A Study on the Relationship between Accounting Conservatism and Earnings Management in Teheran Stock Exchange Listed Companies

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Abstract. The present study focuses on the link between accounting conservatism and earnings management in Teheran Stock exchange listed companies. To this aim, the researches selected a statistical sample consisting of 154 companies and gathered statistical data for time period from 1385 to 1390. Using multiple variable combinational regressions, the researchers extracted the proper research model and examined the research hypothesis. The models developed for conservatism and earnings management were respectively book value to market value ratio of the stockholders' equity, and Jones's adjusted model. Primarily, research findings indicated that the models are insignificant and a significant link between conservatism and earnings management does not exist. However, when the researches fitted the examination based on logarithm of conservatism, they found out that there is significant and negative link between conservatism and earnings management.

Keywords: conservatism, earnings management, discretionary accruals

1. INTRODUCTION

Regarded as the basic providers of companies’ resources, investors always require accurate and comprehensive databases from the companies. Accounting information appears in financial statements and investors regularly refer to such information without adjusting into the changes in accounting methods or the way those information were calculated (Hendriksen et al., 1982). Income statements are a key tool among the financial statements for evaluating the performance as well as the profitability of the business enterprise. The information needs to be shared in a way that it enables the investors to evaluate preceding performance and to effectively assess and forecast the profitability of the business enterprise. As a result, the profit reported in the statements helps the investors evaluate the performance and profitability of the firm and fulfill their expectations about their ideal return profit. Therefore, both the reported profit and the qualitative characteristics of the profit mean a lot to the investors (Francis et al., 2004). Earnings management is a means managers take advantage of to manipulate reported profit. It is, in effect, a targeted interference by personal motives of managers in the process of financial reporting to the individuals outside the business enterprise and is achieved by manipulating the information of the current period. In other words, managers let their personal judgments meddle in the process of financial reporting and manipulate the mechanism of transactions to make changes in the financial reports.

Conservatism has been a controversial premise from the outset and plays an important part in the practice of Accounting. A conservative approach defines a level of caution in forecasting the profit; however, it does the same with the possible loss only if it is risk-free for the upcoming cash flow. Preparing conservative financial statements heightens reliability of accounting data and indicates the ability of accounting profit to illustrate financial profit (positive dividend yield) and financial loss (negative dividend yield). Conservative approach stresses on distinguishing between positive and negative dividend yield (financial profit and loss) (Basu, 1997). The notions of profit management and conservatism in accounting have other functions in financial reporting, and each of them solely is capable of influencing immensely the quality of financial reporting and consequently the efficiency of capital market and also the behavior of investors, creditors and in general the
users of financial statements. Therefore, the researchers believe that studying the correlation between these two parameters can be a step forward and contribute significantly to the literature on this subject. The researchers seek to answer the following questions: does conservatism in accounting procedure have any influence on profit management? Is there any correlation of any kind between conservatism and profit management?

2. THEORETICAL FRAMEWORK AND RELATED LITERATURE

2.1. Defining conservatism

Basu (1997) defines conservatism as the necessity to gain high degree of certainty to differentiate between desirable news e.g. profit from undesirable ones e.g. loss. Such a definition views conservatism from a profit/loss standpoint. However, other definitions (Feltham and Ohlson, 1995) examine conservatism in the balance sheets. Based on this, where there is an actual uncertainty in selecting from among a number of reporting methods, that method is preferable which has the least desirable effect on the rights of the shareholders. The third definition (Givoly and Hayn, 2000) combines the two aforementioned methods of balance sheets and profit/loss standpoint. In this third approach, conservatism is defined as an accounting notion and results in a reduction in reported cumulative dividend caused by belated acknowledgement of profit and prompt acknowledgement of expenses, low evaluation of assets and high evaluation of debts. Ryan (2006) draws another category to define conservatism i.e. conditional and unconditional conservatism. Conditional conservatism is obligated by accounting standards. This translates into prompt recognition of the losses in case of any undesirable news and not acknowledging the profit in case of any desirable news. For instance, applying the law of minimum cost or that of net sales value in inventory evaluation is an example of conditional conservatism, also called profit/loss or retrospective conservatism. On the other hand, unconditional conservatism is not obligated by the widely accepted accounting standards. This type of conservatism does not go beyond indicating net book value of the assets through traditional accounting procedures. It is also known as balance sheet or futuristic conservatism.

2.2. Literature Review

Many studies have ever been conducted on topics related to profit management and conservatism. Basu (1997) studied the link between earnings and dividend using regression to estimate the conservatism index.

He realized that in companies whose dividend yield is negative, the dividend yield has higher correlation with earnings compared with companies whose dividend yield is positive. He also found out that in periods of judicial and court trials, conservatism increases. Watts and Zimmerman (1978) hold that companies with higher political costs tend to apply more conservative accounting procedures. Just to prove this fact, Ahmed et al. (2002) showed that big companies apply conservative accounting procedures more than other companies. Their study also revealed that in case of any discrepancies between the interests of the loaners and those of the shareholders concerning distribution of the income, the managers of the borrowing companies are more likely to apply conservative accounting procedures. He also discovered that there is negative relation between conservatism and profit management. In another study (2007), Ahmed concludes that conservative accounting discourages managers from investing on projects with negative return.

In addition, Nikolav (2008) examined the relation between conservative accounting and the limitations of debt covenants. He found out that the more limited the debt covenant is, the more the conservatism grows. This fact had already been reached at in Ball et al. (2007). Watts (2003), believes that if a company's contract with different groups e.g. investors and creditors should be based on accounting figures, then the companies' managers, due to discrepancies between their own interests and those of the groups, will try to unfairly manipulate the figures in their own favor. For example, they may increase the profit or asset and on the other hand decrease the debts. In such cases, conservatism, as an effective regular mechanism, neutralizes the manager's unfair manipulations by postponing the acknowledgement of profit and helping a prompt recognition of the debt and loss. In their research Zhou and Lebov (2006) found out that companies that offer conservative financial statement are able to handle profit management more efficiently. However, as Zhou discovered, such companies normally do not get involved in earning management. Richardson (2005) claims that accrual items have proven to be more reliable and can predict loss and profits of the coming year as well.

Bur Gestaller et al. (2006) concluded in their research that private companies make bigger profits compared with state-run companies and in countries with more efficient judicial system, these companies have a smaller share in profit management. Lafond and Wattz (2007) showed that informational asymmetry between aware and unaware investors gives rise to conservatism in financial statements. Conservatism lowers managers' motive and ability to
manipulate accounting figures and consequently, informational asymmetry and great losses it is responsible for are reduced and the value of the company increases. Moreover, in another study (2008) Lafond and Watz pointed out that conservative financial reporting is part of a regulation system that makes managers less able to manipulate profit and to raise cash flow in the company. Ball and Shivakumar (2006) believe that once the managers realize that they can no longer postpone loss recognition to the coming years, they appreciate conservative accounting since it helps solve potential issues and restricts company’s investments on projects with negative Net Present Value (NPV).

3. THESIS HYPOTHESIS

Based on the primary studies that were already carried out in the field, the hypothesis of the research is as follows: There is a meaningful link between accounting procedures and profit management

4. METHODOLOGY

4.1. Statistical population and sample volume

Statistical population of the present research includes Tehran Stock Exchange listed companies. The statistical sample has been narrowed down using a systematic omission method regarding the following requirements:

1. The business enterprise must not be an investment company, a leasing company or a bank, due to their field of activity
2. The end of fiscal year of the business enterprise must coincide the end of Esfand
3. The business enterprise must not experience a shift in fiscal year during the study period
4. Financial data of the business enterprise must be available during the study period

\[
\frac{TAC_{it}}{TA_{it-1}} = \alpha_{0j} \left(\frac{1}{TA_{it-1}}\right) + \alpha_{3j} \frac{(\Delta REV_{it} - \Delta REC_{it})}{TA_{it-1}} + \alpha_{2j} \left(\frac{PPE_{it}}{TA_{it-1}}\right) + \epsilon
\]

Where, \(TAC_{it}\) = total accruals for company \(i\) in year \(t\); \(TA_{it-1}\) = Lagged total asset for company \(i\); \(\Delta REV_{it}\) = change in operating revenues for company \(i\) in year \(t\); \(\Delta REC_{it}\) = change in net receivables for for company \(i\) in year \(t\); \(PPE_{it}\) = gross property, plant and equipment for company \(i\) in year \(t\); \(\alpha_{0j} - \alpha_{3j}\) = regression parameters; \(\epsilon\) = error term

4.2. Research Methodology

The present study is categorized as a descriptive-exploratory research. It studies the status quo and describes it regularly trying to examine its different features in relation to the variables. Such a research is significant both for applied and theoretical areas. The findings may well be put into use in decision and policy making, and the explorations can contribute substantially to theories since they have been reached at through deductive methods.

4.3. Research parameters

4.3.1. Independent variable

In the present study profit management has been considered as the independent variable. Based on the study, the proper variable to indicate profit management is the accrual items. These items may be subcategorized into non-discretionary and discretionary accrual items. The former is determined by activity levels and is out of the control of the managers; the latter is within the control of the managers and may simply be manipulated. The researchers hold that the residual of accrual items model is a criterion of discretionary accrual items and may be considered as profit management, meaning that after estimating the model and ensuring that its statistical qualities are effective, the residual amount of the model is considered as profit management variable. Dechow et al. (1995) and Guay et al. (1996) argued that Jonse’s adjusted model is the most practical one among the existing models to estimate discretionary accrual items. Because of this, the researchers have applied this model in the present study. The model is formulated as follows:

4.3.2. Dependent variable

Conservatism is the dependent variable in this study. According to other studies ever carried out on the topic (Ahmed et al., 2002; Zang, 2007; Lebov et al., 2008; Jean and Rezaee, 2004) the ratio of book value to the market value of stockholders’ interest has been chosen to represent conservatism. Therefore, if the ratio of book value to the market value of stockholders’ interest is less than one, then it can indicate accounting conservatism.

Considering these requirements, the researchers selected 154 companies for a study period from 1385 until 1390.
4.3.3. Control variables

In this research, variables such as company size, financial leverage and shareholders' dividend yield have been used as control variables in an attempt to control the effects of other factors. Zimmerman (1983) states that, because of more political sensitivities, bigger companies tend to apply conservatism more than other companies. Previous researches prove that we may use common logarithm of total asset at the end of each fiscal period (Derashid AND Zang, 2003) and also logarithm of the total sales income (Zimmerman, 1983) as a criterion to measure a company size. Since the total sales income has direct effect on the profit, it can influence the results of the study in a way that are not desirable, therefore, the researchers have decided that common logarithm of total asset at the end of each fiscal period is an acceptable criterion to indicate the company size. Besides, the study conducted by Chen et al. (2007) proved that companies with lower profitability tend to manage profits more cautiously and effectively. Kowthari et al. also believe that discretionary accrual items are connected with a company's performance which was calculated and evaluated through Return on Equity (ROE).

On the other hand, accounting methods relate to financial leverage, since one of the essential criteria of the creditors in Iran (banks mainly) is the company's debt ratio. Therefore the higher the company's debt ratio is, the less it tends to apply conservative methods. As a result, managers are expected to apply less conservative methods in their financial statements in a bid to minimize the risk that their offer to receive loans from the banks may not be granted, and to stop to be imposed a burden of higher interest rates. Therefore, the researchers have decided that debt ratio represents financial leverage. The ratio is estimated by dividing the total debt by total asset.

4.4. Research model

The following regression model has been applied in the research to study the links between the use of conservatism in accounting procedures and earnings management:

$$EM = \beta_0 + \beta_1 CON + \beta_2 Size + \beta_3 ROE + \beta_4 Lev + e$$

$$\beta_i = \frac{\sum x_i y_i - \bar{x} \bar{y}}{\sum x_i^2 - \bar{x}^2} \quad i = 1,2, ...$$

Where, EM: Earnings management / CON: Conservatism / SIZE: Company's Size / REO: Return On Equity; LEV: Financial Leverage / \(\beta\): fixed parameter / e: error term

5. STATISTICAL METHODS AND TECHNIQUES

Since the objective of the present study is to examine the links between conservatism and earnings management, multiple variable regression models has been used based on mixed method data analysis to test the research hypothesis. In this analysis, the proper models were fitted based on the results from Chow test and Hausman test. To run significant test for the fitted regression model, Fischer statistic was used in 95% assurance level. Respectively, the researchers used T-student statistic to study variable coefficient of regression model; Durbin-Watson test to study autocorrelation among observations; and finally adjusted determining variable statistic to examine how explainable the model is.

6. DATA ANALYSIS AND EXAMINATION OF THE RESEARCH HYPOTHESES

In the present research, the ratio of book value to market value of the stockholders' equity has been considered as a criterion of conservatism in accounting procedures. The reason why such a criterion was chosen was that notable researches such as Ahmad et al. (2002), Zhang (2007) and Lobo et al. (2008) also took advantage of this criterion in their studies. They found out that there is a meaningful negative link between conservatism and discretionary accruals. Jain & Rezae showed in their research that when the ratio of book value to market value of the stockholders' equity is less than one, it can indicate accounting conservatism. Besides, as once mentioned earlier, residual sum of adjusted Jones's discretionary accruals model has been used to estimate earnings management. To examine the research core model, the researchers embedded the variable of book value ratio to market value of the stockholders' equity as an indicator of accounting conservatism as independent variable. On the other hand, they embedded residual sum of adjusted Jones's discretionary accruals model that is the same as discretionary accruals as independent variable to indicate earnings management. Moreover, control variable such as company size, company leverage and return on equity have been exerted to control the undesirable effects.

6.1. Descriptive statistics of research core model variables

Descriptive statistics of research variables include central tendency, variability and distribution indicators. In this research, the relevant data related to mean and median have been presented in category of central tendency, standard deviationin category of
variability, and finally elongation and skewness in category of distribution. Moreover, Jarko-bra statistic and relevant significant level have been presented in this chart to test normality of distribution of research variables. Descriptive statistics of research core model variables have been presented in Table 1.

Table 1: Descriptive Statistics of the Main Model Variables

<table>
<thead>
<tr>
<th>variable</th>
<th>Mean</th>
<th>Median</th>
<th>Standard deviation</th>
<th>Skewness</th>
<th>Elongation</th>
<th>Jarco-bra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Con</td>
<td>0.880815</td>
<td>0.550846</td>
<td>4.854001</td>
<td>22.24455</td>
<td>591.4461</td>
<td>13218915</td>
</tr>
<tr>
<td>Em</td>
<td>-7.49E-19</td>
<td>0.003025</td>
<td>0.233599</td>
<td>-6.818365</td>
<td>154.5776</td>
<td>857948.6</td>
</tr>
<tr>
<td>Size</td>
<td>13.38333</td>
<td>13.17000</td>
<td>1.483872</td>
<td>0.808653</td>
<td>4.018428</td>
<td>137.1351</td>
</tr>
<tr>
<td>ROE</td>
<td>0.405161</td>
<td>0.261357</td>
<td>5.445384</td>
<td>4.407300</td>
<td>131.4621</td>
<td>624521.4</td>
</tr>
<tr>
<td>Lev</td>
<td>0.765846</td>
<td>0.649520</td>
<td>1.332373</td>
<td>15.5463</td>
<td>288.6741</td>
<td>624521.4</td>
</tr>
</tbody>
</table>

The observations indicate that in average, book value of the sample companies is about 88% of their market value. As mentioned earlier, Jain & Rezaee believe that when the ratio of book value to market value of the stockholders' equity is less than one, it can indicate accounting conservatism. Since this ratio is below one in the sample companies, therefore on may conclude that conservative accounting exists in these companies. The ratio for half of the companies is above 0.55 and for the second half it is below 0.55. According to the observations, earnings management in the sample companies is on average -7.49E-19. The negative mark implies that the companies either have adopted an earnings reduction policy or have not taken any measure at all to manage the earnings. However, this does not suggest any lack of earnings management in those companies. This might be due to the fact that the average accrual items are negative. These items have already been referred earlier in this paper. In other words, companies on average possess negative accrual items.

The mean size of the sample companies according to asset logarithm is 13.38. The median of this variable decreased by 0.21 unit and amounted to 13/17. Mean ROE of the sample companies are 40.5 percent, which means that net profit is on average 40.5 percent of shareholders' equity. In half of the companies the equity is above 26 percent and in the other half it is below 26 percent. The observations suggest that the sample companies' debts make up an average of 76.5 percent of their assets. In half of the companies, this ratio is above 65 percent and in the other half it is less than 65 percent. All the research variables have positive skewness except for earnings management indicator. Positive skewness implies that distant samples from central tendency indicator are located on the right domain of the measurement scale. When earnings management indicator has negative skewness then distant samples from central tendency indicator are located on the left domain of the measurement scale. Besides, all the research variables have positive elongation which means that variable distribution curve is longer than normal distribution curve. As Jarco-Bra statistic and its corresponding significant level suggests, not all the research variables have normal distribution.

6.2. Examining correlation among the research variables

In this section, researchers examine the correlation among the core model variables of the research applying Pearson correlation coefficient. Table 2 presents correlation coefficient matrix.

Table 2: Correlation coefficients between the variables of the main model

<table>
<thead>
<tr>
<th></th>
<th>con</th>
<th>Size</th>
<th>ROE</th>
<th>Lev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Con</td>
<td>1.000000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.003540</td>
<td>1.000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>0.9175</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>-0.010421</td>
<td>-0.043804</td>
<td>1.000000</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>0.7604</td>
<td>0.1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lev</td>
<td>-0.025484</td>
<td>0.068145</td>
<td>-0.017358</td>
<td>1.000000</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.4557</td>
<td>0.0459</td>
<td>0.6114</td>
<td></td>
</tr>
</tbody>
</table>

As the table shows, the only significant correlation regarding level of significance of correlation coefficient among the variables (below 0.05) is the correlation between size and leverage, being about 0.068. This means that the correlation is affirmative; however, the correlation intensity between them is evaluated as weak. Therefore, applying the variables
to the model at the same time will not cause any interference concerning collinearity.

6.3. Examination of research core models

6.3.1. Examining the model on links between conservatism and earning management

The researchers primarily examined required tests in each case to select a proper pattern. According to F statistic of Chow test and the sum of related probability (above 0.05) the model lacks required effects. Since this test does not recommend applying mixed data along with the effects, therefore there is no need to Hausman test and the model is immediately fitted. The results are presented in Table 3.

<table>
<thead>
<tr>
<th>Test type</th>
<th>Sample statistic</th>
<th>Statistic quantity</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow test</td>
<td>F</td>
<td>0.008238</td>
<td>153,723</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Table 4: Estimating the model of relation between conservatism index and earning management

<table>
<thead>
<tr>
<th>Dependent variable: discretionary accruals</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>T statistic</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>The width of source: (α₀)</td>
<td>0.000168</td>
<td>0.002285</td>
<td>0.073643</td>
<td>0.9413</td>
</tr>
<tr>
<td>BV to MV ratio</td>
<td>-0.000345</td>
<td>0.000080</td>
<td>-0.431327</td>
<td>0.6663</td>
</tr>
<tr>
<td>Fischer statistic:</td>
<td>0.083745</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of Fisher’s Statistic:</td>
<td>0.772354</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results from model estimation indicate that t-statistic and its relevant probability show lack of (α₀) significance and book value to market value ratio in the model. In other words, there is no evidence that there is significant link between conservatism and earnings management. The adjusted R² model statistic indicates that conservatism cannot explain earning management efficiently. Since all the findings suggested the inefficiency of the model to explain the link between conservatism and earnings management, once again another model was fitted based on logarithm of book value to market value ratio. In other words, logarithm of book value to market value ratio has been considered as a criterion of conservatism. To select a proper pattern, the researchers examined required tests in each case. According to F statistic of Chow test and the sum of related probability (above 0.05) the model lacks required effects. Since this test does not recommend applying mixed data along with the effects, therefore there is no need to Hausman test and the model is immediately fitted. The results are presented in Table 5. Table 6 introduces the results of model estimation using combinational method without exercising the effects.

6.4. Testing the model of links between conservatism and earning management

As it was earlier mentioned, to examine the links between the variables more closely, another model was fitted based on logarithm of book value to market value ratio. In other words, logarithm of book value to market value ratio has been considered as a criterion of conservatism. To select a proper pattern, the researchers examined required tests in each case. According to F statistic of Chow test and the sum of related probability (above 0.05) the model lacks required effects. Since this test does not recommend applying mixed data along with the effects, therefore there is no need to Hausman test and the model is immediately fitted. The results are presented in Table 5. Table 6 introduces the results of model estimation using combinational method without exercising the effects.

<table>
<thead>
<tr>
<th>Test type</th>
<th>Sample statistic</th>
<th>Statistic quantity</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow test</td>
<td>F</td>
<td>0.992227</td>
<td>153,698</td>
<td>0.5139</td>
</tr>
</tbody>
</table>

Table 5: The Results of Choosing a Model for Model Test of Correlation between conservatism and earning management

<table>
<thead>
<tr>
<th>Dependent variable: discretionary accruals</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>T statistic</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>The width of source: (α₀)</td>
<td>-0.003538</td>
<td>0.002619</td>
<td>-1.350927</td>
<td>0.1771</td>
</tr>
<tr>
<td>BV to MV ratio</td>
<td>-0.005332</td>
<td>0.002352</td>
<td>-2.267174</td>
<td>0.0236</td>
</tr>
<tr>
<td>Fischer statistic:</td>
<td>4.641173</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of Fisher’s Statistic:</td>
<td>0.031494</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Estimating the model of correlation between conservatism index and earnings management
Regression equation extracted from model estimation is as follows:

\[
EM = -0.003538 - 0.005332*LNCONS
\]

Having studied the results from model estimation, the researchers found out that t statistic and its related probability (less than 0.05) indicates significance of conservatism (logarithm of Book value to market value ratio). Negative coefficient of the variable proves that it has negative and significant effect on the model. This means that there exists a negative and significant link between conservatism and earnings management. In other words, the higher the conservatism index becomes, the less the earnings management is exercised, and vice versa. \((\alpha_0)\), however, does not influence the model significantly. Adjusted R\(^2\) statistic of the model indicates that only 1.4 percent of the earnings management may be explained via conservatism. Of course, coefficient of explanation of the model is too low. One may conclude that the model is poorly explainable. Durbin-Watson statistic of the model suggests that the remaining model is still independent.

6.5. Testing the model of links between conservatism and earning management along with control variables

To control the undesirable effects, researchers involved other variables such as company size, company leverage and performance as control variables. First, Chaw and Hausman test were used to select a proper model. The results of these tests have been presented in Table 7. According to F statistic of Chaw test and the sum of related probability (below 0.05) the model carries the required effects. Again, with regard to X\(^2\) statistic of Hausman test the related sum of the probability (higher than 0.05) the model contains random effect. Table 8 introduces the results of model estimation using random method.

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Sample Statistic</th>
<th>Statistic Quantity</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow Test</td>
<td>F</td>
<td>1.423763</td>
<td>153,658</td>
<td>0.0018</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>(X^2)</td>
<td>7.972217</td>
<td>4</td>
<td>0.0926</td>
</tr>
</tbody>
</table>

Table 8: Estimating the model of correlation between conservatism index and earning management at the presence of the control variables

<table>
<thead>
<tr>
<th>Explanatory variable</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>T statistic</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>The width of source ((\alpha_0))</td>
<td>0.0222000</td>
<td>0.028989</td>
<td>0.765811</td>
<td>0.4441</td>
</tr>
<tr>
<td>BV to MV ratio</td>
<td>-0.028492</td>
<td>0.013198</td>
<td>-2.158818</td>
<td>0.0312</td>
</tr>
<tr>
<td>size</td>
<td>-0.003145</td>
<td>0.001755</td>
<td>-1.792030</td>
<td>0.0736</td>
</tr>
<tr>
<td>ROE</td>
<td>4.72E-05</td>
<td>0.000508</td>
<td>0.092848</td>
<td>0.9261</td>
</tr>
<tr>
<td>Lev</td>
<td>0.012039</td>
<td>0.002036</td>
<td>5.913195</td>
<td>0.0000</td>
</tr>
<tr>
<td>Fischer statistic:</td>
<td>1.418300</td>
<td>Adj Coefficient of explanation statistic:</td>
<td>0.074572</td>
<td></td>
</tr>
<tr>
<td>Fischer statistical probability:</td>
<td>0.001843</td>
<td>Durbin-Watson statistic:</td>
<td>1.714347</td>
<td></td>
</tr>
</tbody>
</table>

Regression equation extracted from model estimation is as follows:

\[
EM= 0.0222 – 0.028492 * Ln Cons – 0.003145 * Size + 4.72E-05* ROE + 0.012039* Lev+ [CX=R]
\]

Having studied the results from model estimation, the researchers found out that F statistic and its related probability (less than 0.05) indicates significance of the whole model. Negative coefficient of the variable proves that it has negative and significant effect on the model. This means that there exists a negative and significant link between conservatism and earnings management. In other words, the higher the conservatism index becomes, the less the earnings management is exercised, and vice versa. \((\alpha_0)\), however, does not influence the model significantly. T statistic and the related probability (less than 0.05) indicates significance of leverage variable. Positive coefficient of the variable proves that it has Positive and significant effect on the model. In other words, the higher the leverage (debt to asset ratio) becomes, the more the earnings management is exercised, and vice versa. T statistic and the related probability (more than 0.05) indicates lack of significance of size and ROE variables. However, size variable up to 10 percent error has negative significance on the model. In this case, as the size increases (assets logarithm) earnings management increases, and vice versa.

6.6. Testing the model of links between conservatism and earning management along with significant control variables

In this model, researchers involved only company size variable, since it had significant effect on the model. First, Chaw and Hausman test were used to select a proper model. The results of these tests have been presented in Table 9. According to F statistic of Chaw
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test and the sum of related probability (below 0.05) the model carries the required effects. Again, with regard to X^2 statistic of Hausman test the related sum of the probability (lower than 0.05) the model lacks

The findings also indicate that leverage logarithm of book value to market value ratio is significant. Negative coefficient of this variable indicates negative and significant effect of the variable on the model. In other words, the higher the conservatism index becomes, the less the earnings management is exercised, and vice versa. T statistic and the related probability (less than 0.05) indicates significance of leverage variable. Positive coefficient of the variable proves that it has Positive and significant effect on the model. In other words, the higher the leverage (debt to asset ratio) becomes, the more the earnings management is exercised, and vice versa. Adjusted R^2 statistic of the model indicates that about 57.2 percent of the earnings management may be explained via conservative variables in relation to leverage control variable. It is noteworthy that coefficient of explanation of the model has increased dramatically compared with prior models, to the extent that the model is explainable more than 50 percent.

### Table 9: The Results of Choosing a Model for Model Test of Correlation between Earnings Management and Earnings

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Sample Statistic</th>
<th>Statistic Quantity</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow Test</td>
<td>F</td>
<td>1.457958</td>
<td>153,683</td>
<td>0.0009</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>X^2</td>
<td>8.323279</td>
<td>2</td>
<td>0.0156</td>
</tr>
</tbody>
</table>

Regression equation extracted from model estimation is as follows:

\[ EM = -0.020441 - 0.029073*\text{Ln Cons} + 0.010837*\text{Lev} = [\text{CX=F}] \]

Having studied the results from model estimation, the researchers found out that F statistic and its related probability (less than 0.05) indicates significance of the whole model. T statistic and the related probability (less than 0.05) indicates significance of conservatism (logarithm of book value to market value ratio) Negative coefficient of the variable proves that it has negative and significant effect on the model. This means that there exists a negative and significant link between conservatism and earnings management. In other words, the higher the conservatism index becomes, the less the earnings management is exercised, and vice versa. T statistic and the related probability (less than 0.05) indicates significance of the width of source, however, it influences the model negatively and significantly. T statistic and the related probability (less than 0.05) indicates significance of leverage variable. Positive coefficient of the variable proves that it has Positive and significant effect on the model. In other words, the higher the leverage (debt to asset ratio) becomes, the more the earnings management is exercised, and vice versa. Adjusted R^2 statistic of the model indicates that about 57.2 percent of the earnings management may be explained via conservative variables in relation to leverage control variable. It is noteworthy that coefficient of explanation of the model has increased dramatically compared with prior models, to the extent that the model is explainable more than 50 percent.

### Table 10: Estimating the model of correlation between conservatism index and earnings management along with significant control variables

<table>
<thead>
<tr>
<th>Explanatory variable</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>T statistic</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>The width of source (t_{01})</td>
<td>-0.020441</td>
<td>0.002852</td>
<td>-7.167389</td>
<td>0.0000</td>
</tr>
<tr>
<td>BV to MV ratio</td>
<td>-0.029073</td>
<td>0.003773</td>
<td>-7.706612</td>
<td>0.0000</td>
</tr>
<tr>
<td>Lev</td>
<td>0.010837</td>
<td>0.000666</td>
<td>16.26696</td>
<td>0.0000</td>
</tr>
<tr>
<td>Fischer statistic:</td>
<td>8.231768</td>
<td>Adjusted coefficient of explanation statistic:</td>
<td>0.572214</td>
<td></td>
</tr>
<tr>
<td>Fischer statistical probability:</td>
<td>0.000000</td>
<td>Durbin-Watson statistic:</td>
<td>2.238676</td>
<td></td>
</tr>
</tbody>
</table>

7. CONCLUSION

With regard to the tests that were run, the findings indicate that the whole model lacks significance. Book value to market value ratio lacks significance, as well. This means that no significant link was explored between conservatism and earnings management. Since all the cases that were examined showed inefficiency of the model, therefore another model was fitted based on logarithm of book value to market value ratio. This time the findings proved that the whole model as well as logarithm of book value to market value ratio is significant. Negative coefficient of this variable indicates negative and significant effect of the variable on the model. Afterwards, to control undesirable effects, other variables such as company size, company leverage and ROE were also involved in the study. Having fitted the model, the researchers found out that the whole model as well as logarithm of book value to market value ratio is significant. The findings also indicate that leverage variable is significant, since positive coefficient of the variable signifies its positive and significant effect. Next, the final model was fitted applying the leverage, a significant control variable. Eventually, the final findings of the study proved that the whole model as well as logarithm of book value to market value ratio is significant. Adjusted coefficient of determination of the model indicates that about 57.2 percent of earnings management by conservatism is explainable using leveraging control variable.

7.1. Research implications

(1) As it was once mentioned in the descriptive statistics chapter, the observations showed that on
average, book value of the sample companies are less than their market value. That the ratio of book value to market value of the stockholders' equity is below one indicates accounting conservatism is very likely to be there. Since this ratio is below one in sample companies, therefore one may rightly conclude that accounting conservatism is being exercised in these companies. The researchers recommend the possible users to refer to the findings and take this matter into their consideration when making financial decisions.

(2) Since there is a negative and significant link between conservatism and earnings management, it is expected that as conservatism increases, earnings management decrease. In some instances in which earnings management takes a negative aspect, the negative and significant link between conservatism and earnings management can stop manipulating the earnings. Therefore, analysts and possible users of the research findings are recommended to take this matter into consideration when making financial decisions.

7.2. Suggestions for further research

(1) The researchers suggest a similar study with an emphasis on the notion of earnings quality.
(2) The researchers suggest that links between conservatism and income smoothing be studied.
(3) The researchers suggest that links between conservatism and diverse features of time series of profit such as profit stability, profit predictability and the like are studied.

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management. Journal of Accounting Research, 45(3).
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