

DISCRETIONARY ACCRUALS AND CONDITIONAL ACCOUNTING CONSERVATISM FOR CHEMICAL, OIL, AND PHARMACEUTICAL INDUSTRIES IN TEHRAN STOCK EXCHANGE LISTED COMPANIES

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***Abstract:** The current study aimed at investigation of the relationship between discretionary accruals and conditional accounting conservatism in Tehran Stock Exchange listed companies. The managers as the authorities responsible for preparing the financial statements with total awareness of the company's situation and having more information on these statements compared to others potentially try to build a favorable picture of the business unit. For example, they may understate the costs and provide higher benefits in the financial statements through announcing a period's costs as the assets. Also, the assets and capitals of a business unit may look better than what they really are and the outside investors' motivation for capital injections and financial interests may rise. In such a situation, the accounting principles and procedures backed by the authorities formulating the accounting standards, utilize the concept of conservatism in order to modify the managers' optimism, protect the stakeholders' rights, and fairly provide the financial statements. The statistical population of the study included all the chemical, oil, and pharmaceutical companies listed in Tehran Stock Exchange. Considering the availability of the whole information on financial statements of the statistical population, the researcher has chosen the whole population as the sample. The results indicated that there is no significant relationship between discretionary accrual and conditional accounting conservatism. However, there is a relationship between conditional accounting conservatism and non-conditional accounting conservatism. Also, there is relationship between financial leverage degree in a company and conditional accounting conservatism.*

***Keywords:** conditional conservatism, non-conditional conservatism, discretionary accruals*

INTRODUCTION

Profit and Loss Statement is among the financial statements that is the basis for a wide range of decisions and is considered a benchmark for assessing the performance of a business unit. Since the accounting profit is calculated based on accrual, the use of

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accrual basis usually lead in discrepancy between the rates of reported net operating profit, net cash flows derived from operation, and reporting a series of accruals in the financial statements. The accrual part of profit is far more important for assessing the performance of the company. The quality of accruals is considered by the investors as the proximity of accounting profit to cash profit. Thus, the lower quality of accruals will distort the financial information which in turn leads to higher risk for investment. One of the highlights of corporations is the separation of ownership from management. Since the users of financial statements are only aware of the information provided by the management, there is always the possibility that some of the information be exclusive to management. This leads to a phenomena called asymmetry of information between the management and people outside the organization. On the other hand, in the companies with separated ownership and management, the issue of interest conflicts has always been a debate. In this regard, a situation can be assumed in which the management efficiency is estimated based on the company's reported profit. Consequently, the management will try to remove from the financial statement whatever information with negative charge.

The research conducted on profit management during the last years indicated that it is the accrual part of profit which undergoes profit smoothing, since the management ability for distorting and judging is much lesser in cash profit as compared to accrual part.

Copeland, in 1968, introduces the relative ability of management in decreasing or increasing the reported profit as manipulation in accounts. However, the manipulation in accounts is far more important than what Copeland denoted. On the other hand, the window dressing incentive requires more attention and research. The accrual-based accounting provides the managers with a significant optionality for determining the profit in different time periods. In fact, under this system of accounting, the managers can significantly control the time for detection of some costs items such as advertisement, research, and expansion costs. Also, in accrual-based accounting, the managers enjoy several options for the time of income detection such as quicker detection of the earning through sales on credit. The real incentive of the managers for profit smoothing is the management of investors and creditors' assumptions of the business unit. In response to the issues of information asymmetry and interests' conflict, the concept of accounting conservatism emerges. In fact, the conservatism through limiting the management powers and the probability of manipulation in accounts and other information sources, to a large extent improves the adverse effects of information asymmetry between the managers and owners. Thus, the current study aimed at investigating the effect of conditional accounting conservatism on discretionary accruals.

THEORETICAL FRAMEWORK

Bassu (1997) states that conservatism usually leads to quicker detection of profit decrease as compared to its increase or utilizing higher degrees of reliability for

detection of profit increase compared to its decrease. In a classification, the accounting conservatism is divided into conditional and non-conditional, with each having several calculation methods.

The profit time asymmetry has been investigated as a criterion for assessment of conservatism in financial reporting. This criterion's principles are built on the basis of a gain \loss approach and its framework revolves around a definition of conservatism that is nowadays a trend in the world. Accordingly, the following model can be used for calculation of total level of conditional conservatism in profit.

$$C_t^E = C_t^{CF} + C_t^{ACC}$$

The following model can be used for calculation of the conservatism level of conditional accounting used in profit, in cash flows derived from operation, and the accruals that should be divided based on conditional or non-conditional. In this model, the E, CF, ACC, DA[MJ], DA[MJNC], NDA[MJ], NDA[MJNC] variables should be put instead of X.

Model 1-2

$$X_{it}/P_{it-1} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t(R_{it} \times D_{it}) + \varepsilon_{it}$$

Dechow (1994) states that the quicker and in-time detection of the profit-decreasing events against non- detection of profit-increasing events can lead to detection of a part of future periods' costs in the current period. This in turn can decrease the profit's stability.

The model used by bassu for calculation of conditional conservatism level in a short period of time is as follows:

Model 1-3

$$E_{it}/P_{it-1} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t(R_{it} \times D_{it}) + \varepsilon_{it}$$

Also, in the current study, the following ratio was used for calculation of non-conditional conservatism level.

MTB= The book value of common stock at the beginning of the fiscal year / market value of the company's common stock at the beginning of fiscal year

For calculation of the total accruals, the following model was used:

Two models were used for calculation of accruals in the current study. the first model was calculation of the accruals based on Jones' model in which the changes in perceived accounts are modified. The purpose of this modification is controlling and investigation of income manipulation through credit sales.

Model 1-6

$$ACC_{it}/A_{it-1} = a_{0t} 1/A_{it-1} + a_{1t} \Delta REV_{it}/A_{it-1} + a_{2t} PPE_{it}/A_{it-1} + \varepsilon_{it}$$

Based on which, the discretionary accruals are calculated by the following model:

Model 1-7

$$DM_{[MJ]it} = ACC_{it} - [a_{0t} + a_{1t}(\Delta REV_{it} - \Delta REC_{it}) + a_{2t}PPE_{it}]$$

For calculations of non-discretionary accruals based on Jones' modified model, the discretionary accruals which were calculated based on the same model were deducted from total accruals.

The second model used in the current study was the Jones' modified model with non-linear cash flows. Since the accruals cause asymmetry in cash flows through quicker detection of loss compared to benefit, in order to control and investigate the non-linear relationship of accruals, the following model was used for calculation of them.

Model 1-8

$$ACC_{it}/A_{it-1} = a_{0t} 1/A_{it-1} + a_{1t} \Delta REV_{it}/A_{it-1} + a_{2t} PPE_{it}/A_{it-1} + \gamma_{0t} CF_{it-1}/A_{it-1} + \gamma_{1t} CF_{it-1}/A_{it-1} + \gamma_{2t} CF_{it-1}/A_{it-1} + \gamma_{3t} DCF_{it}/A_{it-1} + \gamma_{4t} DCF \times CF_{it}/A_{it-1} + \varepsilon_{it}$$

Based on this model, the discretionary accruals are calculated as follows:

Model 1-9

$$DA_{[MJNC]it} = ACC_{it} - [a_{0t} + a_{1t}(\Delta REV_{it} - \Delta REC_{it}) + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1} + r_{3t}CF_{it} + r_{4t}DCF \times CF_{it}]$$

And also for calculation of non-discretionary accruals based on Jones' modified model with non-linear cash flows, the discretionary accruals calculated by the same model were deducted from the total accruals.

$$NDA_{[MJNC]} = ACC - DA_{[MJNC]}$$

In which:

E: profit

CF: cash flows derived from operation

ACC: total accruals

$NDA_{[MJ]}$: Non-discretionary accruals based on Jones' modified model

$NDA_{[MJ]}$: Non-discretionary accruals based on Jones' modified model with non-linear cash flows

$DA_{[MJ]}$: Discretionary accruals based on Jones' modified model

$DA_{[MJNC]}$: Discretionary accruals based on Jones' modified model with non-linear cash flows

ΔE : Changes in annual profit

P: Stock Exchange value

R: the annual stock return

A: The total book value of assets

D: A binary variable of zero and one. (If R is negative, the value is one; otherwise the value will be zero)

$D_{it}^{\Delta E}$: A binary variable of zero and one. (If ΔE is negative, the value is one; otherwise the value will be zero)

$R_{it} \times D_{it}$: mean estimation coefficient

ΔREC : Changes in perceived accounts which are divided to total assets at the beginning of the period.

ΔREV : Changes in income

PPE : The properties, equipment, and installations at the beginning of the fiscal year divided to total assets at the beginning of the period.

DCF : A binary variable of zero and one. (If CF is negative, the value is one; otherwise the value will be zero)

C_t^E : the accounting conservatism level reflected in profit

C_t^{CF} : the accounting conservatism level reflected in cash flows derived from operation

C_t^{ACC} : the accounting conservatism level reflected in total accruals

MTB : the ratio of market value to book value of a company's stock at the beginning of fiscal year. This ratio will be used for calculation of non-conditional conservatism level.

RESEARCH HYPOTHESES

The current study aimed at investigation of the effects conditional accounting on discretionary accruals. So, three hypotheses are proposed:

First hypothesis: there is a significant relationship between discretionary accruals and conditional accounting conservatism.

Second hypothesis: there is a significant relationship between conditional accounting conservatism and non-conditional accounting conservatism.

Third hypothesis: there is a significant relationship between financial leverage in a company and conditional accounting conservatism.

METHODOLOGY

Regarding the purpose of the current study which is answering the question that each variable in the hypotheses (profit, total accruals, discretionary accruals, non-

discretionary accruals, cash flows derived from operation, the ratio of book value of the assets, the company's financial leverage) has what effects on the conditional conservatism. Thus, the study is of correlation type in which the relationship between the independent and dependent variables is investigated. The statistical population of the studied included the Tehran Stock Exchange listed company (oil, chemical, and pharmaceutical industries). The elimination method was used in the current study for setting the sample size. Accordingly, the companies with the following qualifications were chosen as the samples and the rest were eliminated.

- The companies should be accepted in Tehran Stock Exchange listed companies before 1387. The reason behind this is preserving the equity of the number of the samples investigated.
- The needed information for the study should be available.

The data was collected in two stages in the current study. In the first stage, library-based research was utilized for determining the theoretical framework of the study. In the second stage, the information needed for calculation of the variables was collected from Stock Exchange Organization and Tehran Stock Exchange official website. Since the historical data of the companies were used for the current study, it is quasi-experimental. The multivariable regression was used for testing the hypotheses. Also, regarding the quantitiveness of all of the study's variables, Pearson correlation coefficient (r) was used for analysis and interpretation of the relationship between variables. Also, SPSS was used for statistical tests.

RESULTS

Descriptive Results of the Study

Table 1
Description of central indicators and distribution of the data

	<i>frequency</i>	<i>Mean</i>	<i>Median</i>	<i>Standard deviation</i>	<i>Skewness</i>	<i>Kurtosis</i>	<i>Min.</i>	<i>Max.</i>
Conditional conservatism	235	301.42	0.302	14.73	1.02	8.62	233.38	388.39
Non-conditional conservatism	235	0.394	0.378	0.538	-3.22	24.54	-3.86	2.24
Discretionary accruals	235	4129.8	7557	85705	2.18	24.93	-4570000	6210000
Financial leverage	235	0.590	0.612	0.176	0.150	1.62	0.10	1.28

As indicated by the above table, the mean for conditional conservatism is 301.42 and its standard deviation is 14.73. This variable ranged from 233.8 to 388.39.

Also, indicated by the above table, the mean for non-conditional conservatism is 0.394 and its standard deviation is 0.538. This variable ranged from -3.86 to 2.24.

As indicated by the above table, the mean for discretionary accruals is 4129.8 and its standard deviation is 85705. This variable ranged from -4570000 to 6210000.

Also, indicated by the above table, the mean for financial leverage is 0.590 and its standard deviation is 0.176. This variable ranged from 0.10 to 1.28.

Table 2
Kolmogorov-Smirnov test for normality of the data

	Frequency	Absolute value limit	Positive limit	Negative limit	Kolmogorov	Significance level
Conditional conservatism	235	0.254	0.254	-0.113	3.89	0.000
Non-conditional conservatism	235	0.240	0.150	-0.240	3.68	0.000
Discretionary accruals	235	0.335	0.335	-0.292	5.13	0.000
Financial leverage	235	0.078	0.070	-0.078	1.18	0.118

For performing the regression test, the data should be normally distributed in order for the results to be reliable. Thus, in the current study, the data were tested for normality by K-S test prior to hypotheses testing to determine the data distribution. It is indicated in the above table that the significance level of *Kolmogorov-Smirnov test for the above tables variables data is lower than 1, except for financial leverage. Thus, the variables were not normally distributed. The researcher used the mathematical function for normalizing them, so the data which were analyzed were normally distributed.*

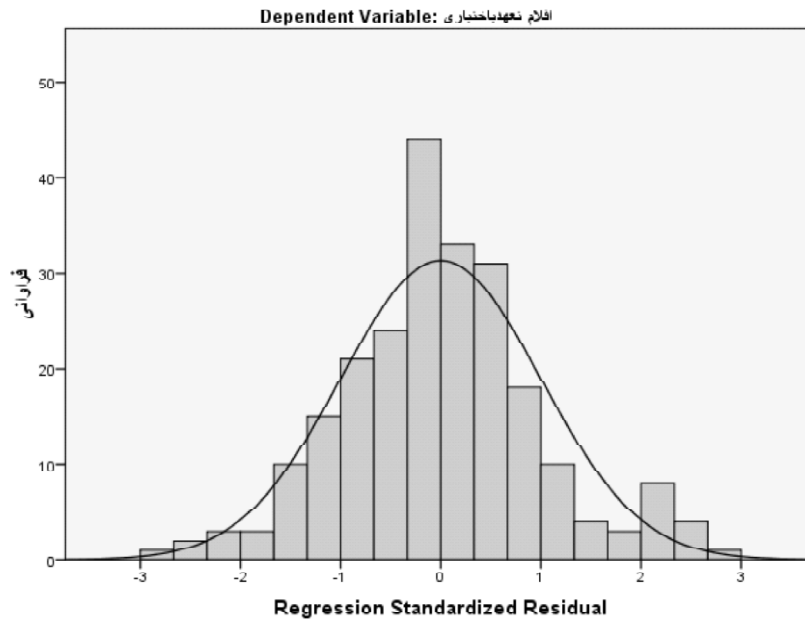


Figure 1: Regression standardized residual for first hypothesis

Inferential Findings

First hypothesis: there is a significant relationship between discretionary accruals and conditional accounting conservatism.

H0: there is not a significant relationship between discretionary accruals and conditional accounting conservatism.

H1: there is a significant relationship between discretionary accruals and conditional accounting conservatism.

Table 3
Summary of regression model

<i>Correlation coefficient</i>	<i>Coefficient of determination</i>	<i>Durbin-Watson value</i>	<i>f</i>	<i>Significance level (sig)</i>
0.032	0.001	1.61	0.241	0.623

One of the requirements for regression is the independence of the variables errors of each other, so that if these errors are not independent, the regression results will not be reliable. Thus, the Durbin-Watson statistics were used to preserve this independence. If the obtained Durbin-Watson value is 1.5-2.5, we can assure that the error is independent. It was 1.61 for the current study. The coefficient of determination value screens the model's precision, therefore the more it is inclined towards 1, the more precise the model will be for predicting the dependent variable. This value was 0.001 for the current study which is so close to zero, so it can be said that the model is not determined by independent variable. For presenting the results of regression test, there should be a linear relationship between the dependent and independent variables and the availability of this relationship is determined by Fisher test. For the current study, this value was 0.241 which means there is no linear relationship between the variables.

Table 4
Regression coefficients

<i>Dependent variable</i>	<i>Independent variable</i>	<i>Non-standard constants</i>		<i>constants Beta</i>	<i>Standard t</i>	<i>Significance level (sig)</i>
		<i>B</i>	<i>Standard error</i>			
Discretionary accruals	(Constant)	18.98	14.7		1.29	0.198
	Conditional conservatism	-1.13	2.29	-0.032	-0.492	0.623

It can be estimated by T-test whether the independent variable is able to affect the dependent variable, and if it is, to what extent it is effective. For determining this, the t-test error level is used as it is seen in the above table, the t-test error level value for conditional conservatism is 0.623 which indicates that conditional conservatism does not affect the discretionary accruals, so the hypothesis is rejected.

Second hypothesis: there is a significant relationship between conditional accounting conservatism and non-conditional accounting conservatism.

H0: Second hypothesis: there is not a significant relationship between conditional accounting conservatism and non-conditional accounting conservatism.

H1: Second hypothesis: there is a significant relationship between conditional accounting conservatism and non-conditional accounting conservatism.

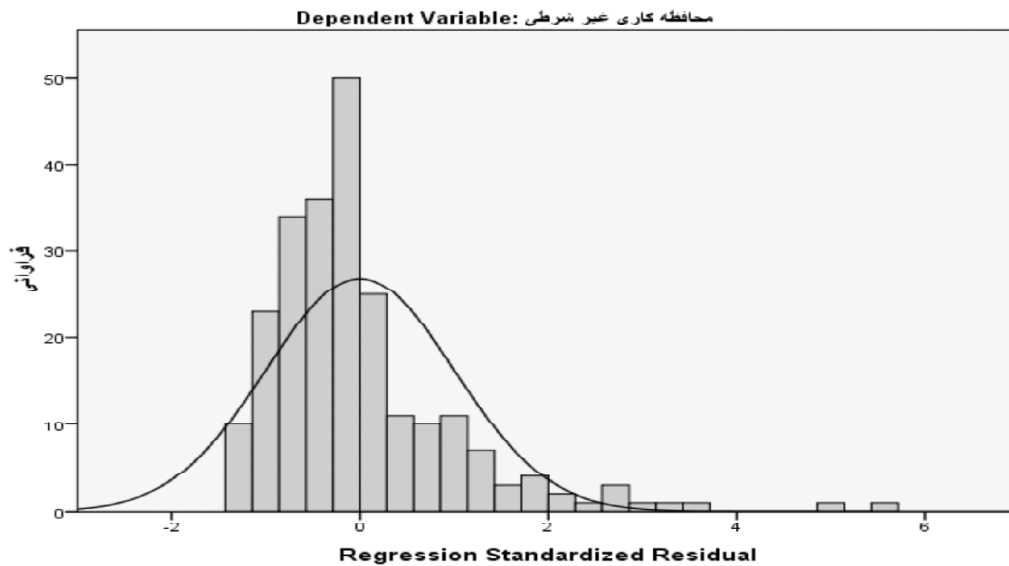


Figure 2: Regression standardized residual for second hypothesis

Table 5
Summary of regression model

Correlation coefficient	Coefficient of determination	Durbin-Watson value	f	Significance level (sig)
0.032	0.065	1.94	16.11	0.000

One of the requirements for regression is the independence of the variables errors of each other, so that if these errors are not independent, the regression results will not be reliable. Thus, the Durbin-Watson statistics were used to preserve this independence. If the obtained Durbin-Watson value is 1.5-2.5, we can assure that the error is independent. It was 1.94 for the current study. The coefficient of determination value screens the model's precision, therefore the more it is inclined towards 1, the more precise the model will be for predicting the dependent variable. This value was 0.065 for the current study which is so low, although the model is determined by the independent variable. For presenting the results of regression test, there should be a

linear relationship between the dependent and independent variables and the availability of this relationship is determined by Fisher test. For the current study, this value was 0.000 which means there is a linear relationship between the variables.

Table 6
Regression coefficients

Dependent variable	Independent variable	Non-standard constants		Standard constants	t	Significance level (sig)
		B	Standard error	Beta		
Non-conditional conservatism	(Constant)	-9.62	2.51		-3.38	0.000
	Conditional conservatism	1.57	0.392	0.254	4.01	0.000

It can be estimated by T-test whether the independent variable is able to affect the dependent variable, and if it is, to what extent it is effective. For determining this, the t-test error level is used as it is seen in the above table, the t-test error level value for conditional conservatism is 0.000 which indicates that conditional conservatism affects the non-conditional conservatism, so the hypothesis is approved.

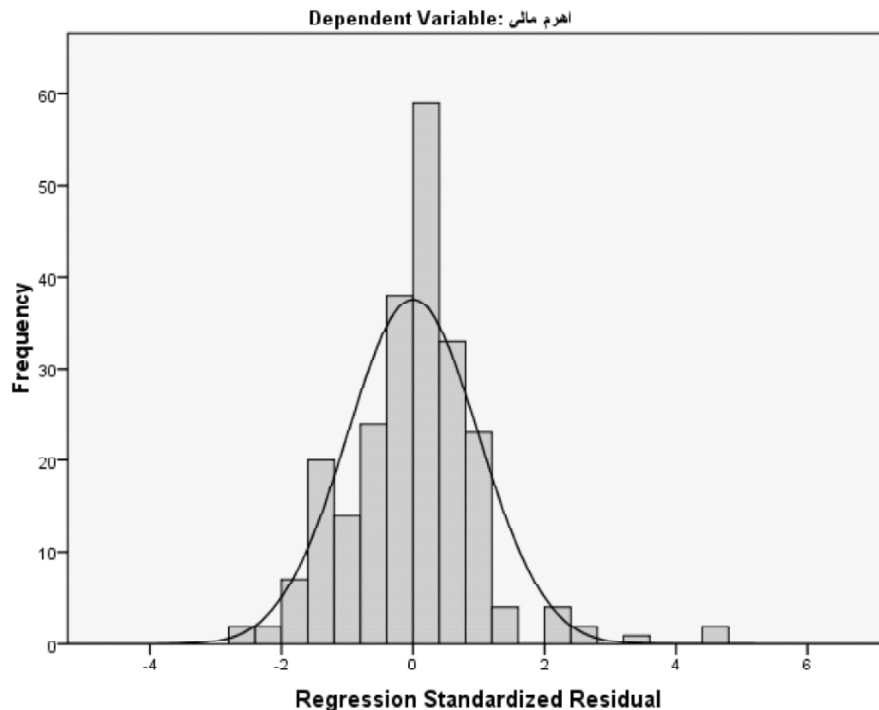


Figure 3: Regression standardized residual for third hypothesis

Third hypothesis: there is a significant relationship between financial leverage in a company and conditional accounting conservatism.

H1: there is not a significant relationship between financial leverage in a company and conditional accounting conservatism.

H0: there is a significant relationship between financial leverage in a company and conditional accounting conservatism.

Table 7
Summary of regression model

<i>Correlation coefficient</i>	<i>Coefficient of determination</i>	<i>Durbin-Watson value</i>	<i>f</i>	<i>Significance level (sig)</i>
0.068	0.005	2.03	1.08	0.299

One of the requirements for regression is the independence of the variables errors of each other, so that if these errors are not independent, the regression results will not be reliable. Thus, the Durbin-Watson statistics were used to preserve this independence. If the obtained Durbin-Watson value is 1.5-2.5, we can assure that the error is independent. It was 2.03 for the current study. The coefficient of determination value screens the model's precision, therefore the more it is inclined towards 1, the more precise the model will be for predicting the dependent variable. This value was 0.005 for the current study which is so close to zero, so it can be said that the model is not determined by independent variable. For presenting the results of regression test, there should be a linear relationship between the dependent and independent variables and the availability of this relationship is determined by Fisher test. For the current study, this value was 0.299 which means there is no linear relationship between the variables.

Table 8
Regression coefficients

<i>Dependent variable</i>	<i>Independent variable</i>	<i>Non-standard constants</i>		<i>Standard constants</i>	<i>t</i>	<i>Significance level (sig)</i>
		<i>B</i>	<i>Standard error</i>	<i>Beta</i>		
Financial leverage	(Constant)	2.587	1.875		1.379	0.169
	Conditional conservatism	-0.305	0.293	-0.068	-1.040	0.299

It can be estimated by T-test whether the independent variable is able to affect the dependent variable, and if it is, to what extent it is effective. For determining this, the t-test error level is used as it is seen in the above table, the t-test error level value for conditional conservatism is 0.299 which indicates that conditional conservatism does not affect the discretionary accruals, so the hypothesis is rejected.

CONCLUSION AND SUGGESTIONS

The First Hypothesis

The managers as the authorities responsible for preparing the financial statements with total awareness of the company's situation and having more information on these statements compared to others potentially try to build a favorable picture of the business unit. For example, they may understate the costs and provide higher benefits in the financial statements through announcing a period's costs as the assets. Also, the assets and capitals of a business unit may look better than what they really are and the outside investors' motivation for capital injections and financial interests may rise.

In such a situation, the accounting principles and procedures backed by the authorities formulating the accounting standards, utilize the concept of conservatism in order to modify the managers' optimism, protect the stakeholders' rights, and fairly provide the financial statements (Jiang & Kim, 2000).

For this hypothesis, the relationship between the discretionary accruals and conditional accounting conservatism was investigated. The results indicated that since the model determination level by the independent variable was almost zero and there was not any correlation and linear relationships between the variables, and due to the significance level of T-test being higher than 5% for conditional conservatism, there were no relationships between these two variables and it can be said there is no relationship between discretionary accruals and conditional accounting conservatism.

Second Hypothesis Results

For this hypothesis, the relationship between conditional accounting conservatism and non-conditional accounting conservatism was investigated. The results indicated that conditional conservatism is effective on non-conditional conservatism which is approved by determination the model by independent variable and correlation between the variables, beside significance of t-test. Thus, there is a relationship between conditional accounting conservatism and non-conditional accounting conservatism.

Third Hypothesis Results

For this hypothesis, the relationship between financial leverage and conditional conservatism was investigated. The financial leverage ratio measures the company's total debt. The mentioned ratio also indicates the company's ability for responding to short- and long-term obligations. The results of hypothesis testing indicates that due to lack of correlation between the variables, lack of a linear relationship between them, and high level of t-test error, the conditional conservatism is not effective on financial leverage.

The actual and potential investors: conservatism leads to quicker and in-time detection of the profit-decreasing events against non- detection of profit-increasing

events. This leads to a part of future periods' costs to be accounted in the current period which in turn can decrease the profit's stability and impose the costs of the improper decisions on the actual and potential investors. Thus, it is suggested for this kind of financial investors to consider this issue while making financial decisions.

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