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Islamic equity market integration and volatility spillover between emerging and US stock markets

Jihed Majdoub[a], Walid Mansour[b,*]

[a] Higher Institute of Management, University of Tunis, Tunisia
[b] Islamic Economics Institute, King Abdulaziz University, Kingdom of Saudi Arabia

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ABSTRACT

The purpose of this paper is to study the conditional correlations across the US market and a sample of five Islamic emerging markets, namely Turkey, Indonesia, Pakistan, Qatar, and Malaysia. The empirical design uses MSCI (Morgan Stanley Capital International) Islamic equity index since it applies stringent restrictions to include companies. Indeed, two main restrictions must be met: (i) the business activity must be compliant with *Shari'ah* (i.e., Islamic law) guidelines and (ii) interest-bearing investments and leverage ratios should not exceed upper limits. Three models are used: multivariate GARCH BEKK, CCC, and DCC. The estimation results of the three models show that the US and Islamic emerging equity markets are weakly correlated over time. No sheer evidence supports that the US market spills over into the Islamic emerging equity markets. Besides interpreting the results in terms of weak market integration, the peculiar specificities of the Islamic finance industry and the admittance conditions to the MSCI Islamic equity index contribute to explaining them. Indeed, Islamic finance bans interest-bearing investments and imposes some rules, such as asset-backing, which has sizeable impacts on volatility spillover and shocks transmissions, alongside with the close linkage between real and financial

* Corresponding author at: Islamic Economics Institute, King Abdulaziz University, PO Box 80214, Jeddah 21589, Kingdom of Saudi Arabia.
E-mail addresses: Jihed.Majdoub@isg.rnu.tn (J. Majdoub), wmmansour@kau.edu.sa (W. Mansour).

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sectors. These findings suggest that investors should take caution when investing in the Islamic emerging equity markets and diversifying their portfolios in order to minimize risk.

1. Introduction

This paper studies the volatility spillovers across regions. It provides empirical evidence from six equity stock markets using the conditional variances stemming from multivariate generalized autoregressive conditional heteroskedasticity (MGARCH) estimations. The objective of this paper is to investigate the volatility spillovers between the US stock market and five Islamic emerging stock markets. It explores the extent to which the volatility spillovers are significant and shocks are transmitted across the pairs of stock markets under consideration. The empirical study of volatility spillovers is interesting from the particular perspective of portfolio diversification and hedging strategies. Indeed, empirical studies (e.g., Bekaert, Harvey, & Ng, 2003) show that the international portfolio diversification is impaired by a high integration of international stock markets and correlated stock prices volatility.

King and Wadhwani (1990) explain the volatility spillover by the rational attempts of agents to use imperfect information about the events relevant to stock prices. They study the simultaneous collapse of financial markets, after the October 1987 crash, although they were operating under different economic circumstances and markets mechanisms. They construct a model in which there is a contagion between stock markets because investors use information from price changes in other markets. Indeed, the authors argue that "this constitutes a channel through which a 'mistake' in one market can be transmitted to other markets." (p. 5) The transmission of imperfect information regarding price changes from one market to another means that a mistake is transmitted. Indeed, the empirical evidence of King and Wadhwani (1990) shows that when the volatility in one market increases this renders the size of the contagion effects larger. The increase of the correlation between stock markets is a consequence after the crash erupted. Duncan and Kabundi (2013) study the features of domestic and foreign sources of volatility transmission in South Africa. They show that the estimated spillover levels are dynamic and tend to increase during domestic and foreign extreme moments.

This paper attempts to study the volatility spillovers across the US stock equity market and a sample of five Islamic emerging markets using MSCI Islamic equity indexes. The research question of the paper is interesting since it sheds some light on the transmission of shocks across international markets, especially during turmoil episodes and investigates volatility spillovers from a different prism, that of Islamic finance. Indeed, we use Islamic indexes for equity markets that have distinguished specificities. Such indexes apply stringent conditions to include companies in terms of compliance of the business activity to *Shari'ah* and restrictions imposed on interest-bearing investments.

Although several reasons lay behind volatility spillovers and transmission of shocks across markets, the industry of Islamic finance[1] provides different explanations. Indeed, since the companies included in the Islamic equity indexes are supposed to have very low leverage ratios and very small interest involvement, this linkage is expected to be broken. A supplementary fact is that the asset-backed rule in Islamic finance ensures that real and financial sectors are closely linked, which does not expose Islamic emerging markets to volatility spillovers from the US market.

The empirical design aims at studying the conditional correlations using three models, namely BEKK-MGARCH, CCC and DCC. Our findings suggest that there exist low volatility spillovers between Islamic emerging stock markets and the US stock market. All pair countries exhibit weak conditional

[1] The industry of Islamic finance increased remarkedly over the recent past. Indeed, the assets of the industry have been multiplied by almost five times over the last five years (Hammoudeh, Jawadi, & Sarafrazi, 2013). The market value of Islamic finance's assets amounts to 1.6 trillion US dollars.