Determinants of equity return: Syariah and Non-Syariah complaint firms the case of Pakistan

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**ABSTRACT**

The study investigates the significant determinants of stock returns of all non-financial listed companies in Karachi Stock Exchange (KSE), Pakistan from 1998-2011 by using panel data techniques. In addition, this study further categorized into Syariah and Non-Syariah complaint firms to examine the significant differences of stock determinants. All listed stocks in Karachi Meezan Index (KMI) are entitled as Syariah complaint firms, rest of the firms listed in KSE all index are identified as non-Syariah complaint firms. As Syariah complaint firms don’t use any unethical means to cater its stock prices, so, it was hypothesized that Syariah stocks follow the fundamental of the companies. Size, book to market, leverage, dividend yield, earning to price, cash flow to price and discretionary accrual represent the fundamentals while market premium, stock price volatility and trading volume indicates the stock market variables. Modified effect model and Random effect model is applied for statistical estimations. Hausman test is further used to find the most significant model. Modified wald test find the heteroskedasticity, final results were robust to counter the heteroskedasticity issue. The results of all non-financial listed firms confirmed the significant positive market premium, size, stock price volatility and trading volume whereas significant negative book to market ratio. Market premium, leverage and stock price volatility are the only significant determinants of Syariah complaint firms. Insignificance of BM and TV confirms that Syariah stocks follow the fundamentals instead of noise trading. In a nutshell, Syariah compliant firms respond to fundamentals and non-Syariah compliant firms follow noise trading in Pakistani context.

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**Keywords**

Syariah Stock, Non-Syariah stock, Stock return, Pakistan, KSE.

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**Introduction**

Islamic stock index provides an ethical and religious platform to the Muslim investors for participating in the growth of company's operations as well as the economy of the country. The increasing trend of investment in Syariah stocks attracted the researchers and mutual fund managers to explore the significant determinants of Syariah stock returns. As firms are scrutinized on the basis of Syariah laws, it is hypothesized that Islamic stocks follow the company's fundamentals rather than investor's sentiments and other market variables.

Due to less availability of literature, determinants of Islamic stock returns are still a puzzle in finance. Previous researchers provided the number of asset pricing theories, like, Capital Asset Pricing Model (CAPM), Fama and French three factor model (TFM), four-factor model (FFM) and different augmented models. CAPM by Sharp (1964), Lintner (1965) and Black (1974) is the commonly known pricing theory in finance and proved to be significant in most of the developing and developed countries. Fama and French (1992) challenged the CAPM and argued the existence of size and value premium in US stock markets. Newly, augmented pricing model presented by Haque and Sarwar (2013) incorporated the fundamental and stock market variables, results reported the significance of market-related predictors in case of Pakistan. Most of the investors in Pakistan are speculators and follow the noise trading, sentiments and intuitions, Suleman et al. (2013).

Afterward, the speculation and non-religious parameters in the conventional stocks shifted the investors towards the Islamic stocks. The operations of Syariah listed stocks are according to the Islamic laws and are being reviewed periodically. Such fair practice in Islamic listed firm's operation enforces the investors and researchers to hypothesize the existence of fundamental predictors rather than market predictors. Ferdian et al. (2011) confirmed the implication of CAPM and FFM on Indonesian Syariah stocks over the period 14 Sep 2007 – 25 Sep 2009. Albaity and Ahmad (2011) studied the Malaysian stock market by taking 150 Syariah and 150 Non-Syariah stocks; results reported the significance market risk, market capitalization and market to book value.

Aforementioned introduction of Syariah and Non-Syariah stock determinates; present research attempts to explore the significant difference among Syariah\(^1\) and Non-Syariah\(^2\) stock determinants of Pakistani listed companies. Even though, some researchers have been previously studied the Pakistani Syariah stock index (Karachi Meezan Index), mainly the stock selection criteria and criticism, at still none of the literature is available to compare the stock determinants of Syariah and Non-Syariah stocks. Company size, book to market ratio, leverage, dividend yield, earning to price ratio, cash flow to price ratio and discretionary accrual represents the company’s fundamentals while market premium, stock price volatility and trading volume

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1 Listed companies of KMI-30 index
2 Listed companies of KSE all index (after excluding the KMI-30 listed companies)
are proxies of stock market variables. Among market-related variables, volatility in stock prices are caused by many factors like macroeconomic shocks, political instability, war on terror, etc. On the other side; trading volume represents the investor’s attitude and the trading pattern of a particular stock. This study covers the largest data set of all non-financial listed companies in Karachi Stock Exchange over the period 1998-2011. Non-financial listed companies are divided into two sub categories; 90 of them are Syariah stocks whereas 307 Non-Syariah stocks. The major contribution of the study is to investigate the determinants of Syariah stocks listed in Pakistani stock market. The result confirms the mix evidence of fundamental and stock market predictors on Non-Syariah stock returns. In Non-Syariah stocks, the significance of stock market variables and insignificance of fundamentals evidently indicate the existence of speculators in Pakistani stock markets; most of the investors are short term investors. Main objectives of such investors are to gain higher profit; they are not concerned about the Syariah or Non-Syariah stocks. Unsurprisingly, Syariah stock returns follow the companies fundamental rather than stock market variables. Market premium and volatility in stock prices are significant positive for Syariah stock, while book to market (BM) and trading volume (TV) of Syariah stock are insignificant. BM and TV provide no evidence of noise trading and confirm the investors follow the fundamentals in context of Syariah stocks.

The rest of the paper is structured as follows: Section 2 is relevant to the review of previous literature to form a significant support for the research hypothesis. Section 3 is about data and methodology of the research to compare the stock determinants of Syariah and Non-Syariah stocks. Section 4 provides the results and analysis within both Syariah and Non-Syariah framework. Fifth section presents the conclusion, recommendation, limitation and practical implication.

**Literature Review**

Literature has been divided into two parts; first one is related to conventional stock market predictors while the other belongs to Islamic stock markets. Capital Asset Pricing Model (CAPM) was one of the pioneer models of stock returns and is proposed by Sharp (1964), Lintner (1965) and Black (1973). CAPM signifies a direct relation among risky stocks and expected stock returns. Afterward, different researchers challenged the CAPM and introduced other noteworthy determinants of expected stock return. Fama and French (1992) analyzed the US stock markets over the period 1963-1990 and inferred the existence of value and size premium; known as Three Factor Model (TFM). Fama and French (1993) proved the significant negative size premium and significant positive value premium on US stocks, whereas, interest rate and default risk are the only significant predictors in US bond market. In addition, Fama and French (1996) examined market risk, size, book to market, sales growth, price to earning, price to cash flow and long term price returns, the study reported the significance of all the variables. Elfakhani, Lookwood and Zaher (1998) reported the significance if size and value premium while non-existence of market beta in Canadian stock market by using the data from 1975-1992. Berkowitz and Qiu (2001) also testified the significance of size, book to market (BM) and market premium in Canadian stock markets. By incorporating the momentum in TFM, L’Har, Masmoudi and Suret (2004) also studied the Canadian stock market and found a positive relation among size, book to market, momentum and expected stock returns. Chui and Wei (1998) analyze Malaysia, Korea, Thailand, Taiwan and Hong Kong stock markets from 1977 to 1993 by applying Fama-MacBeth (1973) regression model and stated the significant negative size effect while significant positive book to market variable. Another study by Rouwenhorst (1999) confirmed the significant positive size and book to market, market beta and turnover. Khan (2009) investigated the Karachi stock market over the period 2001-2009 by incorporating 162 listed firms and found the insignificance of price to earning ratio and book to market ratio. Hassan and Javed (2011) confirmed the existence of TFM in Pakistani stock market. Javid (2008) Javid and Ahmad (2008), Iqbal et al. (2008) and Iqbal and Brook (2007) also suggested an alternate pricing model.

Emerging trend of Islamic stock Indices fascinate the investors to invest according to Syariah rules and researchers too to explore the determinants of stock returns in Islamic stock markets. Most Islamic Scholars permits the investment in Islamic stocks is allowed under Islamic legislation (El-Gamal 2006). Iqbal (2002) emphasized the investment in Syariah stocks due to exclusion of interest. Arouri et al. (2013) argued that Islamic index appears to be less affected during the financial crisis. Due to short history of Islamic stock markets, short academic research is available on Syariah stocks. Ferdian et al. (2011) analyzed the CAPM and Fama & Francs three factor model on Indonesian Syariah stocks over the period 14 Sep 2007-25 Sep 2009. By applying the regression technique, results confirmed the significance of CAPM and three factor model. Albaity and Ahmad (2011) examined the Malaysian stock market to find the determinants of Syariah and non-Syariah stock, Market capitalization of Syariah stocks proved to be significant negative whereas market to book ratio was significant positive. In case of non-Syariah stocks, market to book ratio and market risk concluded the significant positive relation with stock returns. Another important contribution by Madyan et al. (2013) to investigate the liquidity determinates of Indonesian Syariah and non-Syariah stocks.

**Data and Methodology**

**Sample**

The study analyzed the data of all listed firms of Karachi Stock Exchange; firms were further categories among Syariah and non-Syariah stocks. Firms listed in KMI index named the Syariah stocks, remaining listed firms assigned as non-Syariah stocks. After the exclusion of merged and delisted firms, final data consist of 90 Syariah and 307 non-Syariah stocks covering the time period 1998-2011. Selected companies contain at least last five years data for the further analysis. The data was calculated from the Karachi stock exchange (KSE), Business Recorder, company annual reports, State Bank of Pakistan and business journals.

Augmented model is applied to find out the determinants of Syariah and non-Syariah equity return in Pakistani context. Levs is computed by dividing total liabilities to market capitalization. Dividend (Divid) is a signal to foresee the earnings of a firm, on the other hand, Divid used to mislead the shareholders. Divid is computed by dividing total dividend to market capitalization as Hussainey et al. (2011). The paper incorporated three earning mechanisms earning to price (E/P), cash flow to price (CF/P) and discretionary accrual (DA). E/P is utilized by the procedure of Anderson.K and Brooks.C (2005) and scaled by market capitalization as Lakonishok, Sheifer and Vishny (1994). Khan.M.I (2009). Cash flow is a better measure than earning because it depicts the actual financial position of the firm. Discretionary accrual find out the manipulation in earnings by the managers to cater the stocks.

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3 Risky stocks offer higher return.

\[ DA_{t,k} = ACCR_{t,k} - NORMALACCR_{t,k} \]

Whereas accrual is estimated by Jeffrey L. Callen and Dan Segal (2004) technique

\[ \text{Accrual} = (\Delta \text{ current assets} - \Delta \text{ cash and cash equivalents} - \Delta \text{ current liabilities} - \Delta \text{ debt in current liabilities} - \text{depreciation and amortization}) \]

Balance sheet contains two main components operating and funding:

- **Funding components** = Operating components

Funding component is further categorized as equity and debt while operating component consists working capital and noncurrent assets.

- **Equity + Debt = Working Capital + Noncurrent assets**

Managers cannot easily manipulate equity, debt and noncurrent assets values, thus, working capital is the only factor used for earning manipulation, working capital relates with sales of a firm. Therefore, normal accrual is standardized by the sales of a firm. To level the momentary variation we utilize the five years moving average of accrual to five years of moving average of sales and multiply by current sales.

\[ NORMALACCR_{t,k} = \frac{1}{5} \sum_{t=6}^{10} \frac{ACCR_{t,k}}{SALES_{t,k}} \]

Volatility (Vol) in stock prices covers the external environment shocks like macroeconomic condition, political instability, geopolitical situations and terrorism etc. Speculators are mostly focused on Vol, rather than fundamental news, before investing in stocks. In past the investor rely on the trading volume and price. When any particular stock price increase, people rush to purchase it. They have no more information about the stock and market. The trading volume (TV) and previous stock prices were the only tidy variable which uses to predict the stock movement in Pakistan but now other fundamental variables also used by investors and portfolio managers. TV interpret liquidity indicator and used as a proxy of investors sentiment as proposed by Baker and Stein (2003).

**Results and Discussion**

**Descriptive Analysis**

Table I provides the descriptive results of the above mentioned variables including number of observations, mean, standard deviation, minimum and maximum value. Table II and Table III also present the descriptive of Non-Syariah and Syariah stocks respectively. Mean and standard deviation and other statistics are not widely diverse for Syariah and non-Syariah stocks. The average equity return (ER) is about 12% with deviation of 0.5247. MP has reported 5558 observation with mean and standard deviation is -9.2164 and 4.2735 respectively, and the minimum value is -15.7 and maximum is -0.84.

Size has 5238 observation with mean 19.125, standard deviation is 2.1406 while minimum and maximum values 13.5144 and 27.1831 respectively. BM, Lev, Divid, E/P and CF/P have mean 16.868, 8.391, 0.0404, -0.2345 and 1.3361 respectively, their minimum, maximum and standard deviation did not provide any caution. Discretionary accrual DA has shown less number of observation 1567, its due to the moving average calculation method we have adopted. Vol has 5558 observation with average value of 8.3497 and 8.6826 respectively while deviation reported 14.3518 and 2.3222.

Moreover, Skewness and Kurtosis in Table I depict the normal shape of variables.

**Regression Analysis**

This section presents comprehensive regression results of panel data analysis. Firstly, simple Ordinary Least Square (OLS) is applied to analysis the determinants and the results are offered in Table IV. First section explained the result of OLS with coefficients (Coif) and p-value, market premium (MP), book to market (BM), Leverage (Levg), volatility in stock price (Vol) and trading volume of stocks (TV) are proved to be significant at 1 percent. On the other side, Size (Size), Dividend (Divid), and all earning components (E/P, CF/P and DA) confirmed insignificant relation with stock returns. Section two is related with Random Effect Model (REM), the results are similar to the OLS, Breusch and Pagan Lagrangian multiplier test for random effects is applied, p-value = 0.242 rejected the null hypothesis and REM is proved the best fit model as compare the OLS. Furthermore, hausman test is applied to choose among the random effect model (REM) and fixed effect model (FEM), result certifies the fix effect model is the optimum model.

Wooldridge test for autocorrelation of panel data accepted the null hypothesis; turn out no first order autocorrelation in the model. Modified wald test for heteroskedasticity do not accept the null hypothesis in fixed effect model; result confirms the heteroskedasticity in the fixed effect model. Robust test on FEM counter the heteroskedasticity issue and presents the result in Table VI.

Robust analysis of FEM provide different results in section three, MP is significant at 1% level with coefficient of 0.0478, Size offered different outcome as contrast with OLS and REM having 0.1750 coefficient with p-value of 0.015. The significant positive Size recommends the investors to invest in big stocks for better return in Pakistan, similar results also proved in Sarwar. S et al. (2013), Haque. A and Sarwar. S (2013). Book to market (BM) confirm negative significant relation with stock returns with coefficient – 0.1480, BM indicates that investors in Pakistan follow noise trading instead of company fundamentals. Stock price volatility (Vol) is caused by many factors like macroeconomic shocks, political instability, war on terror, etc faced by Pakistan these days. Positive significant Vol validates the preceding results of Duffee. G (1995), Sarwar. S et al. (2013) and Haque. A and Sarwar. S (2013), highly volatile stocks give higher return to the investors. On the other side; trading volume represents the investor’s attitude and the trading pattern of a particular stock. FEM also proves the positive significant relation between trading volume (TV) and stock return (ER), highly trade stocks have higher return. Result of TV also confirmed the noise trading pattern as verified by BM also in Pakistani stock market.

Afterward, Syariah and Non-Syariah stocks are studied separately to find the disparity among Syariah and Non-Syariah stock returns; Non-Syariah companies endorse the previous results. Whereas, Syariah companies postulate different outcomes, Size is insignificant in Syariah stocks. The investors have two choices whether to purchase Syariah stocks or Non-Syariah, those who prefer Syariah stocks do not emphasis on the size of company. Secondly, Levg is negative significant; highly levered Syariah stocks yield lower return. In contrast, volatility in stock price is positively related to the stock returns. Book to Market (BM) and Trading volume (TV) of Syariah stock is surprisingly insignificant; investors of Syariah stock do not follow noise trading.
Equity return (\(ER_{it}\)) is calculated from daily share price data taken from breccorder.com. \(MP_{t}\) is the deviation between \((R_{m})\) and \((R_{f})\) of 6-month Treasury bills. \(Size_{i,t}\) is computed by market capitalization of stock. \(BM_{i,t}\) is the ratio of book value of equity company \(i\) at time \(t\) by market value of equity at year \(t\). \(Levg_{i,t}\) is the division of total liability of company \(i\) at time \(t\) to market value of equity of company \(i\) at time \(t\). 

Table 2. Descriptive Statistics (Non-Syariah Stocks)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Pr(Skewness)</th>
<th>Pr(Kurtosis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ER)</td>
<td>3760</td>
<td>0.1060</td>
<td>0.5171</td>
<td>-0.9964</td>
<td>4.6748</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(MP)</td>
<td>4298</td>
<td>-9.2164</td>
<td>4.2737</td>
<td>-15.7000</td>
<td>-0.8400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Size)</td>
<td>1170</td>
<td>18.1985</td>
<td>1.9131</td>
<td>13.5144</td>
<td>21.8059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(BM)</td>
<td>2882</td>
<td>16.7598</td>
<td>1.4945</td>
<td>9.6491</td>
<td>21.8059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Levg)</td>
<td>4022</td>
<td>9.6405</td>
<td>17.5079</td>
<td>0.0000</td>
<td>289.9415</td>
<td></td>
<td></td>
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<tr>
<td>(Divid)</td>
<td>3964</td>
<td>0.0368</td>
<td>0.0855</td>
<td>0.0000</td>
<td>1.5118</td>
<td></td>
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</tr>
<tr>
<td>(E/P)</td>
<td>3295</td>
<td>-0.2818</td>
<td>1.6200</td>
<td>-28.0000</td>
<td>7.8086</td>
<td></td>
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<tr>
<td>(CF/P)</td>
<td>2586</td>
<td>1.2994</td>
<td>1.2553</td>
<td>-5.2678</td>
<td>8.2437</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(DA)</td>
<td>1182</td>
<td>18.5951</td>
<td>1.7912</td>
<td>11.4210</td>
<td>25.5637</td>
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<tr>
<td>(Vol)</td>
<td>4298</td>
<td>6.9633</td>
<td>13.2988</td>
<td>0.0000</td>
<td>50.5357</td>
<td></td>
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<tr>
<td>(TV)</td>
<td>2924</td>
<td>8.2993</td>
<td>2.0035</td>
<td>-1.8971</td>
<td>16.1559</td>
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Table 3. Descriptive Statistics (Syariah Stocks)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Pr(Skewness)</th>
<th>Pr(Kurtosis)</th>
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<tr>
<td>(ER)</td>
<td>1080</td>
<td>0.1729</td>
<td>0.5480</td>
<td>-0.7607</td>
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<tr>
<td>(MP)</td>
<td>1260</td>
<td>-9.2164</td>
<td>4.2749</td>
<td>-15.7000</td>
<td>-0.8400</td>
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<tr>
<td>(Size)</td>
<td>20.5880</td>
<td>2.2446</td>
<td>14.9185</td>
<td>27.1832</td>
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<tr>
<td>(BM)</td>
<td>948</td>
<td>19.1791</td>
<td>1.7341</td>
<td>11.7447</td>
<td>22.5250</td>
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<tr>
<td>(Levg)</td>
<td>1168</td>
<td>4.0882</td>
<td>9.0704</td>
<td>0.0000</td>
<td>90.3783</td>
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<tr>
<td>(Divid)</td>
<td>1150</td>
<td>0.0531</td>
<td>0.1082</td>
<td>0.0000</td>
<td>2.9557</td>
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<tr>
<td>(E/P)</td>
<td>934</td>
<td>-0.0677</td>
<td>0.7912</td>
<td>-8.1190</td>
<td>1.5120</td>
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<tr>
<td>(CF/P)</td>
<td>813</td>
<td>1.4530</td>
<td>1.1212</td>
<td>-5.1834</td>
<td>8.0111</td>
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<tr>
<td>(DA)</td>
<td>385</td>
<td>19.4897</td>
<td>2.0275</td>
<td>10.0249</td>
<td>24.9131</td>
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<tr>
<td>(Vol)</td>
<td>1260</td>
<td>13.0792</td>
<td>16.6304</td>
<td>0.0000</td>
<td>50.5683</td>
<td></td>
<td></td>
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<tr>
<td>(TV)</td>
<td>738</td>
<td>10.2016</td>
<td>2.8239</td>
<td>4.3365</td>
<td>17.8208</td>
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Table 4. Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>OLS</th>
<th>REM</th>
<th>FEM</th>
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<tbody>
<tr>
<td>(ER)</td>
<td>0.0493</td>
<td>0.0000</td>
<td>0.0000</td>
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<tr>
<td>(MP)</td>
<td>-0.0080</td>
<td>0.636</td>
<td>-0.0026</td>
</tr>
<tr>
<td>(Size)</td>
<td>-0.0740</td>
<td>0.0000</td>
<td>-0.0819</td>
</tr>
<tr>
<td>(BM)</td>
<td>-0.0102</td>
<td>0.004</td>
<td>-0.0103</td>
</tr>
<tr>
<td>(Levg)</td>
<td>0.1552</td>
<td>0.257</td>
<td>0.1648</td>
</tr>
<tr>
<td>(Divid)</td>
<td>-0.0924</td>
<td>0.132</td>
<td>-0.0960</td>
</tr>
<tr>
<td>(E/P)</td>
<td>0.0109</td>
<td>0.481</td>
<td>0.0123</td>
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<tr>
<td>(DA)</td>
<td>0.0092</td>
<td>0.516</td>
<td>0.0077</td>
</tr>
<tr>
<td>(Vol)</td>
<td>0.0024</td>
<td>0.002</td>
<td>0.0024</td>
</tr>
<tr>
<td>(TV)</td>
<td>0.0292</td>
<td>0.004</td>
<td>0.0314</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.5070</td>
<td>0.0000</td>
<td>1.5228</td>
</tr>
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</table>

Breusch and Pagan LM Test  p = 0.242
Hausman test  p = 0.000

Table IV presents OLS, REM and FEM results with coefficients (Coff) and p-values. Breusch and Pagan LM Test is applied to test the best fit model among OLS and REM while Hausman test compare the finest model between the FEM and REM.


