

# Islamic Investment: Evidence From Dow Jones and FTSE Indices<sup>#</sup>

**Khaled A. Hussein\***

*Despite the increasing attention to Islamic investment, the empirical studies on Islamic indices and/or funds are scarce. Due to increased monitoring costs, availability of a smaller investment universe, and restricted potential for diversification, it has been argued that unscreened benchmarks should outperform Islamic (ethical) investment. This paper examines the impact of the Shari'ah screening on the performance of FTSE Global Islamic index and Dow Jones Islamic Market Index (DJIMI) using a number of performance measurement techniques. We particularly examine whether returns earned by investors who purchases shares in the FTSE Global Islamic and DJIMI indices are significantly different from their indices counterparts, both in the short-run and long-run. In order to capture the impact of the changes in the economic conditions on the indices performance, we divide the sample period into bull and bear market periods. Our findings provide strong evidence to reject the assumption that shari'ah investing offer inferior investment performance compared to unscreened portfolios.*

## 1. Introduction

Until the 1970s, a great proportion of the Muslim community was not involved in any stock market investments due to Islamic prohibition of certain business activities. In the 1990s, a major breakthrough took place in religious rulings related to equity investment, and since then Islamic equity funds have started to operate. It has recently been estimated that the Islamic financial markets have \$230 billion to invest, an amount that is growing annually by 15% (Hakim and Rashidian, 2004).

Islamic equity funds experienced strong growth during the second half of the 1990s. In 1996, there were 29 Islamic funds, valued at US\$800 million. During that period, the performance of the Islamic funds was mixed whereby investors lacked a suitable benchmark to assess performance. By March 2002, the number of Islamic funds rose to 105 with total assets of US\$3.3 billion, down from US\$5 billion in 2000 (Siddiqi, 2002). As a result of the increasing demand for Islamic equity investment, the International Investor (of Kuwait) in collaboration with FTSE Group, The Independent Global Index Company (based in London), launched the

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\* Islamic Research and Training Institute, Islamic Development Bank, PO Box 9201, Jeddah 21413, Saudi Arabia, Email: KHussein@isdb.org

first Islamic equity index series, FTSE Global Islamic Index Series (GIIS) at the end of 1998. Subsequently, in February 1999 the first Dow Jones Islamic market index (DJIMI) was launched to track the performance of companies whose activities are consistent with Islamic principles from 34 countries.

Due to increased monitoring costs, availability of a smaller investment universe, and restricted potential for diversification, it has been argued that unscreened benchmarks should outperform Islamic investment. Despite the increasing attention to Islamic investment, the empirical studies on Islamic indices and/or funds are scarce.

This paper examines the impact of the ethical screening on the performance of FTSE Global Islamic index and Dow Jones Islamic Market Index (DJIMI) using a number of performance measurement techniques. We examine whether returns earned by investors who purchases shares in the FTSE Global Islamic and DJIM indices are significantly different from their indices counterparts, both in the short-run and long-run. In this paper, we provide a comprehensive study on the accurate performance of each Islamic index by capturing the effects of different economic conditions on returns.

The rest of the paper is organized as follows: Section 2 provides an overview of the current major Islamic indices and a summary of the empirical studies on Islamic indices performance. Section 3 explains the main hypothesis of the study and its theoretical background, while Section 4 identifies the variables used in the study and specifies the different sample periods. Section 5 gives full description of the methodology utilized in the study. Results are discussed in Section 6, while Section 7 concludes.

## **2. Islamic Indices: an Overview**

At the end of December 1998 and due to the growing interest in Islamic finance, FTSE, in collaboration with the International investor, launched FTSE Global Islamic Index Series (GIIS). GIIS are equity benchmark indices designed to track the performance of leading publicly trading companies whose activities are consistent with Islamic shari'ah principles. The GIIS are a subset of FTSE All-World Index group,<sup>1</sup> which includes stocks from 29 countries.<sup>2</sup> FTSE has 15 Islamic indices, classification is based on industry (10 indices) and region (Global, Americas, Europe, Pacific Basin, South Africa).

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<sup>1</sup> The FTSE All-World Index covers 48 different countries and over 2,700 stocks. The index is divided into Developed, Advanced Emerging and Emerging segments.

<sup>2</sup> Countries eligible for inclusion in the FTSE Global Islamic Index series are: Australia, Austria, Belgium/Luxembourg, Brazil, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Indonesia, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Philippines, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, UK and USA.

The GIIS are calculated at the end of each day when the FTSE All-World Index is calculated where the base currency for the GIIS is the US dollar. Companies are included in the appropriate GIIS index, if they are current constituents of one of the FTSE All-World index markets and also meet the Islamic criteria. Islamic shari'ah principles exclude stocks whose core activities are related to any of the following: banking or any other interest related activity, alcohol, tobacco, gambling, arms manufacturing, life insurance, pork production, packaging and processing any activity related to pork, and companies with gross interest bearing debt to total assets exceeds 33%. GIIS have a management committee which is responsible for the calculation of the GIIS, reviewing the GIIS and approving changes to the constituents. The GIIS are reviewed semi-annually in the first week of March and September. If a stock drops out of the FTSE All-World Index markets, it is removed from the relevant GIIS index. Further, if a stock of the GIIS fails to meet the eligibility criteria, the management committee removes it from the relevant GIIS index. Changes arising from the semi-annual review are implemented after the close of the index calculation on the third Friday in March and September.

In February 1999, Dow Jones launched its first Islamic market index. The Dow Jones Islamic Market Index (DJIMI) is a subset of Dow Jones Global Indexes (DJGI) group, which includes stocks from 34 countries and covers 10 economic sectors, 18 market sectors, 51 industry groups and 89 subgroups defined by the Dow Jones Global Classification Standard. The DJIMI excludes from the index universe any industry group that represents an incompatible line of business with Islamic principles. Those activities include tobacco, alcoholic beverages, pork, gambling, arms, pornography, hotel and leisure industry, and conventional financial services (banking, insurance, etc).

Once companies with unacceptable primary business activities have been eliminated from the universe, the remaining stocks are tested according to three filters designed to limit the Dow Jones Islamic universe to the most desirable firms. Debt and assets are considered, as to which extent that assets are financed by debt. Thus, the debt/capital ratio should not exceed 33% in order for a firm to be included in the DJIMI. Companies are also excluded if the sum of cash and interest bearing securities exceeds 33% of market capitalization. Firms also cannot be included in the DJIMI if accounts receivables is greater than 45% of total assets. Companies that pass these criteria are included in the DJIMI investable universe.

DJIMI is created and maintained according to a consistent methodology. It is monitored by a supervisory board of Islamic scholars that advise Dow Jones on matters pertaining to the compliance of the indices' eligible components. The composition of the DJIMI is reviewed quarterly with changes implemented on the third Friday in March, June, September and December. Market data from the end of January, April, July and October are used as the basis for the revision process. The review process is carried out by repeating the universe creation and component selection processes as described above. In addition to the quarterly and annual

composition reviews, the DJIMI is reviewed on an ongoing basis. A change in the index is necessary if an extraordinary event such as bankruptcy, merger, and take-over affect the index component. Furthermore, when there is a new issue and it is added to the Dow Jones Global Indices, it is also evaluated according to the DJIMI criteria to determine whether it will be included in the DJIMI.

It has been argued that excluding significant chunks of business from Islamic portfolio funds runs the risk of losing out in terms of overall performance since liquor companies in general have been able to withstand the recent global recession very well and were among the world best performers. On the other hand, in the recent global recession and on several occasions before the collapse of high-profile companies such as WorldCom and Enron, DJIMI was able to detect signs of corporate troubles and remove those stocks from the Islamic indices. Almost a year before WorldCom's collapse, the DJIMI removed WorldCom from its indices. WorldCom was taken out because its debt to market capitalization ratio exceeded the limit of 33 percent that DJIMI requires in order to include a company in the Islamic indices.<sup>3</sup> As soon as WorldCom was removed from DJIMI, the Islamic fund managers sold off WorldCom shares, when share price was trading at \$14. Six months later, the share has lost its entire value.

Despite the growing interest in Islamic finance, there are few empirical studies that examine the performance of Islamic equity investing in the literature. Hassan (2002) examines the issues of market efficiency and the time-varying risk return relationship for the DJIMI over the 1996-2000. Several statistical tests, such as serial correlation; variance ratio; and Dickey-Fuller tests, were employed. The results document that DJIMI returns are normally distributed and the DJIMI has remarkable market efficiency. Utilizing a GARCH econometric framework, Hassan also tests the volatility of the DJIMI returns. His results show that there is still operational inefficiency at DJIMI that needs to be corrected to make the risk behaviour of DJIMI stable overtime.

Using cointegration and causality analysis, Hakim and Rashidian (2004) examine the relationship between DJIMI, Wilshire 5000 index, and the risk-free rate- proxied by the three month treasury bill over the time period 1999-2002. They find that the DJIMI is not correlated with neither Wilshire 5000 index nor the three month treasury bill. The results also show that the changes in the DJIMI are not caused by the Wilshire 5000 or the three month treasury bill. They conclude that the filtering criteria adopted to eliminate non-compliant firms leads to an Islamic index with a unique risk-return characteristics that are not affected by the broad equity market.

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<sup>3</sup> The decision to take off WorldCom from DJIMI was an automatic decision since the debt had gone beyond the limit and therefore were no longer in accordance with the Islamic principles.

Hussein (2004) examines the hypothesis that the performance of the FTSE Global Islamic index is significantly different from those of the FTSE All-World Index during the sample period 1996-2003. A comparison of the raw and risk-adjusted performance show that the Islamic index performs as well as the FTSE All-World index over the entire period. There is evidence that the Islamic index yields statistically significant positive abnormal returns in the bull market period, though it underperforms the FTSE All-World index in the bear market period. In general, the results show that the application of ethical screens does not have an adverse impact on the FTSE Global Islamic index performance.

### **3. The Hypothesis**

Opponents of ethical investing unscreened benchmarks may outperform ethical investment since using ethical investing criteria may cause additional screening and monitoring costs, availability of a smaller investment universe, and restricted potential for diversification (Temper, 1991). In particular, ethical screening tends to eliminate large firms from the investment universe and as a result remaining firms tend to be smaller and have more volatile returns.

Advocates of ethical investing argue that a company that adopts and implements an effective corporate responsibility policy is better positioned to avoid any environmental and social crises that could lead to reputation damage, higher production costs, lost production, higher security costs, and increased insurance premiums. Good corporate responsibility practise can offer companies range of opportunities to help them secure a competitive advantage.

Here, we examine the hypothesis that whether returns earned by investors who purchases shares in the FTSE Global Islamic and DJIM indices are significantly different from their indices counterparts, both in the short-run and long-run.

### **4. Data**

We use the Dow Jones Islamic Market Index (DJIMI) and adopt the Dow Jones World Index as a corresponding index. Since the Dow Jones company was able to track-back the Islamic index, thus our sample period is extended to cover from January 1996 to December 2004. On the other hand, we use the FTSE All-World index as the counterpart index of the FTSE Global Islamic Index. The available sample period of the FTSE Islamic indices are two years longer that the Dow Jones Islamic indices since the FTSE company can provide historical monthly data on the Islamic indices from December 1993.

In order to capture the impact of the changes in the economic conditions on the indices performance, we divide the sample period into bull and bear market periods. The sample period is classified into three sub-periods: bull period (1) from Dec 1993 – Dec 2000, bear period from Dec 2000- Sept 2002, bull period (2) from Sept 2002 to Dec 2004.

To capture the risk factor, we use the world portfolio as a reference portfolio (market benchmark) for both the Islamic index and its index counterparts. Therefore, we follow other studies and use the monthly data of the World Index All International, established by Morgan Stanley database, as an appropriate proxy for the market portfolio. Furthermore, we use the one-month US treasury bill return as a proxy for risk-free rate.

## 5. Methodology

This section highlights the methodology that we employ to achieve the objectives of this study. We utilize the parametric t statistic and the non-parametric signed-rank test to examine whether the Islamic indices achieve abnormal returns for investors based on monthly returns. The long-run performance is calculated using more than one technique.

To test the behaviour of the Islamic indexes and compare them with the corresponding indices (FTSE All-World index, and Dow Jones World index), we calculate the return on a monthly basis by taking the logarithmic difference of the price index, so that:

$$R_{i,t} = \left[ \log(P_{i,t}) - \log(P_{i,t-1}) \right] \quad (1)$$

where  $R_{i,t}$  is the raw return for index  $i$  for the time  $t$ ,  $P_{i,t}$  refers to the price of index  $i$  at time  $t$ , and  $P_{i,t-1}$  is the price of index  $i$  at time  $t-1$ .

Since the Islamic indexes and their index counterparts are not from the same category of risk, and since the raw returns are not adjusted for risk, we utilize the Capital Asset Pricing Model (CAPM) in order to estimate the risk-adjusted returns:

$$\{(R_{i,t} - R_{f,t}) = \alpha_{i,t} + \beta_{i,t}(R_{m,t} - R_{f,t}) + \varepsilon_{i,t}\} \quad (2)$$

where  $R_{f,t}$  is the risk-free rate measured by a short-term one-month treasury bill return,  $R_{m,t}$  is the monthly return on the market portfolio (Morgan Stanley World Index All International) in period  $t$ ,  $\alpha_{i,t}$  is an intercept and known as Jensen (1968) measure of performance or Jensen's alpha, and  $\beta_{i,t}$  is the risk of index  $i$  in period  $t$  relative to benchmark,  $m$ .  $\varepsilon_{i,t}$  is an error term. Note that  $(R_{i,t} - R_{f,t})$  is the excess return on the Islamic index  $i$  in period  $t$  and  $(R_{m,t} - R_{f,t})$  is the excess return on the benchmark index  $m$  in period  $t$ . If beta is greater than one, this indicates that index  $i$  has higher risk than the benchmark index  $m$ . Further, if alpha is positive and statistically significant, it indicates that the index  $i$  outperforms the market index  $m$ .

Based on Jensen measure and given  $\beta_{i,t}$  from equation (2), the risk-adjusted returns can be calculated as follows:<sup>4</sup>

$$\bar{R}_{i,t} = \{R_{i,t} - R_{f,t} - \beta_{i,t}[R_{m,t} - R_{f,t}]\} \quad (3)$$

where  $\bar{R}_{i,t}$  is the risk-adjusted monthly return of index i.

We test the null hypothesis that the monthly excess returns (market-adjusted return) over different periods are equal to zero where the market-adjusted return is calculated as follows:

$$MAR_{i,t} = R_{i,t} - R_{crp,t}, \quad (4)$$

where  $MAR_{i,t}$  is the abnormal return or market-adjusted return for index i for the month t, and  $R_{crp,t}$  is the raw return on corresponding reference portfolio for the month t. Under the null hypothesis, these test statistics follow a Student's t-distribution if the sample is normally distributed. Given the fact that some returns might not be normally distributed, an alternative (non-parametric) technique is also implemented. We adopt the non-parametric Wilcoxon signed-rank test, which examines the null hypothesis that the median abnormal return is equal to zero. Although the non-parametric test statistic is less sensitive to the presence of outliers, it is, however, less powerful than the t-test if the data all come from a single normal distribution. Hence, we use both test statistics for the robustness of the results.<sup>5</sup> Further, we use Skewness and Kurtosis tests to examine whether the monthly return series are normally distributed.

We, then, examine the long-run performance of the concerned indices. The literature shows that there is no consensus on the appropriate methodology of calculating long-run returns (see, among others, Barber and Lyon, 1997; Kothari and Warner, 1997; Brav and Gompers, 1997; and Lyon, Barber and Tsai, 1999). So, we use two alternative methods to calculate long-run returns: buy-and-hold returns (BHRs) and cumulative returns (CRs). We compute CRs and BHRs utilizing both the raw returns and the Jensen return model, which take the risk factor into consideration.

$$CR_{i,s,e} = \sum_{t=s}^e R_{i,t}, \quad (5)$$

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<sup>4</sup> Jensen measure is the most commonly used and widely accepted measure of risk-adjusted returns in the literature.

<sup>5</sup> The findings from the parametric test should be treated with caution if their corresponding returns are not normally distributed.

where  $CR_{i,s,e}$  is the cumulative return for index  $i$  from the event month  $s$  to the event month  $e$ , where  $s$  is the starting month of the calculated period of an index  $i$  and  $e$  is the end of the calculated period.

We also calculate BHR as follows:

$$BHR_{i,T} = \left[ \prod_{t=1}^T (1 + R_{i,t}) - 1 \right] \quad (6)$$

where  $BHR_{i,t}$  is the buy-and-hold return for index  $i$ , is in period  $T$ , and  $t = 1$  indicates the first month of the calculated period of an index  $i$ .

As we previously did, we take into account the risk factor. Hence, we already calculated the returns of each index based on the Jensen measure, we apply the same two forms, CRs and BHRs, to the risk-adjusted returns.

## 6. The Results

Table (1) presents the average monthly raw returns of the DJ indices. It shows that the DJ Islamic index outperforms its counterpart in the entire period (1996-2004) and bull period (1). It is worth noting that the median monthly return of the DJ World index is higher than the DJ Islamic returns over the entire period. This indicates that the Islamic index has greater volatility compared with the DJ world index. On the other hand, the DJ Islamic index fails to maintain its superior performance over the bear market period and in the recent bull period where the DJ World index provides investors with higher average monthly returns.

Table (2) presents the average monthly returns of the FTSE indices. The findings from the FTSE indices tend to be similar to those of Table (1). Table (2) reports that the FTSE Islamic index has a better performance over the FTSE All-World index in the entire and bull (1) periods. In the contrary, the FTSE Islamic index underperform its counterpart in the bear market. Further, both indices provide an average monthly return of 0.013 in the bull (2) period.

In order to provide more meaningful estimates of the indices performance, the risk factor should be controlled, thus we proceed and estimate the risk-adjusted returns using CAPM model (as shown in equations 2 and 3). The results of the OLS estimations of equation (2) are shown in Table (3). It is interesting to note that the betas of the two Islamic indices are greater than unity and higher than those of the two counterpart indices (DJ World index and FTSE All-World index). These results imply that the two Islamic indices are riskier than the benchmark (Morgan Stanley World Index All International index) and the counterpart indices. In fact, the DJ Islamic index has a higher risk than the FTSE Islamic index since the risk coefficients are 1.07 and 1.01, respectively. Table (2) also reports that Jensen's alpha is positive for all four indices but statistically insignificant for all cases. This

means that the Islamic indices do not provide any marginal return over the benchmark return. Further, the R2 statistic, which shows the proportion of variation in the return of the index that is explained by variations in the market (benchmark) return, is quite high (above 81 percent) for the DJ World Index and FTSE indices, suggesting that the three indices move in line with the market. In contrast, the R2 statistic is quite low (0.37) in case of the DJ Islamic index. This would imply that the deviations of the DJ Islamic index from the MSCI index are considerable and MSCI may not be the suitable benchmark index for the DJ Islamic index.

*Table 1: Raw Returns of Dow Jones Indices*

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
DJ Islamic	0.009	0.007	-0.169	0.221	0.077	0.468	0.448
DJ World	0.005	0.011	-0.129	0.135	0.046	-0.259	0.644
Bull Period (1)							
DJ Islamic	0.026	0.018	-0.169	0.221	0.096	0.179	-0.529
DJ World	0.013	0.017	-0.129	0.127	0.043	-0.500	1.653
Bear Period							
DJ Islamic	-0.024	-0.026	-0.128	0.092	0.057	0.269	-0.727
DJ World	-0.018	-0.020	-0.103	0.093	0.050	0.067	-0.650
Bull Period (2)							
DJ Islamic	0.012	0.014	-0.101	0.084	0.039	-0.728	1.432
DJ World	0.014	0.019	-0.089	0.135	0.041	0.215	2.751

Notes: Min. Max. St. Dev., Skew. and Kurt refer to minimum, maximum, standard deviation, skewness and kurtosis, respectively.

*Table 2: Raw Returns of the FTSE Indices*

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
FTSE Islamic	0.007	0.010	-0.137	0.154	0.047	-0.388	0.775
FTSE All-World	0.006	0.008	-0.112	0.091	0.042	-0.412	0.042
Bull Period (1)							
FTSE Islamic	0.017	0.017	-0.124	0.154	0.042	-0.137	1.975
FTSE All-World	0.012	0.011	-0.110	0.091	0.038	-0.424	0.463
Bear Period							
FTSE Islamic	-0.022	-0.020	-0.137	0.064	0.053	-0.156	-0.501
FTSE All-World	-0.017	-0.020	-0.112	0.075	0.049	0.068	-0.614
Bull Period (2)							
FTSE Islamic	0.013	0.017	-0.100	0.103	0.047	-0.596	0.541
FTSE All-World	0.013	0.018	-0.112	0.086	0.041	-0.854	1.877

Notes: Min. Max. St. Dev., Skew. and Kurt refer to minimum, maximum, standard deviation, skewness and kurtosis, respectively.

Table 3: OLS Estimation

Index	Alpha	Beta	R <sup>2</sup>
DJ Islamic	0.003 (0.56)	1.07 (7.87)***	0.37
DJ World	0.0002 (0.13)	0.99 (30.30)***	0.90
FTSE Islamic	0.001 (0.70)	1.01 (22.90)***	0.81
FTSE All-World	0.00 (0.14)	0.99 (100.81)***	0.99

Notes: Three asterisks indicate significance at the 1 percent level.

Based on the calculation of Equation (3), the risk-adjusted returns are reported in Tables (4) and (5). The results from the Dow Jones indices are similar to those obtained from the FTSE indices. The results indicate that the Islamic indices offer investors higher monthly returns compared to their counterparts in the entire and bull (1) market periods. The Islamic indices fail to sustain their superior performance during the bear and bull (2) market periods whereby both DJ World Index and FTSE All-World Index achieve higher mean monthly returns compared with the Islamic counterpart indices. Overall, the risk-adjusted findings of Tables (3) and (4) are fairly similar to those of the raw returns in Tables (1) and (2).

Notes: Min, Max, St. Dev., Skew. and Kurt. Refer to minimum, maximum, standard deviation, skewness and kurtosis, respectively.

Table 4: Risk Adjusted Returns of Dow Jones Indices

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
DJ Islamic	0.004	0.002	-0.132	0.164	0.061	0.369	1.757
DJ World	0.000	-0.001	-0.053	0.049	0.015	-0.142	2.661
Bull Period (1)							
DJ Islamic	0.012	0.014	-0.132	0.164	0.088	-0.005	-0.660
DJ World	-0.001	0.000	-0.046	0.038	0.014	-0.397	2.998
Bear Period							
DJ Islamic	-0.004	-0.005	-0.041	0.027	-0.017	-0.140	-0.318
DJ World	0.000	-0.003	-0.038	0.027	0.015	0.128	0.669
Bull Period (2)							
DJ Islamic	-0.002	-0.003	-0.031	0.019	0.009	-0.680	2.537
DJ World	0.001	0.003	-0.53	0.049	0.018	-0.357	2.902

Notes: Min, Max, St. Dev., Skew. and Kurt refer to minimum, maximum, standard deviation, skewness and kurtosis, respectively.

Table (5): Risk Adjusted Returns of the FTSE Indices

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
FTSE Islamic	0.002	0.002	-0.108	0.112	0.021	0.066	14.559
FTSE All-World	0.000	0.000	-0.031	0.024	0.005	-1.398	20.694
Bull Period (1)							
FTSE Islamic	0.004	0.005	-0.081	0.093	0.017	0.212	17.004
FTSE All-World	-0.001	0.000	-0.031	0.024	0.006	-1.034	13.825
Bear Period							
FTSE Islamic	-0.002	0.000	-0.048	0.042	0.018	-0.312	1.526
FTSE All-World	0.001	0.001	-0.007	0.010	0.003	0.300	4.041
Bull Period (2)							
FTSE Islamic	-0.001	-0.002	-0.108	0.112	0.031	0.241	11.463
FTSE All-World	0.000	0.000	-0.003	0.003	0.001	-0.411	-0.227

Notes: Min. Max. St. Dev., Skew. and Kurt refer to minimum, maximum, standard deviation, skewness and kurtosis, respectively.

Now we proceed and test whether the excess monthly returns (abnormal returns) of the Islamic index are equal to zero. We employ the parametric t- test and the non-parametric Wilcoxon signed-rank test. Based on market adjusted and Jensen models, the results in Table (6) indicate that the yields of the Islamic indices do not differ significantly from those of the other two counterpart indices in the entire period. The null hypothesis cannot be rejected in seven cases out of eight.

With respect to the bull (1) market period, there is a clear evidence that there is a statistically significant difference between the Islamic index and the FTSE All-World index at the 5 percent level. With respect to the DJ indices in the bull (1) period, the parametric tests do not reject the hypothesis that observed difference in average performance between the two DJ indices is insignificant, while the non-parametric test provide mixed evidence.

With respect to the bear market period and based on raw returns, both tests (parametric and non-parametric) show that (negative) abnormal returns of the two (DJ and FTSE) Islamic indices are significant at the five and ten percent levels, respectively. The results are entirely different when findings are based on risk-adjusted returns whereby the null hypothesis on insignificant abnormal returns cannot be rejected.

With respect to the second bull market period, the results indicate no significant difference the Islamic indices returns and those of two counterpart indices since the null hypothesis cannot be rejected in all eight cases.

Table 6: Mean Abnormal Monthly Return for the Islamic Index

	Dow Jones		FTSE	
	Market-adjusted	Jensen	Market-adjusted	Jensen
Entire Period				
mean abnormal return	0.004	0.004	0.001	0.002
t-statistics	(0.59)	(0.67)	(0.73)	(0.97)
median abnormal return	0.001	0.001	0.001	0.002
z-statistics	(0.52)	(0.88)	(1.45)	(1.85)*
Bull Period (1)				
mean abnormal return	0.013	0.013	0.005	0.005
t-statistics	(1.03)	(1.04)	(2.18)**	(2.28)**
median abnormal return	0.011	0.014	0.004	0.006
z-statistics	(1.88)*	(1.93)*	(3.26)***	(3.49)***
Bear Period				
mean abnormal return	-0.007	-0.004	-0.005	-0.003
t-statistics	(-2.04)**	(-1.45)	(-1.61)*	(-0.92)
median abnormal return	-0.005	-0.005	-0.003	-0.001
-z-statistics	(-2.03)**	(-1.56)	(-1.71)*	(-0.99)
Bull Period (2)				
mean abnormal return	-0.002	-0.003	0.000	-0.001
t-statistics	(-0.76)	(-0.94)	(-0.16)	(-0.29)
median abnormal return	-0.004	-0.001	-0.001	-0.001
z-statistics	(-0.99)	(-1.17)	(-0.63)	(-1.09)

Notes: One, two and three asterisks indicate significance at the 10, 5 and 1 percent levels.

Further, we examine the long run performance of the four indices. The cumulative return (CR) and buy-and-hold return (BHR) methods are employed. The results, given in Table (7), are quite consistent with our earlier findings of the short run (monthly) performance. Based on raw returns and risk-adjusted returns, Table (7) indicates that the Islamic indices outperform their counterpart indices in the entire and first bull market periods. On the other hand, the two counterpart indices provide superior long term returns compared with the Islamic indices in the bear and second bull market periods.

Table 7: Long-run Performance

	Raw Returns				Risk-Adjusted Returns			
	DJ Indices		FTSE Indices		DJ Indices		FTSE Indices	
	Islamic	World	Islamic	World	Islamic	World	Islamic	World
Panel A: Cumulative Returns								
Entire Period	0.95	0.57	0.096	0.78	0.45	0.02	0.24	-0.01
Bull Period(1)	1.30	0.68	1.23	0.89	0.01	-0.04	0.32	-0.04
Bear Period	-0.75	-0.55	-0.68	-0.53	-0.13	0.01	-0.06	0.03
Bull Period(2)	0.33	0.40	0.37	0.38	-0.05	0.03	-0.01	0.01
Panel B: Buy and Hold Returns								
Entire Period	0.09	0.58	1.26	0.95	0.39	0.01	0.32	-0.01
Bull Period(1)	1.91	0.84	2.20	1.30	0.98	-0.08	0.80	-0.09
Bear Period	-0.57	-0.46	-0.55	-0.47	-0.02	0.02	-0.05	0.00
Bull Period(2)	0.52	0.59	0.56	0.60	-0.10	0.01	-0.03	0.02

## 7. Conclusions

The main objective of this study is to examine whether returns earned by investors who purchases shares in the Dow Jones Islamic Index and FTSE Global Islamic index are significantly different from those of the Dow Jones World Index and FTSE All-World Index, both in the short-run and long-run. In order to control for changes in market conditions, the performance of the four indices is measured over several periods: entire period from Dec 1993 – Dec 2004, bull period (1) from Dec 1993 – Dec 2000, bear period from Dec 2000- Sept 2002, bull period (2) from Sept 2002 to Dec 2004.

Our findings indicate that the application of *shari'ah* screens does not have an adverse impact on the Islamic indices performance. In the short run, a comparison of the raw and risk-adjusted performance show that the Islamic indices perform as well as their counterparts over the entire period and the second bull market period. There is clear evidence that the Islamic indices yield statistically significant positive abnormal returns in the first bull market period, though the Islamic indices under-perform the Dow Jones World Index and FTSE All-World index in the bear market period. In the long run, there is a clear evidence that the Islamic indices have a superior performance compared with their counterparts in the entire and first bull market periods. On the other hand, the Islamic indices fail to sustain their better performance over the bear and second bull market periods since the counterpart indices achieve higher returns.

In general, our findings reject the assumption that *shari'ah* investing offer inferior investment performance compared to unscreened portfolios.

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