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Original Articles

# Islamic mutual funds' financial performance and international investment style: evidence from 20 countries

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## Abstract

We pursue the first large-scale investigation of a strongly growing mutual fund type: Islamic funds. Based on an unexplored, survivorship bias-adjusted data set, we analyse the financial performance and investment style of 265 Islamic equity funds from 20 countries. As Islamic funds often have diverse investment regions, we develop a (conditional) three-level Carhart model to simultaneously control for exposure to different national, regional and global equity markets and investment styles. Consistent with recent evidence for conventional funds, we find Islamic funds to display superior learning in more developed Islamic financial markets. While Islamic funds from these markets are competitive to international equity benchmarks, funds from especially Western nations with less Islamic assets tend to significantly underperform. Islamic funds' investment style is somewhat tilted towards growth stocks. Funds from predominantly Muslim economies also show a clear small cap preference. These results

are consistent over time and robust to time varying market exposures and capital market restrictions.

Keywords:

fund manager learning | home bias | Islamic finance | Islamic mutual funds | responsible investment | three-level Carhart model

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# Notes

The estimated growth is partly related to an extended estimation coverage. Nevertheless, Islamic financial services' market value was only about $150bn in the mid-1990s. Hence, it grew nearly 400% until the end of 2007 with average annual growth rates of about 14% (McKenzie 2009).

The Shari'ah Supervisory Board of the Dow Jones Islamic Index, for instance, tolerates corporations, whose total debt, sum of cash and interest bearing securities, or accounts receivable are less than one-third of the corporation's market capitalization (Dow Jones 2009). Other Islamic indices use similar ratios (Derigs and Marzban 2008).

The literature on Islamic investment indices is somewhat more extensive. Most notably, Derigs and Marzban (2009) find ex-post optimized Shari'ah compliant indices to deliver a lower financial return than ex-post optimized conventional indices. Results of Forte

and Miglietta (2007) highlight the unique characteristics of Islamic investments, as they do not observe FTSE's Islamic index to be significantly co-integrated with its socially responsible or conventional counterpart. Girard and Hassan (2008), however, do not find international FTSE Islamic indices to trail their conventional peers. These three papers are recommended as gateway into this literature.

We follow Bollen (2007) and Renneboog, Ter Horst, and Zhang (2008) by defining equity mutual funds as investing at least 75% in stocks. As Eurekahedge does not provide asset allocation data for Islamic funds, our sample comprises all funds classified by Eurekahedge as equity as well as all of Eurekahedge's balanced funds, whose benchmark consist to at least 75% of an equity index.

It is common practice to analyse portfolios of assets with religious or ethical characteristics based on equal-weighted rather than value-weighted portfolios. This practice ensures a focus on the assets' religious or ethical characteristics and substantially reduces the risk of bias due to idiosyncratic return characteristics of a specific asset (Hong and Kacperczyk 2009; Renneboog, Ter Horst, and Zhang 2008). In the case of Islamic mutual funds, the available data furthermore do not allow for a precise computation of value-weighted portfolios. Eurekahedge, for instance, provides only static fund size data, which are very generously rounded and somewhat incomplete.

In the case of two countries (Liechtenstein, Qatar), our data set comprises more than 20 but less than 30 observations. Thirty observations are commonly considered to be the minimum threshold to assume an approximately normal distribution of ordinary least squares (OLS) regression residuals based on the central limit theorem. Since we cannot assume a normal distribution of regression residuals for these two countries, we pursue Jarque and Bera (1987) tests of the normality of these nations' regression residuals in all our main estimation models. Our results do not allow us to reject the normality of the regression residuals in any specification even at the lenient 10% significant level. Hence, we assume the residuals of our regressions for Liechtenstein and Qatar to be approximately normally distributed based on our tests instead of the central limit theorem.

Style Research Limited provides return indices, which assume distributions to have been reinvested, and dividend yields but no price indices. However, as discussed in the previous section, we require equity market returns exclusive of dividends to match

these with our Islamic mutual fund returns. Hence, we manually compute price indices by reducing the return indices by the monthly reinvested dividend yield.

As Style Research does not offer the construction of the size and book to market factor precisely according to Fama and French (1993), we follow the slightly amended procedure of Renneboog, Ter Horst, and Zhang (2008). Renneboog, Ter Horst, and Zhang (2008, 307) found that their 'factors are virtually identical' to the ones of Fama and French (1993).

Matching Islamic equity mutual funds against conventional equity mutual funds as common in the socially responsible investment literature (e.g. Kreander et al. 2005) is not possible for large parts of our sample, as the usual databases cover an insufficient number of conventional mutual funds from many nations in Asia or Africa.

As we do not have sufficient data on any benchmark asset for Liechtenstein, we employ Germany's benchmark assets for it. For Luxembourg, we employ the equity market benchmark and the investment style benchmarks of the Benelux countries due to the same reason.

For instance, in case the global factor and the national factor were perfectly correlated, whereby the absolute returns of the global factor would always be half of the national factor's returns, subtracting the global from the national factor would lead to a corrected national factor, which is identical to the global factor. Hence, multicollinearity problems would be certain in this case.

As our baseline model is a national four-factor Carhart model, we expect the coefficients of the orthogonalized regional and global factors in our three-level Carhart model to be more variable than their national equivalents.

The other symbols in Equation (3) are defined equivalent to the previous equations.

UAE and Qatar are the only two predominantly Islamic economies, whose Islamic funds significantly outperform their international equity benchmarks on average. UAE and Qatar are also two of three Islamic countries in our sample, who closely follow the most literal Islamic school of thought (Hanbali). The third 'Hanbali' country is Saudi-Arabia. As shown in Table 5, Saudi Arabia's Islamic funds could outperform their equity market benchmarks on average, if their fund managers would be more successful in timing their market risk exposure based on economic fundamentals. Hence, we carefully

conclude that the most literal Islamic school of thought, Hanbali, might have a positive effect on Islamic fund performance.

The mean zero value transformation of Cortez, Silva, and Areal (2009) addresses some but not all multicollinearity in our sample. Hence, we also pursue a three-step orthogonalization procedure. First, we orthogonalize the product involving the treasury bill from its terms spread equivalent. Second, we orthogonalize the product including the dividend yield from its cleaned treasury bill and its term spread equivalent. Third, we orthogonalize the product based on the default spread from its cleaned dividend yield, cleaned treasury bill and term spread equivalent. Eventually, we use the product involving the cleaned default spread, the cleaned dividend yield, the cleaned treasury bill and the term spread.

The results of the further robustness tests are available upon request.