

The relationship between short-term debt and accrual-based earnings management of listed companies in Tehran Stock Exchange

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Abstract : Most previous studies have shown that there is a positive relationship between debt and earnings management. Target The present study investigated the relationship between short-term debt and accrual-based earnings management of listed companies on the Stock Exchange of Tehran. And in terms of applied research is descriptive-correlation. Two hypotheses were formulated for research. To do panel research data and software Eviews 6 And spss 18 used. We sampled 107 companies in Tehran Stock Exchange for the period 1388 to 1392 were studied. After the execution of research and application of descriptive and inferential statistics were first and second hypothesis research confirms. Results showed that short-term liabilities and the accrual-based earnings management there is a positive relationship and opportunity Its also affect investment.

Key Words: Tehran Stock Exchange, Short-Term Debt, Earning Management Based on Accrual, Investment Jel \ Classification: G1, M41

Speech problem at a theoretical basis

The purpose financial statements, providing information about the status, performance and financial flexibility to users of financial statements in making economic decisions, helpful. So we can say that if manipulation of financial statements, the financial statements undermine the purpose and philosophy. In addition, platforms such as conflict of interest and information asymmetry leads to the development of this subject can be (arrested and Hosseini, 1392). Manipulation of financial statements by the Director-called earnings management to achieve specific goals of PAT in a bonus plan based on three assumptions, debt contracts and the political costs. In each of these three hypotheses , Please consider achieve the desired goal, all of which benefit from period to period is transferred. Please aimed at manipulating the items for action on debt contracts to contracts that represent debt liabilities associated with earnings management is of great interest in recent research has (Scott [1](#) , 2007). In this study the issue in Tehran Stock Exchange by taking opportunities The investment is evaluated.

There is some evidence of a relationship between announced. This means that the relationship between companies with different conditions, for example, various different investment opportunities in some studies have shown, for example, the relationship between the companies with investment opportunities has been a little weaker than other companies (an_d John Simon [2](#) , 2013). This study investigated the problem is to manage the Companies listed in the Tehran Stock Exchange extent due to short-term debt and thereby benefit accruals to manipulate the handles. Is this relationship also in terms of different investment firms, with more power.

The main hypothesis of the research

Hypothesis is correct or not there is anyone who should be tested temporary (Hafeznia, 1383, 110).

1.byn short-term debt and there is positive relationship accrual-based earnings management.

2.byn short-term debt and accrual-based earnings management firms with more investment opportunities there is a positive relationship.

Research method

This study is an applied research (decision-oriented), because our research results to the Stock, managers, investors, creditors, auditors and universities helpful. However, since the financial statements using historical data to examine the relationship between short-term debt with earnings management is ex post facto.

Variables

Regression model of the study for the first hypothesis is as follows:

Regression model of the study for the second hypothesis is as follows:

Table variables

Variable type	Variable name	Symbol
Independent	Short-term debt	DEBT
Dependent	Accrual-based earnings management	REDCA
	Firm size (log of assets)	SIZE
control	Return on assets	ROA
	The market value of the equity book	MB
	Gearing ratio (long-term debt)	LEV
equalizer	investment	INVEST

Population and sample

The target population of this research is elected as follows:

Corporate accepted in Tehran Stock Exchange from 1388 to 1392, which is currently 4 8 8 company.

Screening sample is selected by the following criteria:

Holding companies, financial institutions, banks, insurance and investment companies were excluded due to the different nature of their activities.

Information required for use in tests should be available.

For the same period of fiscal year ended 29 March are.

If necessary, to select a sample of the population, the sample is as follows:

Sampling

Where n sample size, N volume of research, p towards society And d is the maximum error (Azar and Momeni, 1385, 76).

The maximum error of 10% is considered.

If the sample size is too good Nsabhyay is proposed that they be considered in estimating sample size to its minimum sample size of not less. The following is an example installers of the following:

In this correlation (sample size n = 30)

The causal research and experimental (sample size n = 15)

In this descriptive Survey and a survey (sample size n = 100)

In research community need to classify for sampling at least each class of 20 to 50 people (cultural and Safarzadeh, 1387, 258).

The study also noted that a quorum.

After applying restrictions to the number of the 300 samples was determined after sampling:

In this study, 107 samples participate in the 5-year period the overall 5-year, 35 companies in terms of statistics and empirical terms is a good example.

The formation of panel data model

Panel data regression difference [3](#) with typical time series [4](#) or cross-sectional regressions [5](#) is in the double-captioned panel data regression, the variables are:

And the operation is as follows

That It represents the company and Represents time. Therefore, subtitles While the size of cross-sectional regressions The time series shows. Vector Is equal to Intercept and the slope of the independent variables and Indicative Amin is the view of the independent variables. Most applications of panel data from a one-way error component model [6](#) are available for the error.

where in Shows the effect of (a) non-visible individual and Represents the residual error terms. the amount of Is constant and firm-specific effects that are not included in the regression is justified. In this case, it can be seen as the ability of companies to consider. Including residual error And one change with time and can be regarded as a regression error term to permanent. Note clear these models differ in the amount of regression models And independent variables is dependent or independent of these factors.

Chow test for the diagnosis is whether the fixed effects model should be used or integrated model is better?

In other words this test the following hypothesis test.

Used a variety of models

Fixed effect model [7](#)

Here, it is assumed that Fixed parameters that must be estimated. The remaining sentences are error occurs, Independent and Which is distributed uniformly. For all And Independent of Is considered. Fixed effects model when the model is suitable for And components There is a correlation. For example, the relationship between income and education level, work experience and age is investigated. In this case, the component The ability of an individual can be correlated with three variables. That was the .

Random effect model [8](#)

As before mentioned assumptions hold, but it is assumed between And components There is no correlation between these two variables are independent and That part of the total error In this case, the random effects model is used For example, the relationship between capital and labor, and production is investigated. In this case, the component May demonstrate the ability to manage that is associated with the two variables (although it may be the result of the accumulation of capital and labor is the ability to manage both). In this case, the .

Hausmann test [9](#)

In the example of the correlation function of the component Independent variables in question is in fact the question is used in data analysis with fixed effects model or random?

Hausman test on the null hypothesis and the alternative hypothesis to the test.

Or

The test statistic is defined as follows

Top-square distribution statistic distribution - two with K Degrees of freedom (K The number of independent variables) is.

Describing data

At Table Having the following characteristics Indicators in the center of Sentence Or wars of this And Of the grain And Measures of dispersion Sentence SD, Fans of complexity and For skewness of different variables Calculation By Is Great to be The stigma of this From Of the grain Existence points Great And At Data And sign CE of the Because the The stigma of this Under Impact of These Values The I have ordered In these cases, the data distribution is skewed to the right and on the contrary, and in some cases distribution is skewed to the left Skew left no variables, but variables DEBT, MB and INVEST skew to the right.

Table 4-1: Descriptive statistics for variables

Variables	Number	average	Middle	SD	Skewness	Strain	At least	Maximum
REDCA	535	70 793	69097	1491621	0.43	0.80	-5183727	6023692
DEBT	535	1564394	329 451	3737891	4/41	22/77	11787	28706034
SIZE	535	5/91	6/00	0.77	0.64	0.19	5/00	8/00
ROA	535	0/10	0.09	0.13	-0/13	2/99	-0/49	0/63
MB	535	6/33	2/38	1.13	3/21	12/24	-18/16	82/49
LEV	535	0/63	0/63	0.28	1/51	5/37	0/10	2/08
INVEST	535	291 363	8495	844 980	3/46	11/32	0.00	4794755

If the mean and the median variables are close to symmetrical distribution of variables This feature is important because the symmetry of the normal distribution is one of the features that will be discussed in the next section. (Skewness and kurtosis of the normal distribution is zero) value of skewness and kurtosis for the dependent variable 43/0 and 80/0 respectively which means that the variable distribution and symmetry of the distribution of this variable is similar to a normal distribution.

Testing hypotheses

Review normal to be Distribution The dependent variable

Normal to be One of the assumptions of the regression residuals of the regression model that represents the validity of regression tests At Continuation With Use From Test Kolmogorov - Smirnov normal to be Distribution Dependent variables. By Is. The normality of the dependent variables to the normal residuals (difference between the estimated value of real values) is performed. So it is necessary to estimate the normality of the dependent variable parameters to be controlled and in case of non-normal condition suitable solution for them (including

conversion of it) would be taken. Assumption Zero And Assumption front side At this Test To the face under Writing Out.

table4-2: Kolmogorov-Smirnov test for normality of the dependent variable

Year	Number	Normal parameters.		The difference			the amount of Z Kolmogorov - Smirnov	The probability
		average	SD	Absolute	Positive	negative		
1388	107	8729	1241977	0.27	0.27	-0/25	1/25	0/087
1389	107	31988	1459631	0.27	0.25	-0/27	1/07	0/201
1390	107	40158	1615222	0.30	0.30	-0/25	1/21	0/108
1391	107	164 854	1446969	0/29	0/29	-0/23	1/28	0/075
1392	107	108 238	1678164	0.26	0.25	-0/26	1.02	0/247

The probability value for the dependent variable REDCA 88 to 92 years respectively for 087/0, 201/0, 108/0, 075/0 and 247/0 is more than 05/0, the distribution of these variables predicted (Skewness and kurtosis parameters close to zero) is normal.

Analysis panel

In the analysis of panel data for cross when [10](#) were collecting the data collected for different sections (in this case Company) over time. The data that are collected in this way, the independence of observations can not be maintained because any company in different years several repeated view that these observations are related to one another (since they are owned by a company). To analyze this type of data analysis is used panel. In the discussion panel analysis model without fixed effects, fixed effects and random effects that different tests are used to determine the appropriate model. The following briefly referred to this test:

The selection process of suitable models

Model selection process are as follows:
 First, there is no effect of the model is test (test-Limmer or Chow).
 At this stage, hypothesis testing are as follows:

If the amount is likely to test the null hypothesis is up less than 05/0 will be rejected at the 95% confidence level models with fixed and random effects is appropriate and otherwise does not reject the null hypothesis at the 95% confidence level that the appropriate integrated Is.

Second, the model with fixed effects models with random effects is test (Hausman test).
 If the model used is the model effects, the next question is whether or models with random effects model with fixed effects is appropriate? To answer this question random effects model with the fixed effects model was tested using the Hausman test.

In this test the null hypothesis and the alternative hypothesis is as follows.
 If the probability for above test is less than 05/0 null hypothesis is rejected at the 95% confidence level fixed effects model is appropriate) and otherwise null hypothesis is not rejected at the 95% confidence level models with random effects appropriate Is.

At the end of three models without effects, fixed effects models and models with random effects model was the most appropriate and significant in each of the independent and control variables will be discussed.

Choose a model

As previously mentioned, the appropriate model among the models (integrated model, fixed effect model or random effects model) is chosen Chow and Hausman test results to determine the appropriate model presented in the following table

Table 4-3: Chow test and Hausman test to select the appropriate model

models	Chow test or Limmer				Hausman test				result
	Effects test	the amount of	Degrees of freedom	The probability	-Two-Square value	Degrees of freedom	The probability		
The first model	the amount of F	5/153	(106,423)	0.000	5/07	5	0/408	Models with random effects	
	The Chi - square	443/600	106	0.000					
The second model	the amount of F	5/571	(106,426)	0.000	4/69	2	0/096	Models with random effects	
	The Chi - square	465/308	106	0.000					

Chow test probability values in the above models is less than 05/0 (equal to 0.000) Thus, the model used for the company's separate effects.

Hausman test probability for the first version of 408/0 and 096/0 for the second of the two is more than 05/0 models with random effects model used is therefore a continuation of this model was used to investigate hypotheses .

The first model: model with random effects

In this part of the analysis of a panel to investigate and model 11 is used. The model is given as follows:

In this model, the null hypothesis and the alternative hypothesis is as follows:

At Table under results analyze Panel Brought By Is:

Table 4-4: Estimated and test parameters

parameters	Coefficients	the amount of t	The probability	result	VIF
Constant	-1530953	-0/916	0/360	Meaningless -	
DEBT	0/350	7/782	0.000	A significant and positive	1/87
SIZE	123 470	0/441	0/659	Meaningless	1/97
ROA	3637974	2/700	0.007	A significant and positive	2.00
MB	2532/36	1/166	0/244	Meaningless	1.02
LEV	-192 457	-0/331	0/741	Meaningless	1/89
the amount of F		22/25	The probability F		0.000
The coefficient of determination		0/17	Durbin Watson		1/53

The table-top models with random effects estimate the amount Possibility Significant F Equal With Is 0.000. this Amount of Lower From 05/0 is so Assumption Zero At Level confidence 95 Percent Rejection In other words, there are significant at 95% confidence level **model**. amount Coefficient Determination Is equal to 17/0, about 17 percent of the dependent variable is explained by the independent variables and control. The Durbin-Watson statistic is equal to 53/1 residual values close to 2 indicate lack of auto shows is that another regression assumptions. (Thus, there is no autocorrelation between residuals).

Values of VIF (variance factor) marker to detect multicollinearity between independent variables if its value is above 10, there is the possibility of multicollinearity between independent variables. The rate of this index for all variables is less than 2 multicollinearity between independent variables thus correlation does not exist.

For Estimated Coefficients Can be Assumptions under And With Use From Statistics **t** - partial Performance A. Assumption Zero And The null hypothesis for the intercept or constant is as follows:

And for the relationship between independent and control variables To be written as:

And the amount of Statistics Test To the face under Calculation Is:

High standard normal distribution is a statistic distribution for large samples so that the area will be rejected and the rejection is as follows.

The referee is to be rejected if the value of t in the null hypothesis is rejected.

The relationship between independent variables and the dependent variable specified in the table above is a positive and significant relationship in the sense that an increase in the independent variable, dependent variable increases, while significant negative correlation with the increase in the independent variable, dependent variable is reduced communication means there is no relationship between the dependent and independent variables.

DEBT t statistic value equal to 78/7 (positive and significant), equal to 44/0 SIZE (nonsense), ROA equal to 70/2 (positive and significant), the MB is equal to 17/1 (B. meaning), and for LEV equal to 33 / -0 (nonsense) to intercept t-statistic amount equal to 91 / 0- to 95 percent in the region reject the null hypothesis that the intercept is significant is not.

Interpretation

Since the test statistic equal to 78/7. So this variable DEBT REDCA That is a positive and significant relationship with other control variables for each unit increase in DEBT REDCA to the 35/0 unit value increases.

Compare results

The results of research (1) Simon and John (2013), (2) Gupta et al (2008) Simon and John (2013), (3) Izadi et al (1392) are consistent.

Previous research are summarized as follows:

Simon and John (2013) survey as short-term debt maturities, monitoring and accrual-based earnings management performed. The research on companies listed on the Stock Exchange America and between years 2003 and 2006 was performed. The results showed that the accrual-based earnings management between short-term debt and significant positive association. This association is consistent with the theory of financial crisis showed the relationship between the companies also have the opportunity to invest a little weaker than other companies have.

Gupta et al (12) 2008) is an international, cross-sectional study with a legal obligation, short-term debt and earnings management performed. The findings consistent with the theory of financial crisis showed that short-term debt and there is a significant positive relationship between earnings management. The findings also showed that the association in countries with weak legal system this relationship further. In this study, the firm's investment opportunities unheeded.

Izadi et al (1392) study as the relationship between financial leverage and real earnings management of listed companies in Tehran Stock Exchange did. In the literature, numerous studies have been done on earnings management and financial leverage. The results show that in terms of financial leverage, companies tend to pay through the management of real benefit to the earnings. The aim of this study was to investigate the relationship between financial leverage and management of real profits. In this study, 118 companies in the period 1389-1379 is examined. The real benefit management measures, including operating cash flows unusual, abnormal production costs and discretionary spending is unusual. Real earnings management as the dependent variable and the independent variable is financial leverage. To examine the relationship between financial leverage and management measures of real benefit of multivariate regression analysis was used to panel data, the results showed that financial leverage and measures between real earnings management, relationship Reverse There is a significant and

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