ETHICAL INVESTMENT: EMPIRICAL EVIDENCE FROM FTSE ISLAMIC INDEX

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This paper examines the hypothesis that ethical investment has inferior performance compared with their unscreened benchmarks. We empirically test whether returns earned by investors who purchase shares in the FTSE Global Islamic Index are significantly different from their index counterpart (FTSE All-World Index). The sample period is divided into two sub-periods, bull period (July 1996 – March 2000) and bear period (April 2000 - August 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. On the other hand, the Islamic index yields statistically significant positive abnormal returns in the bull market period, although it underperforms the counterpart index in the bear market period. In general, our findings show that the application of ethical screening does not have an adverse effect on the FTSE Global Islamic Index performance.

1. INTRODUCTION

Over the past few decades, the world of finance has paid more attention to the area of "socially responsible" and "ethical" investment. There is an increasing number of investors who seek to align their investments with their principles through socially responsible investment. As a result, the size of socially responsible funds has grown from $40 billion to $639 billion between 1984 and 1995 in the US (Social Investment Forum, 1995), and has jumped from $1.2 to $2.2 trillion between 1997 and 2000 (Hakim and Rashidian, 2004).

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

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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 exceptionally strong growth during the second half of the 1990s. In 1996, there were just 29 specialist 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 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 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 ethical investment. Despite the increasing attention to ethical investment, the empirical studies on ethical indices and/or funds are scarce. The few empirical papers on ethical investing provide mixed evidence on the performance of ethical indices/funds compared to their unscreened counterparts.

This paper examines the impact of the ethical screening on the performance of FTSE Global Islamic index using a number of performance measurement techniques. We examine whether returns earned by investors who purchase shares in the FTSE Global Islamic index are significantly different from their index counterpart (FTSE All-World Index), both in the short-run and long-run. Further, we examine the performance of the FTSE4Good index, which is a recently established socially responsible index, and compare it with the FTSE Global Islamic and FTSE All-World indices.

The rest of the paper is organized as follows: Section 2 provides a brief review on ethical investment, while Section 3 summaries the recent development in Islamic investing. The data set employed in this study is introduced in Section 4. Methodology and statistical tests are explained in Section 5. Results are discussed in Section 6, while Section 7 concludes the paper.

2. ETHICAL INVESTMENT

Ethical investment goes back to the attempts of some religious institutions to avoid the so-called sin industries such as gambling and tobacco (Murninghan,

1992). Ethical investing is defined as the use of ethical and social criteria to select and manage investment portfolios (Cowton, 1994), while ethical funds are defined as those that exclude one or more company groups from their portfolio for non-financial reasons. Ethical investment considers the characteristics of potential investment along with expected risks and return.

The economic viability of ethical investing is a controversial issue. Proponents of ethical investing argue that screening potential investment opportunities with both financial and ethical criteria makes positive social and economic contributions. By screening potential investments, ethical investors ensure that the investments they select are consistent with their personal values, raise awareness to firms that are not responsive to ethical concerns and put pressure on unresponsive firms to social and ethical concerns to change (Sauer, 1997).

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 practice can offer companies range of opportunities to help them secure a competitive advantage.

Ethical behavior increases trust as well as enhances and protects corporate reputation. An open dialogue with stakeholders makes it easier for firms to identify risks by highlighting issues before they reach a crisis point. Close stakeholders and community relations can also help companies to secure a license to operate. Furthermore, environmentally superior products can also contribute to product differentiation and developing and strengthening customer loyalty. Firms that are regarded as leaders in environmental and human rights are able to attract and retain talented employees, cut recruitment costs and remain ahead of the competition. (see FTSE4Good website).

Opponents of ethical investing highlight the adverse costs and effects that ethical screening may involve. They argue that the potential hidden costs associated with implementing ethical screens adversely affect investment performance and therefore should not be ignored (Sauer, 1997). 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. Further, diversification may be hindered to the extent that ethical criteria eliminates or favors certain industries. Langbein and Posner (1980) argue that ethical investment may involve higher risk but should not yield

significantly worse returns since ethical investors do not invest in clearly unprofitable stock.

Currently, there are few ethical equity indices. The most well-known ethical and social indices are the Domini 400 Social index (DSI), GIIS and FTSE4Good index. The DSI[2] is the oldest ethical index and was established in May 1990. It monitors the performance of 400 US corporations that pass multiple, broad-based social screens. The Index consists of approximately 250 companies included in the Standard & Poor's 500 Index, approximately 100 additional large companies not included in the S&P 500 but providing industry representation, and approximately 50 additional companies with particularly strong social characteristics. The Index stands at 400 companies at all times, adding a company to the Index at the same time that another company is removed.

DSI eliminates companies that derive two percent or more of sales from military weapons systems; derive any revenues from the manufacture of alcoholic or tobacco products; or derive any revenues from the providing of gaming products or services. It also eliminates electric utilities that own interests in nuclear power plants or derive electricity from nuclear power plants in which they have an interest. Further, DSI evaluates companies' records in areas such as the environment, diversity, employee relations and product. Problems in one area does not automatically eliminate a company. Instead, DSI balances the mixed records of concerns and strengths that companies often have within these areas.

The FTSE4Good Index Series[3] was launched in July 2001 and it has been designed to measure the performance of companies that meet globally recognized corporate responsibility standards, and to facilitate investment in those companies. To qualify for inclusion in the FTSE4Good Index Series, companies must be in either the FTSE All Share Index (UK) or FTSE All-World Developed Index (Global). For inclusion, eligible companies must meet criteria requirements in three areas: working towards environmental sustainability, developing positive relationships with stakeholders, and up-holding and supporting universal human rights.[4] Companies that have been identified as having business interests in the following industries are excluded from the FTSE4Good Index Series:

- Tobacco products,
- Companies manufacturing either parts for, or whole, nuclear weapons systems,

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[2] The index was created by the social research firm of KLD Research & Analytics, Inc.(KLD).

[3] There are the FTSE4Good Global. FTSE4Good UK, FTSE4Good Europe, and FTSE4Good US.

[4] In 2004, FTSE is planning to announce new criteria relating to labor standards in the supply chain.

- Companies manufacturing whole weapons systems,
- Owners or operators of nuclear stations,
- Companies involved in the extraction or processing of uranium.

The criteria are regularly revised and updated to ensure that they reflect developments in corporate responsibilities thinking and trends in socially responsible investment as they evolve.

The empirical evidence on the performance of ethical investment presents an inconclusive outcome. Mueller (1991) examined the risk-adjusted returns of 10 socially responsible funds against comparable unrestricted investments over the period 1994-1998. He found a statistically significant difference between the two groups and unrestricted investments earned an average of 1.03% higher than the socially responsible funds. Luther et al. (1992) examined the performance of 15 ethical unit trusts based in the UK against the FT All-Share index and the Morgan Stanley Capital International Perspective World Index. Based on risk-adjusted measures, they found weak evidence to suggest that ethical unit trust outperform the market. They also found that ethical trusts are mainly skewed towards small market capitalization and tend to invest in low dividend yield firms. Mallin et al. (1995) argued that ethical funds have their own characteristics that may make the comparison with benchmarks such as FTSE somewhat misleading. Mallin et al. examined the performance of 29 ethical funds by comparing each ethical fund to a non-ethical one having the same formation date and fund size. They found that beta is lower for the ethical funds. This implies that the non-ethical trusts are riskier than the ethical trusts. On a risk-adjusted basis, they found weak superior performance of ethical funds in the sample.

Sauer (1997) compared the returns of DSI to two broad-based benchmark portfolios: S&P 500 and Chicago Centre for Research in Security Prices (CRSP) Value Weighted Market indices. His results showed that additional screening and monitoring costs associated with implementing social-responsibility screens does not necessarily result in higher volatility and reduced returns.

Statman (2000) analyzed the performance of the DSI index and the S&P 500 index during 1990-98 period. The risk-adjusted returns of S&P 500 were slightly higher than those of the DSI but the difference was not significant. On the other hand, DSI is somewhat riskier than the S&P 500. Furthermore, Statman compared the performance of socially responsible mutual funds vs. conventional funds of equal size. He found no statistically significant difference between risk-adjusted returns of the two groups.

3. ISLAMIC EQUITY INVESTMENT

Islamic finance in general aims at promoting specified sectors/industries that provide added value to the real economy. On the other hand, Muslim investors expect their financial portfolio to provide stable earnings and capital growth opportunities in accepted investments. Islamic investing is low-debt, non-financial, social-ethical investment. It has much in common with modern forms of investing known as "ethical investing", "green investing", "faith investing" and "socially responsible investing" (DeLorenzo, 2001). The most important difference between Islamic and other ethical funds is that in addition to the exclusion of particular sectors, Islamic funds do not deal in fixed income market and the receipt and payment of interest is not permitted.

In general, most Islamic funds have extensive retail distribution channels and have minimum investment subscription of between $2000 to $5000. There are few Islamic funds that target high net-worth individuals. For example, Wellington Management Company based in the US and Barclays Global equity have a minimum investment thresholds of $1 and $5 million, respectively (Siddiqi, 2002). A typical Islamic portfolio includes cross-sectoral holdings, ranging from technology, telecommunications, engineering, steel, transportation, healthcare, utilities, construction and real-estate. But after the bursting of the IT bubble in early 2001 and the subsequent plunge in technology stocks, several Islamic funds have increased their exposure to defensive stocks such as healthcare and utilities.

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,[5] which includes stocks from 29 countries.[6] FTSE has 15 Islamic indices, classification is based on industry (10 indices) and region (Global, Americas, Europe, Pacific Basin, South Africa).

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

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[5] 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.

[6] 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.

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.

Although the issues arising out of screening are similar, Islamic indices use different criteria to screen shares from other ethical indices. Thus, any extraordinary performance that ethical funds may exhibit is unlikely to be directly attributable to a common strand of uniformly defined ethicality (Hassan, 2002). This does not mean that ethical investing cannot be highly specialized where both the FTSE and Dow Jones have separate Islamic market indices for different sectors such as utilities, healthcare, and technology.

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.[7] 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 had lost its entire value.

WorldCom was not the only example as DJIMI took off Tyco, another deeply troubled American company, well before that scandal became public. Furthermore, DJIMI tossed out Enron before it declared bankruptcy in December 2001. By selling off WorldCom, Enron, and other dubious shares, the Islamic fund managers were able to save several million dollars for their investors. These events were extremely significant moments in the acceptance of Islamic finance by the global financial community.

Despite the growing interest in Islamic finance, there are few empirical studies that examined the performance of Islamic equity investing in the literature. Hassan (2002) examined 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 showed that DJIMI returns are normally distributed and the DJIMI has remarkable market efficiency. Utilizing a GARCH econometric framework, Hassan also examined the volatility of the DJIMI returns. His results showed that there are operational inefficiencies in DJIMI that needs to be corrected to make the risk behavior of DJIMI stable over time. Using cointegration and causality analysis, Hakim and Rashidian (2004) examined 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 found that the DJIMI does not correlate with either Wilshire 5000 index or the three month treasury bill. The results also showed that the changes in the DJIMI are not caused by the Wilshire 5000 or the three month treasury bill. They concluded that the filtering criteria adopted to eliminate non compliant companies leads to an Islamic index with a unique risk-return characteristics that are not affected by the broad equity market.

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[7] 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.

4. DATA

Among the FTSE Islamic Index Series, we use the monthly FTSE Global Islamic Index (FTSE-GII). This is because FTSE-GII is the main Islamic equity index and other FTSE Islamic indices are simply driven as sub-groups from the FTSE-GII. Currently, the FTSE-GII incorporates 1092 companies that are compatible with shari[ah principles and pass the index qualification criteria. On the other hand, we use the FTSE All-World index and FTSE4Good Global index as the counterpart indexes to the FTSE-GII. The three indices were kindly provided by the FTSE company.

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 world portfolio. Furthermore, we use the one-month UK treasury bill return, obtained from the Bank of England website, as a proxy for risk-free rate.[8]

Our sample period is constrained by the availability of data. Since the FTSE4Good Global index is the most recent index in our study and the FTSE was able to re-track it to July 1996, our sample period goes from July 1996 to August 2003. In order to capture the impact of changes in economic conditions on indices performance, we track the behavior of the indexes in the bull and bear market conditions. The sample time period is classified into two sub-periods, July 1996 - March 2000 and April 2000 to August 2003.

5. EMPIRICAL MODELS AND METHODOLOGY

This section highlights the methodology that we employ to achieve the objectives of this study. The long-run performance is calculated using several benchmarks. 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 and long-run performance.

To test the behavior of the FTSE Global Islamic index and compare it with the corresponding indices (FTSE All-World index, and FTSE4Good index), we calculate the return on a monthly basis by taking the logarithmic difference of the price index, so that:

$$R_{i,t} = \left\lfloor \log(P_{i,t}) - \log(P_{i,t-1}) \right\rfloor \tag{1}$$

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[8] We use the UK treasury bills denominated in US dollar.

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 FTSE Global Islamic index and its 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:

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

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 (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 $\left(R_{i,t} - R_{f,t}\right)$ is the excess return on the Islamic index i in period t and $\left(R_{m,t} - R_{f,t}\right)$ 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:

$$\bar{R}_{i,t} = \left\{ R_{i,t} - R_{f,t} - \beta_{i,t} \left[R_{m,t} - R_{f,t} \right] \right\} \tag{3}$$

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:

$$MAR_{i,t} = R_{i,t} - R_{crp,t}, \tag{4}$$

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 technique is the non-parametric

test statistic, Wilcoxon signed-rank test, which tests 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 all the data come from a single normal distribution. Hence, we use both test statistics for the robustness of the results[9]. 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 abnormal 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.

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

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 anniversary month number 90, 51, and 39 or the end of the calculated period.

We also calculate BHR as follows:

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

where $BHR_{i,t}$ is the buy-and-hold return for index i, is in period T, where T is 90, 51, and 40 months, and $t = 1$ indicates the first month of the calculated period of an index i.

As before, we take into account the risk factor. Hence, having 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.

Although we calculate the risk-adjusted performance based on Jensen measure, which is the most commonly used and widely accepted measure of risk-adjusted

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[9] The findings from the parametric test should be treated with caution if their corresponding returns are not normally distributed.

returns in the literature, we examine the robustness of our results by applying two other main measures: Sharpe (1966) and Treynor (1965). We examine the correlation among the risk-adjusted returns measures and the statistical results obtained.

The Sharpe ratio measures the trade-off between reward and total volatility. Higher Sharpe measures are associated with superior performance. The Sharpe ratio is based on the standard deviation and measures the excess return per unit of risk, as follows:

$$SHARPR_{i,t} = \frac{\overline{R_{i,t}} - \overline{R_{m,t}}}{\sigma_{i,t}} \qquad\qquad (7)$$

where $SHARPR_{i,t}$ is the Sharpe ratio for index i in period t (entire period, 91 months; bull period, 51 months; and bear period, 40 months), respectively, $\overline{R_{i,t}}$ is the average monthly returns for index i in period t, $\overline{R_{m,t}}$ is the average monthly return on the market portfolio (World Index All International) in period t, and $\sigma_{i,t}$ is the standard deviation of monthly returns of index i in period t.

Similar to the Sharpe ratio, the Treynor measure produces the excess return per unit of risk, but systematic risk instead of total risk. The higher the Treynor index, the more return the index is providing per unit of risk assumed:

$$TREYR_{i,t} = \frac{\overline{R_{i,t}} - \overline{R_{m,t}}}{\beta_{i,t}} \qquad\qquad t = \{91,51,40\} \qquad\qquad (8)$$

5. RESULTS

Based on the raw returns calculated in eq (1), Table (1) indicates that the average monthly return on the FTSE Global Islamic index (0.004) is similar to the mean return offered by the FTSE All-World index for the entire period. The findings show that the Islamic index has a superior return of 0.019 compared to the FTSE All-World index (0.016) in the bull market period. The Islamic index does not sustain its superior performance in the bear market period whereby the Islamic and All-World indices offer average monthly returns of -0.013 and -0.010, respectively.

On the other hand, Table (1) shows that the FTSE4Good index has the best performance among the three indices of interest during the entire and bull markets periods. It offers investors a monthly return of 0.006 and 0.022 in the entire and bull periods, respectively. During the bear market period, the FTSE4Good index

underperforms the FTSE All-World index where the FTSE4Good mean return is -0.012.

Table-1
Raw Returns

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
FTSE Islamic	0.004	0.006	-0.133	0.143	0.053	-0.310	-0.076
FTSE All-World	0.004	0.010	-0.151	0.089	0.048	-0.660	0.350
FTSE4Good	0.006	0.012	-0.158	0.095	0.054	-0.639	0.124
Bull Period							
FTSE Islamic	0.019	0.026	-0.133	0.143	0.047	-0.569	2.028
FTSE All-World	0.016	0.020	-0.151	0.089	0.044	-1.400	3.516
FTSE4Good	0.022	0.033	-0.158	0.086	0.047	-1.451	3.469
Bear Period							
FTSE Islamic	-0.013	-0.014	-0.120	0.084	0.054	0.029	-0.867
FTSE All-World	-0.010	-0.013	-0.117	0.085	0.050	-0.058	-0.570
FTSE4Good	-0.012	-0.012	-0.124	0.095	0.055	0.001	-0.540

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

With respect to whether the return series are normally distributed, the results of the skewness and kurtosis tests provide mixed evidence over the three periods of time.

Table-2
OLS Estimation

Index	Alpha	Beta	R^2
FTSE Islamic	0.002(0.87)	1.05(27.42)*	90.17
FTSE All-World	0.002(5.58)*	1.01(169.9)*	99.72
FTSE4Good	0.003(3.70)*	1.10(53.57)*	97.22

Notes: One asterisk indicates significance at the 1 percent level.

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 estimation of eq (2) are shown in Table (2). It is interesting to note that the betas of the two ethical indices are greater than unity and higher than those of the FTSE All-World index. These results imply that the two ethical indices are riskier than the benchmark (Morgan Stanley World Index All International index) and the

FTSE All-World indices. In fact, the FTSE4Good index has a higher risk than the FTSE Global Islamic index since the risk coefficients are 1.10 and 1.05, respectively. Table (2) also reports that Jensen's alpha is positive for all three indices but statistically significant at the 1 percent level in two cases (FTSE All-World and FTSE4Good indices). This means that the Islamic index does not provide any marginal return over the benchmark return. Further, the R^2 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 90 percent in the three cases), suggesting that the three indices move in line with the market.

Table-3
Risk-Adjusted Returns (CAPM)

	Mean	Median	Min.	Max.	Std.Dev.	Skew.	Kurt.
Entire Period							
FTSE Islamic	0.002	0.002	-0.080	0.084	0.017	-0.004	13.241
FTSE All-World	0.002	0.002	-0.007	0.010	0.003	-0.322	2.301
FTSE4Good	0.004	0.003	-0.012	0.027	0.009	0.372	-0.315
Bull Period							
FTSE Islamic	0.004	0.005	-0.080	0.084	0.020	-0.204	11.284
FTSE All-World	0.001	0.001	-0.007	0.006	0.003	-0.463	1.352
FTSE4Good	0.006	0.005	-0.012	0.027	0.010	0.161	-0.635
Bear Period							
FTSE Islamic	-0.001	0.001	-0.026	0.020	0.011	-0.453	0.388
FTSE All-World	0.002	0.002	-0.004	0.010	0.002	0.406	4.512
FTSE4Good	0.002	0.001	-0.012	0.019	0.008	0.391	0.196

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

    Based on the calculation of eq (3), the risk-adjusted returns are shown in Table (3). The results are fairly similar to those obtained from Table (1). Table (3) reports that over the entire sample period (1996-2003), the Islamic index performance is in line with the FTSE All-World index since both indices have mean monthly return of 0.002. During the entire and bull market period, the FTSE4Good index has a superior performance compared to the other two indices, it has a (higher) monthly returns of 0.004 and 0.006, in the entire and bull periods, respectively. In the bull market period, the Islamic index offers investors higher monthly returns (0.004) compared to those of the FTSE All-World index (0.001). In the bear market period, the FTSE All-World and FTSE4Good indices have positive and similar returns of 0.002, above the return offered by the Islamic index (-0.001).

Table-4
Mean Abnormal Monthly Return for the Islamic Index

	FTSE All-World		FTSE4Good	
	Market-adjusted	Jensen	Market-adjusted	Jensen
Entire Period				
mean abnormal return	0.0001	0.0001	-0.002	-0.002
t- statistics	(0.05)	(0.08)	(-1.10)	(-1.15)
median abnormal return	-0.0004	0.0003	-0.003	-0.004
z-statistics	(-0.22)	(0.28)	(-1.53)	(-1.75)***
Bull Period				
mean abnormal return	0.004	0.004	-0.002	-0.002
t- statistics	(1.28)	(1.16)	(-0.63)	(-0.50)
median abnormal return	0.005	0.004	-0.006	-0.006
z-statistics	(2.23)**	(2.14)**	(-0.89)	(-0.86)
Bear Period				
mean abnormal return	-0.004	-0.003	-0.002	-0.002
t- statistics	(-2.19) **	(-1.93)***	(-0.91)	(-1.33)
median abnormal return	-0.004	-0.002	-0.0005	-0.001
z-statistics	(-1.82)***	(-1.62)	(-0.77)	(-1.23)

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

Now we proceed to 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 and results. Based on market adjusted and Jensen models, the results in Table (4) indicate that the yields of the Islamic index 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 market period, the non-parametric test reveals that there is a statistically significant difference between the Islamic index and the FTSE All-World index at the 5 percent level. On the other hand, the parametric and non-parametric tests cannot reject the null hypothesis that observed difference in average performance between the Islamic and the FTSE4Good indices are significant.

The same results are shown for the bear market period. The parametric and non-parametric tests reject the hypothesis that the negative abnormal return of the Islamic index compared to the FTSE All-World index is equal to zero at the 5 and 10 percent levels of significance. In addition, the results indicate no significant difference the Islamic index returns and those of the FTSE4Good index.

Further, we examine the long run performance of the three indices. The cumulative return (CR) and buy-and-hold return (BHR) methods are employed. The results, given in Table (5), are consistent with our earlier findings of the short run (monthly) performance. Based on raw returns and risk-adjusted returns, Table (5) indicates that the Islamic index outperforms the FTSE All-World index in the bull market and vice versa in the bear market period. In the entire period, the Islamic index performance is in line with the FTSE All-World index. Table (5) also shows that the FTSE4Good has a superior long run returns compared to the other two indices (Islamic and FTSE All-World indices) in the entire and bull market periods. The FTSE4Good fails to hold its superior performance in the bear market period where the FTSE All-World index has the best returns among the three indices.

Table-5
Long-run Performance

	Raw Returns			Risk Adjusted Returns		
	FTSE Islamic	FTSE All-World	FTSE4 Good	FTSE Islamic	FTSE All-World	FTSE4 Good
Panel A: Cumulative Returns						
Entire period	0.309	0.301	0.488	0.148	0.136	0.334
Bull period	0.847	0.687	0.960	0.180	0.037	0.267
Bear period	-0.538	-0.386	-0.472	-0.032	0.098	0.066
Panel B: Buy and Hold Returns						
Entire period	0.362	0.351	0.630	0.176	0.180	0.170
Bull period	1.333	0.987	1.612	0.941	0.913	0.980
Bear period	-0.389	-0.291	-0.336	-0.374	-0.357	-0.399

In order to examine the robustness of the above results, we re-estimate the performance of the three indices of interest using Sharpe and Treynor ratios and compare these with those of Jensen ratio. The results are reported in Table (6) where indices are ranked according to their performance. The results indicate that the rank of the indices is identical by the three measures except in one case. The exception case is shown by the Sharpe ratio where the Islamic index performance has been ranked behind the other two indices while the other two ratios of Treynor and Jensen put the Islamic index in the second place.

Table-6
Performance and ranking of the indices

	Sharpe		Jensen		Treynor	
	Returns	Rank	Returns	Rank	Returns	Rank
Panel A: Entire Period						
FTSE Islamic	0.032	3	0.0018	2	0.002	2
FTSE All-World	0.033	2	0.0016	3	0.002	3
FTSE4Good	0.072	1	0.0040	1	0.003	1
Panel B: Bull Period						
FTSE Islamic	0.098	2	0.0040	2	0.004	2
FTSE All-World	0.022	3	0.0008	3	0.001	3
FTSE4Good	0.151	1	0.0059	1	0.006	1
Panel C: Bear Period						
FTSE Islamic	-0.028	3	-0.0009	3	-0.0014	3
FTSE All-World	0.046	1	0.0024	1	0.0023	1
FTSE4Good	0.003	2	0.0015	2	0.0001	2

To sum up, our findings indicate that the application of ethical screens does not have an adverse impact on the FTSE Global Islamic index performance. A comparison of the raw and risk-adjusted performance shows that the Islamic index performs as well as the FTSE All-World index (a well diversified index) over the entire period of the study. In fact, the Islamic index provides investors with positive abnormal returns in the bull market period, however, it underperforms the FTSE All-World index in the bear market period. Our findings reject the assumption that ethical investing offers inferior investment performance compared to unscreened portfolios.

The above results lead to an important question: why the Islamic index outperforms a well diversified index such as the FTSE All-World index in the bull market period and underperforms in the bear market period? A growing number of empirical studies argue that, regardless of the industry in question, the most profitable firms typically borrow the least. Myers (1993), Fama and French (1998 and 2002), Shyam-Sunder and Myers (1999), and Baker and Wurgler (2002) provide evidence in favor of negative relationship between leverage and profitability. As all firms included in the FTSE Global Islamic index have low

leverage ratios, it is not surprising to find that the Islamic index outperforms the index counterparts with relatively heavy-leveraged firms.

The hard task now is to find a reasonable explanation for why the Islamic index outperforms the index counterpart in the bull period, but underperforms in the bear period. One possible explanation is that although the Islamic index was able to remove several large firms before they got into financial troubles during the bear market period, liquor firms which are excluded from the FTSE Global Islamic index have been among the world best performers during the bear period.

7. SUMMARY AND CONCLUSIONS

The economic viability of ethical investing is a controversial issue. Opponents of ethical investing argue that using ethical investing criteria may cause additional screening and monitoring costs, availability of a smaller investment universe and restricted potential diversification. Thus, ethical screens adversely affect investment performance. Advocates of ethical investing argue that good corporate responsibility practice can offer firms a range of opportunities to help them secure a competitive advantage. On the other hand, the empirical literature on ethical investing is scarce. The few empirical papers on ethical indices/funds performance compared to their unscreened counterparts provide mixed evidence.

The primary objective of this paper is to examine whether returns earned by investors who purchases shares in the FTSE Global Islamic index are significantly different from those of the FTSE All-World Index, which is a well diversified index, both in the short-run and long-run. In addition, we examine the performance of the Islamic index compared to the FTSE4Good which is a socially responsible index. In order to control for changes in market conditions, the performance of the three indices is measured over several periods: The entire period (July 1996 until July 2003), the bull period (January 1996-March 2000) and the bear period (April 2000-July 2003).

Our findings indicate that the application of ethical screens does not have an adverse impact on the FTSE Global Islamic index performance. 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 clear 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, our findings reject the assumption that ethical investing offer inferior investment performance compared to unscreened portfolios where the FTSE4Good index outperforms the FTSE All-World index in the entire and bull market periods.

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