RELATION BETWEEN ACCOUNTING CONSERVATISM AND DIFFERENCE OF REAL AND PREDICTED PROFIT

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Abstract

Importance of predicted profit depends on its deviation from real profit. The prediction will be more precised when this deviation is less. Researches indicate that fulfillment of expectations is really important for market and it reacts as they are not fulfilled. On the other hand, accounting conservatism is an effective contractual mechanism for limiting baised behavior of manager in profit exaggeration; also shareholders need useful data for making correct and appropriate decisions. Amongst existed information, data related to profit of each share and profit of predicted stocks is a criterion which is considered so important and relevant by users. In this regard, accounting conservatism is one of the effective cases which its effects on difference of real and predicted profit is studied in 105 enterprises which are accepted in Tehran Stock Exchange from 2006 to 2012. Results show that accounting conservatism has reductive effect on difference of real and predicted profit which means that the relationship between accounting conservatism and difference of real and predicted profit inverse. Also, in this research effect of some variables which can be influential in mentioned relationship is controlled. These variables are: size of enterprise, proportion of debt to earning, proportion of gross profit to sales and changing management.

Keywords: accounting conservatism, difference between real and predicted profit

Problem Statement

Profit forecast is consisted of notable prediction of futue performance. Generally, there are differences between predictions of managers and real items because of changes in commercial, economical and etc situations. Most of the provided information by financial reporting includes forecast of future performance. Forecast helps investors to improve their decision-making process and reduce the risk of their decisions. As Biver believes: forecasts can be made without decision-making but it is not possible to make any decisions without forecast (Mashayekhi & Shahroukhi, 2007, p: 67). Existed information except for financial statement is published mainly in order to provide some data about future performance of enterprise. It is obvious that this information is future estimation which is reflected in items of earnings and debts that affect features of income. Although these estimations potentially

improve financial information by transfering internal and far-sighted data to investors, but on the other hand, quality of financial information becomes invalid because of difficulties and misuse of estimations for manipulation of financial data.

In order to experimentally examine this issue, relation between error of profit forecast by manager (which is defined as differenc of forcasted and real profit) and accounting conservatism is studied. The reason for focusing on profit forecast instead of other forms of revealed information except for financial statement is that in addition to reflection of management forecast about future view of enterprise, it is quantitavie and acceptable. Also, accounting conservatism is studied because it is defined as forcasting losses and lack of forcasting profit. As profit forecast and accounting conservatism both include management subjectivism, this research studied relation between accounting conservatism and difference of real and forecasted profit.

Research Background

Givoly and Hayn (2000) showed in a research that profitability is reduced in America during past 4 decades. But, this reduction didn't decrease cash flows. Results indicate that recognition of loss is easier than profit and non-conditional conservatism and loss report is increased to 35% in fifnacial statements in America. Kellin and Marcoart (2006) indicated that there is a direct relationship between increase of non-conditional conservatism and increase of loss in enterprises. They studied American enterprises for 50 years (second half of 20 century) and found direct relation between conservatism and loss of enterprises and confirmed research of Givoli and Hayn. In Australia, Ball Krishna et al (2007) indicated that during 1993-2003, about 40% of conditional conservatism is increased. Basu (1997) studied relationship between income and stock returns by regression in estimation of conservatism index. He found that in enterprises with negative stock returns, stock returns is more correlated with incomes in comparison with enterprises with positive stock returns. He understood that when judicial claims have increased in America, conservatism was also increased. Watz and Zeemerman (1978) believed that enterprises with high political expenses tend more to use accounting conservatism methods. Confirming Ahmed et al results (2002) indicated hat lirge enterprises use more accounting conservatism methods in comparison with others. Also, results showed that if there was a conflict between profits of lenders and shareholders in profit division, then managers of borrowing enterprises tend more to use accounting conservatism methods. Watz (2003) believes that if contracts of an enterprise with various groups such as investors and creditors were arranged according to accounting figures, then because of conflict between profits of managers and those groups, they try to manipulate those figures with biased behaviors for their benefit. As an example, they increase profits or earnings or reduce debts. Amongst these, conservatism is an effective contractual mechanism by delaying identification of profit and earning and timely recognition of debt and loss, which neutralizes baised behavior of manager. Ahmed and Delman (2008) concluded in another research that accounting conservatism prevent from managers' anvestment in projects with negative return. Also he understands that there is a direct relationship between percentages of shares belonged to board of directors and conservatism. Ghavang (20070 understood that conditional and non-conditional conservatism play various role sin each conservatism interpretations. Contractual interpretation leads to conditional conservatism and interpretation of legal claims leads to both conditional and non-conditional conservatism. Other interpretations also cause non-conditional conservatism. He understood that by increasing non-conditional conservatism, conditional conservatism decreases. There is an inverse relationship between conservatism

and capital cost. They found that conservatism, reduces enterprise risk and as a result capital cost. The results indicate that although previous models of measuring accounting conservatism which studied relation between conservatism and capital cost were theoretically correct but there are some errors. Givoli et al (2007) showed that for calculation of conservatism index, it is necessary to use different models, simultaneously. They indicated in their research that results of Basu model is different from other models and as reporting setting is different by type of industry, country and period of time, still it necessary to use various models.

Bani Mahd (2006) determined effective factors on accounting conservatism according to information related to 11 years studied and then suggested a model for measuring accounting conservatism. Results indicate that accounting conservatism and profitability index (earnings returns) were reduced in Iran during research period, simultaneously. Size of enterprises and tax on accounting conservatism weren't effective and accounting conservatism cannot be considered as efficient contractual mechanism for reduction of conflicts between profit division among sharehorlders and creditors. Kurdestani and Amir Beygi (2008) studied relationship between time asymmetry of profit and proportion of market value to official value of stocks. They understood that there is a negative relationship between time asymmetry of profit and proportion of market value to official value of stocks and as estimation of time asymmetry of profit takes longer, this relation will become more negative. In other research, Reza zadeh and Azad (2008) studied relation between conservatism and information asymmetry. Results indicate that there is a positive and significant relationship between information asymmetry of investors and accounting conservatism. Also, according to their conlusion, change of information asymmetry between investors transforms conservatism.

Research Questions

1. Is there any significant relationship between accounting conservatism and the difference of real and predicted profit?
2. Is there any significant relationship between enterprise size and the difference of real and predicted profit?
3. Is there any significant relationship between proportion of debt to earning and the difference of real and predicted profit?
4. Is there any significant relationship between the proportion of gross profit to sales and the difference of real and predicted profit?
5. Is there any significant relationship between changing management and the difference of real and predicted profit?

Research Hypothesis

According to researcher's questions, this hypothesis is determined:

There is a significant relationship between accounting conservatism and the difference of real and predicted profit.

Research Methodology

This research is an applicable one by its goal. Research method is correlative by its nature and content. It is done by inferential-comparative reasonings. Due to this, theoretical basics and research background are acquired in comparative framework by library studies, papaers and websites. Also, data collection was done based on inferential framework for confirmation and rejection of hypotheses.

Data Collection

Data required for research was collected from studying internal and external papers, financial records and annual counted notes of studied enterprises and also from databases and existed softwares in market and Stock Exchange website.

Research Topic

This research is aimed to study relationship between accounting conservatism and the difference of real and predicted profit from 2006 to 2012 in enterprises accepted in Tehran Stock Exchange Organization which had these feature:

1. Their financial year ended in March and during studying these enterprises their business wasn't stopped.
2. They weren't finanacial and investment brokers.
3. They should have required data for this research especially information related to predicted profit.

Studied Variables

Here, dependent variable is difference between real and predicted profit. However, independent variables that their relation with difference of real and predicted profit as dependent variable is studied are: conservatism index, enterprise size, proportion of sum of debts to sum of earnings, proportion of gross profit to sales, and changing management. Among variables above, except for conservatism index, other variables are intervening that possibly can influence the relation between accounting conservatism and difference of real and predicted profit.

Accounting Conservatism

In this research, for measurement of accounting conservatism index, Givoly and Hayn model (2000) was used because information of this model was completely related to accountancy which is easily available in Iran and most of the researches out of Iran, such as research of Ahmed (2002) and Ghavang (2007), have used this model. Conservatism index is calculated according to this model which is given below:

Conservatism Index	Operating Accruals	×(-1)
	Sum of earnings at the beginning of period	

Givoly and Hayn (2000) believe that growth of accruals can be an index of changing accounting conservatism in a long period of time. In ther words, if accruals increase, accounting conservatism decreases and vice versa. So, in order to determine direction of conservatism changes, accruals are multiplied by (-1).

Enterprise Size

Such as other researches, it is possible to use Drashid and Zhang (2003) criterion, natural logarithm of sum of earnings related to the end of period, as enterprise size.

Proportion of Debt to Earning

It is concluded in research of Zeetan and Tian (2007) that borrowing leads to improvement of enterprises' performance. So, int his research, proportion of sum of debt to sum of earnigs (financial risk) is considered as one of the control variables.

Proportion of Gross Profit to Sales

As sales can be effective on accruals such as changes in accounts receivable, inventories and profitability index, so, in this research propotion of gross profit to sales is added to research variables as a control variable.

Changing Management

Chaing management is also consired as control variable in this research. So, enterprises that their managers were changed during this financial period are indicated by 1 and others that didn't have any changes in management are showed by 0.

Research variables will be divided by sum of earnings in order to control inflation, control accruals and conservatism changes and also for homogenizing information in enterprises with various sizes.

Total research model is given below:

$$FE_{i,t} = \beta_0 + \beta_1 * CSCORE_{i,t} + \beta_2 * CEO\_CH_{i,t} + \beta_3 * N\_D\_A_{i,t} + \beta_4 * N\_G\_S_{i,t} + \beta_5 * SIZE_{i,t} + \mathcal{E}$$

That in this research:

$FE_{i,t}$	Difference between real and predicter profit
$CSCORE_{i,t}$	Accounting conservatism
$SIZE_{i,t}$	Enterprize size
$N\_D\_A_{i,t}$	Propotion of debt to earning
$N\_G\_S_{i,t}$	Proportion of gross profit to sales
$CEO\_CH_{i,t}$	Chinging management
$\mathcal{E}$	Model error

Analysis of Research Findings and Hypotheses Testing

In a scientific research, analysis of statistical data that was collected from statistical samples is an important step because researcher will achieve ultimate result in this step; so that, by means of one research method, data will be analyzed, hypothesis will be tested and finally ultimate conclusion will be reported.

Data analysis is a multi-step process in which data is collected by utilization of data collection tools in statistical sample (population). Then they are coded, categorized and etc and finally

they are processed to be analyzed in order for testing the hypothesis. In this process data is refined conceptually and experimentally.
In this research, data is obtained from 105 studied enterprises during 2006-2012 in order to study the relationship between variables for testing hypothesis. Data was calculated by software EXCEL and was analyzed by software Eviews 7 which is related to linear regression statistical technique.

Descriptive Statistics
Descriptive statistics include methods that are applied for collection, summarization, classification and description of numeral facts. Actually, these statistics describe research data and information and give a total model of data fro fast and better use. Totally, it is possible to state features of a group of information by means of descriptive statistics. Central and dispersion parameters are used for such purpose. One of their applications is that they can show features of a group of data in numbers, they help to understand results of a test, better and also they simplify comparing results of one test with other tests and observations. Descriptive statistics of research variables are given in tables below:

	Dependent Variables	Independent Variables	Control Variables			
Symbol	***FE***	***CSCORE***	***CEO_CH***	***N_D_A***	***N_G_S***	***SIZE***
Mean	-98.55899	-0.120174	0.836508	0.389559	0.284399	11.50625
Median	-27.35000	-0.140396	1.000000	0.375137	0.160771	10.13350
Maximum	26.00000	0.058662	1.000000	0.685025	0.924226	14.57596
Minimum	-281,0000	-0.249785	0.000000	0.206958	-0.112297	9.797349
Standard Deviation	131.7733	0.092581	0.370108	0.163941	0.346940	2.176314
Skewness	-0.606982	0.735496	-1.819877	0.572919	0.781579	0.695274
Kurtosis	1.487163	2.975031	4.311951	2.247377	2.312576	1.499999
Jarque-Bera	98.76260	56.81658	392.9367	49.33392	76.54539	109.8202
Jarque-Bera Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Statistics of Jarque-Bera test for dependent variables indicate that they are not normalized according to value of Jarque-Bera probability. Mathematical transformation of data square logarithm is used for their normalization.

	Dependent Variables
Symbol	***FE***
Mean	8.559714

Median	8.943025
Maximum	17.37879
Minimum	-6.270988
Standard Deviation	3.359645
Skewness	-0.867511
Kurtosis	4.465791
Jarque-Bera	11.41696
Jarque-Bera Probability	0.065430

Statistics of Jarque-Bera test for dependent variable shows that difference of real and predicted profit is greater than 0.05 due to value of Jarque-Bera probability which means that difference of real and predicted profit is normalized because it is transformed.

Unit Root Test of Research Variables

ADF Fisher test is used for determination of inertia.

Variable	Symbol	Statistics	Probability
Dependent variables	*FE*	184.70732	0.000
Independent variables	*CSCORE*	137.4127	0.000
Control variables	*CEO_CH*	54.7018	0.000
	N_D_A	126.8038	0.000
	N_G_S	98.68653	0.000
	SIZE	132.4692	0.000

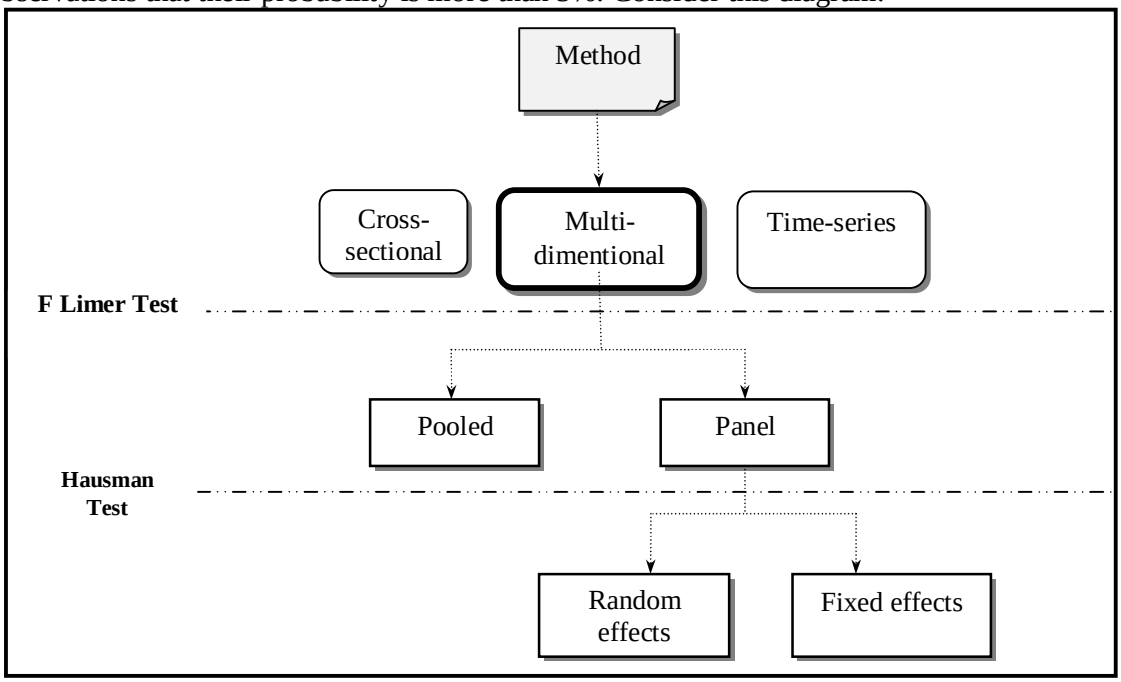
As it is observed P-Value is lower than 0.05 in all variables which shows that these variables are static. It means that variables mean and variance in a period of time and variables co-variance in various years were constant. As a result, utilization of these variables in his model doesn't lead to creation of regression.

Regression Hypotheses

Testing hypotheses requires creating hypotheses of normalized dependent variables, variance similarity and autocorrelation; if not, results are not reliable and this leads to wrong conclusions. When regression hypotheses are created, testing of research hypotheses is carried out. Then, statistical tests will be described.

Model Estimation Method by F-Limer and Hausman Test

When inertia of variables was studied now it is time to estimate the method. According to what is mentioned, data in this research is combined. However, before estamition of modelm it is necessary to determine estimation method (pooled and panel). So, F Limer test was used. Pooled method is used for observations that probability of their test is more than 5% or in other words their test statistics were lower than statistics in table and for model estimation, panel method is used for observations that probability of their test is lower than 5%. Panel method is carried out with two models "random effect" and "fixed effects". For determining the model, Hausman test is used. In order to estimate the model, fixed effects model is used for observations that their probability is lower than 5% and random effect model is used for observations that their probability is more than 5%. Consider this diagram:



F-Limer Test for research Models (study of similarity of sectional y-intercepts)

Null Hypothesis (H_0)	Research models	F-Limer statistics	Probability	Test result
Pooled data (y-intercepts Of all sections are similar).	Model (1)	17.456350	0.000	H_0 is rejected

As results show, propability of F-Limer test for this research model is lower than 5%; so, H_0 hypothesis (Pooled Model) is not confirmed for any of the models. In other words, there are individual or group effects and panel data should be used for estimation of models.

Hausman Test (selection of fixed or random effects)

(H_0) Null Hypothesis	Research models	Statistics	Probability	Test result
Random effects model	Model (1)	4.23254	0.3452	H_0 is accepted

As results show, according to research models, propability of Hausman test for determination of using fixed and random effects model is greater than 5%; so, H_1 hypothesis (fixed effects model) is not confirmed which means there is no relation between estimated regression error and independent variables. Due to results of Shav and Hausman test, the most appropriate method for estimation of parametes and hypothesis testing is random effects model.

Research Hypothesis Testing

Statistically, research hypothesis is given such as below:

H_0: there isn't any significant relationship between accounting conservatism and difference of real and predicted profit.

H_1: there is a significant relationship between accounting conservatism and difference of real and predicted profit.

Results related to estimation of model are given in table below:

$$FE_{i,t} = 4.227355 - 30748.51 * CSCORE_{i,t} + 71981.43 * CEO\_CH_{i,t} + 3.236912 * N\_D\_A_{i,t} - 40976.37 * N\_G\_S_{i,t} - 12798.21 * SIZE_{i,t}$$

Variables	Estimation coefficient	Standard error	*t*-test statistics	*t*-test probability
$CSCORE$	-30748.51	1140.904	-26.95100	0.0000
CEO_CII	71981.43	1739.020	41.39194	0.0000
N_D_A	3.236912	1.619658	1.998516	0.0401
N_G_S	-40976.37	6228.102	-6.579271	0.0000
$SIZE$	-12798.21	1149.946	-11.12940	0.0000
$\beta.$	4.227355	1.583252	2.670045	0.0078
Determination coefficient	0.869769	Akaike Criterion		5.259040
Moderated determination coefficient	0.821914	Schwartz Statistics		5.301380
F- Limer statistics	5.516889	Hannan-Quinn Criterion		5.275486
F- Limer probability	0.000	Durbin-Watson Criterion		1.638245

Results of estimation indicate that probability of *t*-test for independent and moderator variables is lower than 5% so, statistically estimation coefficient of variables above is significant. It means that these variables are important factors in determinations of criterion related to real and forcasted profit. negative and significant relationship between accounting conservatism and control variables of enterprise size, proportion of debt to earning, proportion of gross profit to sales and changing management, shows inverse relation between variables above and difference of real and forcasted profit ans thus, with 95% confidence, research

hypothesis is confirmed with moderator variables which means that there is a significant relationship between difference of real and forecasted profit and accounting conservatism even with existence of control variables of enterprise size, proportion of debt to earning, proportion of gross profit to sales and changing management.
Power factor indicates describing power of independent variables which can describe changes of dependent variable for 86.97%. Probability of F statistics states that the model is significant, statistically (because F probability is lower than 5%). As Durbin-Watson is between 1.5and 2.5; so, there isn't any autocorrelation in model.
Regression equation is given below:

$$FE_{i,t} = 4.227355 - 30748.51 * CSCORE_{i,t} + 71981.43 * CEO\_CH_{i,t} + 3.236912 * N\_D\_A_{i,t} - 40976.37 * N\_G\_S_{i,t} - 12798.21 * SIZE_{i,t}$$

One of the simple criteria for identification of multicollinearity is utilization of correlation coefficients between descriptive variables. If correlation coefficient between descriptive variables were rather great, it indicates that there is a partly strong multicollinearity. However if correlation coefficients were small, it means that there isn't any multicollinearity.

	FE	*CSCORE*	*CEO_CH*	*N_D_A*	*N_G_S*	*SIZE*
FE	1	-0.04773	0.037646	0.073581	-0.01152	0.019688
CSCORE	-0.04773	1	-0.08815	0.387199	-0.3213	-0.335
CEO_CH	0.037646	-0.08815	1	-0.17954	0.200236	0.235948
N_D_A	0.073581	0.387199	-0.17954	1	-0.41509	-0.43501
N_G_S	-0.01152	-0.3213	0.200236	-0.41509	1	0.300151
SIZE	0.019688	-0.335	0.235948	-0.43501	0.300151	1

As it is observed in table below, correlation coefficient of variables is lower than 0.5 which means that multicollinearity can be ignored.

Research Findings Analysis
According to studies that were carried out from 2006 o 2012 and also research findings, results indicate that probability of F-Limer test for first model is lower than 5%. So, hypothesis of pooled model wasn't confirmed which means that individual or group effects don't exist and method of panal data was used for model estimation. Also, probability of Hausman test is greater than 5% for determination of using fixed effects against random effects model. Therefore, hypothesis of fixed effects model was rejected. It means that there isn't any relationship between estimated regression error and independent variables. So, random effects model was utilized for estimations of parameters and hypotheses testing. Then research hypothesis was tested and examined accourding to obtained estimations of regression model. Obtained estimations and test in fourth section showed that fist of all *t*-test probability is lower than 5% for independent variable of accounting conservatism; so, accounting conservatism coefficient is significant. It means that this variable is an important factor in determination of difference between real and forecasted profit.

Also, study of moderated determining coefficient of model indicates that model descriping power is for explanation of dependent variable i.e. difference of real and forecasted profit. So,

results related to index of model moderated determining coefficient show that explanatory variable of accounting conservatism can describe fluctuations of difference between real and forecasted profit for 82.19%, even with existeance of control variables. Also, as probability of F statistics is lower than 5%, it means that statistically the model is significant.
Additionally, as explanatory variable coefficient of accounting conservatism is negative, it is understood that increase of this variable has decreasing effect on difference of real and frecasted profit. So, result of test confirmed research hypothesis even with control variables. It means that there is a relation and correlation between accounting conservatism and difference of real and forecasted profit with control variables of enterprise size, proportion of debt to earning, proportion of gross profit to sales and changing management.

Research Suggestions

According to result of research hypothesis which is "there is a significant relationship between accounting conservatism and difference of real and predicted profit" and is confirmed, sharehorlders and other investors are suggested to notice accounting conservatism of enterprise for estimation and measurement of difference between real and predicted profit because due to results of research hypothesis difference of real and predicted profit is reduced by increase of accounting conservatism of enterprises accepted in Tehran Stock Exchange and also, they should consider that enterprise size, proportion of debt to earning, proportion of gross profit to sales and changing management are influential in efficacy of accounting conservatism on difference of real and predicted profit; so, it seems that difference of real and predicted profit is reduced by increase of accounting conservatism and if investors and active shareholders in exchange enterprises want to recognize shares of enterprises with less error in profit forecast and acquire higher profit from their investment, so they should buy or maintain shares of enterprises with higher conservatism.

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