

Evaluating differences in institutional ownership and earnings management using fuzzy method

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Abstract: The aim of this study is to assess the effect of potential ownership of shares on the profit management method through Fuzzy method. In this research, the criterion of potential ownership and optional accruals items are used as independent and dependent variables, respectively. 101 companies were studied from 2006 to 2011 and the selected companies were among adopted ones in Tehran security exchange. During this study, Jones' moderated method was applied to calculate profit management, and the first model of Fuzzy method having better index was used to predict the effect of potential ownership on profit management. The results indicated that potential ownership is effective on profit management and the liquid funds related to investors have the most effects on profit management among potential ownership variables.

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Key words: accrual items, Fuzzy method, potential ownership, profit management.

Introduction

Because the owners are persons outside the firm rely on received accounting data, the person inside the firm, managers and board of directors in order to decide according to legal-political approach (Saqfi and et al, 1999). Also, they select major owners of board of directors and supervise the managers' performance, take firm's information and give it to other members. When the argument is about separation of ownership from management, the goals of managers and owners are not in the same direction anymore, and the result of this difference is to evaluate firm performance with more attention, so corporate governance has the most effective way in order to coordinate between owners and managers and also reduce the cost of representation (Najjar and Taylor, 2008).

Statement of the problem

In recent years, managers are encouraged to profit under voluntary management. Also it is proceeded to manage profit when the managers use judgment in financial statement and transaction in order to change financial statements used to mislead some of the bankers about economical performance of firm or to affect contractual profits. The managers are flexible in selecting audit policies to maximize their use. In order words, it seems that potential investors play an important role in this regard. When the motivation is high to manipulate profit, irresponsible managers and major potential investors have a weak role in reducing the abnormality of unusual accruals. When potential investors, like banks and pension fund, are the owners of firm, the manager will be limited to manage profit (Modares and et al, 1999).

Profit management can include real activities; this kind of profit management will be done through changing the operational activities in order to mislead stakeholders. Although this kind of deviation helps manager in firm's activity to provide financial statements, but it does not increase the firm's value. There are some optimal methods help managers to increase sale or decrease voluntary costs in economical crisis called the ways of manipulating real activities like price reduction of product sale. A fundamental factor to test profit management in firms is to estimate voluntary factor and managers' comment to determine profit (Roychowdhurg, 2006). Profit quality is not clear and observable. Various definitions are stated in past studies, and there is no agreement on it. In the majority of audit researches, accruals are used to measure profit quality with regard to this argument that accruals are direct criteria of profit management and it is a factor that helps profit quality (Moradzadeh Fard and et al, 1999).

The defect of corporate governance mechanisms cause some problems of firms' representations, and also found that these mechanisms are relative issues and different from firm to firm, and it is supposed that the effect of corporate governance quality was in all value creation processes and its increase creates value for firms. One of the corporate governance criterion, the most important one is potential ownership of shareholders which has an effective role on supervision of managers' activity and it acts as a parameter factor in the line with managers' activity and own goals (Ahmadpour and et al, 2000).

This study aimed at investigating the different roles of potential ownership in profit management by

using fuzzy method. Regarding to potential investors in corporate governance and its effect on the managers' activities of a firm, following question raises that how is potential share ownership related to the way of profit management?

Review of related literature

Pincel and et al (2000) studied the profit management in England. In this study, the focus was on the role of irresponsible managers and audit commission in board of directors. The results indicated that the number of irresponsible managers has a reverse relationship with the probability of management of abnormal accruals in order to avoid reporting loss or profit reduction. More investigations show that this relationship is limited to the firm having separate corporate governance and controlling more decisions.

Shelifer and Winsi (1986) noted that all the stakeholders benefit from the supervision of a major stakeholder because there is no cost for this supervision, and also the major shareholders are motivated enough to supervise actively on profit management.

Zavari and Robaee (2009) investigated the relationship between the differences of potential ownership and profit management with fuzzy approach, and 121 firms were studied in the USA. They evaluated the effect of potential ownership in retirement environment and determined that the behavior of profit manager will be limited.

Booshi (1998) stated that potential investors can be temporary or for a long time. It is necessary to say that both approaches of potential investors confirm the presence of relationship between potential investors and profit management. The temporary approach indicates that temporariness of potential investors causes that the managers of present firms in portfolio be motivated to show the profit more than real one.

Chung, Firth and Kim (2002) investigated the potential control and management of profit resulted from lost opportunity, and found that potential investors avoid to be included in management of accruals for smoothing profit in order to reach to the optimal profit level.

Que (2003) studied the relationship between potential investors and profit management in Australian firms. The results indicated that the relationship between potential investors and profit management is nonlinear and concave. It means that first, increases in profit management causes shareholders' ownership till it reaches to maximize level then starts to decrease.

Darog and et al (1998) investigated the profit management in Japanese firms. They confirmed that there is a relationship between debt hypotheses, political costs and reward plans, ownership structure

hypotheses, and internal funding with manipulation of profit.

Chang and et al (2002) found that major potential shareholders prevent managers' use through abnormal accruals which increase or decrease profit. Also the results showed that if the manager does not motivate to increase or decrease profit, potential investors does not have any relationship with profit management.

Eps and et al (2009) classified American firms in 3 groups including positive accruals, negative accruals, and small accruals (close to zero). The findings indicated that negative accruals are in firms which select own board of directors small and annually, and have a complete independent trading and rewarding commission. Also, there are negative accruals in the firms with small and independent board of directors.

Research question

Whether the amount of potential share ownership can be effective on profit management or not?

Research methodology

With regard to the goal, the present methodology is applicable because its results can be used practically. Because of the nature of data, the current study is post-event, since the past data are used. It is a descriptive study.

The method of research

In this research had been used from decision making technique for answering to the research's data. Preliminary data obtained adaptation [with using the Pair wise data (hierarchy analyze process)] is evaluated with Leung and Cao technique and finally with weighting fuzzy method were prioritized.

In this research for gathering data had used from questionnaire form. The first step is presentation of evaluation criteria to 12 Financial Expert with Fuzzy Delphi Technique data and finally with using determined indexes we produce new data with using hierarchy fuzzy analyze process and using pair wise. This data has 17 criteria that it graded with nine-point Likret test. Table number 1 is marker of nine-point Likret test with using fuzzy triangle number.

Table NO.1 function of linguistic variables for comparing criteria

Equal Importance	(1, 3, 3)
A Little Important	(1, 3, 5)
Relatively Important	(3, 5, 7)
Important	(5, 7, 9)
Quite Important	(7, 9, 9)

According to the obtained results from firs data of table number 1 we had calculated the average of experts' opinion and results are in table number 2.

Table NO.2 average of experts view obtained from first data

Average	Institutional owners	row
(.333333 and.583333 and.833333)	Compani 1	1
(.395833 and.645833 and.895833)	Compani2	2
(.125 and.375 and.625)	Compani3	3
(.166667 and.416667 and.666667)	Compani4	4
(.333333 and.583333 and.833333)	Compani5	5
(.333333 and.583333 and.833333)	Compani6	6
(.145833 and.395833 and.645833)	Compani7	7
(.354167 and.604167 and.854167)	Compani8	8
(.145833 and.395833 and.645833)	Compani9	9
(.354167 and.604167 and.854167)	Compani 10	10
(.125 and.375 and.625)	Compani 11	11
(.166667 and.416667 and.666667)	Compani 12	12
(.125 and.375 and.625)	Compani 13	13
(.395833 and.645833 and.895833)	Compani 14	14
(.416667 and.666667 and.916667)	Compani 15	15
(.104167 and.354167 and.604167)	Compani 16	16
(.333333 and.583333 and.833333)	Compani 17	17
(.354167 and.604167 and.854167)	Compani 18	18
(.104167 and.354167 and.604167)	Compani 19	19
(.115385 and.365385 and.615385)	Compani20	20
(.416667 and.666667 and.916667)	Compani21	21
(.375 and.625 and.875)	Compani22	22
(.104167 and.354167 and.604167)	Compani23	23
(.675 and.6875 and.9375)	Compani24	24
(.83333 and.333333 and.583333)	Compani25	25
(.395833 and.645833 and.895833)	Compani26	26
(.4375 and.6875 and.9375)	Compani27	27
(.395833 and.645833 and.895833)	Compani28	28
(.416667 and.666667 and.916667)	Compani29	29
(.145833 and.395833 and.645833)	Compani30	30

Now calculated opinions are as follows in the table number 5:

Table NO.5: average difference between the first and second data

Average	Earning management	row
(.833333 and.333333 and.583333)	Compani1	1
(.625 and.3125 and.5625)	Compani2	2
(.41667 and.291667 and.541667)	Compani3	3
(.20833 and.270833 and.520833)	Compani4	4
(.375 and.625 and.875)	Compani5	5
(.291667 and.541667 and.791667)	Compani6	6
(.3125 and.5625 and.8125)	Compani7	7
(.354167 and.604167 and.814567)	Compani8	8
(.270833 and.520833 and.770833)	Compani9	9
(0 and.25 and.5)	Compani10	10
(.416667 and.666667 and.916667)	Compani11	11
(.291667 and.541667 and.791667)	Compani12	12
(.068182 and.318182 and.568182)	Compani13	13
(.041667 and.291667 and.541667)	Compani14	14
(.020833 and.270833 and.520833)	Compani15	15
(.083333 and.333333 and.583333)	Compani16	16

Average	Earning management	row
(.3125 and .5625 and .8125)	Compani17	17
(.020833 and .270833 and .895833)	Compani18	18
(.479168 and .729167 and .979167)	Compani19	19
(.125 and .354167 and .604167)	Compani20	20
(.479167 and .729167 and .979167)	Compani21	21
(.4375 and .6875 and .9375)	Compani22	22
(.458333 and .708333 and .958333)	Compani23	23
(.625 and .3125 and .5625)	Compani24	24
(.375 and .625 and .875)	Compani25	25
(.4375 and .6875 and .9375)	Compani26	26
(.625 and .3125 and .5625)	Compani27	27
(.057692 and .307692 and .557692)	Compani28	28
(.458333 and .708333 and .958333)	Compani29	29
(.4375 and .6875 and .9375)	Compani30	30

In this step with calculating the difference between two steps, with using the relations of fuzzy number, we calculate experts' consensus. If this difference be less than 0.15 we stopped the Delphi method.

Table NO.6: testing the difference between averages

Difference of average	Institutional owners	row
.057692	Compani1	1
.04167	Compani2	2
.041667	Compani3	3
.04167	Compani4	4
.08333	Compani5	5
.041667	Compani6	6
.04167	Compani7	7
.04167	Compani8	8
.0625	Compani9	9
.0625	Compani10	10
.0625	Compani11	11
.041667	Compani12	12
.0625	Compani13	13
.02083	Compani14	14
.02083	Compani15	15
.0625	Compani16	16
.04167	Compani17	17
.0625	Compani18	18
.04167	Compani19	19
.125	Compani20	20
.0625	Compani21	21
.104167	Compani22	22
.104167	Compani23	23
.125	Compani24	24
.125	Compani25	25
.104167	Compani26	26
.10417	Compani27	27
.125	Compani28	28
.08333	Compani29	29
.0625	Compani30	30

The results off above chart indicated that cash capital related to investors has the most effect on profit management. The other chart also confirms this because this variable affects positively profit management.

Findings

Based on the prior literature, the relationship between institutional investors and earning management is expected to be positive and significant. The results of the first main hypothesis are provided in the table below.

Table 1

Model	$OI_{t+1} = \alpha_0 + \alpha_1 Ins_t + \alpha_2 Out\ Direct_t + \alpha_3 SIZE_t + \alpha_4 LEV_t + \alpha_5 Cash\ Ins_t + \alpha_6 Cap\ Bank_t + \alpha_7 Tang_t + \epsilon$		
Regression level	High growth opportunity firms		
Statistics	Coefficient	t statistic	Sig. level
institutional investors	-0.007262	-1.317931	0.0143
The percentage of out- directors size corporate	-0.001043	-0.647821	0.0304
leverage	0.013180	1.579198	0.0426
cash institutional investors	0.000117	0.141793	0.0898
capital bank	-2.09E-06	-1.244906	0.2390
Tangibility	0.001857	0.860365	0.0079
	0.001655	0.331189	0.0467
F statistic	2.745514		
Sig. level	0.006319		
Durbin-Watson	2.139073		
Adj. R ²	0.259886		
R ²	0.468385		

Based on the findings about the hypotheses (shown in table 1), it is found that the significance level of the F statistic is 0.006319 which shows that the regression has the explanatory power.

Testing the hypotheses

The first hypothesis: There is a significant relationship between institutional investors and earning management.

The significance level of the institutional investors is 0.0143 which is lower than 0.05, and it confirms the positive significant association between institutional investors and the earning management. In addition, the R² of the model is 0.46 and indicates that about 46 percent of the changes in the dependent variable is explained by the independent and control variables. Durbin-Watson statistics for the firms with high growth opportunity and the ones with the low growth opportunity indicate that there is no autocorrelation between the variables.

Suggestions

With regard to this issue that profit management and corporate governance are the subjects studied most of time recently and also play an important role too increase firm value, so emphasize on these issues and do some research in these fields are the necessary requirements to reach to the goals of firms. If more accurate and more researches will be done in future

years, it causes that the probability of research error becomes lower and the capability of its use increases. First there are some suggestions for better conclusion of this study and its test and then some are provided for future research.

1. Because time limitation changes the result of hypothesis test, so it is suggested to the same study at another period of time and compare its results with the results of this study.
2. Also, this study can be done for special industry because this study included all the industries.
3. It is offered to assess the relationship between policies of profit division with corporate governance through fuzzy.
4. Also it is proposed to consider the rate of firm product, size and performance of firm as control variable and study in this regard.

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