Relation between Corporate risk-taking and high levels of managerial earnings forecasts

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Abstract: The aim of this study is to investigate the relationship between risk of the company and the high level of earnings forecast by management. The main hypothesis of this study is to investigate the relationship between anticipated revenue and risk management. To test the hypothesis, the 105 sample firms (630year-firm) observations during the years 2009 to 2014 have been used sample firms were the National systematic sampling Statistical methods for the main hypothesis proposed in this study, the model data panel regression with random and for the main analysis of data effects was conducted. The findings suggested there is a positive significant relation between anticipated revenue management with risk of the firm at about 98.8 percent are discussed.

Keywords: management of earnings forecast, corporate risk, corporate size, accuracy of earnings forecast.

Introduction

Earning is an important item in the financial statements which attracts the attention of financial statements users. Investors, creditors, managers, employees, analysts, government and other users of financial statements apply earnings as a base for decision making in investment, giving loan. Earning payments policy, evaluation of firms, tax calculation, and other firm-related decisions overemphasis of capital market on earnings and its related information has caused that item to become one of the important factors of stock price changes and by creating an abnormal returns, making dependent the value of the company to itself. On the other hand, the firm by increasing its value try to reduce investment risk. Investment risk includes fluctuations in actual and expected investment returns. From the point of view of investors, the higher the quality and quantity of information published by the firm, firm information asymmetry is lower and thus the prospect of a future performance of a firm is brighter. In this case, investors have more precise estimate on investment returns and lower adjustment will be done on accomplished estimates, this reduces the risk of stocks with high-quality information.

In this case, one of the views, simply is providing historical and current information by commercial unit. Of course, so that investors themselves can make their forecast for the future. Another view is that management makes reliable forecast by owning the resources and facilities and with the public publication of these forecasts will increase the efficiency of these financial markets, as the managers of the companies are in the group of financial statements users which are present within the firm and consequently obtain more information than external users. Also in addition to the financial statements, they have access to those information which is to be considered confidential to firms. By the way, faster and less expensive information is available to managers. Deciding to select between two above views seems to be difficult. Because a good understanding of how they process information did not exist by investors, and the theory of the labor market focuses on the speed and effectiveness of financial information stock price. Several studies have come to conflicting results in this case. But in general, most financial professionals believe that published financial forecast helps to make investment decisions. Also, since the related information about the earnings and forecast them by the manager, compared with another information published by the firm attracts most interest to investors and other stakeholders. Considering to the features of these information is essential.

Also the presence or absence of information on firms and their shares could affect the firm’s overall risk. If manager as an informed person, traces the future of firm through the forecast of earnings per share to stakeholders, Information risk decreased and investors act more certain in evaluating the future cash flows (Foster, 1973, quated by Heidarpour and Khwaja Mahmoud, 2013).

On the other hand, voluntary disclosure of information by managers of firms can change their chances of reinforcement or punishment. Also the disclosure of this information could be used in the decisions of the users of accounting information. A very important part of the voluntary disclosure of information is that, management is authorized to disclose it.

Forecast the earnings for the periods of time is quarterly and annual, which the management can provide a major step in the direction of the service information by disclosing this information to the users of accounting information, particularly the primary users include stakeholders and creditors. In order to study the issue of voluntary disclosure of
information by managers and earnings forecasts by managers, there is a fundamental issue, and it is that, earning forecasts by management can be related with the risk-taking of firm and in fact affect the firm’s risk-taking. So in the firms that their managers forecast the earning in the upper level, determining the presence or absence of relationship between firm risk-taking and its future value is very interesting & appealing.

In the present study it will be attempted to clarify the relationship between risk-taking and future value of firm with management firm’s earnings forecasts in the form of hypotheses to be investigated. Finally, in relation to earnings forecasts by management based on the effect which has on risk-taking and the firm’s future value, has been judged and decided.

**Literature review**

Earnings is an important item in the financial statements which attracts the attention of financial statements users, investors, creditors, managers, employees, analysts, government and other users. Financial statements apply earning as a base for decision making in investment, giving loan, earning payments policy, evaluation of firms, tax calculation, and other firm-related decisions (Mashayekh & Shahrokhi, 2007).

Forecasted earnings by management in many countries are among the voluntary disclosure of information. US Securities and Exchange Commission in early 1973 for the first time allowed the listed firms on the stock exchange to disclose earnings forecasts and two years later requiring firms to publish such information. In April 1976, the requirement for large opposition was removed, and retail investors had to rely on financial analysts (Mashayekh & Shahrokhi, 2007).

In Iran also the firms are required to estimate their forecasted earnings per any stock quarterly and annual and maximum of 20 days after the end of the quarter, submit it to monitoring management on companies department of Tehran Stock Exchange. In addition, in the event of specific cases with important events which have significant effects on the financial situation, especially affecting earnings per stock. Such as changes in products prices, rates of raw materials, new products and other related issues, the necessary information should provide as soon as to the Stock Exchange. However, the first forecast of earnings per stock is related to the beginning of 1995 and before aforementioned year, the firm is mainly engaged in production and sales reporting (Jahankhani and Safarian, 2003).


These results suggested that forecasted earnings by firms were of information and performance content and in this respect, the importance of accounting earnings forecast due to its role and influence in decision-making which used especially for investors will be obvious. According to the above cases, we can conclude that forecasted earnings can be useful for the following:

- Help assess the profitability of business units
- Determine the current value or the total value of firm stock
- Estimate investment risk in business unit
- Estimate lending loan risk to the business unit

Management of earnings units, despite the usefulness of providing financial forecasts and prompted some countries to provide the legal authorities again, the public publication of some specific forecasts are reluctant for the following reasons:

- It is possible that disclose of forecasts, induce excessive non-justifiable accuracy.
- Forecasts are usually quickly and, over time, lose its value, so renewal & continuous adjustment is necessary.
- Publication of the forecasts may be to the detriment of the firm and in favor of its business competitors
- Management may commit itself to fulfill the forecasts and to achieve this goal, Take short-term decisions that they are generally not beneficial to shareholders.

Failure to realize expected earnings units can be upset stakeholders (Shahbahan, 2003).

Mashayekh (2007) studied earnings forecast errors by managers and related factors and, based on random walk theory, found a significant relationship between forecast errors of managers and forecast errors. Results of testing hypotheses indicated an optimistic deviation in managers’ forecasts and revealed that forecast accuracy varies with firm size, type of industry, and profitability or non-profitability of the company.

Jaggi & Xin (2013) showed that In contrast to Hoy et al.(2009) Conservative Accounting cannot be a substitute for all their expected managerial forecasts expected in reducing information asymmetry in the market and future obligations through timely reporting bad news.

Brockman and Cicon (2013) examine the announcement effects of hard (quantitative) and soft (qualitative) information contained in management earnings forecasts. Consistent with previous studies, they confirm a positive relation between the earnings surprise component of the announcement and the magnitude of the abnormal return. In contrast to previous studies, they examine the effect of soft information on abnormal returns while controlling for hard information. Their results show that soft information generally explains more of the announcement effect of earnings forecasts than does hard information. Overall, their findings contribute to the growing literature that examines the economic significance of qualitative information.

Baginski & Rocco (2009) attempted to create policy variable of disclosure of forecasted earnings by management using management projections made during the 2001 to 2004. The mentioned structure take into account presenting or not-presenting forecast by firm, the number of forecasts in period of sample and the average of accuracy of the
predictions, during the period. These researchers found that the provided structure by them, even after controlling for earnings quality, size and the ratio of book value to market value is positively related with the firm's market value.

**Research Hypothesis**
According to the above contents, hypotheses are as follows:
There is a relationship between high levels of forecasts of earnings by management and risk-taking.

**Variable and research models**

**Independent variable**
The main independent variable includes earning forecasting by high-level management.
The high level of earnings forecasting by management: the forecasted earnings is calculated as higher than the average forecasted earnings of all firms.

**Dependent variables**
The dependent variables are risk-taking of the firm. In this study, risk-taking is calculated as the standard deviation of annual stock return.

**Controlling variable**
In this study, the ratio of market value to book value, Natural logarithm of the market value of the rights of capital owners. The ratio of debt to capital, annual returns, operating cash flow and the number of board members, the size of firm along with accurate earning forecast are controlling variables.

**Research model**
The regression model is used to test the hypothesis of research:

\[ RISK_{i,t} = \beta_0 + \beta_1 \text{HIGH_MEF} + \beta_2 \ln_{\text{MKT}} + \beta_3 \text{MTB} + \beta_4 \text{LEVERAGE} + \beta_5 \text{INV} + \beta_6 \text{PAYOUT} + \beta_7 \text{ANNRET} + \beta_8 \text{OCF} + \beta_9 \ln_{\text{COMP}} + \beta_{10} \text{CEO\_CHAIR} + \beta_{11} \text{AVG\_HORIZON} + \beta_{12} \text{AFTER\_QE} + \beta_{13} \text{FIRM\_FE} + \beta_{14} \text{YEAR\_FE} + \beta_{15} \text{SIZE} + \beta_{16} \text{AEF} + \epsilon \]

In this relation,
RISK = the risk of firm
HIGH_MEF = high level of earnings forecast by management
\ln_{\text{MKT}} = Natural logarithm of the market value of the rights of capital owners
MTB = the ratio of market value to book value
LEVERAGE = The ratio of debt to capital
INV = investment
PAYOUT = the ratio of firm payout
ANNRET = annual return
OCF = operating cash flow
\ln_{\text{COMP}} = Natural logarithm of annual compensation of manager
CEO\_CHAIR = the number of board members
AVG\_HORIZON = Average days between forecast with quote
AFTER\_QE = A dummy variable, that if a firm after the end of the fiscal period and before the announcement of earnings provide a forecast, was equal to 1 and otherwise equal to zero.
FIRM\_FE = firm fixed effects
YEAR\_FE = year fixed effects
AEF = accuracy of earnings forecast
SIZE = size of firm

**Research Methodology**
The present study in terms of purpose is an applied research and in terms of data collection is part of a the scientific survey research. Based on the research topic and the variables in which information is needed to test the hypothesis by referring to existing data banks result of the Novin software can be obtained. In other words, the data used in this research is recycled. It timeframe for collecting data, fiscal year 2009 to 2014. In other words, the type of study which we examined are the following five aspects:

**In terms of purpose**
The aim of this study was applied. Using methods and models can be utilized to improve the situation of other organizations and companies listed on the stock exchange.

**In terms of the method of inference**
Conclusion based on this research method is descriptive and statistical population of listed firms in the stock exchange during the 2009-2014 years will be examined.
In terms of research design

The outline of the study was the retrospective study (using past information) and financial information of these companies will be used from 2009 to 2014.

In terms of method of reasoning

Since the research for the past year and uses of financial information for the firm's financial information directly observes the terms of the argument is inductive research.

In terms of theoretics

Since this study used to extract information from financial statements of the special procedures .this research is theoretical.

Population and sample

In the present study, according to the subject and its application, population of this study includes all accepted listed firms of Iranian capital market, other than investment firms, insurers and banks that consistently have been active stock since 2009 to 2014.

firms were selected based on the following conditions:

The date of acceptance of the exchange should be before the 2009 and the end of 2014 and also should be in stock index lists and during the period to be restated its financial statements

The fiscal year ended March, and during the period studied,did not changed fiscal year. required information, including the report notes alternating with the financial statements in order to extract the necessary data to calculate discretionary accruals, should be available.

According to the nature and classification of financial statement items of different investment firms, insurance and financial intermediation relative to production companies, population firms should not be part of the investment firms, insurance and banking.

During the period of study, at least once had been published restated annual financial statements.

sampling method is elimination in this way that of all existing firms, the firms that have not above conditions are removed and finally the remaining firms will be selected to conduct test . thus the sampling method in this study is judgmental (or systematic screening). With these conditions, 105 firms were selected as a sample of study.

Data collection method

This research in terms of data collection method is library and documentting. In the theoretical part of study , various books and articles were used. Data of study to test the hypothesis was gathered by reference to the audited financial statements of listed firms on the Tehran Stock Exchange .As well as the report of the Board to the General Assembly of Stakeholders (refer to Islamic studies research, development, site management) Rahavard Novin software was used to collect data.

Way analysis of statistical data

To investigate the influence of independent variables on the dependent, panel regression or money due to the significant level panel of Lineer test (Chow) has been used.in this test when the p-value is significantly smaller than 0.05 (the Panel) panel regression selected to fit the model, fitting the model is both random and fixed effect . According to Hassman test, random and fixed effect fitting used . In this test, if the significance level is greater than 0.1 we used a random fit.

Results

There is a relationship between the high level of forecasted earnings by management and the firm’s risk.

The null hypothesis and alternative hypothesis is as follows:

H0: there isnot a relationship between the high level of forecasted earnings by management and the firm’s risk.

H1: there is a relationship between the high level of forecasted earnings by management and the firm’s risk.

After the test regression assumptions the fit regression results presented in Table 1 above. The value of F (3.76) also showed a significant overall regression model. It has been determined as at the bottom of Table 1. The coefficient of determination and adjusted coefficient of determination are 98.8% and 98.7% respectively, we can conclude that the regression equation, only about 98.8 percent of the firms surveyed by the independent variables and control risk shall be explained. In this table, positive (negative) numbers in coefficient column represents the value of the direct impact (reverse) of each of the variables on the risk –taking in investigated firms.

It is worth mentioning that the random effects of model was fitted up when the Durbin-Watson statistic (0.67) did not confirm the errors of autocorrelation.
Just a lack of correlation errors as the dependent variable in the model with four lags, the Durbin-Watson statistic was changed to 2.34 (Souri, 2012).

Table 1: Output of the fitted model of First hypothesis

<table>
<thead>
<tr>
<th>variable</th>
<th>The coefficient variable</th>
<th>The coefficient value</th>
<th>t</th>
<th>p-value</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RISKi,t=β0+β1HIGH_MEF+β2ln_MKT+β3MTB+β4LEVERAGE+β5INV+β6PAYOUT+β7ANNRET+β8OCF+β9ln_COMP+β10CEO_CHAIR+β11AVG_HORIZON+β12AFTER_QE+β13FIRM_FE+β14YEAR_FE+β15 SIZE +β16AEF+ε</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGHMEF</td>
<td>B1</td>
<td>-0.007251</td>
<td>-2.003685</td>
<td>0.0455</td>
<td>Effective</td>
</tr>
<tr>
<td>LNMKT</td>
<td>B2</td>
<td>0.003225</td>
<td>0.566840</td>
<td>0.5710</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>MTB</td>
<td>B3</td>
<td>0.000107</td>
<td>5.806342</td>
<td>0.0000</td>
<td>Effective</td>
</tr>
<tr>
<td>LEV</td>
<td>B4</td>
<td>0.000504</td>
<td>0.927963</td>
<td>0.3538</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>INV</td>
<td>B5</td>
<td>1.50E-10</td>
<td>0.117203</td>
<td>0.9067</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>PAYOUT</td>
<td>B6</td>
<td>-0.000291</td>
<td>-0.311331</td>
<td>0.7557</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>ANNRET</td>
<td>B7</td>
<td>0.003120</td>
<td>4.777624</td>
<td>0.0000</td>
<td>Effective</td>
</tr>
<tr>
<td>OCF</td>
<td>B8</td>
<td>-5.35E-10</td>
<td>-0.391457</td>
<td>0.6956</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>LNCOMP</td>
<td>B9</td>
<td>3.10E-07</td>
<td>0.089454</td>
<td>0.9288</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>CEOCHAIR</td>
<td>B10</td>
<td>0.013966</td>
<td>0.369673</td>
<td>0.7118</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>AVGHORIZON</td>
<td>B11</td>
<td>8.16E-05</td>
<td>1.358302</td>
<td>0.1749</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>AFTERQE</td>
<td>B12</td>
<td>-0.002479</td>
<td>-1.057501</td>
<td>0.2907</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>FIRMFE</td>
<td>B13</td>
<td>-0.001259</td>
<td>-4.137514</td>
<td>0.0000</td>
<td>Effective</td>
</tr>
<tr>
<td>YEARFM</td>
<td>B14</td>
<td>-0.141656</td>
<td>-4.807813</td>
<td>0.0000</td>
<td>Effective</td>
</tr>
<tr>
<td>SIZE</td>
<td>B15</td>
<td>0.007696</td>
<td>0.777507</td>
<td>0.4372</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>AEF</td>
<td>B16</td>
<td>4.68E-06</td>
<td>0.946092</td>
<td>0.3445</td>
<td>Non-Effective</td>
</tr>
<tr>
<td>C</td>
<td>B0</td>
<td>2.350051</td>
<td>10.30345</td>
<td>0.0000</td>
<td>Effective</td>
</tr>
</tbody>
</table>

The coefficient of determination 98.8%  F 3.76  P-Value 0.000
Adjusted coefficient of determination 98.7%  Durbin-Watson statistic 2.34

According to Table 1, the level of significance (sig) between two variables is equal to 0.045, which is just smaller than the significance level considered in this study (5%). So at 95%, the null hypothesis is rejected, and the main hypothesis is confirmed. After fitting models, according to the first hypothesis is as follows:

\[ RISK_{i,t}=\beta_0+\beta_1 HIGH\_MEF +\beta_2 \ln\_MKT +\beta_3 MTB +\beta_4 LEVERAGE +\beta_5 INV +\beta_6 PAYOUT +\beta_7 ANNRET +\beta_8 OCF +\beta_9 \ln\_COMP +\beta_10 CEO\_CHAIR +\beta_11 AVG\_HORIZON +\beta_12 AFTER\_QE +\beta_13 FIRM\_FE +\beta_14 YEAR\_FE +\beta_15 SIZE +\beta_16 AEF +\epsilon \]

Suggestions based on research findings

In summary and overall conclusion of test of research hypothesis based on the relationship between forecasted earnings by management and risk of firms during the period 2009 to 2014, it can be said that forecasted earnings by management has a significant linear relationship with risk. This confirms that it is a correct forecast and firm managers can reduce their risk by providing accurate and valid forecasts.

On the other hand, the hypothesis suggests that the forecasted earnings, had a content information and declaration of forecasted earnings cause variation in the average of risk. Accordingly, it can be argued, forecasted earnings has noticeable effect on financial statement ’s decisions. The importance and value of forecasted earnings in investment decisions requires that in accounting education information it should be given attention to the quality of information.

Further suggestions for research

Some areas of research could deepen understanding and strengthen literature related to the disclosure of managers are as below.

The reaction rate of investors in real returns in cases where actual earnings differs from forecasted earnings.
The impact of reputation on management forecast on raising credit of forecast that inherently less valid. Study the relationship between the expected value and risk management forecast of interest with companies in various industries. The impact of macroeconomic factors such as GDP, inflation, etc. on management earnings forecasts.

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