Relationship between Accounting Conservatism and Bankruptcy Risk of the Companies Listed on Tehran Stock Exchange

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ABSTRACT: The present research aims at studying the relationship between accounting conservatism and bankruptcy risk for the companies listed on Tehran Stock Exchange. Altman index is applied to measure bankruptcy risk and Ball and Shivakumar model is used to quantify conservatism. The data related to 100 companies listed on Tehran Stock Exchange - as statistical samples during 2006-2011 period - were analyzed through combined data analysis method for testing research hypotheses and studying the relationship between conservatism and the dependent variables. Chow and Hausman tests were used to estimate the suitable models for testing hypotheses in the combined data. The results indicate that there is a reversed relationship between accounting conservatism and bankruptcy risk of the companies under study.
Key words: Accounting Conservatism, Bankruptcy Risk-Debit Ratio, Altman Model.

INTRODUCTION

Bankruptcy is one of the most important topics of commercial law. However, in spite of its importance, it has not been recognized sufficiently. The important point on bankruptcy is that — depending on the extent of activities of a businessperson or an enterprise, its consequences and negative effects not only affect the bankrupt businessman or company but also third parties, creditors and parties to the contract dealing with the businessman or the company incur a loss. If a company developed its activity, this would sometimes lead to other bankruptcies, their workers and employees would lose their jobs, and it would create potential adverse consequences for country's economy (Shaghaghi Nezhad, 1993; Macintosh, 2006).

Recent global financial scandals, for instance Enron and WorldCom in America and Parmalat in Europe, have made the blame lie with financial reporting. Financial statements form the main core of financial reporting process. The investors focus on financial statements and most important of all profit and loss statement (net income figure). The issue of quality of reported profit has gained attentions of many researchers during recent years. One of the aspects of earnings quality is conservatism. It means that the more the conservatism of profit is, the higher its quality would be (Gillan and Starks, 2003; Mackie, 2011).

Conservatism is one of the fundamental concepts of accounting, which was considered by Financial Accounting Standards Board (SFAC) in the Statement of Financial Accounting concepts (SFAC) No. 2. FASB defines conservatism as a conservative reaction to

make confident that the economic and fiscal condition of a company has been offered sufficiently (Biddle et al., 2011; Macías, 2002).

Biddle et al. (2011) discussed the relationship between accounting conservatism and risk of bankruptcy in Hong Kong in their studies. The result of their research indicated that there is a negative relationship between conservatism and risk of bankruptcy.

Conservatism, one of the prominent features of finical reporting, can help company managers to promote goals of a business unit. Clarifying the relationship between this feature (conservatism) and other variables effective in company economy, such as bankruptcy, can help a logical decision-maker to take his/her optimal decision. Therefore, the present research clarifies and studies a relationship between accounting conservatism and bankruptcy risk.

MATERIALS AND METHODS

This is a descriptive research as far as method is concerned because attempts are made here to describe the present condition and study the relationship between variables. As far as time dimension is concerned, the research is of ex post facto research. It uses the previous information of the sample companies. Since it deals with the real data of companies, different resources, such as website of Tehran Stock Exchange organization, are used to provide the information of the companies entitle in Tehran Stock Exchange. Therefore, the data are collected here through field method. Desk method

and referring to different books and articles are also used in this concern to study theoretical basis of the research.

The statistical population of the research included the companies listed on Tehran Stock Exchange during six years, since early 2006 to the end of 2011.

The companies were selected among the companies listed on Tehran Stock Exchange because:

1- It was easier to access the financial information of the companies listed on Tehran Stock Exchange. Specially, some information is available on CDs as databases.

2- As the financial information of the companies entitled on Tehran Stock Exchange in controlled and supervised, it seems that the information reflected on the financial statements of the companies is of a higher quality.

3- As observing financial codes, regulations, and standards are enforceable in preparing financial statements of the companies listed on stock exchange, it seems that the information written on the financial statements of the companies is more homogeneous and analogous. All the companies entitle on Tehran Stock Exchange since early 2006 to the end of 2011 include 422 companies (2532 year-company).

No specific relation was used in this research to determine the statistic sample for estimating sample size and sampling. Here, only systematic elimination method was used. Therefore, following conditions were defined for me for the sample size:

1- To compare the items, the companies whose fiscal year was not ended on March 21 or 22, were omitted.

2- The banks, financial institutes, and financial investment companies were omitted (due to having a different entity as compared with other business enterprises). These companies have higher debit ratios as compared the rest of companies, whereas, the debt increase do not indicate further risk.

3- The companies, which did not provide all the required data for calculating variables, were omitted as well.

It should be noted that the companies should have been listed on Tehran Stock Exchange before 2006 and they should not have changed their fiscal year during research period. It was done so to make number of the statistical samples equal during the years the research were conducting.

The model is as follows:

$Acc_{it}= 0+1DCFO_{it}+ 2CFO_{it}+ 3 CFO_{it} *DCFO_{it}+ET$

Acc_{it}: Operating income for company i subtracted by operating cash flows (OCFs) in year t balanced by total assets in year t-1;

$DCFO_{it}$: If OCFs is negative for i company in year t, it will be one; otherwise, it will be zero;

CFO_{it}: Operating cash flows for companies in year t divided by total assets in year t-1

This model is a criterion for conditional conservatism.

Bankruptcy Risk: It is calculated based on Altman model (1983) as follows:

$z'=0.717 x1+ 0.847 x2+ 3.107 x3+ 0.420x4+ 0.998x5$

Where

Z'= Total index

X1= Ratio of circulating capital to total assets

X2= Ratio retained profit to total assets

X3= Ratio of earnings before interest and tax (EBIT) to total assets

X4= Ratio of book value of stocks to book value of total debits

X5= Ratio of sale to total assets

In this relation, the lower the Z', the more would be the rate of company's financial crisis.

After collecting the data required for carrying out the research, selecting a suitable tool to calculate and analyze information related to variables is of crucial importance. Here, after extracting the required information from the mentioned resources and preparing variables using Excel and doing needed calculations to achieve the required variables and conduct the research, Eviews was used to calculate regression models using the collected data. Eviews (ver. 6) is one of the powerful and outstanding software to analyze statistical and econometric tests.

RESULTS AND DISCUSSION

Table 1 shows descriptive statistics of the research, including average, mean, maximum, minimum, and standard deviation. The values only offer a general view of the distribution status of the research data.

As Table 4 shows, Chow test results does not confirm zero of this test based on similarity of intercept in all terms. Therefore, the panel model (fixed or random effects) should be used for the test of first hypothesis. To select the suitable model, Hasman test was selected among the models of fixed and random effects. Table 4 shows Hasman test results.

Table1. Descriptive statistics

Variables	Mark	Ave.	Mean	Max.	Min.	SD
Bankruptcy Index	**Z**	0.3645	0.3122	0.4654	0.0434	0.1425
Conservatism Index	**CONS**	0.1186	0.1462	0.3268	-0.2164	0.0904

Table 2. Correlation coefficient among research variables Table

	Z	CONS
Z	1	-0.0967
CONS	-0.0967	1

Table 3. Chow test results

Model Under Test	Chow Test Statistic	p-value	Test Result
Model	8.1043	0.0000	Doing Hasman Test *Panel data*

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Table 4. Hasman test results for the first model Table

Hasman Test Statistic	p-value	Test Result
0.0034	0.9864	Random Effects Model

The results of Hasman test for the model show that the zero hypothesis of the test is confirmed. Therefore, Random Effect Method would be a more appropriate choice to estimate the model. The test results of the research are presented after specifying the type of test model. In this model, the variable is dependent, bankruptcy risk and variable are independent, and accounting is conservational. As Table 5 shows, statistic F with the confidence level of 99% is significant because the p-value obtained from the model test is less than 1%. Therefore, the research model is generally significant and dependable variables are capable of explaining dependent variable.

Table 5. Results of test of model for first hypothesis

Description	Coefficient	t-static	p-value
CONS	-0.0942	-8.0489	0.0000
SIZE	-4.4681	-11.6634	0.0000
Fixed	-0.6348	-6.2904	0.0002
R-squared		0.3529	
Adjusted R-squared		0.3494	
F-static		8.6352	
F(p-value)		0.0000	
D-W		1.8372	

The adjusted coefficient of determination (adjusted R2) obtained from test of model is 0.3494. This figure shows that approximately 35 percent of the changes of bankruptcy index of the sample companies are explained by independent and control variables available in the model. Durbin-Watson test was used to study non self-coefficient of the error caused by model. Its favorable rate for lack of self-coefficient is two. If the rate of this statistic is between 1.5 and 2.5, self-coefficient is rejected in the error rates of the model. As the rate of Durbin-Watson statistic obtained from the research model was 1.8372, self-coefficient itself in the error rates of the model is rejected.

After studying significance of the model, we will analyze the hypotheses and significance of the coefficients. The statistic related to determining significance of coefficients would be student's t statistic. The test is used for determining coefficient significance and effect of that coefficient on dependent variable. According to the results shown in Table No. 5, the significance level (p-value) for the first hypothesis is 0.0000 (less than level 1%). Therefore, variable of accounting conservatism has had a significance effect on bankruptcy risk index in the model. The coefficient of independent variable is negative. Consequently, there is an inverse relationship between conservative accounting and bankruptcy index. In other words, with the conservative accounting increasing among the companies under study, bankruptcy index decreased. Therefore, the first hypothesis of the research is confirmed with the confidence of 99%.

Recommendation

The present research was carried out aiming at studying the relationship between accounting conservatism and bankruptcy risk of the companies listed on Tehran Stock Exchange. According to the research findings and the fact that conservativeness may help to reduce bankruptcy risk, it is not only in favor of stockholders of institutes but also encompasses economy at a macro level. Moreover,

concerning bankruptcy risk, the results of the present research will allow standard board to consider application of procedures of conservative accounting in a more completed manner.

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