



# Analysis of the Relationship between Accounting Conservatism and Capital Structure of Companies Registered with Tehran Stock Exchange

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**ABSTRACT:** The objective of this research is to study the relationship between accounting conservatism and capital structure of companies registered with Tehran Stock Exchange. Conservatism was measured using the Ball and Shivakumar (2005) model. Criteria for assessment of capital structures were the ratio of debt to equity and the ratio of debt to total assets. The research control variable was also company size. In order to examine the research hypotheses and study the relationship between conservatism and independent variables data on 100 companies registered with Tehran Stock Exchange, which formed the statistical population, were used. The data, which belonged to years 2006 to 2011, was analyzed using the combined data analysis method. In order to estimate suitable models for studying hypotheses in combined data analysis the Chav and Hausman tests were used. Research results indicate an inverse relationship between conservative accounting and capital structure (ratio of debt to equity and ratio of debt to total assets) in companies under study.

**Key words:** Accounting Conservatism, Capital Structure, Debt Ratio, Altman Model.

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## INTRODUCTION

One of the most important responsibilities of directors of finance to maximize the wealth of shareholders is determining the combination of company resources or the capital structure. Capital structure or the ratio of debt to income of shareholders, which is also known as the financial leverage, is the focus of attention of many financial analysts (Nourvash, 2008).

Conservatism is one of the qualitative characteristics of the contents of financial information. According to the theory of financial reporting conservatism is the application of a specific amount of care to the estimation process in an ambiguous situation. It is employed in order to prevent overestimation of assets and underestimation of debts. Conservatism is a careful reaction to ambiguity. Without ambiguity there is no need for conservatism. In addition, more ambiguity and risk adds to the need for conservatism (Shabahang, 2004).

Conservative accounting procedures prevent directors from showing opportunistic and optimistic behaviors and give more reliable earning reports (Chung et al., 2002).

Li (2010) also studied the relationship between accounting conservatism and financial decisions. He introduced liquidity management as one of the criteria for financial decisions. Results of his study indicated that there is a positive significant relationship between accounting conservatism and liquidity management

index. Moreover, results also suggested that the relationship between conservatism and liquidity in companies with a higher level of financial flexibility is stronger than similar relationships in companies with lower financial flexibility.

Some study reports the relationship between accounting conditional conservatism and negative coming. Results of their investigation indicated that accounting conditional conservatism leads to a reduction in negative coming reports (reduction in earnings and returns). In addition, they concluded that high levels of returns for more conservative companies lead to positive market reports (Rezazadeh and Azad, 2008).

## MATERIALS AND METHODS

The present study is a descriptive research because it tries to describe the current situation and analyze the relationships among variables. In addition, based on its temporal dimension it is a post-event research, which uses information in the history of sample companies. This research deals with real data from companies and uses different resources (including the website for Tehran Stock Exchange) for gathering information on companies registered with Tehran Stock Exchange. Therefore, the data are collected by field investigations. In order to study the theoretical research fundamentals the library method was used and various books and articles were studied.

The research statistical population included companies registered with Tehran Stock Exchange from the beginning of year 2006 to the end of 2011.

Reasons for selecting companies from the society of companies registered with Tehran Stock Exchange were as follows:

1. It is easier to accessing financial information of companies registered with Tehran Stock Exchange, especially since some information is only available in the form of databases on compact discs (CDs).

2. Since financial information of companies registered with Tehran Stock Exchange is subjected to investigation, information contained in the financial statements of companies has a higher quality.

3. Since criteria, regulations and standards of financial accounting are necessary for preparing the financial statements of companies registered with Tehran Stock Exchange, information contained in the financial statements of the companies is more homogenous and competing.

All of the companies registered with Tehran Stock Exchange from the beginning of year 2006 to the end of year 2011 (a total of 422 companies) were included in the study (2532 year-company).

In order to define the statistical sample for the present study, no particular relationship was used for estimating the sample size and sampling. Instead, the systemic elimination method was employed. Hence, the following criteria were defined for determining the sample size:

1. In order to be able to compare accruals companies whose financial year ended in March 19 or 20, 2012 were excluded from the study.

2. Banks, enterprises and financial investment companies were also excluded because the nature of their activities differed from other companies. These companies produce a higher level of debt ratio compared to other companies. However, a higher level of debt does not reflect a higher level of risk.

3. Companies which lacked all of the information required for calculation of variables in the study were also excluded.

It shall be noted that companies had to be registered with Tehran Stock Exchange before 2006.

They also had to be on the same financial year during the research. The reason is that the number of statistical samples associated with years under study had to be equal.

In this research, accounting conservatism, as the research independent variable, was measured using the model introduced by Ball and Shivakumar (2005) and adjusted by Roudak et al. (2006). The model is expressed as follows:

$$Accit = 0 + 1DCFOit + 2CFOit + 3CFOit * DCFOit + ET$$

Where:

**Accit**: operating income for the i-th company deducted from operating cash flows in year t, adjusted by total assets in year t-1.

**DCFOit**: it is equal to 1 if operating cash flow for the i-the company in year is negative; otherwise it is 0.

**CFOit**: operating cash flows for companies in year t for total assets in year t-1.

It shall be mentioned that the model is a criterion for conditional conservatism.

After collecting data required for the research it is important to choose measures suitable for calculating and analyzing information. In this research, information was obtained from the aforementioned resources and variables were formulated using Excel software. In addition, calculations were performed for accessing research variables and Eviews software was used for calculation of regression models based on collected data. The latter software (version 6) is among the powerful and known software for the analysis of statistical tests and econometrics.

## RESULTS AND DISCUSSION

In this research, the values of research variables were calculated using raw data and research descriptive statics were calculated and presented in Table 1. The statics included average, median, maximum, minimum, and standard deviation of research data. The values presented in this table only show an image of distribution of research data.

**Table 1.** Descriptive statics of research variables

Variables	Symbol	Average	Median	Maximum	Minimum	Standard Deviation
Ratio of debt to equity	CS1	0.3471	0.3682	0.6239	-0.1209	0.1448
Ratio of debt to assets	CS2	0.2749	0.2588	0.4879	0.0892	0.2133
Conservatism index	CONS	0.1186	0.1462	0.3268	-0.2164	0.0904
Company size	SIZE	5.6981	5.3709	7.2699	4.1436	1.3241

The correlations among research variables are shown in Table 2. The values of correlation coefficients for independent variables used in one model should not be big because the correlation among independent variables used in one model leads to distortion of results of regression analyses.

**Table 2.** Correlation coefficients among research variables

Symbol	CS1	CS2	CONS
<b>CS1</b>	1		
<b>CS2</b>	0.0086	1	
<b>CONS</b>	-0.1286	-0.1064	1
<b>SIZE</b>	0.0843	0.1146	0.1688

Regression models for examining the research hypotheses are formulated as follows:

$$CS1_t = \beta_0 + \beta_1 CONS1_t + \beta_2 SIZE_t + e_t$$

$$CS2_t = \beta_0 + \beta_1 CONS1_t + \beta_2 SIZE_t + e_t$$

**Table 3.** Results of Chav test

Tested Model	Chav test statics	p-value	Test results
<b>Model 4-1</b>	1738.0	9514.0	Pooled data
<b>Model 4-2</b>	1586.2	0937.0	Pooled data

As seen in Table 3, results of Chav tests for models (4-1) and (4-2) both approve and reject the basic hypothesis, which states that the width from the beginning of all periods are the same. Hence, the pooled data estimation method is a more suitable method for estimating models (1) and (2). In this method, all data are combined and estimated by Ordinary Least Square Regressions (OLS).

Table 4 shows the results of the examination of the significance of the first model (1) and analysis of correlation coefficients for years 2006-2011 using the pooled data method. As seen in Table 4, the value of F-static is significant at a confidence level of 99%. Therefore, the research model is significant in sum and independent variables can explain the dependent variable. Moreover, the adjusted coefficient resulted from testing the model was 0.3238. The figure shows that about 32% of variations of the dependent variable (i.e., ratio of debt to equity) results from variations of independent and control variables and 68% of variations are caused by other factors.

**Table 4.** Results of testing the first model

Description	Coefficient	t-static	p-value
<b>CONS</b>	-3.2988	-6.3626	0.0170
<b>SIZE</b>	-1.3809	-4.0067	0.0446
<b>Constant</b>	0.0229	3.0162	0.0049
<b>R-squared</b>		0.3166	
<b>Adjusted R-squared</b>		0.3238	
<b>F-static</b>		6.2386	
<b>F(p-value)</b>		0.0007	
<b>D-W</b>		2.3277	

The static for the Durbin-Watson test is equal to 2.3277. If the value of this static is between 1.5 and 2.5, autocorrelation in values of model error is rejected. Since the value of the resulting Durbin-Watson static is 2.3277, it can be concluded that the values of model error lack autocorrelation.

According to results presented in Table 5, the t-static of the dependent variable of the second hypothesis and its significance level (p-value) are 6.3626 and 0.0170, respectively. Since the error level assumed for this research was 0.05, conservatism has a significant impact on the ratio of debt to equity. Hence, the confidence level of 95% is also approved. The coefficient of the independent variable (conservatism) is negative. Therefore, there is an inverse relationship between conservatism and ratio of debt to equity. In other words, increase in conservatism of earnings statement leads to a decrease in the ratio of debt to equity.

Table 5 shows the relationship between the ratio of debt to total assets (as the second criterion for assessing capital structure) and conservatism. Results of examining the significance of the third model (3) and analysis of the correlation coefficients obtained for 2006-2011 using the pooled data method are also presented.

**Table 5.** Results of testing the second model

Description	Coefficient	t-static	p-value
<b>CONS</b>	-1.4689	-8.1185	0.0056
<b>SIZE</b>	-0.0002	-8.5289	0.0000
<b>Constant</b>	0.1625	3.4432	0.0006
<b>R-squared</b>		0.2222	
<b>Adjusted R-squared</b>		0.2136	
<b>F-static</b>		6.5908	
<b>F(p-value)</b>		0.0000	
<b>D-W</b>		2.0116	

As seen in the above table, the F-static is significant at a significance level of 99%. Hence, the research model is significant in sum and independent variables can explain the dependent variable. In addition, the adjusted coefficient resulted from testing the model was equal to 0.2136. The figure indicates that about 21% of variations of the dependent variable (ratio of debt to total assets) result from variations of the dependent and control variables in the model.

Since the value of the Durbin-Watson static was 2.0116, there is no autocorrelation in the values of model error. The t-static of the dependent variable of the third hypothesis and its significance level (p-value) were -8.1185 and 0.0056, respectively. Since the significance value was less than 0.01, it can be concluded that conservatism has a significant impact

on the ratio of debt to total assets. Therefore, the third research hypothesis is also approved at a confidence level of 99%. The independent variable (conservatism) is also negative. Hence, there is an inverse relationship between conservatism and ratio of debt to total assets. In other words, increase in conservatism leads to a decline in the ratio of debt to assets.

#### **Recommendation**

The present research was focused on analyzing the relationship between accounting conservatism and capital structure of companies registered with Tehran Stock Exchange. According to the results of researches by chief executive officers, more severe application of the principle of conservatism with respect to accounting standards is recommended for early identification of the current losses and costs and even possible costs and debts. However, it will postpone the estimation of earnings and assets and reduces the financial leverage of the company. Since there is a negative relationship between conservative accounting and ratio of debt to assets (as the criterion

for the capital structure), chief executive officers should consider the fact that increase in conservatism causes a decrease in the debt ratio.

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