Manipulation of profit figures associated with the bankruptcy of companies listed in Tehran Stock Exchange

Mohamadreza Abdoli¹, Mahboobeh Jalali², Fatemeh Jalali³, Bahram Sattari⁴

1. Department of Accounting, Shahrood branch, Islamic Azad University, Shahrood, Iran
2. Department of Accounting, Shahrood branch, Islamic Azad University, Shahrood, Iran
3. Department of Accounting, Shahrood University non-profit, Shahrood, Iran
4. Faculty of Management, Osku Branch, Islamic Azad University, Osku, Iran

Corresponding Author email: Jalali_mahbubeh@yahoo.com

ABSTRACT: Bankruptcy play an important role at the financial manangement, thus the function of financial manangement is recognizing and complete understanding of the main factor of the bankruptcy. Also, giving some solution by them, befor the company bankruptcy can be influential. But recently, the bankruptcy of the world great companies has forced the financial researcher to emphasize both profit digit and profit quality. Incrising criminal act and financial crisis in the world has induced the corporate governance, therefore, safe life of the economic instition is the longest goal of the corporate governance. In this article we make an effort to study the earning management and some compilations of the corporate governance and to making clear the relation between these factors and bankruptcy. In this direction, used to firms accept in the Tehran Stock Exchange. For this purpose, considering exertion of some characteristics (applying elimination method), 95 companies were investigated in the Tehran Stock Exchange from 2007 to 2012. This experimental research is based upon real information of financial and audited accounts. After gathering information from official site of stock organization and compact disks, regression model and descriptive and inferential statistical techniques (including homogeneity of variance, normality, independence of remained amounts) were applied to examine the theories and at the end, the correlation between these two variables was analyzed. The result shows that studing the earning management and the compilations of the corporate governance has influenced the bankruptcy in the second theory. In the other word, corporate governance containing three minor theory, the programme of the informal members, the internal auditor an the degree of ownership concentration, has an significant relation with the index of the gross bankruptcy. And the first theory about the relation between earning management and index of the gross bankruptcy has been rejected.

Keywords: earning management - corporate governance - bankruptcy corporation

INTRODUCTION

Following the bankruptcy of major companies of the world in recent years, researchers and financial analysts, instead of focusing their attention solely on profit figures, turned their attention into profit quality. It is the existence of a proper strategy of firms and economic institutions that most countries try to strengthen and improve. One of the reasons for raising corporate governance was the increased crime and global financial crisis. Corporate governance, more than anything else, targets the healthy life of businesses in the long term. The importance of establishing corporate governance is for these reasons: 1) The process of privatization and market-based investments; 2) Technological progress and the liberalization of financial markets and transactions; 3) Movement of capital from private ownership to corporate ownership; and 4) Increasing coherence in international finance, transactions and investment flows. The main actors in corporate governance are managing directors, shareholders and board of directors. In this paper, we have attempted to explain the profit management, some elements of corporate governance and relationship of these two factors with corporate bankruptcy.
To test the ability of financial ratios to predict bankruptcy of companies listed in Tehran Stock Exchange by using the logit model and relevant variables. To test the model, the performance data from 2001 to 2004 were examined. The results show that it can be claimed that Logit model accuracy in predicting bankruptcy of companies was with 95% confidence.

Modarres, Hosseini and Reissi (2009): In a research on the effect of institutional investors as a measure of corporate governance on shareholder returns of companies listed in Tehran Stock Exchange, they concluded that due to agency problems, corporate managers may not use company resources to increase shareholder wealth. For this purpose, five-year data (2003-1999) of ninety companies were studied. Using regression analysis, the research hypotheses were tested. The results showed that although the level of institutional ownership in companies listed in Tehran Stock Exchange is very high, there is no significant relationship between shareholders and institutional efficiency. However, based on results from studies in other countries, this relationship has been positive or negative.

Atanasoo and Kim (2008): In a research titled: Work and corporate governance: International evidences on decision-making, the results emphasized the reaction between management, work and investors in shaping corporate governance. They found that strict union laws not only protect workers, but take also managers under consideration. The protection of weak investors, who have joined the Union, resulted in union between workers and managers. The result: Asset sales by firms with poor performance avoid large scale demolition and encourage the workers to support managers. Assets sales in countries with weak sponsors lead to a poor performance, while in countries with strong sponsors and investors, performance improvement and unemployment aggravation were the results observed.

Strict rules of the union, when the financial power is very high, are less effective in preventing damages. Seriopelosis, Test Saronis and Rompis (2007): In a research on financial decisions, ownership, and corporate governance, experimental results approve the relationship between debt and dividends according to a company's reputation negatively related to dividend payments and credit issues. Impact of various ownership structures and the allocation of quota resources are also proven.

Koerniadi and Touranirad (2009): In a research titled: Corporate governance, financing model and capital cost: Evidences from New Zealand companies, the results obtained by using unique spontaneous index of corporate governance and Fama and French financial models (1991) indicate that companies with poor corporate governance mechanisms have more influence than companies that have stronger corporate governance mechanisms. After the control of the effects of corporate governance components, they found that companies with different levels of corporate governance quality are using different mechanisms of corporate governance in connection with their financial policy; also found that companies are able to regulate their influence as a governmental mechanism through the shareholder compensation and salary policies. It seems that board members can influence companies only when other corporate governance mechanisms are ineffective; and this is inversely related to the financial crisis.

**METHODOLOGY**

This research is practical with regard to objective and descriptive with regard to classification according to methods. Its description is correlation-related in which the behavior of 95 companies were studied in a cross-sectional method. So, simple and multivariate regression methods were used to test hypotheses. To analyze the data collected, Excel software was used; and for complementary tests to make sure of regression model, SPSS software was used. Information needed to test the hypotheses of this research included audited financial statements such as different components of profit and loss statement, cash flow statements and balance sheet along with explanatory notes and other information like management activities annual report, report of the general meeting of shareholders, stock price and dividend of member companies. Data needed by companies in this research were from Tehran Stock Exchange CDs and the Iranian official website of the Stock Exchange. However, in this regard we can use databanks of Tadbir Paraz and Denasahm companies.

**Research population**

Companies listed in Tehran Stock Exchange were selected as research population. However, some companies were excluded for following conditions: Companies that are not investment companies and financial intermediaries or the end of their fiscal year March.

**Literature**

Dastjerdi, Sajjad and Moghaddam (2009): In a research on corporate bankruptcy using logit prediction model, the results indicate that this paper empirically sought to test the ability of financial ratios to predict bankruptcy of companies listed in Tehran Stock Exchange by using the logit model and relevant variables. To test the model, the performance data from 2001 to 2004 were examined. The results show that it can be claimed that Logit model accuracy in predicting bankruptcy of companies was with 95% confidence.

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**Research population**

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Statistical sample
Studied companies were randomly selected.

Research scope
Thematic scope: The study of the effect and relationship between profit management and some corporate governance components with regards to company bankruptcy.
Time scope: The studied period of 2007 to 2012.
Spatial scope: Companies listed in Tehran stock exchange.

Research hypotheses
According to objectives and research questions, main and secondary hypotheses are formulated as follows:

Based on Falmer model, there is a significant relationship between profit management index and corporate insolvency index.
Based on Falmer model, there is a significant relationship between corporate governance components and corporate insolvency index.
Based on Falmer model, there is a significant relationship between corporate internal auditor and corporate insolvency index.
Based on Falmer model, there is a significant relationship between corporate major shareholder and corporate insolvency index.
Based on Falmer model, there is a significant relationship between the board off-duty members and corporate insolvency index.

Research variables
Independent variables (components of profit management and corporate governance)

Profit management variables
To measure profit management, we use the modified Jones model. Jones recognized as accruals the difference between operating income and cash flow from operations. The prevailing opinion in this approach is that information on cash flow from operations is the more objective criteria for real economic performance evaluation of a business unit; therefore it's less possible that it's handled by management. Jones (1991) developed a model to examine the profit management in business units and assumed that the non-discretionary accruals were constant over time. In this model that attempts to separate the non-discretionary and discretionary accruals, efforts have been made to evaluate the effect of economic conditions of a business unit on accruals for a specific period, known as event period, along with sales variables, property, machinery and equipment as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{it}}{A_{it-1}} \right) + \alpha_3 \left( \frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

In this relation, TA represents total accruals, A is total assets, REVAΔ indicates change in sales revenue and PPE is property, machinery and equipment. After estimating the above model parameters with the help of data from 2012 to 2007, each company by applying time series model of following non-discretionary accruals is calculated for the "assessment period" namely the year 2012.

$$NDA_{it} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \left( \frac{PPE_{it}}{A_{it-1}} \right)$$

REC Δ is the change in receivables.
In the last step, discretionary accruals or the same profit management index is calculated as follows:

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it}$$
DA is discretionary accruals.

It should be noted that based on the existing framework overall accruals are calculated through one of the following two methods according to available data:

In this study we will use formula 3-4 that calculate as total accruals the difference between net income and cash from operations.

\[ TA_{it} = E_{it} - OCF_{it} \]

\[ TA_{it} = (\Delta CA_{it} - \Delta CASH_{it}) - (\Delta CL_{ir} - \Delta STD_{it}) - DEP_{it} \]

In the above formulas, \( E \) represents net income before extraordinary items, \( OCF \) represents cash flow from operations (according to accounting standards), \( CA \) represents current assets, \( \Delta CASH \) represents changes in cash, \( \Delta CL \) represents changes in current debts, \( \Delta STD \) represents change of current portion of long term debts and \( DEP \) represents amortization.

**Components of corporate governance**

Internal and external components of corporate governance include: Off-duty board members ratio, on-duty board members ratio, presence of major shareholders in the company, presence of internal auditors in the company.

**On-duty board members ratio**

It's equal to the number of employed members of the board in the Company divided by the total number of board members.

**Off-duty board members ratio**

It’s equal to the number of non-employed members of the board in the Company divided by the total number of board members.

**Presence of major shareholders**

The degree of ownership concentration: It’s the distribution of shares among shareholders of different companies. The less is the number of shareholders, ownership would be more concentrated. To calculate the index of ownership concentration, "Hirfindahl-Hirshman" index is used in this research. The above index is obtained by total squared percentage of shares owned by shareholders. The index has increased in parallel with the increase in ownership concentration. In conditions that the whole shares are owned by one person, the highest value is allocated to the latter and calculated on the basis of 10,000 units, while the ownership structure is dispersed and if all shareholders have equal proportions, HHI index takes the minimum value and calculated equivalent to 10000/N.

\[ HHI = \sum (p_i/p*100)^2 \]

**Presence of internal auditors**

If there was an internal auditor, it takes 1 otherwise 0 value.

**Dependent variable**

Bankruptcy variable: It’s the bankruptcy index of every company that is calculated by Falmer model which is the best-known model for bankruptcy computation.

Falmer model for each company is calculated as follows:

\[ F = 5.5X_1 + 0.212X_2 + 0.073X_3 + 1.27X_4 - 0.12X_5 + 2.335X_6 + 0.575X_7 + 1.082X_8 + 0.485X_9 \]

- Total assets / cumulative profit: x1
- Total assets / sales: x2
- Equity / profit before tax: x3
- Total debt / cash flows: x4
- Total assets / liabilities: x5
- Total assets / current liabilities: x6
- Logarithm of total tangible assets: x7
- Logarithm (financial costs / profit before interest and tax): x8
- Working capital to total liabilities ratio: x9
If the calculated index is less than zero, company is classified in insolvent group.

**Control variable**

**Type of corporate ownership**

Under the law, if more than 50 percent of the company’s shares are owned directly and indirectly by the State, the company is considered public, otherwise, it’s private. Public companies take 1 and private companies take 0 value.

**Statistical hypotheses testing**

To test the hypotheses, descriptive and inferential statistics and correlation analysis were used including: a) Homogeneity of variance, b) Normality, c) Balance independence d) Linear hypothesis, e) correlation analysis.

**CONCLUSION OF THE RESEARCH HYPOTHESES**

**TEST RESULTS OF THE FIRST HYPOTHESIS**

As stated, the first hypothesis suggested that between profit management index and corporate bankruptcy index there is significant relationship based on Falmer model. To test this hypothesis, after the calculation of the profit management, the bankruptcy index was calculated using Falmer model and then the correlation of these two variables was examined.

The correlation coefficient of profit management and bankruptcy was 0.006, which shows that there was a reverse relation. Considering that sig =40% and 5% higher, the relation was non-significant, that’s to say, H0 was accepted but H1 was not. There wasn’t a significant correlation between bankruptcy and profit management. And given that the coefficient of determination was 0.000, which is very low, this indicates that the model was unable to change the ratio of profit management to stop bankruptcy.

With a confidence more than 95% we can say that assuming linear regression model was not confirmed. The results indicate the rejection of the hypothesis. In other words, the regression model could not explain the changes in the dependent variable.

Table 1 summarizes the results of the tests and modeling to examine the hypotheses simultaneously by multiple models.

<table>
<thead>
<tr>
<th>Test results</th>
<th>Type of Relationship</th>
<th>Probability of independent variables</th>
<th>Standardized slope coefficient (β)</th>
<th>Research hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research hypothesis is rejected</td>
<td>Reverse</td>
<td>0.479</td>
<td>-0.006</td>
<td>Main hypothesis 1</td>
</tr>
<tr>
<td>Research hypothesis is accepted</td>
<td>Direct</td>
<td>0.003</td>
<td>0.397</td>
<td>Sub-hypothesis 1</td>
</tr>
<tr>
<td>Research hypothesis is rejected</td>
<td>Direct</td>
<td>0.245</td>
<td>0.130</td>
<td>Sub-hypothesis 2</td>
</tr>
<tr>
<td>Research hypothesis is accepted</td>
<td>Direct</td>
<td>0.010</td>
<td>0.285</td>
<td>Sub-hypothesis 3</td>
</tr>
<tr>
<td>Research hypothesis is accepted</td>
<td>Direct</td>
<td>0.24</td>
<td>0.239</td>
<td>Hypotheses</td>
</tr>
</tbody>
</table>

As a result, in sum, for the first hypothesis, we determined that relationship between profit management and bankruptcy index is rejected based on the Falmer model. There is no significant relationship between hypothesis variables and the hypothesis is not confirmed. Given that the relationship between the profit management and corporate governance components and corporate bankruptcy were not examined with these indexes, the results of the present study were compared with similar internal and external studies. Some of these studies include: Noravesh, Sepasshi and Nikbakhht concluded that there was significant, positive relationship between the profit management and corporate bankruptcy. Cherito and Lora also reached to a significant relationship between these two components. Rasnov found a significant inverse relationship between them. Also, Bilderbeik and Pompep found out that in companies that go into bankruptcy, profit management is high on the move.
TEST RESULTS OF THE SECOND HYPOTHESIS

The second hypothesis suggested that there was a significant relationship between the corporate governance components and corporate bankruptcy index according to Flamer model. This hypothesis is divided into three sub-hypotheses:

First sub-hypothesis

According to this sub-hypothesis, there is a significant relationship between off-duty board members ratio and bankruptcy. The test results showed a significance level (p-value) of 0.245 which was greater than 5%. Therefore, at the 95% confidence level, the hypothesis indicating the existence of a significant relationship between bankruptcy and on-duty board members shall not be approved. Although in fitting the separate regression model, the relationship between the off-duty members and bankruptcy was approved, but the results were shown to have higher credit. For this reason, the effect of all of the variables was examined together. As you may know, it's possible that there is a significant variable alone, but it's rejected in general. Our variables were affected by other variables to neutralize the above effect, just like the off-duty board members' variable.

According to the statistical tests results, corporate bankruptcies were influenced by internal auditors and level of ownership concentration.

Second sub-hypothesis

This sub-hypothesis implies that there is a significant relationship between internal auditors and bankruptcy. Statistical tests at a 5-percent error level showed a 1-percent significant level that was less than 5%. Thus at a 95-percent confidence level, the hypothesis that there was a significant relationship between internal auditors and bankruptcy indicated that compared to other independent variables, more changes of the bankruptcy are explained by the internal auditors variable which is a direct relationship. In fitting the separate regression model, the relationship between the internal auditors' ratio and bankruptcy was confirmed and showed that the relationship between these two variables was significant and positive. The higher is the possibility of using internal auditors, and the higher will be the possibility of corporate bankruptcy and vice versa.

Third sub-hypothesis

This sub-hypothesis states that there is a significant relationship between the level of ownership concentration and bankruptcy. The test results at an error rate of 5 percent showed a significance level (p-value) of 0.024 which was less than 5%. Thus, at a 95-percent confidence level, the hypothesis that there was a significant relationship between the level of ownership concentration and bankruptcy was confirmed. The higher is the level of ownership concentration, and the higher will be the possibility of corporate bankruptcy and vice versa. However, because of its low coefficient of determination, we determined that the role of the level of ownership concentration in determining bankruptcy was low and that the majority of changes resulted from bankruptcies were due to other factors. On the other hand, in the multiple regression model examining the relationship between indexes of corporate governance and bankruptcy, because the standard slope coefficient or the same beta level of ownership concentration was lower than the beta of internal auditors, the internal auditors variable was found to be more effective than the level of ownership concentration.

In sum, although there was a significant relationship between the level of ownership concentration and internal auditors with corporate bankruptcy, but due to the low coefficient of determination in the regression model, equal to 0.157, and also to the low coefficient of independent coefficients in this mode, we concluded that the role of corporate governance in determining the changes in predicting the bankruptcy was low and that the majority of changes in bankruptcy were caused by other factors including inefficient management, insufficient capital and betrayal, fraud or business fluctuations and ...

CONCLUSION

The results of the first hypothesis indicate that profit management using Falmer index is not effective on bankruptcy. The results of the second hypothesis show that corporate governance has an impact on bankruptcy using Falmer index, and that, in general, the model was significant and there is a linear relationship between variables. This hypothesis was divided into 3 sub-hypotheses. On-duty members affect bankruptcy using Falmer
The presence of internal auditors in companies puts an impact on bankruptcy using the Falmer index. And the level of ownership concentration impacts bankruptcy through Falmer index.

Results of these three components on bankruptcy (off-duty members - internal auditors – level of ownership concentration) indicated that off-duty members were not effective on bankruptcy; the two other components – internal auditors and level of ownership concentration – were effective based on Falmer index. By examining beta, it was determined that the beta coefficient 2 of internal auditors and level of ownership concentration was greater that that of off-duty members and this shows the effectiveness of these 2 variables on corporate bankruptcy. Finally, because the greater beta implies stronger relationship, internal auditor with greater beta is more effective than the level of ownership concentration.

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