Ramadan Effect on Stock Market Return and Trade Volume: Evidence from Dhaka Stock Exchange (DSE)

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Abstract

A predictable pattern of stock market return is the violation of the efficient market hypothesis (EMH). It is well studied and evident in financial literature that stock markets around the world have predictable patterns e.g. calendar effect, behavioural effect, and Religious festival effect. Analysing market return and trading volume data of Dhaka Stock Exchange (DSE) over the period of 1st January 2002 to 30th August 2018, this study attempts to investigate the association of Ramadan, the holy month for the Muslims, with the market return, volatility and trade volume in the of DSE. Applying $GJR - GARCH (p, q)$ model on the market return of DSE, this study concludes that Ramadan month has no significant relationship with stock market return and volatility. However, Ramadan has a significant negative impact on the daily trade volume of DSE. This is might be the outcome of decreased trading and banking hour and religious perception of investors.

Keywords: Calendar anomaly; GARCH; Moving calendar event; Ramadan effect; Dhaka Stock Exchange (DSE).

JEL Classification: G11, G12, G14, G40

1 Introduction

In a capital-starved developing country like Bangladesh, efficient distribution of resources is very important to achieve rapid economic expansion. In the last several decades, the country has emphasized on the privatization and the success of this privatization wave will severely depend on the efficient and active capital market. Moreover, being a Muslim major country, the capital market could provide a good alternative of riba (usury) to the people who think Islam prohibits fixed return. Currently, there are two stock markets in operation in the country, namely Dhaka Stock Exchange (hereinafter DSE) and Chittagong Stock Exchange (CSE). Unlike the stock markets in developed countries, the emerging country’s stock markets are commonly characterised by smaller size in terms of trade volume and frequency, existence of influential large traders, weaker disclosure and governance, long settlement time and absence of adequate financial information (Islam & Khaled, 2005). These characteristics of stock markets prevent information to be reflected in the stock prices and make the market inefficient.

Beside the information asymmetry among the investors, behavioural factors are also responsible for the anomalies and disruptions of the stock markets of developing countries, those factors emerge time to time in the form of stock market bubbles (Kapoor & Prosad, 2017). Therefore, behavioural
finance is also an important perspective to test the efficiency of the stock markets of developing countries. The major breakthrough occurs in the field of behavioural finance after the introduction of prospect theory, which replaces the utility function of the expected utility theory with the value function of the prospect theory. This theory assumes that losses and gains are valued differently and thus investors make decision based on the perceived gain not based on the perceived losses. This development drive behavioural finance to deal with the influence of psychological biases on the behaviour of the investors and its impact on the stock market. Psychological biases e.g. herd behaviour, overconfidence, mental accounting, and loss aversion etc. leads to the several financial anomalies. Behavioural finance, at present, has become so critical that many people tend to forget the general principles of investment theory in analysing investment decision and are guided by the intuition and other criteria that conflict with rational investment theory (De Bondt, 1998).

This study applies one perspective of behavioural finance that is religion on the daily market return and trade volume data of DSE- the dominant and oldest stock market of Bangladesh- to measure the efficiency of the market. In general, religious faith plays an important role in the lives, behaviour and decisions of the people. Though religious beliefs and practices have a substantial effect on economic activities and development, economists largely ignored this association (Al-Ississ, 2010). However, the recent global trend in literature shows an increased use of religion in finance and investment analysis, still there is a lack of research in the context of Bangladesh. This study aims to fill this lacuna by investigating the association of Ramadan, the holy month for the Muslims, with the market return, volatility of return and volume in the context of DSE.

Ramadan is a time of reflection, self-reformation, worshiping Allah, giving, spiritual cleansing and enlightenment (Qur'an 51:21; 2:183, as citied in Bialkowski, Etebari, and Wisniewski, 2009), which significantly change the working hours, lifestyle and brings more religious mental attitude of the devotee. Sonjaya and Wahyudi (2016) have listed few factors from the literature related to Ramadan that could support the existence of Ramadan effect in the Muslim countries, such as social empathy, feeling happy and peaceful, investors’ positive moods, health issues, and the encouragement to do good deeds and prevent evil deeds. Therefore, being a muslim dominated country, stock markets of Bangladesh might also have some effect and produce a predictable pattern in favour of inefficient maket. The balance of the study organized as the literature review in the second part; methodology and results in the third and fourth chapter respectively; and conclusion in the last chapter.

2 Literature Review

After the traditional assumptions of finance come under threat from a number of quarters the behavioural finance got the academic attention (Lo, 2005). Under uncertainty, investors’ decision may vary from rational market behaviour (ibid) and from the assumptions of the efficient market
hypothesis, which is called abnormality of financial market (Latif, Arshad, Fatima, & Farooq, 2011). Numerous research shows that security returns respond to variables related to factors such as biorhythms, beliefs, social identity and even weather! For instance, Hirshleifer (2001), Lucey and Dowling (2005) and Kamstra et al. (2000) have shown that seasonal variation and daylight savings time, biorhythms and disruptions in sleep affect the stock return. Edmans et al. (2007) have found even the loss of international competition by the national soccer team cause significant decline of stock returns.

There is another wave of empirical behavioural finance study that has provided evidence about the presence of seasonal patterns e.g. day- of-the-week, weekend, time-of-the-month, turn-of-the month, month-of-the-year and Holiday effect (Cross, 1973; French, 1980; Gibbons & Hess, 1981; Keim, 1983; Tinic & West, 1984). Holiday effect refers to the observation that the average stock return is different on the trading immediately pre- or post-holiday periods than on the other days. Ariel (1990) has examined daily returns on the ‘CRSP equally weighted and value-weighted indices of NYSE’ and ‘AMEX stocks from 1963-82’ and found that the average return on pre-holidays is significantly higher than the remaining trading days. Similar results have found in Australia, Canada, Hong Kong, Japan and the US, but not evident in France, Italy, Switzerland, UK, West Germany (Cadsby & Ratner, 1992). Furthermore, Aly et al. (2004) have investigated daily market anomalies in the Egyptian stock market using its major stock index and got positive and significant Monday effect in the market returns. Whereas, Al-Rjoub (2004) got Thursday return tend to be positive and higher.

Like various calendar anomalies, religious festival and cultural events are also investigated comprehensively to find their impact on the stock market return. Usually, religious festivals are celebrated according to the religions’ own calendars. For instance, Jewish society follows the Hebrew calendar, Christens follow the Gregorian calendar and Muslims follow Hijri (moon cycle) calendar. It is evident in many instances that festive mode during religious festival time plays a vital role in making the investment decision. Frieder and Subrahmanyam (2004) have found a significant impact of Jewish High Holy days i.e. Rosh Hashanah and Yom Kippur on the US investors’ mode. Results of this study suggest that stock return is positively associated with Rosh Hashanah and negatively associated with the Yom Kippur. Pantzalis and Ucar (2014) have analysed the US investors mode during Easter week holiday and concluded that investors’ are reluctant to react quickly upon the firms’ news during this religious festival.

These findings of religious holidays do not only exist in Jewish or Christian communities but also exist in Muslim communities. Among various Islamic festivals, Ramadan is the subject of interest of this study. Ramadan is the 9th month of the Hijri calendar that tremendously changes the behaviour of the Muslims. During this period, practicing Muslims try to maintain a close relationship with Allah.
and encourage optimistic beliefs and become more satisfied and happy. This optimistic belief may extend to the investment decisions of the devotees (Beit-Hallahmi & Argyle, 1997). According to Bialkowski et al. (2009) “People follow a set of prescribed standards of behaviour during Ramadan with an intention of becoming better Muslim and responsible member of the society, which can improve their feelings of self-worth and produce an upbeat sentiment, overconfidence and a greater willingness to accept risk”. They have studied on 14 predominantly Muslim countries and have found that stock return during Ramadan is significantly higher and less volatile compare to the return and volatility of other months of the year. Similarly, Gavrilidis et al. (2016) and Bialkowski et al. (2013) have studied on Amman Stock exchange and concluded that stock returns are significantly higher during the Ramadan than the return of other months. More studies have reported the similar results such as Al-Ississ (2010), Al-Hajieh et al. (2011), Almudhaf (2012) and Ramezani (2013).

Furthermore, During Ramadan overall economy of the Muslim countries increases due to the increase of “iftar” related grocery sales and the electricity consumption as the consequence of late-night socio-religious activities (Seyyed, Abraham, & Al-Hajji, 2005). However, apart from the religious and festival related economic activities, many economic sectors including stock market trading might have sluggish trend due to the reduced banking hours and other Islamic views towards the investment. For instance, because of religious motive, many Muslims restrained themselves from trading of some categories of stock. Among all categories of stocks, the majority of contemporary Muslim jurists are in agreement on the permisibility of trading with common stocks (el-Din & el-Din, 2002). Nevertheless, the prohibition on some categories might reduce the overall stock trading during the month of Ramadan in the Muslim majority countries.

There are several studies exist to support this pessimistic view of Ramadan effect. Results of these studies suggest that Ramadan has negative or no effect on the stock market return, volatility or trade volume. Iqbal et al. (2013) have reported a significant negative effect of Ramadan in Karachi Stock Exchange (KSE) return and reduction in the volatility of monthly return. They have identified some factors that lead to the lower interest in trading, such as reduced banking hours, Islamic prohibition against speculation and use of interest that would affect margin trading and greater religious orientation of market participants. Zhu (2015) has also reported that Ramadan has a negative influence on the European Islamic Investment Bank (EIIB) stock return and the stock price volatility is significantly larger during this month.

Besides, many studies have also found no effect of Ramadan on the stock market outcomes. Husain (1998) has concluded that Ramadan does not significantly affect the average return in the Karachi Stock Exchange (KSE) but got strong evidence of volatility reduction of stock returns during this month. Similar results have reported by Shah and Ahmed (2014). Furthermore, Seyyed et al.
(2005) have concluded the average rate of return are unaffected during the month of Ramadan, but found less volatility in weekly market return in the case of Saudi Arabia. Alper and Aruoba (2001) have studied the Istanbul stock market and also suggested that returns of the stock are not showing any significant behaviour during Ramadan. In another study, Al-Khazali (2014) has observed that investor would not get benefit from a wealth perspective by investing during the month of Ramadan. However, the study found that risk averse investor prefers to invest during the month of Ramadan.

Overall, Ramadan is an uplifting holiday for Muslims like Rosh Hashanah for Jews. Several studies were conducted across the Muslim countries and those are concluded that Ramadan has associateship with the abnormal stock return. Though many scholars studied the pattern of market return of DSE based on the behavioural finance framework, there is no study found regarding the effect of Ramadan on the stock market return and volatility. The existing literature suggests that there might have a Ramadan pattern (Ramadan effect) in DSE as similar pattern found in several predominantly Muslim countries. Based on the previous studies and information on current issues, this study intends to examine whether the Ramadan has any effect on stock market return, volatility of return and trade volume of DSE.

3 Data and Methodology

This study attempts to estimate the Ramadan effect on the return and trade volume by using daily market data of DSE over the period of 1st January 2002 to 30th August 2018. This period consists of 4130 trading days. One important fact to note that since 28th January 2013 DSE is issuing new market indices in collaboration with NASDAQ, namely DSEX instead of DSE general index. However, it is evident from the correlation analysis that these two indices are almost perfectly similar with a correlation coefficient of 0.99 over the first three months of their inception. Therefore, consistency of the time series due to the change in indices should not be a great concern.

The effect of Ramadan month on the stock market return is estimated in this study by using the model from the ARCH family, which has been extensively used in financial time series and has demonstrated enormous success in forecasting conditional variance (Seyyed et al., 2005). At first, the daily market return \( Ret_t \) is calculated by the logarithmic function of the market index-

\[
Ret_t = \ln(dse\_ind_t) - \ln(dse\_ind_{t-1})
\]

Where, \( dse\_ind_t \) is the closing value of the market index on \( t \) –th day and \( dse\_ind_{t-1} \) is the closing value of the previous \((t - 1) \) day. This \( Ret_t \) series is the dependent variable in this study and found stationary or stable from the Augmented Dickey-Fuller (ADF) unit root test. However, this series is not ‘normally distributed’ according to Jarque-Bera statistics. Furthermore, return series \( Ret_t \) has autocorrelation and partial autocorrelation. So following equation 1 is used to estimate the Ramadan
effect, modelled as a dummy variable \((\text{Ram}_{-}\text{Day}_t)\) that takes the value 1 if the trading day is in Ramadan month or takes 0 if otherwise. The lagged values of the return \((\text{Ret}_{t-i})\) and lagged error \((\epsilon_{t-j})\) values capture the autoregressive (AR) effects and moving average (MA) effects respectively. The AR and MA order \(k\) is included in the equation to eliminate the autocorrelated residuals. Ljung-Box test statistics is used to evaluate the order of AR and MA terms. Therefore, the ARMA model is as follows:

\[
\text{Ret}_t = \mu + \alpha_t \text{Ram}_{-}\text{Day}_t + \sum_{i=1}^{k} \phi_i \text{Ret}_{t-i} + \sum_{j=1}^{k} \theta_j \epsilon_{t-j} + \epsilon_t \quad \ldots \ldots (1)
\]

ARCH-LM test reveals the existence of a sequence of squared residuals \((\epsilon_t^2)\) order autorelation, which means the model error sequence have autoregressive conditional heteroscedasticity i.e. ARCH effect. Thus, it is suitable to use models from ARCH family. Based on the maximum likelihood statistics and Akaike Information Criterion (AIC), GJR-GARCH model has selected to estimate the time varying volatility of market return of DSE, which is modelled as a \(GJR - GARCH (p, q)\) process to estimate the parameters of the variance equation (2), that can be written as follows:

\[
\text{h}_t = v_0 + \beta_t \text{Ram}_{-}\text{Day}_t + \sum_{i=1}^{p} (y_i + \omega_i l_{t-i}) \epsilon_{t-i}^2 + \sum_{j=1}^{q} \delta_j \text{h}_{t-j} \quad \ldots \ldots (2)
\]

Where,

\[
l_{t-i} = \begin{cases} 
1 & \text{if } \epsilon_{t-i} < 0 \\
0 & \text{if } \epsilon_{t-i} \geq 0 
\end{cases}
\]

The orders of \(p\) and \(q\) in conditional variance are a linear function of past squared error and lagged variance. Equations 1 and 2 are estimated jointly to determine the effect of Ramadan on the return and volatility of the market return of DSE. Where, \(v_0, y_i, \omega_i \text{ and } \delta_j\) are the parameters to be estimated by the \(GJR - GARCH (P, Q)\) model, while \(p > 0\) and \(q > 0\) define the order of the process and \(\beta_t\) captures the Ramadan effect on the volatility of return.

Furthermore, the impact of Ramadan month on the trading volume is estimated using the following regression (equation 3). Trade volume data of DSE is available only since 2\textsuperscript{nd} January 2003 thus included observations are 3843 up to the date of 30\textsuperscript{th} August 2018. The following equation is estimated by simple OLS regression, where \(\text{Trade}_\text{Vol}_t\) is the number of trade took place on \(t\)-th date and \(\text{Ram}_{-}\text{Day}_t\) is the dummy variable for Ramadan month.

\[
\text{Trade}_\text{Vol}_t = \beta_0 + \beta_t \text{Ram}_{-}\text{Day}_t + \epsilon_t \quad \ldots \ldots (3)
\]
Where, $\beta_0$ is the intercept of the regression equation that indicate the average daily transactions during the months other than Ramadan, $\beta_1$ reflects the marginal effect on trade volume due to the Ramadan months and $\epsilon_t$ is the error term.

### 4 Empirical Results

Table 4-1 depicts the descriptive statistics of daily return on different day-of-week, month-of-year and Ramadan period of DSE during the study period. The last column of the table exhibits the contrast of return between two periods. Ramadan period provides more return (0.0767%) compare to the non-Ramadan periods (0.0437%); however, this difference (0.0330%) is not statistically significant. Return differences among the day-of-week are statistically significant for all day except Saturday, which can be ignored as this day is no longer the trading day of DSE. First two days of the week (Sunday and Monday) have a negative difference and rest of the days have positive difference. Among the month-of-year, January, February and April have significant negative differences and June, August and November have the significant positive differences in months’ average daily return in compare to the other months. Rest of the months’ return differences are not statistically significant.

Table 4-1 also exhibits skewness and kurtosis of the return series of different days, months and Ramadan period. All sub-sample distributions are skewed at different degrees, indicating that they are asymmetric. Moreover, they all exhibit high levels of kurtosis i.e. these distributions have fat tails, which indicates that return series are not normally distributed. Bartlett’s test is also used to see whether the variance is persistent or not and it is evident from the result (not reported) that the variances of Ramadan period and non-Ramadan period are not equal. These initial findings show that daily returns are leptokurtic and asymmetric and possess some behavioural origins i.e. investors of the market have excessive optimism or pessimism that leads to large swing in the market return.

**Table 4-1: Descriptive statistics of daily return on different days, months and Ramadan periods**

| Day/month        | N=4130 | Mean Return (%) | Standard Deviation | Minimum Return | Maximum Return | Skewness | Kurtosis | Return contrast with all other day or month |
|------------------|--------|-----------------|--------------------|----------------|----------------|----------|----------|-------------------------------------------|
| Non-Ramadan      | 3,804  | 0.0437          | 1.3518             | -9.3300        | 20.3821        | 0.9061   | 25.6593  | 0.0330                                    |
| Ramadan           | 326    | 0.0767          | 0.9653             | -3.2141        | 3.6709         | -0.0421  | 4.6198   |                                           |
| Saturday¹        | 162    | 0.1076          | 0.9485             | -3.4323        | 2.7475         | -0.4266  | 5.3676   | 0.0638                                    |
| Sunday           | 783    | -0.2023         | 1.4830             | -8.0768        | 7.5266         | -0.7993  | 8.2428   | -0.3068**                                 |
| Monday           | 801    | -0.0701         | 1.4868             | -9.3300        | 20.3821        | 2.4454   | 50.8678  | -0.1444**                                 |
| Tuesday          | 795    | 0.2055          | 1.3955             | -7.3589        | 14.4799        | 2.0619   | 22.0649  | 0.1972**                                  |
| Wednesday        | 803    | 0.0764          | 1.1608             | -6.6379        | 7.0225         | 0.2143   | 8.9427   | 0.0374**                                  |
| Thursday         | 786    | 0.2083          | 1.0657             | -8.8737        | 5.4090         | 0.0421   | 13.9862  | 0.2000**                                  |
| January          | 371    | 0.0746          | 1.7821             | -9.3300        | 14.4799        | 0.5586   | 20.8354  | -0.1328*                                  |
| February         | 323    | 0.1142          | 1.7889             | -8.1357        | 8.7113         | 0.0049   | 9.4828   | -0.1741**                                 |

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Table 4-2 reports the estimation results of the GJR-GARCH (1, 1) model. Results are estimated twice by assuming different error distributions. Gaussian normal error distribution has avoided, as the DSE index return is not normally distributed. First part of the table exhibits the mean equation (eq. 1) where both AR and MA components are found statistically significant at 1% level of significance. However, the dummy variable for Ramadan days is not statistically significant. Moreover, the beta coefficient of the Ramadan dummy is positive. These results are consistent with the results reported by Seyyed et al. (2005) for the Saudi stock market.

The second part of the table (eq. 2), depicts the results of the variance equation, where again the dummy variable for Ramadan is not statistically significant and beta coefficient of the dummy variable is positive, which is inconsistent with the previous study by Husain (1998) and Seyyed et al. (2005). Both of these studies have found a negative effect of Ramadan in the variance equation. Again, ARCH, GARCH and Threshold terms of GJR-GARCH model have found statistically significant at 1% level of significance. From the diagnostic perspective, this GJR-GARCH model does not suffer from autocorrelation problem and does not have any ARCH effect. However, the error of this model is not normally distributed, which has not assumed as well.

Table 4-2: Estimated returns and conditional variance- GJR-GARCH (1, 1) model with ARMA (2,1) components and Ramadan month dummy variables

| Variable                | Student’s t Error Distribution | Generalized Error Distribution |
|-------------------------|--------------------------------|--------------------------------|
|                         | Coefficient | Standard Error | Coefficient | Standard Error |
| Part 1: Mean Equation   |             |                |             |                |
| Constant                | 0.000267*   | 0.000133       | 0.000130    | 0.000238       |
| Ramadan Dummy           | 0.000422    | 0.000449       | 0.000491    | 0.000446       |
| AR(1)                   | -0.580100** | 0.120857       | 1.111722**  | 0.021054       |
| AR(2)                   | 0.082739**  | 0.030574       | -0.129175** | 0.017118       |
| MA(1)                   | 0.749539**  | 0.117995       | -0.961244** | 0.012648       |
| Part 2: Variance Equation |            |                |             |                |
| Constant                | 0.000001**  | 0.000000       | 0.000002**  | 0.000000       |
| Ramadan Dummy           | 0.000001    | 0.000001       | 0.000001    | 0.000001       |
| ARCH Term               | 0.151014**  | 0.017043       | 0.152489**  | 0.018859       |
| ARCH Term*Dummy for negative lagged residual | 0.094319** | 0.022550 | 0.133341** | 0.026096 |
Table 4-3 reports the results of the trade volume regression. Results show that Ramadan dummy has a significant negative impact on the daily trade volume of DSE during the study period. These results are consistent with the previous results reported by Seyyed et al. (2005). Some of the factors might have contributed to this negative effect of Ramadan, such as, reduced trading and banking hours and greater religious orientation of the market participants.

Table 4-3: Regression result of trade equation with Ramadan month dummy variable

| Dependent Variable: Trade Volume in million | Coefficient | Standard Error |
|--------------------------------------------|-------------|----------------|
| Constant                                   | 72.13967**  | 1.400481       |
| Ramadan Dummy                              | -15.98742** | 4.979384       |

Overall, Ramadan does not have any statistically significant effect on the daily market return in case of DSE during the study period of 1st January 2002 to 31st August 2018. In the case of daily return volatility, Ramadan also does not have a significant effect. However, average trade volume DSE is significantly reduced during the period of Ramadan.

5 Conclusion

It has been well researched and evident that behavioural factors of the investors played an important role in the processing investment decision. These factors could be range from biorhythms to social identities, mental accounting to religious beliefs. Numerous recent studies have considered religion as an influential factor behind the investment decision though it was largely ignored previously. Being a Muslim majority country, stock market of Bangladesh might have the same religious influence as like some other Muslim countries have around the world. Especially Ramadan, a holy month for the Muslims that change the socio-religious behaviour of people, should have some impact on the stock market return and volatility. However, this associationship never addressed before. This study fills this lacuna by enquiring the relationship of this religious month with the stock market return, volatility of return and trade volume of DSE.

By applying $GJR - GARCH (p,q)$ model on DSE market return, this study finds no significant relationship between Ramadan month and stock market return. These results are similar to some of the previous studies, notably Hussain (1998); Alper and Aruoba (2001); and Seyyed et al. (2005). Moreover, in the case of DSE, time varying volatility of the market return is also not associated with
the Ramadan month. However, trade volume during the month of Ramadan has reduced significantly, which is consistent with the earlier research. Reduced banking hours and greater engagement to socio-religious activities by the market participants may be the prime reasons behind this slow-down. Overall, uplifted religious morality during Ramadan does not show any significant effect on the market return or volatility in the context of Dhaka Stock Exchange (DSE).

References

Al-Hajieh, H., Redhead, K., & Rodgers, T. (2011). Investor sentiment and calendar anomaly effects: A case study of the impact of Ramadan on Islamic Middle Eastern markets. *Research in International Business and Finance, 25*(3), 345-356.

Al-Ississ, M. (2010). The impact of religious experience on financial markets. *Harvard Kennedy School of Government. Al-Khazali, OM, Koumanakos, EP, & Pyun, CS* (2008). *Calendar anomaly in the Greek stock market: Stochastic dominance analysis. International Review of Financial Analysis, 17*(3), 461-474.

Al-Khazali, O. (2014). Revisiting fast profit investor sentiment and stock returns during Ramadan. *International Review of Financial Analysis, 33*, 158-170.

Al-Rjoub, S. A. (2004). The Daily Return Pattern in the Amman Stock Exchange and The weekend Effect. *Journal of Economic Cooperation, 25*(1), 99-114.

Almudhaf, F. (2012). The Islamic calendar effects: Evidence from twelve stock markets. *International Research Journal of Finance & Economics, 87*, 185-191.

Alper, C. E., & Aruoba, S. B. (2001). Deseasonalizing macroeconomic data: a caveat to applied researchers in Turkey. *Istanbul Stock Exchange Review, 5*(18), 33-52.

Aly, H. Y., Mehdian, S. M., & Perry, M. J. (2004). An analysis of day-of-the-week effects in the Egyptian stock market. *International Journal of Business, 9*(3), 301-308.

Ariel, R. A. (1990). High stock returns before holidays: Existence and evidence on possible causes. *The Journal of Finance, 45*(5), 1611-1626.

Beit-Hallahmi, B., & Argyle, M. (1997). The psychology of religious belief, behaviour and experience. In: London: Routledge.

Białkowski, J., Bohl, M. T., Kaufmann, P., & Wisniewski, T. P. (2013). Do mutual fund managers exploit the Ramadan anomaly? Evidence from Turkey. *Emerging Markets Review, 15*, 211-232.

Białkowski, J., Etebari, A., & Wisniewski, T. (2009). *Piety and Profits: stock market anomaly during the Muslim Holy month*. Working Papers in Economics. University of Canterbury. Christchurch.

Cadby, C. B., & Ratner, M. (1992). Turn-of-month and pre-holiday effects on stock returns: Some international evidence. *Journal of Banking & Finance, 16*(3), 497-509.

Cross, F. (1973). The behavior of stock prices on Fridays and Mondays. *Financial Analysts Journal, 29*(6), 67-69.

De Bondt, W. F. (1998). A portrait of the individual investor. *European Economic Review, 42*(3-5), 831-844.

Edmans, A., Garcia, D., & Norli, Ø. (2007). Sports sentiment and stock returns. *The Journal of Finance, 62*(4), 1967-1998.
el-Din, T., & el-Din, S. (2002). Towards an Islamic model of stock market. *Journal of King Abdulaziz University: Islamic Economics, 14*(1), 27.

French, K. R. (1980). Stock returns and the weekend effect. *Journal of Financial Economics, 8*(1), 55-69.

Frieder, L., & Subrahmanyam, A. (2004). Nonsecular regularities in returns and volume. *Financial Analysts Journal, 60*(4), 29-34.

Gavriilidis, K., Kallinterakis, V., & Tsalavoutas, I. (2016). Investor mood, herding and the Ramadan effect. *Journal of Economic Behavior & Organization, 132*, 23-38.

Gibbons, M. R., & Hess, P. (1981). Day of the week effects and asset returns. *Journal of business, 54*(4), 579-596.

Hirshleifer, D. (2001). Investor psychology and asset pricing. *The Journal of Finance, 56*(4), 1533-1597.

Husain, F. (1998). A seasonality in the Pakistani equity market: The Ramadhan effect. *The Pakistan Development Review, 37*(1), 77-81.

Iqbal, M. S., Kouser, R., & Azeem, M. (2013). Conventional and Islamic Anomalies in Karachi Stock Exchange. *Science International, 25*(4), 999-1007.

Islam, A., & Khaled, M. (2005). Tests of weak-form efficiency of the Dhaka stock exchange. *Journal of Business Finance & Accounting, 32*(7-8), 1613-1624.

Kamstra, M. J., Kramer, L. A., & Levi, M. D. (2000). Losing sleep at the market: The daylight saving anomaly. *American Economic Review, 90*(4), 1005-1011.

Kapoor, S., & Prosad, J. M. (2017). Behavioural Finance: A Review. *Procedia computer science, 122*, 50-54.

Keim, D. B. (1983). Size-related anomalies and stock return seasonality: Further empirical evidence. *Journal of Financial Economics, 12*(1), 13-32.

Latif, M., Arshad, S., Fatima, M., & Farooq, S. (2011). Market efficiency, market anomalies, causes, evidences, and some behavioral aspects of market anomalies. *Research Journal of Finance and Accounting, 2*(9), 1-13.

Lo, A. W. (2005). Reconciling efficient markets with behavioral finance: the adaptive markets hypothesis. *Journal of Investment Consulting, 7*(2), 21-44.

Lucey, B. M., & Dowling, M. (2005). The role of feelings in investor decision-making. *Journal of economic surveys, 19*(2), 211-237.

Pantzalis, C., & Ucar, E. (2014). Religious holidays, investor distraction, and earnings announcement effects. *Journal of Banking & Finance, 47*, 102-117.

Ramezani, A., Pouraghajan, A., & Mardani, H. (2013). Studying impact of Ramadan on stock exchange index: Case of Iran. *World of Science Journal, 1*(12), 46-54.

Seyyed, F. J., Abraham, A., & Al-Hajji, M. (2005). Seasonality in stock returns and volatility: The Ramadan effect. *Research in International Business and Finance, 19*(3), 374-383.

Shah, S., & Ahmed, S. (2014). The Ramadan effect on stock market. *European academic research, 1*(11), 4712-4720.

Sonjaya, A. R., & Wahyudi, I. (2016). The Ramadan effect: Illusion or reality? *Arab Economic and Business Journal, 11*(1), 55-71.

Tinic, S. M., & West, R. R. (1984). Risk and return: January vs. the rest of the year. *Journal of Financial Economics, 13*(4), 561-574.
Zhu, L. (2015). Impacts Of Ramadan On European Islamic Finance Stock Volatility Based On EGARCH-M Model And Empirical Analysis Of EIIB Stock. Paper presented at the International Conference on Materials Engineering and Information Technology Applications (MEITA 2015), Guilin, China.