Profit management in the case of financial distress and global volatile market behaviour:
Evidence from Borsa Istanbul Stock Exchange

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Abstract. The purpose of this paper is to find out how firms manage earnings under volatile market behaviour and financial distress in Borsa Istanbul Stock Exchange (BIST). We used in order to determine four discretionary accruals models such as Jones, Adjusted-Jones, Kasznik, and Kothari. 171 listed companies in BIST for the annual data between 2006 and 2016 were used. Model was analysed by using panel data methods such as fixed effects, random effects estimation. Our results indicate that nondiscretionary accruals, discretionary accruals, firm size and leverage by the future profit value are significant determinants of earning management behaviour in Turkey. However, we do not find a significant relation between future profitability and volatile market index, financial distress. This research will lead the way of accounting standard setters and policy makers to understand earning management activities under volatile market behaviour and financial distress in Borsa Istanbul Stock Exchange BIST.

Keywords: discretionary accruals, earning management, profit management.

JEL Classification: M41, G30.
1. Introduction and literature review

Over the last few decades, earning management is a main subject for researchers and policy makers. Plenty of studies (Healy and Wahlen, 1999), (Beneish, 1999), (Dechow et al., 1995), (Kasznik, 1999), (Kothari et al., 2005), (Adıgüzel, 2018) investigate how firms manage their earnings and what ways they do this. Although earning management is defined in different ways in the literature and the most commonly used that it is the legal practice to apply some of the most profitable accounting policies (Scott, 2009). Furthermore, earnings management is the change in the firm's profit values making the Generally Accepted Accounting choices in line with the economic and financial situation of the managers. On the other hand, in literature there are some people called earning management as fraudulent. But, (Dechow and Skinner, 2000) give a certain difference between earning manipulation and earning management. They defend that if accounting practices violate the GAAP (Generally Accepted Accounting Principles) and IAS (International Accounting Standards), it is named earning manipulation or earning fraudulent (Lo, 2008) and if discretionary is used for accounting practices which do not violate the GAAP and IAS, then it is defined earning management.

The literature confirms that companies apply to profit management due to capital markets which is listed in stock exchange, contractual reasons and political reasons. Firms tend to announce high profit value prior to the issuance of shares to investors and financial analysis (Healy and Wahlen, 1999), receiving a premium over the profits made by the managers agreement (Nelson et al., 2002), (Hosseini et al., 2016), (Watts and Zimmerman, 1986), (Cheng and Warfield, 2005) the shareholders entitled to vote to leave positive reputation about their performances and the fear of losing his job (Jiraporn et al., 2008). On the other hand, they want to show low profit value to take over the company's management (DeAngelo, 1988) and increase the political and governmental costs.

There are lots of theoretical and experimental studies related to earnings management in the literature. The quality of the company's earnings is determined by the way of real activities or accrual-based (Healy, 1985) (Dechow et al., 1995), (Jones, 1991), (Kasznik, 1999), (Kothari et al., 2005). The real profit that occurs after transactions such as increasing sales and reducing costs. At the same time, earnings quality also provides the basis for sustainability to provide the future of the enterprise. In case the quality indicators are not attractive for the related persons and groups, the managers of the enterprises have to make arrangements in their presentations or manipulate the expectations of those concerned. However, since it is difficult to change the expectations of third parties, it is mostly chosen to adapt the presentations to expectations. Earnings are made to be adapted to the expectations of the person or group by the ways; accrual based earnings management or gain management applications based on real transactions (Özden and Ataman, 2014). Real earning management based on real transactions may be in the form of increasing sales through a reduction in sales prices during the period, excessive production to lower the cost of goods sold, or disrupt discretionary expense accruals. Such practices also affect the cash flow in the period, but they are recognized by investors and discourages investment decisions (Enomoto et al., 2015), (Tabassum et al., 2015), (Braam, Nandy et al., 2015), (Mellado-Cíd et al., 2017), (Cohen and Zarowin, 2010).
The purpose of this study is to examine the change of earning manipulation of firms which is listed Borsa Istanbul Stock Exchange (BIST) under volatile market behaviour and financial distress. In the study, there are 171 data between 2006 and 2016 years and 1881 firm-level observations in total. Model was performed by using fixed effect and random effect panel data methods. In order to analyse that there is individual effect or not and to understand the sample was selected randomly or not for our sample, we used panel data technics such as fixed and random effect methods. In this study, (Jones, 1991), (Dechow et al., 1995), (Kasznik, 1999), (Kothari et al., 2005) models are used for earning management analysis. After these models were estimated, the best explaining model was selected and nondiscretionary accrual and discretionary accruals were determined. Points to consider is an administrator may change profitability reporting through discretionary accruals. In fact, discretionary accruals provide a flexible area that managers change and please itself the profit value. (Kothari et al., 2005) model is used to detect earning management for Borsa Istanbul listed firms.

Firstly, we clarify data information and variable definitions. Secondly, we determine discretionary accrual with proper model by using (Jones, 1991), (Dechow et al., 1995), (Kasznik, 1999), (Kothari et al., 2005) approaches. After determination of discretionary accruals, then we improved main regression model. In following, we construct the model with high explained discretionary accrual model. Finally, all outputs are interpreted financial and economic supports and point of views.

2. Data and hypothesis development

Our dataset is eliminated from the banking and insurance industrial data because of cash flow and accounting process of them is different from other industrials. In addition, we used data for 2006 and later owing to the fact that we could not find data for some variables for 2005 and earlier due to accounting arrangements. In totally, there are eleven years and 171 firm data in our dataset.

Our data provider is Bloomberg and Financial Information News Network FINNET. We use Stata MP-33 package and in data-running process benefit from (Yerdelen Tatoğlu, 2018). Currency is Turkish Liras (TL).

We investigate the earning management under volatile market behaviour and financial distress for Borsa Istanbul listed companies. We expect that earning management activities with accrual based increase when global market volatility is in high period. In our hypothesis, managers tend to report higher earning in high volatile market behaviour. In the light of expectations, we state first hypothesis.

H1: There is a significant positive relation between next-year profitability and earning management with discretionary accruals.

Furthermore, other hypothesis is that managers tend to announce earnings high if firm is in financial distress. Since, firms reach financial credit easily they should be in a financial wellness situation. Any of credit provider company do not want to give to credit a firm which is in financial distress and low- profit value because irrevocable liability (Habib et al., 2013).
In order to determine the impact of distance of bankruptcy on earning management, we investigated Hypothesis 2 as follow.

**H2: The impact of earning management with discretionary accruals on the next year profit is higher for firms in high financial distress than for those in low financial distress.**

We concentrate on earning management of BIST listed companies as firm profit management behaviour are sensitive to economic and financial situation. In order to capture the information about financial distress, we add Altman Z-Score to understand the internal status of companies. Firm leverage and firm size is other explanatory variables in order to capture firms’ internal information. Altman Z-Score is used for detecting the firms’ distance of bankruptcy.

On the other hand, (Moghaddam and Abbaspour, 2017) suggest that high leveraged firms execute more earning management activity than low leveraged firms. Since, high leveraged firms need and want to make a good impression to investors, shareholders and analysts with high profitability value. We developed Hypothesis 3 as follow.

**H3: The impact of earning management with discretionary accruals on the next year profit is higher for firms with high leverage than for those with low leverage.**

In addition, literature has no strict consensus about the relationship between firm size and next year profitability. There is an ambiguous relation between company size and earning management. Researchers have no consensus about this question (Usman et al., 2015), (Teuta, 2013). Empirical results point out unsatisfactory results. But, we expect that the amount of earning management is more for large size firms than small size ones. Since, large size firms have more discretionary accruals. Under this expectation, we proposed the hypothesis 4 is as follow.

**H4: The impact of earning management with discretionary accruals on the next year profitability is higher for large size firms than for small size firms.**

When we do this, we use the annual panel data obtained from the Independent Audit Reports of the companies traded on Borsa Istanbul Stock Exchange BIST between 2006 and 2016. Macro-economic control variables are obtained from Bloomberg as VIX (The CBOE Volatility Index) that based on market prices of options on S&P 500. Since economic and financial behaviour contagion (Kenourgios, 2014), we use VIX that provide us information about economic turmoil that took place the outside of Turkey. Namely, we use VIX index to investigate how market volatility in USA affect firms’ earning management in Borsa Istanbul listed companies in Turkey. In this way, we build following hypothesis 5 as below.

**H5: The impact of earning management with discretionary accruals on the next year profit is higher for firms under high volatile market behaviour than for those under low market behaviour.**

Under all of these hypothesis, we construct a model and skip methodological part.
3. Methodology and variable definitions

Earning management is possible with three general ways in the literature. First of them is the total accrual based model. Second of them is the model which is focusing on the specific accrual. Third of them is the model which calculating income is changing around specific threshold point.

The manger may change profitability reports through discretionary accruals. In fact, discretionary accruals item gives managers to some elbow room. Firms are making the earnings management through discretionary accruals. In literature, (Healy, 1985) is the first researcher to analyse total accrual based earning management analysis. Weak side of his study is that carry out not to decompose total accruals to discretionary and nondiscretionary accruals. In order to overcome this weakness, (Jones, 1991) fills this gap in literature by the way of decomposition of total accruals such as discretionary and non-discretionary accruals. Discretionary accruals are obtained by deducting non-discretionary accruals from the total accruals.

\[ DAC = TA - NDAC \]

In determining total accruals, two approaches based on such as cash flows and balance sheet items. In this study, we aimed to calculate total accruals from balance sheet items. Firstly, we estimate total accruals (TA) by the ways (Jones, 1991), (Dechow et al., 1995), (Kasznik, 1999), (Kothari et al., 2005) models. After model, we have decomposed total accruals to discretionary accruals (DAC) and non-discretionary accruals (NDAC). We determined the total accruals (discretionary and non-discretionary accruals) with four models in the literature. These models are indicated below Table 1.

| Models |\[ TA_{it} = \alpha_1 + \alpha_2 \Delta REV_{it} + \alpha_3 PP_{it} + \varepsilon_{it} \]| |\[ TA_{it} = \alpha_1 + \alpha_2 (\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 PP_{it} + \varepsilon_{it} \]| |\[ TA_{it} = \alpha_1 + \alpha_2 (\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 PP_{it} + \alpha_4 \Delta CFO_{it} + \varepsilon_{it} \]| |\[ TA_{it} = \alpha_1 + \alpha_2 \Delta REV_{it} + \alpha_3 PP_{it} + \alpha_4 \Delta CFO_{it} + \alpha_5 ROA_{it} + \varepsilon_{it} \]| |
|---|---|---|---|---|
| 1 | Jones Model (1991) | | | |
| 2 | Adjusted Jones model (1995) | | | |
| 3 | Kasznik Model (1999) | | | |
| 4 | Kothari et al. Model (2005) | | | |

After analysing the data, we see that Kothari, Andrew and Charles model better explained earnings management in Borsa İstanbul Stock Exchange listed companies by looking at the result of adjusted R-squares at Table 2. The significance level of Kothari, Andrew, and Charles Model is also high. (Kothari et al., 2005) model adjusted R-squares is the highest value among other four ones. In our study, we have obtained the accrual estimate by means of the estimation of the total accrual model (Kothari et al., 2005) which has the highest explanations and significance level.

<table>
<thead>
<tr>
<th>Model Comparison</th>
<th>Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>F-statistic</th>
<th>p-value</th>
<th>Adj R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones Model</td>
<td>( \Delta REV )</td>
<td>-0.000032</td>
<td>0.08</td>
<td>0.937</td>
<td>5.14</td>
<td>0.006</td>
<td>0.0044</td>
</tr>
<tr>
<td></td>
<td>( PP )</td>
<td>-0.0465307</td>
<td>-3.21</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted Jones</td>
<td>( \Delta REV - \Delta REC )</td>
<td>-0.00002255</td>
<td>0.06</td>
<td>0.949</td>
<td>5.14</td>
<td>0.006</td>
<td>0.0044</td>
</tr>
<tr>
<td></td>
<td>( PP )</td>
<td>-0.0462968</td>
<td>-3.21</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After determining suitable models for accrual measurement, we designed our main research model. In regression, we analyze that global economic turmoil and financial distress lead managers to profit management. Companies can change their profit values as long as the accounting standards allow. In doing so, we also investigated the question of how firms' size, distance to bankruptcy, and leverage rates affect profitability management.

Our dependent variable is profitability for the next year. We calculated the profitability \( (Profitability_{it+1}) \) by deducting the accrual from the net income for the previous year (Rezaei, 2012), (Siregar and Sidharta, 2008). We used discretionary accruals (DAC\(_{it}\)), non-discretionary accruals (NDAC\(_{it}\)), leverage (Leverage\(_{it}\)), logarithm of total assets (LSize\(_{it}\)), volatility Index (VIX\(_{it}\)), and financial distress of companies (ZScore\(_{it}\)).

We also sought answers to the question of how the profitability of the two variables is affected by using covariates. As the covariate factor, we received discretionary accruals and the global economic policy uncertainty (DAC*VIX\(_{it}\)), discretionary accruals and the financial distress of companies (DAC*ZScore), discretionary accruals and leverage (DAC*Leverage), discretionary accruals and the logarithm of total assets (DAC*LSize). The reason that we use covariate variable is to observe the increasing impact of each variable on the future profitability with discretionary accruals.

As we can easily see below, Table 3 indicates all variable and data descriptions.
There are 1881 firm-level data for all variables. Next Year profitability has 0.99 mean and 0.0018 standard deviations. Also, next year profitability change between -1.03e-6 and 0.079. Non-discretionary accrual has 0.259 mean and 7.298 standard deviations. Minimum of non-discretionary accruals is -199.137 and maximum of non-discretionary accruals is 117.011. Discretionary accrual has mean of -0.221 and standard deviation of 9.4107. Logarithm of size has 8.5826 and 0.8187, mean and standard deviation, respectively. When minimum of logarithm of size is zero, maximum of logarithm of size is 11.4889.

Mean of leverage is 45.62724 and standard deviation of leverage is 25.4067. Minimum of leverage is zero and maximum of leverage is 293.9812. Z-Score change between -20.12 and 1493.79. Z-score has the value 12.63 in mean and 56.6859 standard deviations. Volatility Index VIX has minimum and maximum value between 12.81 and 32.69. Mean of volatility index is 20, standard deviation of volatility index is 6.5747.

Moreover, we have four covariate variables such as DAC*VIX_{it}, DAC*ZScore, DAC*Leverage_{it}, DAC*LSize. DAC*VIX_{it} has a value of minimum -1498.822 and maximum 6270.17. Also, mean of DAC*VIX_{it} is -3.249 and standard deviation is 188.1699. DAC*ZScore change a margin which is minimum value -55157.51 and maximum value is 43314.38. Mean of DAC*ZScore is 6.35852 and standard deviation is 1892.068. DAC*Leverage_{it} changes between the interval which is minimum value -487.052 and maximum value 303,989. DAC*Leverage_{it} has mean of -16.12605 and standard deviation 52.58527. DAC*LSize has a minimum value of -784.2556 and maximum value of 1344,164. DAC*LSize has 49.8246 standard deviations with mean of -2.0067.

4. Results

The next year Profitability value for (t+1) year is used as the dependent variable (Subramanyam, 1996), (Stregar and Utama, 2008). The next year profitability is measured as cash flow from operation by adding depreciation to Earnings before Interest and Taxes EBIT and subtract the taxes.

Our model is based on (Kothari et al., 2005) approach. Accruals decompose from total accruals to discretionary accruals (DAC_{it}) and non-discretionary accruals (NDAC_{it}). There are four control variables such as Leverage_{it}, LSize_{it}, VIX_{it}, ZScore_{it}. Leverage_{it} is measured that total debts divided by total assets. LSize_{it} is measured the logarithm of total assets (Swastika, 2013). VIX_{it} is an index which indicates the global economic and financial turmoil. ZScore_{it} indicates the distance to bankruptcy of firms known as Altman-Z score. While we are doing this, longitudinal data multiple regression approach is used on account of analysis.

Profitability_{it(t+1)} = \beta_0 + \beta_1 NDAC_{it} + \beta_1 DAC_{it} + \beta_3 Leverage_{it} + \beta_4 LSize_{it} + \beta_5 VIX_{it} + \beta_6 ZScore_{it} + \beta_7 (DAC*VIX)_{it} + \beta_8 (DAC*ZScore)_{it} + \beta_9 (DAC*LSize)_{it} + \beta_0 (DAC*Leverage)_{it} + \epsilon_{it}
In addition, we use covariate (interaction) variables on behalf of determination behaviour of dependent variable next year profitability as two explanatory variables change simultaneously.

Next year Profitability is positive cash flow operation in average that is to say companies are in a situation which is defined financial wellness. According to Table 4, next year Profitability have negative relation with DAC and positive relation with NDAC. This means that firms tend to manipulate earning management increasingly the case of declining profit value (Hassanpour and Ardakani, 2017).

Consistent to correlation relation, next year Profitability has positive value in the average by the explanation of negative relation between profitability and DAC.

Moreover, next year Profitability has positive correlation with LSIZE. In our sample, we mostly have large scale firm in the average whose size change between 0 and 11.49.

Firms reflect to all information about the market. If market uncertainty and fear is high, then firms tend to make capital structure decision in the light of information. When Volatility Index VIX increases, firms have low profit value by the reason of low production, low selling, reaching to debt difficulty then before etc. (Mollik et al., 2013). This means that market volatility is high in sample period. Accordance to Table 4 next year profitability is negatively correlate with VIX. Although Volatility Index is between 12.81 and 32.69; in our sample period VIX is 20 in the average.

ZScore is defined financial distress condition for companies. Moreover, Zscore gives the information about distance to bankruptcy for firms. In our sample, there are companies with high financial distress; but in the average, there are firms with low or above financial distress in our sample. Pursuant to correlation table, increase of financial distress cause decrease of next year profitability in sense.

<table>
<thead>
<tr>
<th>Correlation Table</th>
<th>Profitability</th>
<th>NDAC</th>
<th>DAC</th>
<th>Leverage</th>
<th>Lsize</th>
<th>VIX</th>
<th>Zscore</th>
<th>DAC*VIX</th>
<th>DAC*ZSCORE</th>
<th>DAC*Lsize</th>
<th>DAC*LEVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NDAC</td>
<td>0.9996</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAC</td>
<td>-0.9988</td>
<td>-0.9969</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lsize</td>
<td>0.0185</td>
<td>0.0204</td>
<td>-0.0174</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>VIX</td>
<td>-0.0252</td>
<td>-0.0259</td>
<td>0.0247</td>
<td>-0.0692</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Zscore</td>
<td>-0.0217</td>
<td>-0.0216</td>
<td>0.0222</td>
<td>-0.126</td>
<td>0.0344</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Leverage</td>
<td>0.0279</td>
<td>0.0268</td>
<td>-0.0324</td>
<td>0.256</td>
<td>-0.0365</td>
<td>-0.1631</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>DAC*VIX</td>
<td>-0.9616</td>
<td>-0.9615</td>
<td>0.9617</td>
<td>-0.0302</td>
<td>0.0741</td>
<td>-0.0413</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>DAC*ZSCORE</td>
<td>-0.8817</td>
<td>-0.8819</td>
<td>0.8862</td>
<td>-0.0049</td>
<td>0.0473</td>
<td>-0.07266</td>
<td>-0.008</td>
<td>0.0621</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>DAC*Lsize</td>
<td>-0.9564</td>
<td>-0.9692</td>
<td>0.9996</td>
<td>-0.02</td>
<td>-0.0232</td>
<td>0.0251</td>
<td>-0.0348</td>
<td>0.9621</td>
<td>0.8805</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DAC*LEVERAGE</td>
<td>-0.2883</td>
<td>-0.2878</td>
<td>0.2878</td>
<td>0.0716</td>
<td>-0.067</td>
<td>0.0111</td>
<td>-0.2415</td>
<td>0.2809</td>
<td>0.1309</td>
<td>0.2989</td>
<td>1</td>
</tr>
</tbody>
</table>

There is negative correlation between next year profitability and DAC*VIX, DAC*ZScore, DAC*Lsize, DAC*LEVERAGE in our firms’ sample. In other words, companies with higher VIX, Zscore, Lsize, and Leverage tend to increase their profitability values through discretionary accruals.
In this study, we used balanced panel data (longitudinal panel data) whereas panel data refers to individual firms to time points. Heterogeneity can be found in firms for panel data analysis. In addition, in the longitudinal data cross section and time series observations give more likely to data. In addition, panel data cause less collinearity and more variability among variables because of becoming more efficiency and increasing degree of freedom. Panel data analysis is strong to capture and measure the effect of variables that cannot do so in the solely time series and cross section analysis. Panel data analysis easily overcome bias results and the right model specifications (Baltagi, 2012), (Hsiao, 2014).

Fixed effect model allows heterogeneity among firms and ensures that each firm has its own intercept terms. This intercept terms change from one firm to another firm. Intercept term refers that each firms have own special features. In the fixed effect model, each firms’ intercept is time invariant namely It does not change over the time. Thus, for each firms have slope which is not variant over the time. Fixed effect model proposes possibility which neglect the fixed effect for pool analysis. It is also proposed a solution which create bias slope. In order to avoid this problem, model uses dummy variable technique. On the other hand, random effect model is proposed an estimation which intercept values are drawn randomly from the population of firms. All firms have own fixed intercept value. We can easily see about lack of information of dummy variables through disturbance term. Hence, this random effect model is called error component model (ECM). Error term of random effect model has either cross-sectional or time series error terms which is named idiosyncratic. This error term does not correlate with responsive variables (Bell and Jones, 2015), (Wooldridge, 2005), (Petersen, 2004).

In order to determine proper model, we made Haussmann test. Null hypothesis under Haussmann test is based on fixed effect model and random effect model estimators do not differ substantially (Baltagi and Liu, 2012), (Hahn et al., 2011), (Frondel and Vance, 2010), (Baltagi et al., 2003). Chi-Square distribution determine the null hypothesis rejection or acceptance. If null hypothesis is rejected, then random effect is suitable for parameter estimation.

We estimated our model via two methodology such as fixed effect estimation, random effect estimation (Shahzad, 2016), (Laird and Ware, 1982). All outputs are available in Table 5. In order to have panel data, we prefer to estimate with panel data multiple regression models. To check individual effect and detect the randomness of sample, we used the random effect and fixed effect models.

In Table 5, DAC have negative relation with next year profitability for all models with %5 significant level. In other words, we see that the discretionary accruals increase, next year profitability decrease. This means that firms raise their next year profit value.

In this study, leverage and next year profitability has negative and significant coefficient for sample of BIST listed firms. This tell us that high-level debt firms have lower profitability value for next year. Furthermore, DAC*Leverage coefficient is negative but insignificant for all Model I, Model II with next year profitability of firms. This infers that the impact of discretionary accruals on future profitability is lower for highly leveraged
firms than for low leveraged firms. Essentially, we see that high leverage firms which is listed Borsa İstanbul tend to apply less earning management than low leverage companies. Moreover, the relation between DAC*LSIZE and future profitability is positive coefficient but insignificant for all models. The impact of discretionary accruals on next year profitability is higher for large-scale companies than low-scale firms. One of the important factors affecting profitability is the scale. Moreover, we see a significant and positive relationship between LSIZE and future profitability. This is consistent with the study (Arslan et al., 2017), which concludes that the values of the companies with blue chips are higher than the values of smaller companies.

Again, the relation between DAC*ZSCORE and next year profitability is positive coefficient but insignificant for all models (Hassanpour and Ardakani, 2017). Discretionary accruals on next year profitability is higher impact for highly financial distress firms than for low financial distress firms (Campa and Camacho-Miñano, 2015) (Lin et al., 2016). ZSCORE indicates the distance of bankruptcy of firms. In the average, indicating approximately 20.00 ZScore refers that firms are in a financial well-being situation for selected sample. In Table 5; there is a positive and significant relation between ZSCORE and future profitability. Namely, firms want to announce profitability value for next year in the condition of increasing of financial distress positions. This result can read that firms can not want to inform to public from bad situation of Therefore, the impact of discretionary accruals on future profitability is high for firms which is high financial distress.

<table>
<thead>
<tr>
<th>Hypothesis Results</th>
<th>Model I</th>
<th></th>
<th>Model II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>p-value &gt;</td>
<td>Coefficients</td>
<td>p-value &gt;</td>
</tr>
<tr>
<td>NDAC</td>
<td>-0.081701</td>
<td>0.06403</td>
<td>0</td>
<td>0.06403</td>
</tr>
<tr>
<td>DAC</td>
<td>-1.083918</td>
<td>0.001</td>
<td>0</td>
<td>0.001</td>
</tr>
<tr>
<td>LSIZE</td>
<td>0.025955</td>
<td>0.02926</td>
<td>0</td>
<td>0.02926</td>
</tr>
<tr>
<td>LEVERAGE</td>
<td>-0.001383</td>
<td>0.00003</td>
<td>0</td>
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</tr>
<tr>
<td>ZSCORE</td>
<td>0.000081</td>
<td>0.222</td>
<td>0</td>
<td>0.222</td>
</tr>
<tr>
<td>VIX</td>
<td>-0.000731</td>
<td>0.07</td>
<td>-0.00051</td>
<td>0.237</td>
</tr>
<tr>
<td>DAC*VIX</td>
<td>0.000067</td>
<td>0.249</td>
<td>-0.00022</td>
<td>0.147</td>
</tr>
<tr>
<td>DAC*ZSCORE</td>
<td>1.83e-06</td>
<td>0.622</td>
<td>3.68e-06</td>
<td>0.296</td>
</tr>
<tr>
<td>DAC*LSIZE</td>
<td>0.000045</td>
<td>0.983</td>
<td>0.00075</td>
<td>0.731</td>
</tr>
<tr>
<td>DAC*LEVERAGE</td>
<td>-0.000075</td>
<td>0.275</td>
<td>-0.00004</td>
<td>0.552</td>
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<tr>
<td>Constant</td>
<td>-0.107956</td>
<td>0.119</td>
<td>-0.1407</td>
<td>0</td>
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<tr>
<td># of Obs.</td>
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<td>0</td>
<td>1881</td>
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<tr>
<td>F-Statistic</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.9997</td>
<td>0.9997</td>
<td>0.9997</td>
<td>0.9997</td>
</tr>
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</table>

Model I, Model II are based on Fixed effect, Random effect models, respectively. Confidence interval is 5% for all model.
the relation between VIX and future profitability has a negative coefficient for all models. High volatile market behaviour causes of decreasing the future profitability of firms. This result supports the relation between DAC.

5. Conclusion

This study stands on an important point for ones which try to read market behaviour and want to invest their money to right firms. Under global turmoil market behaviour and firms’ financial distress, investors can be myopic about financial decisions. It seems that global volatile market behaviour diffuse step by step all kind of financial and economic forms. Under uncertainty and fear, investment and capital structure attitudes are changed by firms like individuals because of that uncertainty and fears are contagious. On the other hand, we tried to analyse whether the situation of financial distress lead to earning management of company basis. We try to answer this question and fill in this gap in logical approach. It is clear that firms tend to propensity of earning management under volatile market behaviour and financial distress situations. In addition, we investigated whether firm size and level of leverage affect earning management activities or not. High debt level decrease value.

In the end, we see that companies reflect all information in situations to earning values via discretionary accruals. Under global turmoil, next year profit of firms tends to decrease. Moreover, impact of discretionary accruals on future profitability is higher for highly volatile market than for low volatile market. Financial distress firms have positive coefficient next year profitability. It means that firms’ managers don’t prefer to transmit the financial distress information to next year public reports in the cause of resistance of decreasing market value and stock price of firms.

This study shed in light for policy makers, investors, capital structure makers and managers about the firms which is listed in Borsa Istanbul Stock Exchange (BIST) to understand the relation of earning management activities under market volatile behaviour and financial distress situations. In conclusion, we advise that researchers to carry out a study which is indicated and detected for machine learning system such as (Dbouk and Zaaour, 2017). In addition, this study can be searched by using two control such as group financial and non-financial firms with using Beneish model (Beneish, 1999), (Beneish, 2001) as (Ahmed and Naima, 2016), (Kim and Yoon, 2008).

References


Profit management in the case of financial distress and global volatile market behaviour


