Research in International Business and Finance 38 (2016) 360–375

Contents lists available at ScienceDirect

Research in International Business and Finance

journal homepage: www.elsevier.com/locate/ribaf

Full length article

Are there profit (returns) in Shariah-compliant exchange traded funds? The multiscale propensity☆

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ARTICLE INFO

Article history:
Received 5 September 2015
Received in revised form
16 December 2015
Accepted 19 April 2016
Available online 10 May 2016

JEL:
C22
C58
E44
G15

Keywords:
Islamic exchange traded fund returns
Wavelet coherence
MODWT

ABSTRACT

This paper is the first attempt to investigate the multiscale tendency of the co-movement and cross-correlation of nine Islamic Exchange Traded Fund (ETF) returns across the global developed and emerging markets using both wavelet coherence and wavelet MODWT methods. The wavelet coherence results tend to indicate consistent co-movement between most of the ETF returns especially in the long run. The study also uncovers evidence of wide variation of co-movement across the time-scales during the global financial crisis and the Euro debt crisis. Strong co-movement can be observed during the global financial crisis, both for the medium term investors and long term investors. The paper studies the relationship between different ETF returns using wavelet multi-resolution analysis. The cross-correlation analysis also shows certain significant and positive correlations between the ETF returns, especially during the period of global financial crisis. The findings from these two recent dynamic time-scale decomposition methodologies have important policy implications for both risk management and investors' investment policy.

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1. Introduction

Exchange Traded Funds (ETF) emanated from the innovation in the capital market. ETFs are tradable securities which derive their value from a pre-defined basket of securities which are constituents of an index. These types of ETFs derive their value (and volatility) from market movements of the underlying stocks, which comprise the portfolio, and these funds are similar to index funds managed by institutional portfolio managers. Index-linked products, such as ETFs, have been increasingly successful because they provide investors with benefits of diversification through one investment product (Gallagher and Segara, 2006).[1] Carty (2001) acknowledged that ETFs have provided investors the advantage of risk diversification, tracking, all-day trading, strategic trading capability, tax efficiency, lowest fees and transparent holdings.

With the Islamic Finance industry showing tremendous growth and innovation during the last decade, demand for Islamic financial instruments is growing at a high pace. Many individual and institutional investors, mainly from Islamic countries, seek to invest only in stocks that are compliant with the Islamic laws (or Shariah). Conventional ETFs have attracted many investors as one of the most innovative products of financial engineering. The structure of Islamic ETF is very much unique as

☆ The authors are deeply grateful to the editor (Prof. Thomas Lagoarde-Segot) and the anonymous reviewer for their learned comments which enhanced the quality of the paper greatly.

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[1] David and Segara, (2006).

http://dx.doi.org/10.1016/j.ribaf.2016.04.007
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compared to its conventional counterpart, with the extension of Shariah compliant component in the main structure which includes Shariah stock screening methodology. This is due to the fact that Islamic ETF requires strict Shariah compliance from all aspects of the process beginning with the creation and redemption aspect of the Islamic ETF.

ETF performance is a central concern for analyst and investors. Many studies tried to discuss the performance of ETFs, with some studies focusing on the tracking error and ETF volatilities (Diaw et al., (2010); Chu, (2011); Lin and Chiang, (2005); Chen and Huang, (2010) and Curcio Richard et al., (2012)). However, research concerning Islamic ETF performance is very limited (Diaw et al., (2010); Alam, (2012)). Studies on conventional ETFs are abundant. Huang and Lin (2011) studied 19 iShares ETFs from June 2003–March 2009 and show that ETFs have higher Sharpe measures than target market indices especially in the emerging markets. Although they found no significant performance difference between direct (stock market) and indirect (ETF) methods of investment, it is more effective for investors to use indirect methods to create internationally diversified portfolios.

In this study we show evidence of multiscale Islamic ETF returns co-movement and cross-correlation among developed economies, emerging economies and selected country specific ETFs through wavelet analysis. We also show the relative ranking of ETF co-movement and cross-correlation which may differ across the investment horizons because expected returns increase or decrease at different rates in investment horizons. We use daily returns of 9 ETF variables from developed markets, emerging markets and selected country specific ETFs. We use both continuous and discrete wavelet transform techniques to decompose the daily returns into orthogonal components with different timescales. The results show that the ETF return changes with the different time scales used. We also provide evidence that cross-correlation interdependence exists amongst the selected ETF returns variables.

This research, in examining the interaction between Islamic ETF returns across different markets is motivated by a number of ways. First, given the limited evidence on the performance of Islamic ETFs and the absence of empirical research with regards to multiscale performance of ETF, this study makes the initial attempt to contribute to the literature by providing analysis on the multiscale tendency of the Islamic ETFs' performance across the global markets.

This gap in the literature is surprising given the significant growth and size of assets invested in Islamic ETFs. Secondly, while some research have been conducted to study the performance of Islamic ETFs,[2] research which shows relative co-movement and cross-correlation of ETF returns across developed and emerging markets still remain unheard of.

There are several advantages of using ETF data in the study. First, these securities are liquid and give investors instant exposure to the underlying index. It is not necessary to buy a "basket" of securities to mimic the index, and ETFs are not subject to the non-synchronous trading problems associated with stock index price data. The ETFs under study here are not vulnerable to potential biases since they are traded securities, not indices that are calculated from underlying individual stock price data (Krause and Tse (2013)).

This study is the first attempt to use multiscale approach in analysing Islamic ETF returns in both developed and emerging markets (IFUS, IFEMRG, IFWLD, ILUS, ILEMRG, ILWLD) and also country related ETF returns such as MYETF (Malaysia), DAIWA (Japan) and EASYETF (France). From the best of Authors' knowledge, this was the first study using wavelet analysis on the returns of global ETF.

The rest of the paper is organized as follows: in Section 2, we review the literature on ETF performance and the wavelet applications. In Section 3, we provide a brief introduction on the ETF considered and their unique features. The wavelet technique is explained in Section 4. Empirical results are discussed in Section 5. We conclude in Section 6. Section 7 highlights the limitations of this research and future suggestions.

2. Literature review

There are a few studies conducted on the empirical evidence of the performance of ETF. Rompotis (2008) studied the performance and trading characteristic of German ETFs during the period 2000–2006 and showed they slightly underperform their benchmarks. Rompotis (2011) revealed that majority of selected ETFs (out of a sample of 50 iShares) beat the S&P500 index both at annual and aggregate level while the return superiority of ETFs strongly persists at the short-term level during the six year period 2002–2007. Timothy and Tse (2013) studied both US and Canadian ETF in the period of March 2001–September 2009 and demonstrated via Granger-causality tests that the U.S. ETF returns lead those of Canada at the broad market level and at four industry level ETF. They also showed that volatility spill overs occur bi-directionally in the market, financials and technology sectors, but only from the U.S. to Canada for basic materials and energy sectors. Wong and Wai (2011) examine 15 worldwide ETFs across bearish and bullish markets over the period of 1999–2007 and show that ETFs always provide higher returns in a bullish market than in a bearish market by the Sharpe ratio test that shows that ETF returns are not positive, proportional to the market volatility.

Charupat and Miu (2011), in studying Canadian leveraged ETF found that leveraged ETFs[3] are very actively traded and their transactions generally involve much shorter holding periods and much smaller dollar values than transaction in traditional

[2] See Diaw et al. (2010), which give a good analysis on the performance of Islamic ETF in Malaysia by looking at the performance of MyETF-DJIM Malaysia Titan 25 (MyETF).

[3] Leveraged ETFs is a publicly traded mutual fund whose goal is to generate daily returns that are in a multiple or a negative multiple of the daily returns on some benchmarks. The first was introduced in US in 2006 and in Canada in 2007.

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