Investigating the Performance of Islamic Mutual Funds: A Comparative Study

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#### Abstract

Islamic funds are being marketed as strong rivals for conventional funds. This study investigates if Islamic equity funds outperform their conventional peers in GCC markets in the period 2006-2011. The performance is empirically assessed utilizing the CAPM performance evaluation measures against two indices (the national index of each market and the DJI for all markets). The suitability of the CAPM model itself to report on funds' performance is also examined by replicating the tests utilizing the D-CAPM and Estrada beta along with the portfolio performance measures in the downside framework. Unlike many studies cited, our results provided evidence that Islamic funds are not necessarily less risky than conventional funds (as in Kuwait) and do not necessarily underperform (as in UAE). The study concludes that it is equally important for practitioners in emerging markets generally and in GCC specifically to report performance using both CAPM and D-CAPM measures. If differences exist, the D-CAPM could be the superior measure since the downside beta can provide a better risk measure than the traditional beta and may actually improve the asset pricing models in those markets.

**Keywords**: Islamic Funds, Conventional Funds, Portfolio Performance, Downside Beta, Traditional Beta, CAPM, D-CAPM, Shariah Compliance, GCC Countries

#### 1. Introduction and Background

Islamic law or *Shariah* is the law that governs all aspects of day-to-day Muslims' life. The Islamic finance industry plays an important role in the global finance market and is expected to grow even more rapidly in the future. Islamic finance is developing rapidly and the features of global banking are being reshaped (Ebrahim *et al.* 2013). Cihak and Hesse (2010) argue that the number and reach of Islamic financial institutions worldwide has risen from one institution in one country in 1975 to over 300 institutions in more than 75 countries. Hoepner *et al.* (2011) view Islamic financial services as an important contemporary issue for financial institutions and financial markets worldwide evidenced by the offerings of hundreds of Islamic equity indices by Dow Jones, FTSE, MSCI Barra and Standard & Poor's. In 2007, *Shariah*-compliant assets were estimated to have grown by 37% to \$729 billion, were close to US\$820 billion at end-2008 and were expected to reach the \$1 trillion in 2010. More than 700 Islamic mutual funds are currently offered, not only by countries such as the Gulf Cooperation Council countries and Malaysia, but also by Western financial institutions. Governments as the USA, France, Germany and Switzerland have developed a strong interest in Islamic finance and in promoting their Islamic financial services to attract especially petro-dollars.

There are several suggested reasons why Islamic finance has grown rapidly. Maggs (2011) argues that risk diversification benefits and profit opportunities are the main drivers and that the shift to the Modern Islamic banking and finance practices has originated not bottom up from the Islamic faithful, but top down from multinational businesses seeking a profitable market position. Hoepner *et al.* (2011) agree with Malik and Shah (2011) supporting this claim by trying to capture this advancement of Islamic banking and finance in the United Kingdom as a leading centre for Islamic finance outside of the Gulf Cooperative Council (GCC) and Malaysia.

Islamic financial institutions have basically the same purpose as the conventional institutions except that they operate in accordance with the rules of Shariah, known as Fiqh al- Muamalat (Islamic rules on transactions). The objectives and operations are ideally based on Quranic principles (the Islam wholly book) like justice, avoidance of (Riba) taking or receiving interest at exorbitant rates, (Mayser) gambling and (gharar) speculation. The focus is on religiously permissible operations and other ethical goals, and the main concept relies on the fact that money has no intrinsic value but is only a measure of value and thus there should be no charge for its use. Ghayad (2008) views that the most common Islamic operations are profit sharing (Mudharabah, which is a contractual agreement between a capital provider and an entrepreneur, whereby the former party supplies the capital and the latter supplies the labor and skill. Any profits made will be shared between them by an agreed ratio, where both parties share in profits and only capital provider bears all the losses if occurred), joint venture (Musharakah, which is normally applied for business partnerships or joint ventures with profit/ loss sharing implications that are used in Islamic finance instead of interest bearing loans.

The profits made are shared on an agreed ratio, while losses incurred will be divided based on the equity participation ratio. Ijarah Thumma Al Bai where there are two contracts involved in this concept. The first contract, Ijarah contract (leasing/renting) and the second contract, Bai" contract (purchase) are undertaken one after the other), Cost Plus (Murabahah, which is defined as an Islamic financing structure where an intermediary buys a property and retains its title to it. The sale agreement includes a profit margin agreed to by both parties. The purchase and selling price, other costs and the profit margin must be clearly stated at the time of the sale agreement. This is not an interest-bearing loan, which is considered Riba (or excess) but an acceptable form of credit sale under Shariah (Islamic religious law) in which the intermediary cannot charge additional interest on late payments, however the asset remains in the ownership of the bank until the loan is paid in full) and leasing (Ijarah). A thorough explanation of the differences between Islamic financial institutions and Shariah compliant products from their conventional peers is presented in Ghayad (2008), Olson and Zoubi (2008), Khan (2010) and Khaldi and Hamadouni (2011).

It is also argued that Islamic financial institutions can make a useful contribution to economic growth and development particularly in a situation of recession, stagnation and low-growth-level. Islamic financial institutions are found to be more resilient than their conventional peers to the immediate effects of the recent international financial crisis and global economic downturn (see among others, Ilias, 2010). Studies by Razzaq *et al.* (2012), Derbel (2011), Kalim and Lodhi (2006) and Iqbal (2001), all argue that the Islamic system and *Shariah* compliant investments are better at adjusting to shocks and are as profitable as the conventional investments. Some researchers have attributed this to Islamic institutions' avoidance of speculative activities, as in Derbel (2011) and also to their higher solvency and lower leverage as in Hassan and Dridi (2000). On the other hand, studies examining open equity funds by Hayat and Kraeussl (2011), Abdullah *et al.* (2007) and Elfakhani *et al.* (2005) provided evidence that Islamic funds trailed their conventional peers and some attributed this to the restricted investment universe that limit their diversification potential.

Mutual funds are considered an investment vehicle of choice for many investors. For Bryant (2009), these financial institutions are viewed as increasingly effective means for income generation, capital appreciation, and diversification benefits to investors who own a *pro rata* share of the assets in the fund's investment portfolio. Cuthbertson *et al.* (2010) view them as pooled investments which provide liquidity and enable investors to enjoy economies of scale in gaining access to well diversified portfolios of securities which are often differentiated by funds styles such as aggressive growth, growth and income, growth, equity-income and small companies. Most funds are 'active' in that they either try to pick 'winner stocks' or engage in market timing activities as opposed to 'index' funds, which mimic movements in broad market indexes. The rationale for managed funds is that they "add value" by using private information and manager skill to produce "abnormal performance" and this is why they are expected to charge higher fees.

Islamic mutual funds were nonexistent before the 1990s when Muslim scholars reached a consensus regarding the permissibility of equity investing as long as it adhered to the main Islamic finance principles (Hayat and Kraeussl, 2011). Hoepner et al. (2011) define Islamic funds by their compliance with Islamic law. Unlike conventional funds, Islamic funds cannot invest in conventional bonds, warrants, preferred stock, certificates of deposit and some derivatives. Maysir and Gharry prevent Islamic funds from leverage, short selling and any derivate products. In addition, products or services that adversely affect dignity or promote the exploitation of one another are forbidden (Haram). Examples could include pork, (non-medical) alcohol, gambling, tobacco, and weapons. Islamic equity funds can invest in both growth and value stocks that passed the Shariah filtering process, to satisfy the objective of medium to long term capital appreciation. There are basic financial criteria firms must adhere to be classified as *halal* or permissible in Islam in which total debt divided by the trailing 12-month average market capitalization has to be less than 33 percent; cash plus interest-bearing securities divided by the trailing 12-month average market capitalization has to be less than 33 percent; and accounts receivable divided by the 12-month average market capitalization has to be less than 33% percent (Ali, 2005; Elfakhani et al. 2007; Khatkhatay and Nisar, 2007). Otherwise, income could be considered "contaminated" and must be purified, that is, investments in companies with a tolerable amount of interest income or with tolerable revenues from unacceptable business activities can be made if these impure earnings are purified by giving them away to designated charities (Hayat and Kraeussl, 2011; Merdad et al. 2010).

The revolution in performance evaluation was primarily initiated by Markowitz's (1952) mean-variance portfolio theory and the capital asset pricing theory (CAPM) developed by Sharpe (1964). Studies by Ross (1976), Fama and French (1993), Jagadeesh and Titman (1993), Campell *et al.* (1997), Lam (2002), among others, all criticized CAPM as a single factor model and generally argued that multi factor models can do a better job in explaining the variability of returns. The normal distribution of returns was a main assumption that was criticized by Estrada (2002, 2007) questioning the suitability of the CAPM model and the use of variance, as a measure of risk in markets with asymmetrical distribution of returns and this is the same direction our study is intending to examine.

The GCC equity markets were first established around the mid-1970s. The first market to be established was the Kuwait Stock Exchange in 1977 followed by the Tadawul All Share Index (TASI) in Saudi Arabia in 1984, then the Dubai Financial Market (DFM) and Abu Dhabi Securities Market (ADSM) in 2000. The number of companies listed at the GCC level grew from 473 in 2005 to 657 by end-2009. Kuwait recorded the largest increase in listings followed by Saudi Arabia (Tashin and Oral, 2011). By the end of 2009, total market capitalization amounted to \$647 billion of which the Saudi equity market accounted for 49 percent, followed by the UAE at 17 per cent and Kuwait 15 per cent. Market capitalization as a share of GDP at end-2009 amounted to 74 per cent.

The total capitalization of the GCC markets reached almost \$800 billion in early 2012, corresponding to almost 60% of the region's nominal gross domestic product of \$1.4 billion in 2011. Mako and Sourrouille (2010) view that this growing prosperity and large savings have not yet translated into a large and diversified institutional investment sector in the GCC; nevertheless, mutual funds are considered the leading (private) institutional investors in the region with equity funds being the most dominant type of funds. At end-2009, MENA (Middle East and North Africa) countries hosted over 854 privately managed investment funds with a cumulative \$67 billion of assets under management (AUM), including 397 funds with \$33 billion AUM domiciled in the GCC.

In this study, we focus on the emerging GCC market as an attractive investment destination especially in a period in which this market's relative economic and political stability are valued the most by many investors. The period chosen includes three substantial crises, the burst of the speculative bubble of 2006 which resulted in major decline in valuations especially in KSA and Dubai, the 2008 international financial crisis that hit all the stock markets and the Arab spring of 2011 which had a negligible effect on the GCC markets with the exception of Bahrain. We used the data set of Islamic and conventional mutual funds of four GCC countries: Saudi Arabia, Kuwait, Bahrain and United Arab Emirates (hereafter UAE) from 2006 to 2011. Qatar and Oman were excluded because there were no Islamic funds in the former, and no Islamic funds matched our sample period in the latter. As we study the emerging GCC markets with their recent history and characteristics that are primarily associated with the weak-form efficiency, including the asymmetrical distribution of returns (Freedi *et al.* 2012), we examine the appropriateness of using the D-CAPM model along with its performance evaluation measures in the downside framework as opposed to the traditional CAPM model and its evaluation measures. We also investigate other research questions such as which funds (if any) were able to beat the market and to report significant positive abnormal performance and is there evidence as to whether Islamic funds are actually better or as good (or bad) performers than conventional ones.

Our tests are performed on two levels. We initially examine the equity fund performance in each market against two benchmarks, a main local index and the Dow Jones Islamic index (hereafter DJI), utilizing the traditional beta and CAPM performance evaluation measures. The evaluation is then replicated utilizing the downside beta and other tests of funds' performance derived from the CAPM in the downside framework. Finally, the aggregate performance is explored by forming two fund portfolios, one representing the average Islamic mutual fund and the other is the average conventional fund in the GCC markets, to examine the performance of the Islamic mutual funds portfolio compared to its conventional peers and to the overall market. By looking at country specific results, the study documents evidence that Islamic funds are not necessarily lower performers than conventional funds. In fact the performance of Islamic funds in the UAE and Kuwait was better than their conventional peers in terms of providing better return per unit of total risk and systematic risk, and this is consistent with Derbel (2007) and Merdad et al. (2010). Our results also provide evidence on the suitability of the downside beta and the downside CAPM performance evaluation measures to report on fund performance, which is consistent with Estrada's work (2002 and 2007). We provide evidence that downside beta can empirically provide a better risk measure than the traditional beta and may actually improve the asset pricing models in the emerging GCC markets.

The main contribution of our study is the addition to literature by studying markets that are rarely studied despite their importance and growth potential. Generally, studies of the Middle East and North Africa (MENA) region are relatively thin and incomplete. To the authors' best knowledge, this is the first study that evaluates the suitability of the D-CAPM and its performance evaluation measures in the downside framework in the emerging GCC markets using country specific data and aggregate GCC market data. This study being conducted in a different setting from

previous studies that focused on developed markets can provide new empirical evidence for theories and models so far established; one of these is the appropriateness of traditional CAPM to report on performance. Finally, this study also contributes to the debate as to whether *Shariah* compliant or Islamic investments are as equally profitable as the conventional investments or the restrictions imposed on them do hinder their performance.

The rest of the paper is organized as follows. Section 2 reviews previous literature. Section 3 presents the data and the methodology used. Section 4 presents the results and discussion. Finally, section 5 concludes the study.

## 2. Literature review

Contributions made by Markowitz (1952), Treynor (1965), Sharpe (1966), Jensen (1968), and Fama (1972), added enormously to the area of modern portfolio theory. Pioneered by the capital asset pricing model, numerous studies were directed to evaluate mutual funds' performance and to examine if they could actually beat their benchmark and achieve abnormal performance in a consistent manner. Many studies cited in the literature have criticized the suitability of the CAPM model and provided evidence that returns can be explained by more than one variable and thus the performance measurement was extended to multifactor models by Ross (1976), Fama and French (1993), Jagadeesh and Titman (1993), Campell (1997), Wermers (2000), and Lam (2002) (for a detailed list of studies and findings please refer to appendix A).

Most of these studies were actually devoted to the developed markets of U.S. and U.K. However, with respect to emerging markets, some studies were cited in the literature such as Xu (2005) who compared the performance of the Securities Investment Funds in China to those of the U.S., utilizing the CAPM performance measures. Imisiker (2008) used CAPM performance measures, along with the performance attribution analysis by Fama (1972) to assess selectivity and market timing performance of mutual funds industry in Turkey. Low (2010) studied the relationship between fund performance and characteristics of the Malaysian Unit Trust Fund utilizing the CAPM measures. All of these studies utilizing the CAPM generally agreed that on average mutual funds cannot beat their index. Alternatively, Merdad et al. (2010) used a sample of monthly data of Islamic and conventional funds in Saudi Arabia to examine the risk return behavior by employing the CAPM performance evaluation measures. They divided the sample period into bearish and bullish periods and provided evidence that Islamic funds underperform conventional funds in bull periods but outperform them in bearish periods and thus offer hedging opportunities to investors during economic downturns. These results are consistent with similar tests of Malaysian funds presented by Mansor and Bhatti (2011) and Mansor et al. (2012). However these results contradict with Hayat and Kraeussl (2011), Abdullah et al. (2007) and Elfakhani et al. (2005), which provided evidence that Islamic funds underperformed conventional funds.

Of the studies directed towards examining the suitability of the CAPM model itself to report on performance, few studies examined the suitability of the downside risk performance measures over the traditional CAPM measures especially in emerging markets characterized by the asymmetrical distribution of returns. Estrada (2002, 2007) argues that the main characteristic of the CAPM model is that it measures risk by beta, which follows from an equilibrium model in which investors display mean–variance behavior. In that framework, risk is assessed by the variance of returns which is a questionable measure of risk since it requires returns to be symmetric and normally distributed and both assumptions are highly questionable for emerging markets. Instead he proposed the semi-variance of returns as a more acceptable measure of risk and one that can be used

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to generate an alternative behavioral hypothesis (mean-semi-variance behavior), an alternative measure of risk for diversified investors (the downside beta), and an alternative pricing model (the downside CAPM). By using monthly data on 27 emerging markets, he provided evidence supporting the use of downside risk measures over the standard risk measures, and concluded by suggesting the importance of the downside beta and downside risk measures to replace the traditional CAPM performance evaluation measures. This is consistent with Galagedera (2007) who argues that the traditional CAPM has failed to explain the variation in equity prices in emerging markets since return distributions are found to be non-symmetric and highly volatile and that the downside beta might be more appropriate as it provides a better explanation of variability of returns in emerging markets and with Mamoghli and Daboussi (2008) who provided evidence of the insufficiency of traditional CAPM and traditional performance measures in the presence of asymmetrical returns' distributions and stressed the importance of the incorporation of downside risk measures in the CAPM and in the performance measures.

## 3. Methodology and Data

In this section, we will describe and compare in detail the major composite equity portfolio performance measures that combine risk and return performance into a single value and discuss differ. Additionally we will use composite measures that consider the funds' downside risk and compare the results. For evaluating the funds' performance, the methodology based on the classical CAPM model along with its performance-based evaluation measures is applied as follows:

*Treynor's coefficient* (Reward-to-Volatility or RVOL) is used to measure the excess return of a fund, over the risk free rate, per unit of systematic risk as suggested by Treynor (1965). It is the slope of the line between the risk-free rate and the risk-return plot for the fund. A greater slope indicates a better risk-return trade-off; therefore, higher *T* values generally indicate better performance.

Treynor Ratio = 
$$(R_p - R_F) / \beta_p$$
 ...[1]

where  $(R_p - R_F)$  is the average excess return and  $\beta_p$  is the fund's beta.

*Sharpe ratio* (Reward-to-Variability): As suggested by Sharpe (1966), measures the average excess returns of a fund, over the average risk free rate, per unit of total risk of the fund. The higher the value of the Sharpe ratio, the better the performance of the fund.

...[2]

Sharpe Ratio = 
$$(R_p - R_F) / \sigma_p$$

where  $(R_p - R_p)$  is the average excess return and  $\sigma_p$  is the total volatility of the fund.

*Jensen's Alpha:* Measures the Funds' excess returns, over and above those of the benchmark. The alpha measure as suggested by Jensen (1968) is:

Jensen's 
$$\alpha = R_P - R_F - \beta_P (R_M - R_F)$$
 ...[3]

where,  $\alpha$  is the fund excess returns over and above those of the benchmark,  $R_P$  is the average return of the fund over the measurement period,  $\beta_P$  is the sensitivity of the fund excess returns, over the risk free rate, to the excess returns of the benchmark and  $R_M$  is the average market return over the measurement period.  $\alpha$  represents how much of the rate is attributable to the manager's ability to derive above average returns adjusted for risk. A positive significant value for  $\alpha$  indicates outperformance while a negative significant value indicates underperformance.

The second part of the study then applies the capital asset pricing model in the downside framework. As presented in Estrada (2002, 2007), in the alternative mean semi- variance framework, the investor's utility will depend on the *downside* variance of returns (semi-variance) of the investor's portfolio. In this framework, Estrada downside beta (with respect to the risk free rate) is determined as follows:

Estrada 
$$\beta_{Di} = \frac{\prod_{t=1}^{T} [Min(R_{Pt} - R_{Ft}), 0]^* [Min(R_{Mt} - R_{Ft}, 0]]}{\prod_{t=1}^{T} [Min(R_{Mt} - R_{Ft}, 0]^2}$$
 ...[4]

Then, three performance measures in the downside risk framework are applied. These are:

## The Sortino ratio:

Similar to the Sharpe (1966) ratio, the Sortino and Price (1994) ratio is presented as follows:

$$SOR = \frac{R_P - R_F}{\sigma_{DP}} \qquad \dots [5]$$

where  $R_P$  is the portfolio's return,  $R_F$  is the risk-free rate which here represents the minimum acceptable return (or MAR) and  $\sigma_{DP}$  is the downside deviation of the portfolio returns.

#### The index of Mishra and Rahman

Similar to the Treynor ratio except that it replaces traditional beta with the downside beta. It was presented by Mishra and Rahman (2002) and is written as follows:

$$MR = \frac{R_P - R_F}{\beta_{DP}} \qquad \dots [6]$$

where  $R_P$  is the return of portfolio,  $R_F$  is the risk-free rate and  $\beta_{DP}$  is the downside beta.

### The alpha of Mamoghli and Daboussi

A third performance measure, in the downside framework that is similar to the Jensen alpha, utilizing Estrada's beta, was presented by Mamoghli and Daboussi (2008) as follows:

$$\alpha_{DP} = R_P - R_F - \beta_{DP} (R_M - R_F)$$

The adjusted Jensen alpha based on the Estrada downside beta calculates the return of the portfolio in excess of its required rate of return calculated according to the D-CAPM of Estrada (2002).

For our research data, we used the Bloomberg and Thomson Reuters databases of GCC markets. All equity funds that are either locally focused or GCC focused, with completed monthly net asset values from January 2006 to March 2011 are included in our data set. This resulted in 63 observations of 85 equity funds from 4 GCC countries (Saudi Arabia, Kuwait, Bahrain and the UAE), out of which 35 funds are Islamic (18 in Saudi Arabia, 9 in Kuwait, 6 in Bahrain and 2 in the UAE) and 50 are conventional (12 in Saudi Arabia, 21 in Kuwait, 12 in Bahrain and 5 in the UAE). The risk free rate is the 3-month Treasury bill rate of each country and two indices are used for the market portfolio: the main local index of each market and the Dow Jones Islamic index (hereafter DJI). Survivorship bias was cited in the literature by Brown *et al.* (1992) and Otten and Bams

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...[7]

(2004), highlighting the fact that if funds, which are unable to survive for the whole sample period, are eliminated from the sample, the performance measurement can be upwardly biased. This data set is not subjected to survivorship bias, since no open-end mutual fund dropped out of sample.

#### 4. Results and Discussion

Table 1 reports the descriptive statistics and CAPM regression results for aggregate conventional and Islamic funds in each GCC market tested, using monthly returns against two indices, the local index of each market and the DJI index. Descriptive statistics of each fund in each country are detailed in the Appendix B.

### **Insert Table 1 about here**

With respect to the Saudi market, the regression results using the TASI local share index showed that Islamic funds had lower beta and lower SD values than both the index and the aggregate conventional funds. Alternatively the aggregate conventional Saudi fund yielded better return per unit of total risk and per unit of systematic risk represented by the lower negative values of Sharpe ratio and Treynor ratio respectively (-0.15 and -0.016 for aggregate conventional funds as opposed to -0.23 and -0.04 for aggregate Islamic funds). No fund was able to beat the TASI index or to show abnormal performance by scoring a positive significant value for alpha. When using the DJI as the Saudi market proxy, the better performance of the aggregate conventional funds as opposed to their Islamic rival was witnessed, however the model itself was less capable of explaining the variability of the funds' excess returns (evidenced by the lower values of the coefficient of determination) compared to the model that uses the local Saudi index as the market proxy( for aggregate conventional funds, the model was only capable of explaining 30% of the fund's excess returns as opposed to 90% when using TASI as the market index).

With respect to the Kuwaiti market, and using the Kuwaiti local index, table 1 shows that aggregate Islamic funds had higher negative mean returns and higher total risk than aggregate conventional funds, and thus scored lower return per unit of total risk measured by the higher negative value for Sharpe ratio. Alternatively, it showed better return per unit of systematic risk, represented by its lower negative value of Treynor ratio and this difference would attribute to the Islamic funds idiosyncratic risk that was considered in Sharpe measure but ignored in Treynor's. Very close results are reported when using the DJI index as the market proxy. Despite the low values of the coefficient of determination of the models using the two indices, we can generally argue that the regression model using the local Kuwaiti index as the market proxy is more capable of explaining the variability of funds' excess returns, especially of aggregate Islamic funds (almost 70 %) compared to DJI (almost 30%).

With respect to Bahraini market, Islamic funds had lower total risk and lower systematic risk, scoring higher negative values for Sharpe and Treynor ratios. The regression model using the DJI was better able to explain the variability of the funds' excess returns as opposed to the results using the Bahraini local market index.

Finally, with respect to the UAE market, aggregate Islamic funds had higher mean return that both the aggregate conventional fund and the local market index. In fact, it is the only group of funds that yielded positive value for mean adjusted returns. Islamic funds had lower total risk and lower systematic risk, yet they had better values for Sharpe and Treynor ratios compared to their conventional peers. Aggregate Islamic funds can also provide better return per unit of total risk compared to their local index. No fund was able to achieve abnormal performance in a consistent manner by scoring positive significant values for alpha.

In summary, our results are consistent with literature (see for example, Abdullah *et al.* 2007 and Merdad *et al.* 2010) in that the average mutual fund in GCC markets cannot beat their index and contrarily realize abnormal returns. The CAPM regression results are inconclusive in providing evidence on the better performance of conventional funds as opposed to Islamic funds. The study provides some evidence that aggregate Islamic funds' performance is relatively better in UAE and Kuwait. On the other hand, aggregate conventional funds' performance is relatively better in KSA and Bahrain.

One of the main assumptions of the CAPM is the symmetrical distribution of portfolio's returns around the mean. In the CAPM, risk is measured by the fund's beta, which is rooted in the variance. Variance, on the other hand, is the most commonly used measure of risk that measures the dispersion of returns from the mean with no distinction between upside and downside volatility. It is frequently argued that the returns of emerging markets are less normal and more skewed than those of developed markets. Variance is criticized for not being a suitable measure of risk. Actually there are some studies that provided evidence that downside risk measures excel over the standard risk measures in explaining variability in the cross section of returns in emerging markets as in Estrada (2002, 2007). In this section of our study we are examining the suitability of the D-CAPM and the portfolio performance evaluation measures in the downside framework in our four sampled GCC markets.

Table 2 shows the relative performance and risk measures for the aggregate Islamic equity funds and aggregate conventional equity funds of each market tested against two indices; the local index of each market and the DJI, using the Estrada downside beta and CAPM model in the downside framework. In order to calculate the down side risk performance measures: semi-variance, semi-deviation and downside beta are all calculated and used to determine the three selected downside risk performance measures. It is important to mention that the appropriate way to estimate Estrada's beta ( $\beta_D$ ) was derived from Estrada's (2002) work by doing a simple linear regression without a constant between the dependent variable  $Y_t = [Min(R_p - R_F), 0]$  and the independent variable  $X_t = [Min(R_M - R_F), 0]$  and obtaining the downside beta as the slope of this regression.

The Sortino ratio uses the downside semi-variance, which actually penalizes the fund's returns that fall below the risk free rate or what we call the "undesirable volatility" and treats the returns that are above the risk free rate as zero. The same applies to the other two measures of the adjusted alpha of Mamoghli and Daboussi (2008) and the MR ratio in which both use the downside beta instead of the traditional beta. By checking the downside performance evaluation measures of the GCC funds, some differences were cited in values and rankings of funds that could be directly attributable to the asymmetry of returns and the risk perception of the investors who do not perceive the upside volatility in the same manner as they do for the downside volatility which is not captured by the traditional beta.

### **Insert Table 2 about here**

Table 2 presents the D-CAPM regression results for the aggregate Islamic and conventional funds in each market. Our Results were consistent with the results presented in table 1 in terms of which group of funds outperformed the other in each market. What is more interesting to highlight is the higher significant values for beta accompanied by the higher values for the coefficient of determination in several markets (for example aggregate Islamic funds in KSA), showing a better

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capability of the model in the downside framework to explain a higher percentage of the variability of the funds' excess returns. We argue that our results provide evidence that the D-CAPM along with its performance evaluation measures in the downside framework could be more suitable to report on funds' performance in the GCC markets than the traditional CAPM performance evaluation measures.

Finally, Table 3 compares the aggregate performance using the traditional CAPM and D-CAPM performance measures, after forming two fund portfolios, one representing the average Islamic mutual fund and the other is the average conventional fund in GCC markets. Only the DJI index is used as the market benchmark and unadjusted returns were used to exclude the effect of the different risk free rates prevailing in each market). On the aggregate level, the results using the CAPM shows a better performance for the conventional fund portfolio compared to the aggregate Islamic fund portfolio in terms of a higher beta value, higher Sharpe and Treynor ratios and higher capability of the model itself in explaining the variability of excess returns represented by the higher value for the coefficient of determination (31 per cent versus 21 per cent respectively). Additionally, Table 3 confirms the evidence presented earlier on the suitability of the D-CAPM measures to report on performance in the GCC markets manifested by the higher downside beta values significant at 1 per cent level of significance for each of the two portfolios compared to their beta values under the traditional CAPM model and the higher ability of the D-CAPM model to explain the variability of excess returns as represented by the higher R<sup>2</sup> coefficient (0.72 for conventional funds and 0.52 for Islamic funds).

## Insert Table 3 about here

#### 5. Conclusion, implications and future research

From the modern portfolio theory by Markowitz and the development of the CAPM model by Sharpe, many criticisms were directed towards this model and the limitations of the asymmetry of returns and risk perception of investors. In this study we compared the performance of Islamic versus conventional mutual funds in GCC markets by utilizing the CAPM and its performance evaluation measures and then we replicate the tests using the D-CAPM and its performance-based evaluation measures in the downside framework using two benchmarks, the main local index in each market and the DJI index. This study finds that the average mutual fund in GCC markets cannot beat the index and realize positive significant performance in a consistent manner. Islamic funds are not necessarily lower performers than conventional funds. In UAE, Islamic funds were better performers by providing better return per unit of systematic and total risk.

Similarly, Aggregate Kuwaiti Islamic funds yielded higher return per unit of systematic risk as opposed to conventional peers and this result is consistent with Abdullah *et al.* (2007), Derbel (2007) and Merdad *et al.* (2010). On the other hand, aggregate Kuwaiti Islamic funds had higher total and systematic risk than their conventional peers which is inconsistent with (Mamoghli and Daboussi, 2008) who argue that conventional funds have on average, higher systematic and total risk than their Islamic peers, represented by their higher average beta and standard deviation values. Furthermore, we find that semi-variance could be a more suitable measure of risk when returns are asymmetrical since it incorporates skewness and is just as good as the variance when returns are symmetrical. This is consistent with Estrada's work (2002 and 2007). Finally, the results indicate that downside beta can empirically provide a better risk measure than the traditional beta and may actually improve the asset pricing models in the emerging GCC markets. The results are also in

accordance with Galagedera (2007) and Mamoghli and Daboussi (2008) stressing the importance of the incorporation of downside risk measures in the CAPM and in the performance measures.

This study has important implications. First: it is equally important that practitioners, in the GCC markets specifically report performance using both D-CAPM measures and CAPM measures and, if differences exist, then the D-CAPM could be the superior measure because of its higher ability to explain the variability of funds' excess returns. Secondly: Islamic funds could be an attractive source of investing, especially during market downturns. They can offer a good hedging investment alternative as they are not involved in speculative activities and still can report a similar or even better performance than their conventional peers.

Future research could go in five directions. When more data for longer periods (e.g. daily net asset values, daily data about specific attributes such as size and number of shares outstanding, daily data on Omani and Qatari funds and a complete data set for funds' fees) becomes available, it should be possible firstly to evaluate the comparable performance of Islamic vs. conventional funds and secondly, to investigate how appropriate multifactor models in emerging markets. Thirdly, this study focuses on Islamic mutual funds, which mainly invest in equity however; many Islamic funds focus their investment strategies on Islamic bonds, real estate or commodities. Therefore, these funds' performance and investment strategies appear academically unexplored to date and thus may be offering additional routes for future research. Fourthly, while the world experienced a financial crisis in 2008, the effect of changes in the macroeconomic conditions should be taken into consideration. Finally, comparing the financial performance of Islamic funds with socially responsible funds could promise a new direction for future research.

#### References

Abdullah, F., Hassan, T., Mohamad, S., 2007. Investigation of performance of Malaysian Islamic unit trusts. *Managerial Finance* 33, 142-153.

Ali, S.S., 2005. Islamic capital market products: Developments and challenges. Islamic Research and Training Institute, Islamic Development Bank Group. *Occasional Paper No. 9*, 1425H/2005.

Brown, S. J., Goetzmann, W., Ibbotson, R. G., 1992. Survivorship bias in performance Studies. *Review of Financial Studies* 5, 553-580

Bryant, L.L., Liu, H.C., 2009. Management structure and the risk of mutual funds managers. *Journal of Finance and Accountancy* 1, 1-17.

Campbell, J.Y., Lo, A.W., Mackinlay, A.C., 1997. The Econometrics of Financial Markets. Chichester: Princeton University Press.

Carhart, M.M., 1997. On persistence in mutual fund performance. Journal of Finance 52, 57-82.

Chen, H-L, Narasimhan, J., Russ, W., 2000. The value of active mutual fund management: An examination of the stockholdings and trades of fund managers. *Journal of Financial and Quantitative Analysis* 35, 343-368.

Cihak, M., Hesse, H., 2010. Islamic banks and financial stability: An empirical analysis. *Journal of Financial Services Research* 38, 95-113.

Cuthbertson, K., Nitzsche, D., O'Sullivan, N., 2010. Mutual Fund Performance measurement and evidence. *Financial Markets, Institutions and Instruments* 19, 95-187.

Daniel, K., Grinblatt, M., Titman, S., Wermers, R., 1997. Measuring mutual fund performance with characteristic based benchmarks. *Journal of Finance* 52, 1035-1058.

Derbel, H., 2011. Can Islamic finance constitute a solution to crisis? *International Journal of Economics and Finance* 3, 75-85.

Ebrahim, M.S., Molyneux, P., Wilson, J., 2013. Financial sector performance and risk: An introduction. *Journal of Economic Behavior and Organization* 85, 118–121.

Elfakhani, S., Hassan, M.K., Sidani. Y., 2005. Comparative performance of Islamic versus secular mutual funds. Working Paper, University of New Orleans.http://www.business.uno.edu/econ/workingpapers/2006WP/10-IslamicMutualFunds.pdf (accessed March 6, 2013).

Elfakhani, S.M., Hassan, M.K., Sidani, Y. M., 2007. *The Handbook of Islamic Banking*. Cheltenham: Elgar, Chapter 16, pp. 256-273.

Estrada, J., 2002. Systematic risk in emerging markets: the D-CAPM. *Emerging Markets Review* 3, 365–379.

Estrada, J., 2007. Mean-semivariance behaviour: downside risk and capital asset pricing. *International Review of Economics and Finance* 16, 169-185.

Fama, E., 1972. Components of investment performance. Journal of Finance 27, 551-567.

Fama, E.F., French K.R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33, 3-56

Freedi, A.A., Shamiri A., Isa, Z., 2012. A study on the behavior of volatility in Saudi Arabia stock market using symmetric and asymmetric GARCH models. *Journal of Mathematics and Statistics* 8 (1), 98-106

Galagedera, D., 2007. An alternative perspective on the relationship between downside beta and CAPM beta. *Emerging Markets Review* 8, 4–19.

Ghallagher, D.R., 2001. Attribution of investment performance: An analysis of Australian pooled superannuation funds. *Journal of Accounting and Finance* 41, 41-62.

Ghayad, R., 2008. Corporate governance and the global performance of Islamic banks. *Journal of Humanomics* 243, 207-216.

Grinblatt, M. and Titman, S., 1989. Mutual fund performance: An analysis of quarterly portfolio holdings. *Journal of Business* 62, 393-416.

Gruber, M.J., 1995. Another puzzle: The growth in actively managed mutual funds. *Journal of Finance* 51, 783-810.

Hassan, M., Dridi J., 2010. The effects of the global crisis on Islamic and conventional banks: A comparative study. IMF working paper, available in http://www.imf.org/external/pubs/ft/wp/2010/wp10201.pdf accessed on 20 February, 2013.

Hayat, R., Kraeussl, R., 2011. Risk and return characteristics of Islamic equity funds. *Emerging* markets review 12, 189-203.

Hoepner, A.G.F., Rammal, H.G., Rezec, M., 2011. Islamic mutual funds' financial performance and international investment style: evidence from 20 countries. *European Journal of Finance* 17 (9), 829-850.

Ilias, S., 2010. Islamic Finance: overview and policy concerns. Congressional Research Service Support. Available from <u>http://www.fas.org/sgp/crs/misc/RS22931.pdf</u>. Access date: 11<sup>th</sup> October 2012.

Imisiker, S., Özlale, Ü., 2008. Assessing selectivity and market timing performance of mutual funds for an emerging market; the case of Turkey. *Emerging Markets Finance and Trade* 44, 87–99.

Ippolito, R.A., 1989. Efficiency with costly information: a study of mutual fund performance. *Quarterly Journal of Economics* 104, 1–23.

Iqbal, M., 2001. Islamic and conventional banking in the nineties: A comparative study. *Islamic Economic Studies* 8, 1-27.

Jegadeesh, N., Titman, S., 1993. Returns to buying winners and selling losers: Implications for stock market efficiency. *Journal of Finance* 48, 65-97.

Jensen, M.C., 1968. The performance of mutual funds in the period 1945- 1964. *Journal of Finance* 23, 389-416.

Kalim, R., Lodhi, S.A., 2006. Strategic directions for developing an Islamic banking system. Review of Islamic Economics 10, 5-21.

Khaldi, K., Hamdouni, A., 2011. Islamic financial intermediation: equity, efficiency and Risk. *International Research Journal of Finance and Economics* 65, 145-160.

Khan, F., 2010. How 'Islamic' is Islamic Banking? *Journal of Economic Behavior and Organization* 76, 805–820.

Khatkhatay, M.H., Nisar, S., 2007. Shari'ah compliant equity investments: an assessment of current screening norms. *Islamic Economic Studies* 15, 47-76.

Lam, K.S.K., 2002. The relationship between size, book-to-market equity ratio, earnings-price ratio, and return for the Hong Kong stock market. *Global Finance Journal* 13, 163-179.

Low, S-W., 2010. Relationship between fund performance and characteristics of the Malaysian Unit Trust Fund. *Singapore Management Review* 32, 29-43.

Maggs, P.B. 2011. Islamic banking in Kazakhstan law. *Review of Central and East Euro Law* 36, 1-32.

Mako, W. and Sourrouille, D., 2010. Investment funds in MENA. The world Bank. Available at http://siteresources.worldbank.org/INTMNAREGTOPPOVRED/Resources/MENAFlagshipMutualF und2\_28\_11.pdf. Accessed on March 4, 2013.

Malik, A., Shah, H., 2011. An analysis of Islamic banking and finance in west: from lagging to leading. *Asian Social Science* 7, 179-185.

Malkiel, B.G., 1995. Returns from investing in equity mutual funds 1971 to 1991. Journal of Finance 50, 549-572.

Mamoghli, C., Daboussi, S., 2008. Capital asset pricing models and performance measures in the downside risk framework. August. Available at SSRN: <u>http://ssrn.com/abstract=1139307</u>.

Mansor, F., Bhatti, I., Khan, H., 2012. Islamic mutual funds performance: A panel analysis. The 2<sup>nd</sup> Malaysian Postgraduate Conference (MPC2012), 7-9 July 2012, Bond University, Gold Coast, Queensland, Australia.

Mansor, F., Bhatti, M.I., 2011. The Islamic mutual fund performance: New evidence on market timing and stock selectivity. The International Conference of Economics and Finance Research. IPEDR vol.4, IACSIT Press, Singapore.

Markowitz, H., 1952. Portfolio selection. Journal of Finance 7, 77-91.

Merdad, H., Hassan, M.K., Alhenawi, Y., 2010. Islamic versus conventional funds performance in Saudi Arabia: A case study. *J.KAU: Islamic Economics* 23, 161-198.

Mishra, B., Rahman, M., 2002. Measuring mutual fund performance using lower partial moment. Working Paper, available from <u>http://www.utiicm.com/cmc/PDFs/2002/banikant%5E40.pdf</u>. Access date: 24<sup>th</sup> April 2012.

Olson, D., Zoubi, T.A., 2008. Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region. *International Journal of Accounting* 43, 45-65.

Otten, R., Bams, D., 2004. How to measure mutual fund performance Economic versus statistical relevance. *Journal of Accounting and Finance* 44, 203-222

Razzaq, N., Gul, S., Sajid, M., Mughal, S., Bukhari, S.A., 2012. Performance of Islamic mutual funds in Pakistan. Economics and Finance Review 2, 16–25.

Ross, S. A. 1976. The arbitrage theory of capital asset pricing. Journal of Economic

Sharpe, W., 1964. Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance* 19, 425-442.

Sharpe, W.F., 1966. Mutual fund performance. *Journal of Business* 39, part2: supplement on security prices, 119-138.

Sortino, F., Price, L., 1994. Performance measurement in a downside risk framework. *Journal of Investing* 3, 59-65.

Tahsin, S S., Oral, H W., 2011. Global and regional spillovers to GCC equity markets. IMF Working Paper no. WP/11/138, available in http://www.imf.org/external/pubs/ft/wp/2011/wp11138.pdf (accessed on March 6, 2013) *Theory* 13, 341-360

Treynor, J.L., 1965. How to rate management of investment funds. *Harvard Business Review* 43, 63-75.

Wermers, R., 2000. Mutual fund performance: An empirical decomposition into stock- picking talent, style, transaction costs, and expenses. *Journal of Finance* 55, 1655-1965.

Xu, X., 2005. Performance of securities investment funds in China. *Emerging Markets Finance and Trade* 41, 27–42.

Zheng, L., 1999. Is money smart? A study of mutual fund investors' fund selection ability. *Journal of Finance* 54, 901-933.