for both SCC and NSCC, the standard deviation is fairly low, meaning that the data points are not widely dispersed.

4.3- Descriptive Statistics – 2011-2014

Table 3 details the descriptive statistics for SCC (1,299 companies), NSCC (1,285 companies) over the period 2011-2014. Data for univariate statistics is based on time-series averages for each company, and then averaged across companies.

Table 3: Post-recession Period 2011-2014

SCC	Mean	Median	Standard Deviation	Min.	Max.
ROE	12.72	11.36	7.96	-1.06	34.65
ROA	6.13	5.34	4.23	-0.28	18.67
EPS	24.54	2.59	48.56	-0.07	197.99
PE	20.95	17.29	17.15	0.00	110.24
RET	0.10	0.10	0.14	-0.15	0.43
Size	4.58	4.42	1.00	0.00	8.02
Risk	0.55	0.55	0.18	0.00	0.91
Growth	2.16	1.56	1.66	0.16	12.01
Leverage	1.22	1.00	0.90	0.01	7.56
CFO	0.10	0.10	0.07	-0.06	0.37
NSCC					
ROE	12.76	11.31	8.39	-1.06	34.60
ROA	4.53	3.12	4.53	-0.28	18.70
EPS	17.56	2.33	39.53	-0.07	198.00
PE	21.22	15.93	20.26	0.00	110.20
RET	0.10	0.10	0.13	-0.20	0.43
Size	4.92	4.80	1.10	0.00	8.80
Risk	0.40	0.50	0.30	0.00	0.95
Growth	2.19	1.36	3.02	0.00	38.26
Leverage	4.05	1.27	6.36	-3.22	72.63
CFO	0.06	0.06	0.08	-0.40	1.86

Compared with the recession period SCC have outperformed NSCC in terms of Accounting Returns (ROA, EPS and PE) for the post-recession period. However, in terms of ROA, NSCCs have marginally better performance (12.76 as against 12.72). With regard to RET, results are similar for both SCC and NSCC. Once again, size appears similar for both periods, with NSCC having a slightly larger value. Contrary to expectations, the descriptive statistics for risk show SCC to be slightly more vulnerable. Similarly, growth is a little higher in NSCC than in SCC during the post-recession period. Leverage in NSCC is extremely high at 4.05, whereas the figure for SCC is only 1.22. The CFO of SCC is 0.10 and NSCC 0.06. The standard deviation for both SCC and NSCC is quite low, despite considerable differences in values of variables. This confirms that the data points are close to the mean.

Table 2 and 3 are summaries of the extracted data and the true significance is only revealed in the inferential analysis.

4.4- Correlation Matrix – 2007-2010

Table 4 shows the correlation matrix for the variables used in this study for both SCC and NSCC samples.

Table 4: Correlation Matrix 2007-2010

SCC	ROE	ROA	EPS	PE	RET	Size	Risk	Growth	Leverage
ROA	0.8151	1.0000							
EPS	-0.1684	-0.1045	1.0000						
PE	-0.2109	-0.1874	0.0535	1.0000					
RET	0.2740	0.2610	-0.2180	0.0297	1.0000				
Size	-0.1597	-0.2193	0.4768	0.0289	-0.1496	1.0000			
Risk	-0.0686	-0.0534	-0.1308	0.0316	-0.0171	0.0437	1.0000		
Growth	0.6001	0.3936	-0.1437	0.2174	0.3202	-0.1885	-0.0824	1.0000	
Leverage	0.1759	-0.1952	-0.1069	-0.0006	-0.0101	0.0520	-0.1040	0.1083	1.0000
CFO	0.4836	0.5823	-0.0525	-0.0842	0.1744	-0.0890	0.1880	0.4001	-0.2140

NSCC	ROE	ROA	EPS	PE	RET	Size	Risk	Growth	Leverage
ROA	0.7099	1.0000							
EPS	-0.0808	-0.0248	1.0000						
PE	-0.2118	-0.1131	0.1000	1.0000					
RET	0.2829	0.2903	-0.0946	0.0453	1.0000				
Size	-0.1623	-0.3360	0.4291	0.0553	-0.0882	1.0000			
Risk	0.0519	0.1847	0.0344	0.0824	0.0474	-0.1623	1.0000		
Growth	0.0246	-0.0068	-0.0137	0.0988	0.0272	0.0037	-0.0316	1.0000	
Leverage	0.0407	-0.0808	-0.0283	-0.0251	-0.0521	0.0635	-0.0928	0.0043	1.0000
CFO	0.1200	0.5746	-0.0204	-0.0364	0.0334	-0.0902	0.0752	-0.0013	-0.0205

Table 4 shows the correlation between the 5 dependent variables, Accounting Returns (ROE, ROA, EPS) and Market Returns (PE and RET) and the 5 control variables. Any figure over 0.45 is considered to reveal a significant correlation. In this table, there are six such correlations. The correlation between ROA and ROE is expected but they are independent variables and are used separately in the regression. Growth and CFO are closely related to ROE in respect of SCC only. CFO is correlated to ROA in relation to both SCC and NSCC. Had more of the results being higher than 0.45 the correlation would have been stronger and would have compromised the results of the regression, making it unreliable (Shortell, 2001).

4.5- Correlation Matrix – 2011-2014

Table 5 shows the correlation matrix for the variables used in this study for both SCC and NSCC samples.

Table 5: Correlation Matrix 2011-2014

SCC	ROE	ROA	EPS	PE	RET	Size	Risk	Growth	Leverage
ROA	0.8158	1.0000							
EPS	-0.1525	-0.0769	1.0000						
PE	-0.2216	-0.1671	-0.0654	1.0000					
RET	0.2386	0.2137	0.2132	-0.0276	1.0000				
Size	-0.1899	-0.2016	0.5035	-0.0966	-0.0201	1.0000			
Risk	-0.0944	-0.0777	-0.1768	0.0722	-0.1843	-0.0354	1.0000		
Growth	0.5530	0.2894	-0.0793	0.0846	0.1307	-0.1837	-0.0247	1.0000	
Leverage	0.0994	-0.0868	-0.0427	-0.0170	-0.0242	-0.0083	-0.0381	0.2015	1.0000
CFO	0.5176	0.6642	-0.0521	-0.0209	0.1298	-0.1288	0.2492	0.1863	-0.0826

NSCC	ROE	ROA	EPS	PE	RET	Size	Risk	Growth	Leverage
ROA	0.6721	1.0000							
EPS	-0.0793	0.0181	1.0000						
PE	-0.2137	-0.0664	0.0079	1.0000					
RET	0.2099	0.1829	0.1437	0.0174	1.0000				
Size	-0.2111	-0.3723	0.3928	-0.1380	-0.0572	1.0000			
Risk	0.0655	0.2172	-0.0132	0.1318	-0.0012	-0.2583	1.0000		
Growth	0.0168	-0.0071	-0.0140	0.1244	-0.0408	0.0009	-0.0293	1.0000	
Leverage	-0.0504	-0.0933	-0.0243	-0.0527	0.0406	0.0164	-0.0309	0.0139	1.0000
CFO	0.3538	0.5359	0.0129	0.1500	0.1651	-0.2705	0.3104	-0.0215	-0.0417

Table 5 shows significant correlation for only SCC, where growth and CFO are both over 0.45 in their relationship with ROE. CFO is correlated to ROA in relation to both SCC and NSCC. Apart from these instances, there are no high correlations and the results of the regression analysis should not be prejudiced. These results are identical to those for the recession period (Table 4) and the same remarks apply to both.

4.6- Inferential Statistics – Recession Period 2007-2010

This section provides results related to the first hypothesis examining differential performance between Shariah and non-Shariah compliant companies. Table 6 shows the coefficients and p-values (in brackets) from the multiple regression, using Accounting Returns (ROE, ROA, EPS) and Market Returns (PE, RET) as dependent variables. SCC is a dummy variable which takes the value of 1 if a company is Shariah-compliant and zero otherwise. The table also shows the effect on performance of other independent variables in respect of all 2,584 sample companies. Data for the multivariate analysis is based on time-series averages for each firm.

Table 6: Performance of SCC vs NSCC – 2007-2010

	Accounting Returns			Market Returns	
	ROE	ROA	EPS	PE	RET
Intercept	19.45 (0.00)***	9.58 (0.00)***	39.98 (0.00)***	15.60 (0.00)***	0.19 (0.00)***
SCC	0.26 (0.05)**	1.20 (0.00)***	6.97 (0.00)***	0.84 (0.04)**	0.04 (0.00)***
Size	-1.31 (0.00)***	-1.12 (0.00)***	-1.36 (0.00)***	-0.71 (0.01)***	-0.02 (0.00)***
Risk	-0.39 (0.57)	-1.08 (0.23)	-0.53 (0.76)	-1.23 (0.49)	0.00 (0.77)
Growth	0.00 (0.24)	0.00 (0.97)	0.00 (0.57)	0.01 (0.39)	0.00 (0.27)
Leverage	0.02 (0.13)	-0.01 (0.16)	-0.07 (0.15)	-0.01 (0.36)	-0.00 (0.15)
CFO	5.30 (0.00)***	3.32 (0.00)***	1.36 (0.00)***	2.55 (0.03)**	0.03 (0.04)**
Industry dummies	Yes	Yes	Yes	Yes	Yes
R2	0.09	0.15	0.20	0.06	0.12
No. of Observations	2,584	2,584	2,584	2,584	2,584

Notes: *, **, *** are significant levels of 10%, 5%, 1% respectively

The results show that SCC outperform NSCC in terms of both Accounting Returns (ROE, ROA, EPS) and Market Returns (PE, RET) during the recession period (2007-2010). In terms of Accounting Returns, the coefficients are positive figures (ROE 0.26, ROA 1.2 and EPS 6.97) with significant p-values (0.05, 0.00, 0.00 and 0.04 respectively). With regard to Market Returns, the coefficients are also positive (PE 0.84 and RET 0.04) with significant p-value (0.04 and 0.00, respectively). Size is shown to have a negative effective on both performance measures and there is no evidence of risk affecting performance, as the p-values are not significant. The same can be said about growth. SCC always have low leverage and the regression confirms that it is not significant in affecting performance. However, CFO has a positively significant effect on both Accounting and Market Returns.

These results show that the influence of Shariah Law results in stability, particularly in times of recession. Although risk is shown not to significantly affect performance, many investors prefer to include SCC in their portfolio together with conventional financial assets as they are seen to be more stable. This is because SCC are prudent, not greedy and do not seek excessive profits. Previous research, although based on analysis of indices, confirms this conclusion (e.g. Ashraf and Mohammad, 2014; Abderrezak, 2008 and Abdullah et al. 2007). Furthermore, since the screening methodology excludes from the Shariah-compliant index companies with high risk profiles, accounting returns are expected to be more stable (Hassan and Girard, 2011).

4.7- Inferential Statistics – Post-Recession Period 2011-2014

To address hypothesis 2, Table 7 shows the coefficient and p-values (in brackets) from the multiple regression, using Accounting Returns (ROE, ROA, EPS) and Market Returns (PE, RET) as dependent variables. SCC is a dummy variable which takes the value of 1 if a company is Shariah-compliant and

zero otherwise. The table also shows the effect on performance of other independent variables in respect of all 2,584 sample companies. Data for the multivariate analysis is based on time-series averages for each firm.

Table 7: Performance of SCC vs NSCC – 2011-2014

	Accounting Return			Market Returns	
	ROE	ROA	EPS	PE	RET
Intercept	16.29 (0.00)***	6.69 (0.00)***	77.97 (0.00)***	26.39 (0.00)***	0.13 (0.00)***
SCC	0.91 (0.00)***	0.71 (0.00)***	1.27 (0.00)***	1.88 (0.02)**	0.01 (0.04)**
Size	-1.01 (0.00)***	-0.77 (0.00)***	-0.29 (0.00)***	-1.65 (0.00)***	-0.00 (0.02)**
Risk	-3.26 (0.42)	-1.27 (0.32)	-2.28 (0.43)	-1.59 (0.56)	-0.05 (0.23)
Growth	0.00 (0.26)	0.00 (0.97)	0.00 (0.64)	0.01 (0.18)	0.00 (0.18)
Leverage	-0.00 (0.40)	-0.00 (0.19)	-0.03 (0.22)	-0.02 (0.16)	0.00 (0.12)
CFO	3.20 (0.00)***	1.96 (0.00)***	2.63 (0.00)***	3.33 (0.02)**	0.30 (0.00)***
Industry dummies	Yes	Yes	Yes	Yes	Yes
R2	0.19	0.39	0.20	0.04	0.05
No. of Observations	2,584	2,584	2,584	2,584	2,584

Notes: *, **, *** are significant levels at 10%, 5%, 1% respectively

Table 7, covering the post-recession period, shows almost similar results to those of the recession period and performance measured by both Accounting Returns (ROE, ROA, EPS) and Market Returns (PE, RET) is better than NSCC. The coefficient values are positive in relation to Accounting Returns (ROE 0.91, ROA 0.71 and EPS 1.27) with p-values (0.00, 0.00 and 0.00 respectively). Similarly, and PE has a positive coefficient of 1.88 and RET has a positive coefficient of 0.01 with p-values of 0.02 and 0.04, respectively. The control variables show similar results to those found for H1. The overall results confirm that SCC outperform NSCC in most performance measures.

4.8- Sensitivity Analysis

The above analyses use variables which are considered the most suitable to capture the performance characteristics of both SCC and NSCC. However, to make the results more robust further tests are carried out for both periods, first eliminating financial companies and then utilities. After eliminating financial companies for the recession period, results reveal that SCC outperform NSCC in terms of Accounting Returns with coefficients ROE 0.18, ROA 0.92, EPS, 3.25 and p-values of 0.06³, 0.03^{**} and 0.04^{**} respectively. PE and RET show similar findings with coefficients 0.42, 0.12 and p-values 0.06^{*} and 0.08^{*}, respectively. Removing utility companies for the same period produces coefficients of ROE 0.16, ROA 0.98, EPS, 4.29 with p-values of 0.08^{*}, 0.05^{**}, 0.07^{*} and 0.07^{*} respectively, and PE and RET

³ Notes: *, **, *** are significant levels at 10%, 5%, 1% respectively

have coefficients of 0.31 and 0.21, with p-values of 0.07* and 0.08*, respectively. These values have only slight significance.

Similar tests are carried out for the post-recession period and the results show that SCC have better performance than NSCC. After removing financial companies from the samples, the results of the Accounting Returns show coefficients (ROE 0.52, ROA 0.62, EPS 0.82) with p-values (0.05**, 0.03** and 0.06* respectively) and Market Returns coefficients (PE 1.01, RET 0.08) with p-values (0.05* and 0.07*, respectively), which are less significant than the main results. Removing utility companies from both SCC and NSCC gives less significance than the main results. For Accounting Returns coefficients are ROE 0.42, ROA 0.22, EPS 0.49 with p-values 0.08*, 0.05** and 0.06* respectively. For Market Returns, coefficients are PE 0.68 and RET 0.05 with p-values 0.06* and 0.07*, respectively.

The removal of financial and utilities to test robustness is following the approach used by Arouri et al. (2013) who state that conventional and Islamic companies do not share the same financial structure. In the same way, utilities companies have been removed as they are highly regulated.

5. Conclusion

During the recession, investors began to investigate ways of making their portfolios less volatile in the belief that conventional stocks had contributed to the financial crisis. They saw Shariah-compliant companies (SCCs) as a possible solution and over the following years there has been a huge rise in the number of Shariah-compliant financial instruments and many listings of SCC have been established in countries all over the world. Companies included in these lists are compelled to conform with strict Shariah Law before they are admitted. The interest provoked by all this activity in the Islamic markets has led to questioning of why investment in SCC may be desirable. It appears that SCC may offer advantages with respect to performance and stability.

The adherence to Islamic values and ethics should be the primary consideration of all Shariah-compliant organisations, but this should enhance efficiency, not compromise it. In fact, the concerns about efficiency are addressed by the Quran, Sunnah and other Holy Books, which outline permissible and non-permissible actions. As an example, uncertain contracts and undue speculation are regarded as gambling, which is forbidden by the Quran. This leads to the opinion that investment in Shariah-compliant companies is safer than investment in conventional stocks, as it reduces risk and speculation (Obaidullah, 2001).

The present study seeks to establish the strength of this suggestion by examining the performance of SCC against NSCC during the recession (2007-2010) and post-recession (2011-2014) on companies listed on FTSE All World Index.

The results of this research reveal SCCs *outperform* NSCCs in terms of both Accounting Returns and Market Returns during recession and post-recession periods. It is found that size has a negative effect on performance during both periods. CFO contributes positively to performance during both periods.

The present study uses the methodology widely adopted by researchers in evaluating performance in conventional research. It has not previously been used when dealing with Shariah-compliant companies. The conclusions of this study are similar to those found in research on Islamic indices,

confirming that SCC, under strict Shariah Law, perform as well as conventional companies, whilst providing consistent non-volatile returns.

The findings in this study are of interest to several stakeholders. For example, it helps policymakers in identifying a benefit of non-conventional investments i.e. Islamic financing investments. This can be useful to introduce some of the concepts in Islamic financing such as *gharar*, which refers to uncertainty or risk, to the wider investment community. Investors, especially Muslim investors, would be interested to see that investing in Shariah-compliant companies will not make them worse-off financially. This is especially important given anecdotal evidence of higher costs for Shariah-compliant investments (e.g. Cumbo, 2014).

Further performance research could be extended to include corporate governance variables to assess how these could affect SCC. It would also be interesting to investigate the performance of companies controlled by other religious faiths.

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Appendix 1 – FTSE All World Index

	SCC Cos.	NSCC Cos.	Total	Weight %
Australia	45	41	86	3.33%
Belgium	5	6	11	0.43%
Brazil	30	32	62	2.40%
Canada	37	36	73	2.83%
Chile	7	11	18	0.70%
China	102	90	192	7.44%
Columbia	1	5	6	0.23%
Czech Republic	2	1	3	0.12%
Denmark	11	7	18	0.70%
Finland	8	4	12	0.46%
France	38	38	76	2.94%
Germany	37	26	63	2.44%
Greece	1	3	4	0.15%
Hong Kong	35	39	74	2.87%
India	40	62	102	3.95%
Indonesia	16	14	30	1.16%
Ireland	1	3	4	0.15%
Israel	0	31	31	1.20%
Italy	11	19	30	1.16%
Japan	244	178	422	16.33%
Korea	43	53	96	3.72%
Malaysia	20	21	41	1.59%
Mexico	13	20	33	1.28%
Netherlands	9	10	19	0.74%
Norway	7	5	12	0.46%
New Zealand	6	6	12	0.46%
Austria	5	5	10	0.39%
Pakistan	2	3	5	0.19%
Philippines	7	16	23	0.89%
Poland	8	9	17	0.66%
Portugal	2	4	6	0.23%
Russia	18	10	28	1.08%
South Africa	29	32	61	2.36%
Singapore	18	22	40	1.55%
Spain	8	12	20	0.77%
Sweden	21	15	36	1.39%
Switzerland	28	17	45	1.74%
Thailand	9	15	24	0.93%
Turkey	8	18	26	1.01%
Taiwan	49	31	80	3.10%
UAE	10	4	14	0.54%
UK	44	57	101	3.91%
USA	264	254	518	20.07%
Total	1,299	1,285	2,584	100.00%