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The Effect of Pre-bankruptcy Financial Distress on Earnings Management Tools

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ABSTRACT

The purpose of this research is the effect of pre-bankruptcy financial distress on earnings management tools in the listed companies in Tehran stock exchange. The sample of this study is 133 of listed companies in Tehran stock exchange in which have been examined during 2010-2014. In this research, independent variable is pre-bankruptcy financial that is estimated according to the criteria of Staw et al. (1983) and earnings management tools as dependent variable include real activity manipulation and accrual manipulation were considered. Independent t-test was used in econometric software Eviews 9 to test the research hypotheses. The results of this hypothesis showed that there was a significant positive relationship between pre-bankruptcy financial distress and real activities management and accrual manipulation.

Keywords: Pre-bankruptcy, Earnings Management, Financial Distress, Real Activity Manipulation, Accrual Manipulation
JEL Classifications: C32, O13, O47

1. INTRODUCTION

Investors who are always looking for predicting the possibility of bankruptcy risk to prevent their fuel capital. Therefore, they are seeking ways whereby they could estimate the company's financial bankruptcy because bankruptcy leads to economic losses and social costs for managers, investors, creditors, employees and so on. On one hand, increasing competition and economic institutions, have limited access to resources and probability of bankruptcy has increased. In this regard, previous researches have shown that companies hide their bankruptcy and when they officially declared bankruptcy at the time, tried in vain to avoid bankruptcy and it is too late (Kumar and Ravi, 2007). On the other hand, when companies are in economic disadvantage, administrators from accountancy units that are the last line of financial statements (i.e., profit) to improve and thereby to change its information content (Hope and Hope, 1996).

Bankruptcy prediction will be the first useful time for the company, the expected time to bankrupt has higher distance by now. Second, predicted at the time the symptoms of financial distress, and dysfunction so evident (Panahi et al., 2014). Therefore, early detection can greatly needed money before the bankruptcy took to investors and shareholders. However, it should be noted that one of the ways used to inform the status of the company, is profit management. Earnings management of Public Administration refers to intervene in the process of determining earnings management is often desired goals.

These data may be available measures that substantially affect the financial statements. There are several ways in which office notation can be used to manage earnings. Management profit when management knows that the goal of this work is to protect the interests of the owners of the company's profits. These changes, particularly when the company is in financial hardship, are exacerbated. Therefore, in this study, it is discussed to evaluate the effect of financial hardship before the bankruptcy of the means of earnings management.

2. THEORETICAL FOUNDATIONS

The administrator tool and different motivations for office revenues may affect the quality and credibility of financial statements. Especially during times of financial distress, the pressure from shareholders and other stakeholders is generated by providing poor results or difficult financial situations that can transform the concept of probability and this rise change for managers to change the company's current performance. For example, past research literature widely shows that managers reported stronger incentives to manage earnings such as property legal recording situations, during the period before the bankruptcy (Campa et al., 2014).

Managers of business units may have tried a variety of reasons through various methods of accounting, profits of financial support to change their policies. Managers can use a variety of methods to manipulate profits, some of the tools used in relation to earnings management, which have a direct impact on cash flows to manipulate discretionary accruals included, managers also motivated to achieve a desired profit margin in relation to maintenance conditions, years before the actual attempt to manipulate financial events persist that changes in cash flow and even in some cases a change in cash flows and In some cases, the change involves discretionary accruals, such as reducing the cost of advertising is to raise profit (Baharmoghaddam and Hassanifard, 2010). It should be noted that managers tend to use real earnings management through accruals to manage earnings (Graham et al., 2005). When the select the real-time of manipulation activities that require immediate results and do not consider losses and costs for the companies in the long term (Campa et al., 2014). Therefore, following the adoption of these decisions, managers may profit and loss statement and futures companies in crisis even companies into bankruptcy. For example, the manager can divide considerable bonus payments to board members and the management of the company providing companies with high profit and high dividend for the financial year. This decision could affect the future financial statements and lead to financial difficulties for the company. Financial statement items of financial restructuring and exciting figures in the financial statements of companies following management decisions can be very interesting for shareholders and investors. However, recent research shows that companies are experiencing financial hardship consultants, in the years before the outbreak of the financial structure are different than other companies (Campa et al., 2014).

Previous studies have shown that top managers have high incentive to manipulate earnings In terms of financial hardship, in fact, bankrupt companies, compared to firms with the financial health will manipulate rising profits and in some cases, companies do this to financial hardship to eliminate negative signs (Iatridis and Kadorinis, 2009; Jaggi and Lee, 2002; Sweeney, 1994). However, the impact of financial distress on earnings management has received less attention in Iran. So this study is conducted in order to solve the shortage of research, to examine the impact of financial distress pre-bankruptcy on management tools firms listed in the Tehran stock exchange.

3. REVIEW OF LITERATURE

According to the study, which the impact of financial hardship of pro-bankruptcy on management tools's profits, this section has been dealt with an overview on research and theories that used by researchers and experts in the field of relations between the needed money before the bankruptcy and profit management tools.

Kangarzadehlouei et al. (2009) examined the relationship between income smoothing and financial distress of companies in the Tehran stock exchange. A sample of 81 member companies active trade law amendment under article 141 in Tehran stock exchange during the 10-year period between 1997 and 2006 were selected and the possibility of financial hardship was calculated through Altman model tend to predict the probability of financial distress. Their findings suggest that managers of business units in various stages of financial distress, to better illustrate the financial position and performance of their company, in order to maintain itself in the capital market through the tools at their disposal refusing that lead to income smoothing.

Dastgir et al. (2012) investigated how earnings quality in companies was experiencing financial hardship. This research analyzes the companies listed on the Tehran stock exchange and was conducted in the period of 2001-2009. The results indicate that companies needed to manage money into their profits in the 3 years prior to bankruptcy in an increasing manner. This management was tested and determined in two ways: Manipulation of accruals and real activity and it was found that companies with more financial hardship of healthy firms manage earnings through real activity, while normal companies do this mostly through accruals.

Rahmani and Ramsheh (2013) studied the replacement relationship between management and accruals management of real activity. This study examines the use of the actual activities or accruals, as an alternative, how much is common for earnings management in Iran. The results show that managers based on relative costs will use each of these two methods of earnings management, and also shows that managers will modify the level of actual activities during the year, accrual-based earnings management level.

Saeedi et al. (2011) examined the impact of earnings management through manipulation of the actual activities of the future performance of listed companies at the Tehran stock exchange. A total of 123 companies listed in the stock exchange over a period of 9 years and the actual benefits management standards provided by Garcia et al. (2009) and the future operating cash flows and future operating profit is used as a measure of future performance. The results show that there is an inverse significant relationship between the real management measures profit with future performance. In other words, the results can be concluded that manipulating real activities in the current period reduces the companies' future performance.

Ahmadpour and Shahsavari (2014) investigated the earnings quality management and impact on the profitability of future profits of Tehran's stock exchange bankrupt companies. The results with the technique panel data for 55 companies subject to the verge of bankruptcy Altman's model, stating that these companies have a disproportionate composition and proceeded to increased profit management. The results of opportunistic theory of earnings management support and shows that the future profitability of bankrupt companies reporting earnings management is taken over earnings quality work.

Mashayekh and Ganji (2014) investigated the impact of earnings quality onn the bankruptcy prediction using artificial neural networks. The sample was selected among companies in the Tehran stock exchange, based on Kolmogorov-Smirnov test to check normal distribution, finally, the accuracy and Type I and Type II errors were examined in neural network model for high quality and lower profits for both companies and t-test was used for comparing two specimens at 95%. The results show that the prediction accuracy of ANN for companies with high profit is significantly higher than profit for companies with poor earnings quality.

Rosner (2003) investigated the manipulation of accruals in the company using a sample of US Firms, and these companies realized that their profits are infrequent and are in the form of management. He assumed that his test is during the period of manipulate earnings of the companies 5 years before bankruptcy. Furthermore, it stated that in the years of pre-bankruptcy of companies have behavior of reducing income, and received lack of continuity of audit reports. He declared this to reverse the decades-long items years ago when independent auditors' continuity of the applicant at the time of trouble finding it.

Charitou (2007) in his study used a sample of firms that needed money to analyze the implications of profits in the company. This study is to analyze the role of auditors and others who care units limiting manipulated earnings in the year prior to bankruptcy, as well as, relationship between manipulating profits in years and likely to survive after suffering symptoms of it.

Garcia et al. (2009) using a large sample of British Firms Comparison with non-bankrupt companies found that bankrupt companies in the 4 years of pre-bankruptcy manage their profits in an increasing form. Their study showed that the profit management is done using both ways of earnings management and accounting earnings management as a result, the actual activities and management accounting income decreased reliability.

Li (2011) examined the impact of earnings management and earnings quality, the level needed money and Chinese companies went bankrupt. Their findings showed that administration of bankrupt companies' profits is opportunistic and healthy corporate earnings management, more than companies with financial hardship tends towards the performance. They also found that interest management better than the quality of earnings, anticipated future profitability and earnings quality is high in healthy companies and is low in bankrupt companies.

Campa et al. (2014) conducted a study on the response to the question whether Spanish companies go bankrupt, compared to their counterparts, during the years prior to the procedure of bankruptcy law tend to manage earnings or not? In the analysis of a sample matched bankrupt companies, it became clear that earnings management of bankrupt companies is more than those in non-bankrupt them. They achieved this accomplishment of accrual and manipulation of actual items. Findings showed that management tools profit operates by industry in which the company and the years of pre-bankruptcy are changed.

Campa et al. (2014) in a paper examines the impact of financial hardship before the bankruptcy of the means of earnings management in small and medium enterprises. The aim of this study was to evaluate whether the stress of financial hardship nontemporal, the terms of a choice between real activity and manipulation of accruals is effective or not, was that their results show that managers in levels of the stress of bankruptcy, management of real benefit activities rather than accrual, however, have implications for the company in the long run.

4. METHODOLOGY

The study based on purpose is applied and according to the method is cross-correlation. In this study, providing the indicators for management and profit needed money, the impact on earnings management tools is examined. In this research, new methods of library and reference books, articles have been raised on the subject. Data were collected from the website of the stock exchange, Website management, research, Development and Islamic Studies affiliated to the Tehran stock exchange and the software also devise new processes and outcomes, initial data on companies; therefore, the method of data collection is field-library. Then the data were transferred to the Excel and Eviews software, Platform data analysis is provided using regression models and correlation analysis. Finally, the impact of corporate financial distress has been tested on any profit management tools.

The population of this research included the firms listed in the Tehran stock exchange, in the period 2010-2014. The systematic elimination method for sample selection and screening is due to the following:

- Before the beginning of 2010 are listed in the Tehran stock exchange
- They are not among the financial intermediaries' industry
- March is the end of their fiscal year
- The information needed to calculate variables about the companies is available during the period of investigation
- Companies that have not changed their fiscal year during the period of investigation.

Given the above situation were companies that suitable conditions include 133 companies (including 665 firm-year level), which constitutes sample.

4.1. Hypotheses

The main hypothesis 1: There is a direct significant relationship between the needed money before the bankruptcy and the management of discretionary accruals.

The main hypothesis 2: There is a direct significant relationship between the needed money before the bankruptcy and earnings management through the manipulation of real activity.

Sub-hypothesis 2.1: There is a direct significant relationship between the needed money before the bankruptcy and earnings management through an unusually low level cash flow.

Sub-hypothesis 2.2: There is a direct significant relationship between the needed money before the bankruptcy and earnings management through production costs.

According to the statement, including financial hardship before the bankruptcy models to evaluate the effect on earnings management tool used is as below.

4.1.1. Model 1: (First hypothesis)

The following model is used to measure the actual management profits through unusual cash flows.

$$CFO_{it}/ASSETS_{t-1}=\alpha+\beta_1(1/ASSETS_{it-1})+B_2(ASSETS_{it-1})+B_3(\Delta SALES_{it}/ASSTS_{it-1})+\epsilon_{it}$$

4.1.2. Model 2: (Second hypothesis)

This model is used to measure the actual management profits through production.

$$PROD_{it}/ASSETS_{it-1}=\alpha+\beta_1(1/ASSETS_{it-1})+\beta_2(SALES_{it-1})+\beta_3(\Delta SALES_{it}/ASSETS_{it-1})+\beta_4(\Delta SALES_{it-1}/ASSETS_{it-1})+\epsilon_{it}$$

4.1.3. Model 3: (Hypothesis 1-2)

Accruals are unusual that can be estimated from the following model.

$$AWCA_{it} = WC_{it}-(WC_{it-1}/S_{it-1})*S_{it}$$[1]

4.1.4. Model 4: (Hypothesis 2-2)

The model may be used to test hypotheses, the relation between the needed money before the bankruptcy with a variety of earnings management. So that the dependent variable of the model obtained from waste 3 top model, and this model is estimated to be 3 times (Table 3).

$$Y_{it}=\alpha+\beta_1DISTRESS_{it}+\beta_2SIZE_{it}+\beta_3CFO_{it}+\beta_4LEV_{it}+\beta_5ROA_{it}+\beta_6EISSUE_{it}+\beta_7DISSUE_{it}+\beta_8GROWTH_{it}+\epsilon_{it}$$

5. TEST RESULTS OF RESEARCH HYPOTHESES

Prior to estimate the regression model research diagnostic tests were carried out to determine significant effects model. It can be accepted that the initial assumptions are established in determining the effects attributable regression model and results. Prior to estimate the regression model research diagnostic tests were carried out to determine significant effects model. Table 1 shows the results of these tests.

Table 1: Diagnostic test results

Model	Test	Statistics	Degree of freedom	Significant level
1st	Chow test	9.014530	(656,5)	0.0101
	Hausman test	10.024047	3	0.0184
2nd	Chow test	2.843350	(616,43)	0.0000
	Hausman test	32.074356	4	0.0000
3rd	Chow test	96.88769	(645,10)	0.0000
	Hausman test	71.329430	8	0.0000
4th	Chow test	5.568656	(646,10)	0.0024
	Hausman test	32.004175	8	0.0001
5th	Chow test	5.175389	(488,35)	0.0060
	Hausman test	5.389991	8	0.7152

Source: Research results

Due to the significant level of Chow test to determine significant cross-effects regression model research, Type I error is smaller than 0/05, the null hypothesis of this cross-sectional test has been rejected for no significant effects in the research model. It can be accepted that the regression model should be estimated using panel data. Hausman test was conducted to determine the significance level or cross-sectional random effects model was smaller than 0/05 Type I error. Therefore, the regression models were estimated into the panel data with fixed effects. Fifth model, except for the random effects model was used. Table 2 summarizes the results of this model.

Based on the criteria of goodness of fit can be seen that F-ANOVA statistical significance level was obtained <0/05 Type I error and showed significant regression model. Determining model also shows that 37/62% of profits variation through cash flows used in actual management of company is explained by the independent variables of the model.

Based on the criteria of goodness of fit is observed that the significance level is <0/05 Type I error analysis of variance of F statistics and showed significant regression model is estimated. Determining model also shows that 97/22% of variation is used to measure the actual management profit through the production and this model is explained by the independent variables.

Due to the significant level achieved before the bankruptcy and to assess the relationship between financial hardship 0/05 management of discretionary accruals with Type I error, it can be seen that Financial hardship of pre-bankruptcy of company has a significant effect on the management of discretionary accruals. The main hypothesis of the research is confirmed in the first error type 0/05. Also, due to the positive of this coefficient can be expressed as management has a direct impact on discretionary accruals. As well as factors including size, operating cash flow and annual change were significant in equity in the model.

6. DISCUSSION AND COCLUSION

Generally, this research seeks to answer the question, When the company needed money before the bankruptcy if the conditions exist, managers tend to use earnings management; and if the answer is yes, which tools are more inclined to earnings management. In other words, in this study we are trying to examine whether using management tools can prevent or detect failures profit companies are experiencing financial hardship, or not, and which of earnings management tools, the method is suitable. The study has two main

1 .Campa

Table 2: Estimation results of the first version of test

Independent variable	Beta coefficient	Standard deviation	Statistical t	Significance level	Vife
Intercept	0.070997	0.014667	4.840716	0.0000	-
1/AST(-1)	6390.773	3199.968	1.997136	0.0463	1.036858
AST(-1)	−7.21-10	1.85-09	−0.457317	0.6476	1.032723
S/AST(-1)	0.00044	0.000161	3.370646	0.0008	1.005548
Coefficient of determination	0.376267				
F statistic	2.363849				
Level of statistical significance of F	0.000				
Durbin – Watson statistic	2.239812				

Source: Research results

Table 3: Estimation results of the second version of test

Independent variable	Beta coefficient	Standard deviation	Statistical t	Significance level	Vife
Intercept	0.004055	0.011231	0.361012	0.7183	-
1/ASTT	4731.528	1982.575	2.386557	0.0175	1.130984
ST	5.16-10	2.32-10	2.221392	0.0269	1.090786
S/ASTT	0.827481	0.014918	66.46870	0.0000	1.106744
DELTAS(-1)/ASTT	−0.000583	0.000353	−1.651696	0.0994	1.082577
Determination coefficient	0.972263				
F statistics	101.8100				
Significane level of F statistics	0.000				
Durbin – Watson statistics	2.406613				

Source: Research results

hypotheses and sub-hypotheses that during the study were tested. We found that after the model was a response to the assumptions. The assumptions can be criticized as follows.

First hypothesis: There is a direct significant relationship between financial hardship before the bankruptcy and the management of discretionary accruals.

Site with the intention of reporting fair tend to accounting judgments and make their decisions; but in different situations, economic incentives, such as bonuses for executives that are ambitious to manage their profits because the company's value and wealth owners reported profits linked; But whatever the motive, means a lot of accrual earnings management, estimates and judgments accounting. Concern is that investment in community some profit public trust management eliminate procedures relative to external financial reporting and impede the efficient flow of capital in the financial markets. Due to the significant level achieved in pre-bankruptcy and assess the relationship between financial hardship 0/05 management of discretionary accruals with Type I error, it is observed that the needed money during pre-bankruptcy has a significant influence on the company's management and discretionary accruals. The first hypothesis is confirmed at the level of Type I error 0/05. Also, due to the positive of this coefficient can be expressed as financial hardship during pre-bankruptcy has a direct impact on the management of discretionary accruals. So the hypothesis is confirmed and is comply with studies by Baharmoghaddam and Hassanifard (2010) and Rahmani and Ramsheh (2013) and Campa et al (2014), Campa et al. (2014).

Based on the results and findings of the first main hypothesis, that financial hardship duringpre-bankruptcy has significant direct impact on the discretionary accruals. Therefore, it is suggested to shareholders and investors, given that managers, in order to mislead the market and other reasons to manipulate earnings through discretionary accruals during financial hardship exacerbated drawn and it's important, so pay attention to the report and compare their annual discretionary accruals. Especially when companies are faced with financial hardship.

Second hypothesis: There is a direct significant relationship between the financial hardship before the bankruptcy and earnings management through real activities manipulation.

Managers have incentives to manipulate earnings, which can affect the quality of the financial statements. The motives become more at the time of financial hardship. Studies show that manipulating real activity occurs in situations that managers need instant results. Due to the significant level obtained to assess the relationship between financial hardship during pre-bankruptcy earnings management through real activities manipulation with 0/05 Type I error, it can be seen that financial hardship during pre-bankruptcy has a significant impact on corporate profits based on the actual management. The second hypothesis is confirmed at the level of Type I error 0/05. Also, due to the positiveness of this coefficient can be expressed that pre-bankruptcy financial hardship has a direct impact on the actual management benefits. So the hypothesis is confirmed and is comply with studies by Dastgir et al. (2012), Saeedi et al. (2011), Ahmadpour and Shahsavari (2014), Charitou (2007), Garcia et al. (2009), and Campa et al. (2014), Campa and Minano (2015).

According to the second hypothesis, that financial distress during pre- bankruptcy has a direct effect on the manipulation of real activity. Given that, manipulating the real activity accompanies with the real economic costs as well. And if a manager is diverted from the real optimum level of operational activities and engaged in real activities manipulation, the company probably will have economic consequences in the long run. As well as manipulating the real activity indirectly affects the future operational activity of

Table 4: Summary of results

Main hypothesis	Hypothesis	Results
First main hypothesis	1) There is a direct significant relationship between pro- bankruptcy of financial hardship and management of discretionary accruals	Confirmed
Second main hypothesis	There is a direct significant relationship between pro- bankruptcy of financial hardship and earnings management through real activities manipulation	Confirmed
	2-1) There is a direct significant relationship between pro- bankruptcy of financial distress through abnormal levels of cash flow and earnings management	Rejected
	2-2) There is a direct significant between pro- bankruptcy of financial hardship and earnings management through production costs	Confirmed

the company because the director tends to sacrifice the company's future cash flows to the profit of the current period, and this phenomenon is exacerbated in times of financial hardship. It is recommended that shareholders of companies and investors pay special attention to the status of the company and the financial statements in the period of financial hardship. As well as the regulators and foreign law firms in stock exchange as well as careful monitoring and comprehensive reporting companies have suffered from financial hardship.

First secondary hypothesis: There is a direct significant relationship between the financial hardship before the bankruptcy abnormal levels of cash flow and earnings management.

Cash, can be less manipulated and applied by management. Companies with financial hardship, will report less cash flow, in order to mislead the market and other reasons, and increase their reported earnings through discretionary accruals. Due to the significant level achieved during pre-bankruptcy and to assess the relationship between financial hardship 0/05 management of discretionary accruals with Type I error, it can be seen that Needed money before the bankruptcy had no significant effect on operating cash flow. The first research hypothesis is rejected at the level of Type I error 0/05. And is in conformity with studies by Mashayekh and Ganji (2014), Saeedi et al. (2011).

Second secondary hypothesis: There is a direct significant relationship between the needed money before the bankruptcy and earnings management through production costs.

To manipulate earnings through overproduction, also cause abnormal changes in inventory and on the other hand will cause production costs. Manipulation occurs in profits, the managers need to have immediate results that are not important for companies in the long run, what is that expenditures. Due to the significant level obtained to assess the relationship between needed money in pre-bankruptcy and earnings management through production costs with 0/05 first type of error, it is observed that the needed money in pre-bankruptcy has a significant impact on earnings management costs. The second research hypothesis in the first error type 0/05 is confirmed. Also, due to the positiveness of this coefficient, it can be expressed that financial hardship of pre-bankruptcy has a direct impact on earnings management through production costs. So the hypothesis is confirmed in the long term and is based on studies by Dastgir et al. (2012), Dastgir et al. (2012), Kordestani and Tatli (2014), and Campa et al. (2014), Campa and Minano (2015).

According to second secondary hypothesis, there is a direct significant relationship between the pre-bankruptcy and financial distress, earnings management through manufacturing costs; and since the manipulation of the profits is done usually through overproduction, which causes unusual changes in inventory, and/or manipulation is done through changes in production costs. It is recommended to users of financial statements, especially investors should consider this issue prior to any decision, including investment.

In this study, the results showed that were tested during the study period, the research hypotheses. Table 4 summarizes the results of a test research hypotheses.

7. RECOMMENDATIONS

- It is suggested that this research in specific time periods, such as economic doubts and situations of hyperinflation, in particular, be examined
- It is suggested that future studies, models and other methods to assess the effects of financial hardship on earnings management tools used in short period of time.

In this study, to collect data on the variables, we used the enterprises that are not financial intermediaries' industry. Because of the nature of activity in some industries, such as special financial intermediation industry, it is proposed that such research be conducted with an emphasis on specific industry.

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