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Stock return comovement around the Dow Jones Islamic Market World Index revisions

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ABSTRACT

We examine patterns of comovement in stock returns around the Dow Jones Islamic Market World Index (DJIMWI) quarterly revision events. Our analysis is based on a sample of 8250 companies from eighteen countries during the period May 1999–June 2012. We find that a stock's comovement with the DJIMWI increases when it joins and decreases when it leaves the index. We also find that the comovement of newly added (deleted) stocks with the existing DJIMWI constituents increases (declines) during periods of high trading activity and during the month of Ramadan. Further tests reveal that changes in the fundamentals have no impact on the comovements of added and deleted stocks. Overall, our results indicate that stock returns respond to the emotional state of investors around information-free events.

1. Introduction

Several studies show that religion affects human psychology and market behavior. Stulz and Williamson (2003), for example, show that religion is a key determinant of the cross-sectional variation in creditor rights and the level of enforcement. Ariel (1990) and Cadsby and Ratner (1992) report significant abnormal returns prior to the Christian festivals of Christmas and Good Friday. Frieder and Subrahmanyam (2004) show that the US equity market is affected by the major Catholic and Jewish High Holy Days, including St. Patrick's Day and Rosh Hashanah. Many studies also report significant and positive calendar effects in the month of Ramadan in most Muslim countries (e.g., Al-Hajieh et al., 2011; Bialkowski et al., 2012; Al-Khazali, 2014). They argue that Ramadan has a positive effect on investor psychology and this effect translates into optimistic investment decisions.

In this study, we argue that if the practice of Islam influences the mood and the investment decisions of Muslim investors, stocks traded by this group may move together even when their fundamental characteristics are uncorrelated. To investigate this issue, we examine the changes in stock return comovement around Dow Jones Islamic Market World Index (DJIMWI) revision events. Our study makes two important contributions to the literature. First, the fact that the DJIMWI revision

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criteria are clearly defined and publicly available provides us with an interesting setting to study the patterns of stock returns around events that do not carry any signals about changes in fundamentals. Second, the comovement literature focuses mainly on revision events associated with the major country indexes (e.g., Barberis et al., 2005; Coakley et al., 2014; Claessens and Yafeh, 2012). However, several studies document that the revision events associated with some of the major country indexes, including the S&P 500, are not entirely information-free (see, e.g., Cai, 2007; Kaul et al., 2000; Jain, 1987). Furthermore, previous studies on religion and stock markets focus mainly on the stock price reactions to festival occasions. In this study, we take a different approach and examine the return comovement around DJIMWI index revisions. We argue that investigating the change in the correlation structure of stock returns following revision events that are bounded by well-defined religious guidelines should enhance our understanding of the impact of religious practice on stock returns.

Our analysis allows us to distinguish between the fundamental- and the sentiment-based views of return comovement. Specifically, the efficient market hypothesis suggests that stock returns reflect firms' fundamentals and that any price comovement should be due to comovement in fundamentals. Thus, information-free events, such as DJIMWI revisions, should not alter the comovement structure of the added and deleted stocks. However, recent theories suggest that emotions and feelings judgements affect decision-making (e.g., Loewenstein et al., 2001). Wright and Bower (1992) show that stock prices are affected by changes in investor sentiment even around events with an economically neutral cost-benefit perspective. Thus, correlated sentiment may induce a common factor in stock returns and affect price comovement. When a stock enters (exits) the DJIMWI index, it will be held and traded by a new group of investors. If these investors share a common sentiment, the correlation of the added (deleted) stock's return with the returns of other DJIMWI constituents will increase (decline).

We use a univariate regression approach similar to that in Vijh (1994), Barberis et al. (2005), and Green and Hwang (2009) to measure the shift in the comovement structure of event stocks around DJIMWI revisions. Specifically, we regress the returns of each event stock on the returns of the DJIMWI. To examine the change in the event stock's comovement with the DJIMWI, we estimate the univariate regression separately for the period before and the period after the revision event. Consistent with the sentiment-based view, we find that a stock's comovement with the DJIMWI increases after additions and decreases after deletions.

For a better distinction between the fundamental- and sentiment-based theories, we use two approaches. The first is bivariate analysis, which involves regressing the event stock returns on both the DJIMWI and the local index.[1] The bivariate regression is also estimated separately for the pre- and post-index-revision periods. We show that, when a stock joins the DJIMWI, its beta with the DJIMWI rises and falls in relation to the local index. We also show that these comovement patterns move in the opposite direction when a stock is excluded from the DJIMWI. The second approach involves regressing changes in the beta on firm characteristics and market and economic factors (see, e.g., Claessens and Yafeh, 2012; Eun et al., 2015). We find no significant relationships between changes in beta, firm characteristics, and market and economic variables. This finding is consistent with the sentiment-based theory, which suggests that the correlated sentiment of DJIMWI investors induces a common factor in stock returns, causing their comovement with the DJIMWI to increase and their comovement with the local index to decline.

Agyei-Ampomah and Mazouz (2011) argue that since sentiment affects stock prices through trading, it is reasonable to expect a positive relationship between comovement and trading volume. This implies that the comovement of newly added stocks with the DJIMWI should increase during periods of trading activity. To examine this issue, we estimate the excess comovement of newly added stocks that exhibit the highest daily volumes in a given quarter.[2] Despite some cross-country differences, we find that the comovement of newly added stocks with the DJIMWI tends to increase during periods of high trading volume. This implies that the comovement of DJIMWI stocks is driven, at least partly, by investor sentiment.

Although the results reported above suggest that the comovement of DJIMWI stocks reflects the sentiment of index investors, we have not yet established that this sentiment is related to the religiosity practice of Muslim investors. To investigate this issue, we estimate the excess comovement of stock returns around DJIMWI revisions during the month of Ramadan. Our focus on that excess comovement is motivated by Beit-Hallahmi and Argyle (1997), who argue that religion delivers social support that can promote optimism. Since Ramadan is one of the five pillars of Islam, the comovement amongst DJIMWI constituents would be expected to increase significantly during the month of Ramadan. Consistent with this argument, we find that newly added stocks co-move more strongly with the DJIMWI during the month of Ramadan. We also show some (weak) evidence that the comovement of deleted stocks with the DJIMWI is particularly low during Ramadan.

The remainder of the paper is organised as follows. Section 2 provides a brief review of the related literature. Section 3 describes the data. Section 4 discusses the methodology and empirical results. Section 5 concludes.

[1] We use the major local indexes of each of the eighteen countries in our sample. For example, we use the FTSE All Share Index for the UK sample companies added to (deleted from) the DJIMWI. For Egypt we use EGX30 a local index.

[2] We define high trading activity as the highest 10%, 20% and 30% respectively. Our results remain qualitatively unchanged irrespective of the cut-off point used. In the current paper, we report the 30% cut-off point, consistent with Agyei-Ampomah and Mazouz (2011).

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