Investigating the Influence of Accounting Conservatism on cost of debt in the listed Companies in Tehran Stock Exchange (TSE)

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ABSTRACT

This study aims to investigate the effect of conditional and unconditional conservatism on the cost of debt of specified companies including 228 listed companies in TSE during 2006 to 2013. The research results indicate that the unconditional conservatism has got a significant relationship with cost of debt. Furthermore the bigger companies have higher financial expenses and more systematic risk and less cost of debt. Financers pay more attention to unconditional conservatism and its consequences on companies. This may be because of intrinsic performance of conservatism in reducing profit and value of assets. Finally according to the research results, managers of the mentioned companies are not interested in implementing conditional conservatism procedures.

INTRODUCTION

Basu 2, defined conservatism as follows: conservatism is defined as the diversified verification required for recognition of income and expenses, leading to manifestation of less profit and assets. This definition refers to conditional conservatism. In recent studies, conservatism is divided into two types: the first type is unconditional (pre-event) conservatism, which is a conservatism independent from news. Pre-event conservatism is derived from application of that category of the accounting standards that reduce profit in a way independent from current economic news. An example of this type is the immediate recognition of advertisement expenditures and research and development as expense, even if their future expected cash flow is positive [6]. The other type of this concept is postevent conservatism, which is also known as news based conservatism, conditional conservatism and asymmetric timeliness of earnings. Post-event conservatism is defined as timely recognition of bad news in comparison with good news in the revenue.

In his paper about conservatism in accounting, Watts argues: since the financers are more interested in unfavorable risks compared to desirable potential of the company’s performance, the debt contracts is considered as one of the most important elements of demand for conservatism. Regarding the relation of debt contracts with selecting the accounting procedures, there exist two alternative theories. The first theory, which is also known as conventional debt theory, discusses that the managers are motivated to choose perky (non-conservative) accounting procedures. The reason for this is that the debt contracts usually have defined terms and conditions connected to accounting variables (for example the minimum rate of determined debt), the breach of which shall lead to incurring of costs on the company. The accounting procedures that increase revenue are useful in preventing the violation of these terms. The second theory states that the managers can utilize non-conservative in order to increase profit and make efforts to make the company look less risky from the financers’ points of view, which issue will reduce the interest rate expected by the financers and will reduce the contract expenses. Moreman showed that the debt contracts, will determine specific conservative accounting procedures and in this way limits the management’s exclusive power for changing the accounting procedures. In other words, debt contracts are one of the factors that create demand for conservative accounting [15] [12].

Generally, the evidences indicate positive and efficient effects of conservatism in order to preserve the interests of the providers of resources (investors and financers) of the stock companies. So, it is expected that financing in the companies who implement conservative procedures in financial reporting, is carried out with less costs and time compared to other companies. In other words, it is anticipated that the more conservative companies have cheaper access to financial resources. This is due to the trust of providers of financial resources
for these types of companies, and their inclination towards development of their investments in them. The issue of ambiguity and non-confidence is one of the subjects with plenty of applications in many accounting issues due to the uncertainty of the estimates and implementation of professional judgment. Based on the above discussions, the main issue of the present research could be discussed as follows:

1) How does accounting conservatism affect the cost of debt of companies?
2) Which part of the cost of the company’s debt is more influenced by accounting conservatism?

Literature Review:
Basu1 studies the effect of conservatism on financial statements. He discusses that conservatism in accounting is more timely recognition of bad news compared with good news. More timely recognition of bad news indicates that the profit compared to the negative return is more sensitive compared with positive returns at any time (simultaneously), which sensitivity is measured by the slope of the inverse regression line of profit to return. On the other hand, when recognizing the good news in financial statements, the accrual items and cash flows do not have difference with each other [6].

Watts believes that if the company’s contracts with different groups like investors and financiers are prepared based on the accounting figures, then due to existence of conflict of interests between the managers and those groups, the company’s managers will try to manipulate those figures to their own benefit, by carrying out supportive behaviors. In the meantime, conservatism, as an effective contractual mechanism neutralizes the manager’s supportive behavior through delaying the recognition of profit and assets and timely recognition of losses and debts [15]. Schipper and Francis2 conducted a research with regard to the relation between conservatism and financial expenses. The results show the existence of a negative relation between conservatism and financial expenses. They showed that the conservatism has been able to reduce the costs of financing the companies [13].

Bauwhede studied the role of accounting conservation in the debt contracts through studying the effect of conditional and unconditional conservatism on the credit rank of American companies. In his study, he reasoned that the financiers reward the conditional conservatism and show negative reaction to unconditional conservatism in return. In line with confirming these expectations, the results of the research revealed that the credit rank of the companies with higher conditional (unconditional) conservatism, is significantly higher (lower) and the cost of their debt is thus less (more) than other companies.

Beatty, Weber and Yu3 studied the conservative conditions included in the debt contracts; they argued that when the costs of debt representation is higher, these contractual terms are used more often. However, their evidences indicated that the contractual terms do not meet the demand of the financiers for conservatism alone, and thus in order to reduce the costs of debt representation, we need to use the conservative accounting as well [9].

Zhang4 studied the advantages of conservative accounting for the parties to the debt contracts. His findings reveal that in case of the inclusion of conditions for conservative accounting in debt contract, and if the financiers breach these conditions, the financiers shall enjoy such advantages like making the debt become due in an earlier time and imposing penalty resulted from the breach of credit receivers. On the other hand, the credit receivers also claim less interest rate from the companies who use the conservative accounting and the borrowers benefit from such advantages like lower interest rate paid resulted from reduced expenses of debt representation [16].

Sunder, Sunder and Zhang5 studied the effect of conservatism in debt contracts. The results of their research indicate that there is a direct relation between conservatism and the level of debt [14]. On the other hand,

Lafond and Watts found out that the accounting conservatism reduces the asymmetry of information. They concluded that the asymmetry of information between the people inside and outside of the company will lead to demanding conservatism in preparation of financial statements [10].

Shahriari studied the relation between the political costs on the degree of conservatism implemented by the companies listed at Tehran Stock Exchange. He studied the relation between seven variables including size, degree of competition in industry, intensity of investment, risk, public ownership, tax effective rate and centralization of ownership with conservatism and the results of his research shows that with increasing of the size, the conservatism will decrease. Also there is a direct relation between the degree of competition in industry and public ownership with the conservatism. In this study, no significant relation was observed between the variables of risk and tax effective rate with conservatism, also no significant relation was discovered between the intensity of investment and centralization of ownership with conservatism and there is a negative relation between the intensity of investment and centralization of ownership with conservatism [2].

Theoretical Fundamentals and Development of Research Hypotheses:
Based on the theory of demand for financial reporting, the degree of conservatism implemented in the financial reporting is considered by the users of these reports. Beaver & Ryan1 set forth the two concepts of
conditional and unconditional conservatism. Conditional conservatism (retrospective or associated with good
and bad news) means that the net carrying amount of assets is reduced in unfavorable conditions; but is not
increased under desirable conditions.

Using the lower of cost and market value for inventory of goods and short-term investments and reduction
of the value of long-term assets and intangibles are examples of conditional conservatism. The main drive for
conditional conservatism is when in the incentives of the managers for more actual reporting of accounting
figures and values a balance is created under undesirable conditions [8]. This type of conservatism is demanded
by lenders and financiers.

Their motivation from application of conservatism is to become certain that their investment shall be
protected in a desirable manner. Hence, underestimation of net equity is desirable for this group of the users of
financial statements, as it causes a safe margin for loans. Accordingly, the first main hypothesis of research is
developed as follows:

Main Hypothesis:
There is a significant negative relation between conditional conservatism and the cost of debt of companies.
1-1 there is a negative and significant relation between the rate of financial expenses coverage with the cost
of debt of companies.
There is a negative and significant relation between the size of the companies and the cost of their debt.
There is a direct and significant relation between unconditional conservatism and the cost of debt of companies.
2-1 there is a direct and significant relation between the financial lever of companies and the cost of their
debts.
2-2 there is a direct and significant relation between the systematic risk of the companies and the cost of
their debts.

Research Variables and Their Measurement:
Dependent Variable:
The dependent variable of the present research is the cost of debt of the company. In order to calculate the
cost of debt in this research, the ratio of financial expenses over the total long-term and short-term facilities
received is used. This type of calculation provides the possibility that in any of the statistical sample companies
during the research years, the ratio of the cost of debt is obtained in proportion to the facilities received.

\[
\text{Cost of Debt} = \frac{\text{Financial expense}}{\text{total loan}}
\]

Independent Variables:
Independent variables of the present research include conditional and unconditional conservatism in
accounting, financial expenses coverage index, financial lever index, the size of the company and systematic
risk of the company’s shares. In the meantime, the conditional and unconditional conservatism in accounting, is
the main independent variable of the research. The independent variables of the research are calculated and
estimated as follows:

Measurement of Conditional and Unconditional Accounting Conservatism:
In the accounting literature, there are many methods presented and used for measuring the level of
conservatism. According to Basu Conservatism is applied in the concept when the accountants must report the
minimum possible amount for assets and revenues and the maximum possible amount for debts and costs [6].
Basu used the capital market information in order to estimate the degree of conservatism and compared the
reaction of accounting profit with the good and bad news related to the company’s shares. Unconditional
conservatism is independent from good and bad news and is based on the accounting conservatism procedures.

Based on the Basu model, the conditional and unconditional conservatism is measured as follows:

\[
NI_{it} = \beta_0 + \beta_1RD_{it} + \beta_2RD_{it} + \beta_3RD_{it} * RD_{it} + \delta_{it}
\]

\(NI:\) Net income before exceptional items divided by the market value of the shareholders’ equity at the
beginning of the fiscal period.

\(RD:\) is a virtual variable and is equal to one for those companies with negative yield and zero for other
companies.

\(R:\) Annual return of the company’s shares

In this model, if \(\beta_3\) is not zero and positive, it indicates the volume of conservatism, which is calculated for
individual companies separately each year.( \(\beta_2 + \beta_3\) is the reaction of income against bad news and since
\(\beta_2 + \beta_3 > \beta_2\), so \(\beta_3\) is positive and it is the earnings asymmetric timeliness coefficient, which is a criterion for
conditional conservatism [6]. In order to obtain the level of unconditional conservatism, the \(\beta_0 + \beta_1 * LF\) is
used. This criterion was presented and used by Ball, et la2. In the above criterion, \(\beta_0\) and \(\beta_1\) are the
coefficients obtained from the Basu Model fitness. LF means the frequency of bad news or loss and it is calculated through the average of virtual variable RD for individual statistical sample companies during the study period [5].

Control Variables:

Calculating the Financial expenses Coverage Index:
This index is obtained through dividing the operating income over the financial expenses and it shows that how many times a company with the operating income resulted from its main and normal activities can pay the financial expenses of the fiscal period.
\[ \text{INTCOV} = \frac{\text{Operating Income}}{\text{Financial expenses}} \]

Size of the Company:
The researchers have considered various criteria for the size of the companies. In this research, in order to insert the size of the companies in the hypothesis test model, the assets general ledger value logarithm is used.
\[ \text{Size}_{i,t} = \ln (\text{Assets}_{i,t}) \]

Financial Lever:
The ratio of debts to assets is used as a criterion to determine the structure of capital in companies. This criterion, known as financial lever, is considered as an index for the company’s financial risk and also its ability to pay debts.
\[ \text{Lev} = \frac{\text{Total Liabilities}}{\text{Total assets}} \]

Beta Coefficient (Systematic Risk Index):
The systematic risk index reflects the relation between the changeability of the return of company’s shares with changeability of the return of the stock market. In this research, in order to calculate the Beta Coefficient, the following equation is used [4]:
\[ \beta_i = \frac{\text{Cov} (R_{it}, R_m)}{\text{Var} R_m} \]

In which:
Rit: is the return of total shares of the company I in the period t; and Rm is the return of the stock market in the period t.

Statistical Population and Research Sample:
In present research in order to test the research hypotheses, the classified and audited financial data of the companies listed at Tehran Stock Exchange has been used. In order to select a suitable statistical sample, the systematic elimination sampling method has been used.
The reason for using this method is to harmonize the statistical sample with the whole population and the possibility to generalize the results obtained from the tests to the statistical population. The conditions set for selecting a statistical sample are as follows:
1) The company is not an investment company or financial dealer,
2) The fiscal year of the company ends on March 20th,
3) The company has not changed its fiscal year during the study period.
4) The company’s transaction symbol has not been transferred to the Stock Exchange unofficial signboard.
Following the implementation of the conditions and considerations in the systematic elimination sampling, 104 companies were selected from the statistical population for testing. In this sample, the study period was set for 8 consecutive years. So the final volume of the sample is 832 year-company (8 X 104).

Testing the First Hypothesis:
In the first hypothesis, it is predicted that the conditional conservatism, will reduce the cost of debts of the companies. This hypothesis has got two subsidiary hypotheses in which a similar prediction is made for the variables of size and the ratio of financial expenses coverage in the subsidiary hypotheses of the first hypothesis. In order to test these relations a regression model in which the cost of debt is a function of conditional conservatism, the size of the company and the ratio of expenses coverage is used. This model was used by Bauwhede 1 in 2007 and is as follows:
\[ \text{CRD}_{it} = \beta_0 + \beta_1 \text{C-CONS}_{it} + \beta_2 \text{INTCOV}_{it} + \beta_3 \text{SIZE}_{it} + \epsilon_{it} \]
in which:
CRD: is the cost of company’s ratio of debt,
Testing the Second Hypothesis:
In the second hypothesis, it is predicted that the conditional conservatism, will increase the cost of debts of the companies. This hypothesis has got two subsidiary hypotheses in which a similar presumption is made for the variables of financial lever and the beta coefficient. In order to test these relations a regression model in which the cost of debt is a function of unconditional conservatism, financial lever and the beta coefficient is used. This model was used by Bauwhede 2 (2007) and is as follows:

\[ CRD_{it} = \beta_0 + \beta_1 UC-CONS_{it} + \beta_2 LEV_{it} + \beta_3 BETA_{it} + \epsilon_{it} \]

in which:

- CRD: is the cost of company’s ratio of debt,
- UC-CONS: is the level of unconditional conservatism,
- LEV: is the ratio of company’s financial lever
- BETA: is the company’s systematic risk

Considering the anticipations set forth in the first main hypothesis and its subsidiary hypotheses, it is expected that the coefficients \( \beta_1, \beta_2 \) and \( \beta_3 \) are positive and significant [7].

Results of testing the first hypothesis:
In order to test the first hypothesis, a regression model in which the cost of debt is a function of conditional conservatism, the ratio of financial expenses cover and the size of the companies is used. The results of fitness of the said model is presented in Chart 1.

The results show that the regression adjusted determination coefficient is 0.181 and this model has been able to define 18.1 percent of the changes in dependent variable through changes of the independent variables. The Durbin-Watson static is among 1.5 to 2.5, so there is no correlation between the errors of its regression model. Also the level of significance of Static F, is less than 0.05, and so in terms of statistics, the estimated regression is significant and the relations between the study variables are linear.

The second part of Chart 1 illustrates the results of statistical analysis for the coefficients of independent variables of regression model. These results show the type, intensity and significance of the relation between each of the independent variables inserted in the regression model with the dependent variable. The statics of this test for all variables are very close to 1, and they reject the hypothesis for existence of co-linearity among the independent variables of the regression model. Based on the above findings, the fitted regression is statistically valid and significant, based on which we can make decisions about the relation among variables.

Based on the results obtained from the statistical analysis for the coefficients of independent variables, the coefficient obtained for variable C-CON, which shows the relation between the conditional conservatism and the cost of debt, is not statistically significant, because its degree of significance is higher than 0.05. The coefficient estimated for the variable of ratio of financial expenses coverage is -0.425, with the significance of 0.000, which issue indicates a negative and significant relation between the ratio of financial expenses cover with the cost of debt. Also the coefficient estimated for the variable of the size of the company is 0.059 and its level of significance is 0.072, which shows a negative relation between this variable with the cost of debt, but this relation at the level of security of 90% is significant.

Based on the above findings, the first hypothesis is rejected, because no significant relation was observed between the conditional conservatism and the cost of debt.

The first subsidiary hypothesis and the second subsidiary hypothesis are accepted at the security level of 95% and 90%, respectively, as the relation between the cost of debt and the ratio of the expenses coverage and the size of the company is significant.

Chart 1: the Results of Statistical Analysis for First Hypothesis Test

<table>
<thead>
<tr>
<th>Level of Significance F</th>
<th>Static F</th>
<th>Durbin-Watson Static</th>
<th>R2, Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.57474</td>
<td>0.181</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variance Inflation Factor</th>
<th>Tolerance</th>
<th>Level of Significance (P-value)</th>
<th>Static T</th>
<th>Size of Coefficient ( \beta ) (Standardized)</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0.000</td>
<td>-13.005</td>
<td>-0.425</td>
<td>INTCOV</td>
</tr>
<tr>
<td>1</td>
<td>0.999</td>
<td>0.072</td>
<td>-1.804</td>
<td>-0.059</td>
<td>Size</td>
</tr>
</tbody>
</table>
Results of Testing the Second Hypothesis:

In order to test the second hypothesis, a regression model in which the cost of debt is a function of unconditional conservatism, the financial lever and the systematic risk of the company’s shares was used. The results of the fitness of the said model are shown in Chart 2.

<table>
<thead>
<tr>
<th>Level of Significance F</th>
<th>Cost of Debt Model</th>
<th>Durbin-Watson Static</th>
<th>R2, Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.008</td>
<td>13.745</td>
<td>1.86</td>
<td>0.119</td>
</tr>
</tbody>
</table>

As you can see, the results show that the adjusted determination coefficient of the fitted regression has explained 11.9% of the changes in the dependent variable through the changes in independent variables. Durbin-Watson static ranges between 1.5 and 2.5; therefore, there is no self-correlation between the regression model errors. Furthermore, the significance level of the Static F is lower than 0.05 which indicates that the fitted regression model is generally significant and at least one of the input independent variables has had a significant effect on the dependent variable.

Collinear statics for all variables are very close to 1, and they strongly reject the presumption of any collinear relation between the independent variables of regression model. Considering the above findings, the fitted regression is statistically reliable and significant and decisions can be made based on it concerning the relations between the variables.

Based on the results obtained from statistical analysis for the coefficients of independent variables, the obtained coefficient for each unconditional variable, which shows the relation between unconditional conservatism and cost of debt, is 0.071 with a significance level of 0.05. This finding indicates a direct and significant relation between the cost of debt and level of unconditional conservatism and is consistent with the claim set forth in the second main hypothesis. Significance level of the estimated coefficient for the variable LEV is higher than 0.05 and shows that there is no significant relation between the cost of debt and financial lever of companies. The results also show that the obtained coefficient for Beta variable is -0.084 with a significance level of 0.021 which indicates a reverse and significant relation between the cost of debt and the systematic risk of shares for statistical sample companies. Although a significant relation has been proved between the said two variables, the type of relation is inconsistent with the claim set forth in the hypothesis since the relation of the variables was expected to be direct.

Based on the above findings, the second main hypothesis and the claim set forth therein, indicating a direct and significant relation between unconditional conservatism and cost of debt, are accepted with a reliability level of 95%. Furthermore, both subsidiary hypotheses are rejected considering the obtained results.

Results:

Generally, the present study focuses on the useful and positive aspects of conservatism. It has also been argued in this study that accounting conservatism may affect the cost of debt for non-profit firms. The results obtained from testing the first main hypothesis showed that the conservative approach of managers of corporations in reporting the profit did not attract the trust of lenders. In this regard, Bauwhede proved that the cost of debt for the companies with high conditional conservatism was lower in comparison with other companies. Moreover, test result of the first hypothesis is not consistent with the claim set forth therein. Statistical sample companies had probably little tendency in applying conditional conservatism during the study period and bad news relevant to the company was not promptly and accurately reflected in the reported profit. On the other hand, conditional conservatism is caused by the specific approach of each manager in identification and reflection of company-related bad news in the financial reports. Since the lenders are people from outside of the company, they are likely to have no information of such news and as a result, its reflection or non-reflection had no significant importance for such group of users.

Furthermore, the results of statistical tests show that there is a direct and significant relation between the cost of debt and unconditional conservatism. The said finding is consistent with the results of studies made by Ball and Shikumar and Bauwhede [4] [7]. According to the investors and lenders, companies that yield high profits could be suitable places for investment since it is likely that such companies can better meet the expectations of capital suppliers. A higher profit means a higher return for investors and a lower risk for lenders in settlement of the loans granted. This is while the companies in which conditional conservatism procedures have been addressed more had probably faced more problems in the operational field. For example, the value of their products shows higher decrease.
Therefore, higher unconditional conservatism can be attributed to some of the in-house events in the company that lead to a reduced profit which in turn results in negative response of capital financers and increased cost of debt for the companies with high unconditional conservatism.

**Recommendation Following the Study Results:**

The results of the present study generally indicate that accounting conservatism may not be useful for reducing the cost of debt for companies. They also indicate that even the procedures of unconditional conservatism will increase such costs. Considering these findings, lenders are recommended to track the bad news related to the corporate borrowers that originate from sources other than the sources of the accounting system of these companies. They are also recommended to address at least the reflection procedure of such bad news in the financial reports since any lack of consideration in this respect may increase managers' opportunities and motivations for concealing the bad news.

Corresponding to the findings obtained from testing the second hypothesis, the investors are recommended to address in their decisions the application level of unconditional conservatism approaches in the financial reports since the application of such matters in financial reporting can be an indication of operational problems. The lenders are also recommended to be accurate in analyzing the financial reports of corporate borrowers before and after granting of loans. Such supervisions especially before awarding credits can efficiently clarify the unique characteristics of the borrowing unit for the lender.

**REFERENCES**


