Evaluation of the Type of Profit Management and Investigation of the Effect of Ownership Structure and Company Size on Management of Future Profitability

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Abstract

Background: Recent scandal in Enron WorldCom and other American companies, led to public rages. Therefore, people believed that profit management applied by these companies’ managers is biased toward opportunistic profit management to maximize personal benefits. The principal objective of the research is to investigate the applied profit management (opportunist or efficient) and the effect of ownership structure and company size on prediction of future profitability of the companies admitted to Tehran stock market and also persuading and encouraging investors to invest in accordance with the status of the company with respect to information presented in predicting future profitability. Hence, from 321 companies admitted to Tehran stock market before 2012, 99 companies were selected using systematic removal during 2008-11 and tested using multiple regression. Variables of this research are: optional committing items, involuntary committing items, institutional ownership, family ownership, company size and future profitability. Research findings show that the type of applied profit management by companies tend to efficient profit management. Moreover, there is a positive relationship between company size and future profitability prediction and also a negative relationship between family ownership structure and future profitability prediction. Regarding the effect of the structure of institutional ownership on prediction of future profitability, no evidence was found.

INTRODUCTION

At the end of 1920s, spread of providing bill of profit and loss together with considerable pressures of people outside accounting profession as well as dissatisfaction of professional planners and academics from the current method, led to fundamental changes in accounting thought and theorem. One of the most important changes was more emphasis on and attention to the bill of profit and loss which was more concentrated on balance sheet. This resulted in appearance and addressing of the concept of profit management. Profit management is the process of taking conscious steps in the limit of accepted basics of accounting for getting the reported profit to determined target level. This act is done through manipulation [13].

Profit is one of the best indices for measuring activities of an economic unit. Understanding the behavior of accounting profit is a topic which is based upon the extension of quantitative techniques of management and necessity of responding to users of financial bills. This issue goes beyond the limits of measuring previous activities and enables accounting to help decision makers. Although there is no comprehensive for accounting profit which is agreed globally, it is of considerable validity as one of the criteria for financial decision making. In this context, each flow which imposes changes to profit, will become significant since it will bring about economic outcomes and this issue can be especially more important in markets having weak investment performance. Recent scandal in Enron and WorldCom, among others, provided a public feeling that profit management applied by companies managers tends to an opportunistic profit management so that it can ensure personal profit of managers and this suggests that these managers don’t valorize stockholders’ interests. Act of bringing reported profit close to the target level is done through manipulation. For various reasons such as award, debt, political expenditures and so on, managers act for managing profit and in some cases, smoothing. Now, if this management is toward increasing company value, it can be said that it is at least acceptable for
stockholders. However, in some cases, managers use this solution opportunistically and maximize their suitability.

Scat classified profit management into two categories.

Studies performed for profit management generally considers committing items. These items are obtained by difference of the profit and cash values of the operation which includes depreciations, changes in assets and current debts other than cash (such as receiving accounts, product availability and paying accounts). Consequently, by supposing that cash flow is not manipulated, the only remaining solution is to increase or decrease committing items. Many of 90s onward studies used methodology of Jones for estimation of optional and involuntary committing items [14].

One of the basic factor in testing profit management in companies is to estimate the factor of authority of managers in determining profit. Review of literature corresponding to profit management implies the presence of various strategies having different ways for estimating and measuring management authority in determining profit. One of the most important of them is based on application of optional committing items as an index for discovering profit management in commercial units. Discussion about ownership structure and company size and the way the affect company performance is a topic which has been attended for decades by researchers.

In this work, author attempts to answer the following questions:
1. Is the profit management policy adopted in companies admitted in Tehran stock market is opportunistic? If appropriate answer is found, we can seek factors to control this strategy.  
2. Since in discovering profit management we use optional committing items, is there any significant relationship between optional committing items and prediction of future profitability?  
3. According to ownership structure and company size, does ownership structure and company size affect prediction of future profitability?

This research is carried out by assuming that profit management of companies admitted in Tehran stock market is generally opportunistic.

Research hypothesis:

“There is a significant relationship between profit management, ownership structure and prediction of future profitability of the company.”

Theoretical framework and research model:

The aim of this work is to determine whether profit management of companies is opportunistic or efficient. The philosophy of profit management is to utilize flexibility of the standard method and accepted basics of accounting. Of course, various interpretations which can be deduced from procedures is the reason of diversity of accounting methods. When an interpretation in so flexible, integration of data provided in financial bills reduces. By studying various dimensions of profit management, this work will help promotion of knowledge of investment market. Numerous researches have been carried out for profit management and the theoretical framework of this research is derived from them.

In this work, to discover the profit management, moderated model of Jones is applied. They suggested that incomes are not free of freedom and manipulation. Therefore, they proposed that income changes can be determined through reducing changes in receivable accounts.

- Overall committing items of Company j in year t is calculated as follows:
  \[ TA_{jt}= (\Delta CA_{jt} - \Delta CL_{jt} - \Delta CaSH_{jt} + \Delta STDEBT_{jt} - DEPN_{jt}) \]
  \[ TA_{jt}: \text{overall committing items of economic institute } j \text{ in year } t \]
  \[ \Delta CA_{jt}: \text{changes in current assets of economic institute } j \text{ in year } t \]
  \[ \Delta CL_{jt}: \text{changes in current long term debts of economic institute } j \text{ in year } t \]
  \[ \Delta CaSH_{jt}: \text{changes in cash of economic institute } j \text{ in year } t \]
  \[ \Delta STDEBT_{jt}: \text{changes in current long term debts of economic institute } j \text{ in year } t \]
  \[ DEPN_{jt}: \text{depreciation rate of the current year constant and hidden assets of company } j \]

- Calculation of \( \alpha, \beta \) and \( \gamma \) as follows:
  \[ TA_{jt}/ A_{jt} = \alpha (1 / A_{jt}) + \beta (\Delta REV_{jt} / A_{jt}) + \gamma (PPE_{jt} / A_{jt}) + e_{jt} \]
  \[ TA_{jt}: \text{overall assets of company } j \text{ from previous year according to which values are standardized.} \]
  \[ \Delta REV_{jt}: \text{changes in net income of company } j \text{ between years } t-1 \text{ and } t \]
  \[ PPE_{jt}: \text{gross value of properties, machineries and equipment of company } j \text{ in year } t \]
  \[ e_{jt}: \text{error of model for company } j \text{ in year } t \]

- Calculation of involuntary committing items as follows and substitution of \( \alpha, \beta \) and \( \gamma \) computed in previous step:
  \[ NDAC_{jt} = \alpha (1 / A_{jt}) + [(\Delta REV_{jt} - \Delta RE_{jt}) / A_{jt}] + \gamma (PPE_{jt} / A_{jt}) + e_{jt} \]
  \[ NDAC_{jt}: \text{involuntary committing items} \]
  \[ RE_{jt}: \text{changes in net received accounts of company } j \text{ during years } t-1 \text{ and } t \]
• Calculation of optional committing items is as follows:
  
  \[ \text{DAC}_{ij} = \text{TA}_{ij} - \text{NDAC}_{ij} \]

  \[ \text{DAC}_{ij} \]: optional committing items

• To test the hypothesis, we use multiple regression:

  \[ X_{it+1} = b_0 + b_1 \text{CFO}_{it} + b_2 \text{NDAC}_{ij} + b_3 \text{DAC}_{ij} + b_4 \text{DFAM}_{it} + b_5 \text{INST}_{ij} + b_6 \text{DSIZE}_{ij} + e \]

  \[ X_{it+1} \]: future profitability is measured by the following variables:

  \[ \text{CFO}_{it} \]: cash flow of the operation in year \( t+1 \)

  \[ \text{NDNI}_{it} \]: net profit of involuntary committing items of the year \( t+1 \) which is computed as follows:

  \[ \text{NDNI}_{it} = (\text{net profit before unexpected items-optimal committing items}) \]

  \[ \text{EARN}_{it+1} \]: profit changes which is computed as follows:

  \[ \text{EARN}_{it+1} = \text{EARN}_{it} - \text{EARN}_{t} \]

  \[ \text{INST}_{ij} \]: ratio of institutional ownership which is the percent of institutional ownership of company \( j \) in the year \( t \).

  \[ \text{DFAM}_{ij} \]: virtual variable of family ownership which is equal to 1 for the percent of family ownership as much as 50 and higher and equal to 0 for percent less than 50.

  \[ \text{DSIZE}_{ij} \]: virtual variable of company size which initially its natural logarithm of all of the company assets which is equal to one for values over average and zero for values less than average.

  Error \( e \) is considered as the statistical error; that is a random variable which expresses lack of fitting and failure of the model in exact fitting of the data, parameters \( b_1, b_2, \ldots, b_6 \) are regression coefficients. \( \beta_1 \) is the slope of changes in average of \( y \) for a unit change in \( x \).

  To determine the type of profit management, we use optional committing items in regression model. If management method is efficient, \( b_1 \) will be positive. If it is opportunistic, \( b_3 \) will be negative or zero.

**Research variable:**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future profitability</td>
<td>Optional committing items, family ownership, institutional ownership, company size, cash flow resulted from operation, involuntary committing items</td>
</tr>
</tbody>
</table>

In this work, we used three criteria for measuring future profitability:

1. Cash flow resulted from operation during year \( t+1 \) denoted by \( \text{CFO}_{it} \).
2. Net profit of optional committing items in year \( t+1 \) denoted by \( \text{NDNI}_{it+1} \).
3. Changes in profits in year \( t+1 \) denoted by \( \Delta \text{EARN}_{it+1} \).

To neutralize the property of constant profit, variable of changes is used in profit and to neutralize the property of constant committing items, moderated model of Jones for separation of optional and involuntary committing items is applied.

**Research time period:**

Time period of the research information is the years 2008-11. It must be noted that for computation of future profitability indices and to standardize the values used in computation of optional committing items, financial information of sample companies for the past year and after the period. Therefore, in general, it can be said that information of companies for the period of 2007-12 was required for research.

**Literature review:**

Veronica and Sidharta Utamaa [27], in a research entitled “type of profit management and the effect of ownership structure, company size and methods of institutional ownership on the type of profit management of companies admitted to Indonesian stock market”, tested the type of profit management – efficient or opportunistic – in 144 sample companies in a 5 year period. In their work, they used the following hypotheses:

**Basic hypothesis:** there is a significant relationship between optional committing items and future profitability.

**Secondary hypotheses:**

1) Effect of optional committing items of companies with higher ratio of institutional ownership is higher.

2) Effect of optional committing items of companies with higher market investment is higher.

3) Effect of optional committing items of companies with higher ratio of family ownership is higher.

In this work, to separate the committing items into optional and involuntary ones, moderated model of Jones is used and using multiple regression, they found out that profit management type of these companies tends to be efficient and this finding was in contradiction with the hypothesis that profit management is opportunistic in Indonesia. Results of testing hypotheses was as follows: basic hypothesis was approved. Therefore, there is a significant relationship between optional committing items and future profitability of the company. Regarding effects of institutional ownership, company size and company ownership styles, contradicting evidences were found. Hence, hypotheses 1 and 2 were rejected and family ownership has a significant effect on future profitability management. Therefore, hypothesis 3 is approved.
Jirpon et al. in a work entitle “profit management is opportunistic or efficient?” tested the type of profit management in 1621 sample US companies during years 1993, 1995 and 1998. In this work, to discriminate the type of profit management, theory of representation was used and they found that companies having high profits have less representation cost and inversely, companies with lower rate of profit have higher representation costs.

Moreover, they discovered that there is a positive relationship between company value and the profit management. Their results revealed that if profit management is in moderate level, it is not opportunistic and can be even efficient. Richard Chung et al. [26] in a paper entitled “institutional monitoring and opportunistic profit management” evaluated the effect of institutional monitoring on controlling opportunistic profit management. In this research, optional committing items obtained from Jones moderated model was utilized for assessment of profit management. By assuming that institutional investors always have a high ratio of published shares of companies admitted to stock markets and also they have resources, expertise and skills necessary for controlling and monitoring managers, they performed this research. Using regression model, they tested hypothesis that institutional investors affect the type of profit management through considerable investing on shares. Results confirmed that managers use optional committing items to increase or decrease the reported profit and institutional investors. Overall results of research revealed that major institutional investors actively contribute to control of opportunistic managers.

Gill Blen in a research entitled “profit management affected by pricing regulations”, investigated the effect of pricing regulations on profit management applied in Spanish electricity companies during 1991-2001 and by assuming that political expenditures of the profit management are effective, performed their research. Although activities corresponding to generation and distribution of electricity in developed countries is in private sector’s hand, governments still interfere in price of generation and distribution of electricity and pricing must be in accordance with governments’ goals and thy used optional committing items in their research.

Their findings suggested that political expenditures affect profit management. Experimental evidences of this work revealed that there is an inverse relationship between optional committing items and annual changes in electricity prices and many companies manage the profits conservatively and report their profits unrealistically. This is for neutralizing the social protests against governments’ decisions since government must support consumer as well as industrial companies. Therefore, if profit reduction is reported, people do not protest against approved electricity bill. Furthermore, policy makers will be satisfied since it is in agreement with governments’ goals.

Dorosti in his MSc thesis entitled “investigation of the phenomenon of profit management through activities affecting operational cash flows of companies admitted to Tehran stock market”, assumed that real manipulation of operational cash flows deviates companies’ profits. Findings reveal that companies which report low profit, manipulate real operational activities. Usually, companies by discounting, which increases sales temporarily, more production which reduces the final cost of each unit of the product and reducing optional costs which depend upon management’s opinion, avoid reporting losses. Moreover, to prevent reporting profit reduction, manipulate real operational activities.

Statistical population:
Statistical population of this work includes all companies admitted in Tehran stock market during years 2009-11.

Research methodology:
This research is an applied project with respect to the purpose and with respect to identity and methodology is correlative. The research underway has adopted comparative – deductive design. That is, theoretical framework of the project has been put into practice through library research in comparative design and data collection for the purpose of rejection or confirmation of hypotheses is done through deduction.

Variables descriptive indices:
To investigate the general and basic characteristics of variables for estimation and prediction of the pattern and exact analysis of them, estimation of their descriptive indices is necessary. Data description indices which we estimated in this research, include central indices (average and middle) and indices of scatter of standard deviation and changes amplitude. By means of these characteristics, we can obtain a general vision about the values of the variables.

Indices describing variable:
According to table, we can statistically investigate all variables in accordance with relevant indices. Above table suggests that optional committing items with 388 data, the difference of the minimum, 23,613,886.4 and maximum, 15,088,529.3 is equal to 38,702,415.7 and their average is -1918.137 with standard deviation of 1.4852e6. Oscillation of optional committing items with respect to maximum and minimum illustrates the fact
that by means of optional committing items, it is possible to manipulate and smooth the profits. Moreover, for all variables, we can provide above descriptions.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Index</th>
<th>Operational cash flow during year t+1</th>
<th>Net profit of optional committing items in year t+1</th>
<th>Profit changes in year t+1</th>
<th>Net profit of optional committing items in year t+1</th>
<th>Operational cash flow during year t+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>INST,</td>
<td>DAC,</td>
<td>NDAC,</td>
<td>CFO,</td>
<td>ARNY,</td>
<td>NDMI,</td>
<td>CFO, t+1</td>
</tr>
<tr>
<td>388</td>
<td>388</td>
<td>396</td>
<td>396</td>
<td>396</td>
<td>388</td>
<td>396</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>48.72</td>
<td>-1918.137</td>
<td>7830000000000000.0.19</td>
<td>197803.19</td>
<td>31757.67</td>
<td>192363.939</td>
<td>266776.90</td>
</tr>
<tr>
<td>56.50</td>
<td>-5091.740</td>
<td>3700000000000000.0.0.24</td>
<td>24215.50</td>
<td>3839.50</td>
<td>36291.771</td>
<td>29333.50</td>
</tr>
<tr>
<td>33.273</td>
<td>6E1.4853</td>
<td>0e1.946038573514020</td>
<td>836236.305</td>
<td>226897.368</td>
<td>6e1.5124</td>
<td>1028581.583</td>
</tr>
<tr>
<td>0</td>
<td>-23613868.4</td>
<td>0E-2.203100463575</td>
<td>-1378783</td>
<td>-2559688</td>
<td>-10253512.3</td>
<td>-1002251</td>
</tr>
<tr>
<td>99</td>
<td>15088529.3</td>
<td>1E2.737122263064</td>
<td>8166328</td>
<td>1491573</td>
<td>25883215.4</td>
<td>9821295</td>
</tr>
<tr>
<td>99</td>
<td>38702415.7</td>
<td>4.94022726</td>
<td>9545111</td>
<td>4051261</td>
<td>36136727.7</td>
<td>10823546</td>
</tr>
</tbody>
</table>

### Hypothesis testing:

“There is a significant relationship between profit management, ownership structure, company size and future profitability prediction.”

Sometimes, two or more variables have a great effect on a dependent variable. In this case, multiple regression is used for prediction of dependent variable. In this regression, linear relationship between variables is considered and as a result, equation of multiple regression is defined in the form of

\[
y = a + b_1x_1 + b_2x_2 + \ldots \ldots + b_kx_k
\]

To test the hypothesis and determining multiple regression equation in presence of independent variables, each of the future profitability indices will be tested separately.

### Multiple regression with variable of operational cash flow in year t+1 (CFO, t+1):

\[H_0: \text{there is no significant relationship between profit management, ownership structure, company size and future profitability prediction.}\]

\[H_1: \text{there is a significant relationship between profit management, ownership structure, company size and future profitability prediction.}\]

To test hypothesis with this index, test result includes four outputs.

#### 1st output:

- Shows independent input variables, removed variables and method used in determination of regression.

#### Independent Input variables/ removed variables:

<table>
<thead>
<tr>
<th>Method</th>
<th>Independent input variables</th>
<th>Removed variables</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTER</td>
<td>Institutional ownership, company size, family ownership, operational cash flow in year t+1, optional committing items, involuntary committing items</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Enter method is a strategy in selecting variables in which all input variables are used in a stage of determination of regression.

#### 2nd output:

- Correlation factor, determination factor and Durbin – Watson test for independent and dependent variables (operational cash flow for year t+1)
Determination factor is 0.459; that is, 45.9% of changes in response variable, CFO_{t+1}, can be explained by the model. Moderated determination factor is 0.45. Difference between determination and moderated determination factor can result from sample volume and the number of variables. If the sample is small, moderated factor is more appropriate for interpretation and as sample grows, factors approach each other. The value of estimation error suggests low scatter of points around regression line.

Statistic of Durbin–Watson test is 1.814 which falls in interval of 1.5 and 2.5. Therefore, null hypothesis is accepted and we can use regression.

3rd output:
Includes regression variance analysis to investigate the certainty of the linear relationship between variables.

Variance analysis of regression (ANOVA) for independent variables and operational cash flow:

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Statistic</th>
<th>Mean of Squares</th>
<th>DOF</th>
<th>Sum of Squares</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>52.735</td>
<td>376.690</td>
<td>6</td>
<td>2260.141</td>
<td>Regression 1</td>
</tr>
<tr>
<td>7.143</td>
<td>373</td>
<td>2664.380</td>
<td>379</td>
<td>4924.521</td>
<td>Remaining</td>
</tr>
</tbody>
</table>

Above table represents the variance analysis for significance of multiple regression. According to this output, overall significance of the regression model is tested by table (ANOVA) and through following statistical hypothesis:

H_0: \beta_1=\beta_2= \ldots \ldots =\beta_k= 0

H_1: \beta_j \neq 0 at least one of the betas is not zero

Statistic F is obtained by division of regression mean squares by means square of residuals. In table 4-13, statistic F as much as 52.735 illustrates the significance of regression in 95% certainty. p-value approves this fact. Therefore, H_0 is rejected and the significant relationship between profit management, ownership structure, company size and profitability prediction is approved.

4th output:
Coefficients of regression equation for dependent and independent variables for operational cash flow

<table>
<thead>
<tr>
<th>Collinearity statistics</th>
<th>Variance Inflation</th>
<th>Std. Coefficients</th>
<th>Abbrev.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance Inflation</td>
<td>Tolerance</td>
<td>B</td>
<td>Std. Error of B</td>
<td>8.906E-7</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.004</td>
<td>1.889</td>
<td>.189</td>
</tr>
<tr>
<td></td>
<td>.285</td>
<td>.135</td>
<td>.363</td>
<td>.067</td>
</tr>
<tr>
<td></td>
<td>19.027</td>
<td>.121</td>
<td>.297</td>
<td>.318</td>
</tr>
<tr>
<td></td>
<td>(constant)</td>
<td>.011</td>
<td>1.579</td>
<td>.067</td>
</tr>
<tr>
<td></td>
<td>2.955</td>
<td>.338</td>
<td>.803</td>
<td>.115</td>
</tr>
<tr>
<td></td>
<td>3.359</td>
<td>.298</td>
<td>.850</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>1.201</td>
<td>.832</td>
<td>.107</td>
<td>.773</td>
</tr>
<tr>
<td></td>
<td>.414</td>
<td>.508</td>
<td>.223</td>
<td>.223</td>
</tr>
<tr>
<td></td>
<td>3.198</td>
<td>.223</td>
<td>.107</td>
<td>.107</td>
</tr>
<tr>
<td></td>
<td>1.178</td>
<td>.849</td>
<td>.107</td>
<td>.107</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.000</td>
<td>1.579</td>
<td>.067</td>
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<td></td>
<td>.115</td>
<td>.005</td>
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<td>.007</td>
<td>.007</td>
<td>1.071</td>
<td>.067</td>
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<tr>
<td></td>
<td>1.245</td>
<td>.803</td>
<td>.115</td>
<td>.115</td>
</tr>
</tbody>
</table>

Tests corresponding to each of regression coefficients of actual test of hypotheses for model parameters are used for measuring appropriateness of regression model. To assess the significance of coefficients of independent variables, statistic t is used.
Statistic t for variables CFO_{it}, NDAC_{it}, DAC_{it}, DFAM_{it} and DSIZE_{it} are significant in 95% level and p-values obtained in this column confirm this fact. Therefore, hypothesis of equality with zero is rejected and these variables cannot be removed from the regression model.

In coefficients column, constant value and coefficients of independent variables of regression model are presented. In column of inflation factors, all values are less than 5 which represents the lack of collinearity among independent variables. In the column of standardized coefficients, beta value of company size as much as 0.441 illustrates the strong relationship between company size and future profitability prediction with CFO_{it+1} index compared to other variables.

**Interpretation of the effects of independent variables on response variable (CFO_{it+1}):**

1. p-value obtained for institutional ownership represents insignificance of the coefficient of institutional ownership structure in 5% level. Therefore, it has no effect on future profitability prediction.
2. To investigate the effects of profit management type, we use interpretation of the effect of optional committing items on future profitability prediction. As stated, coefficient of committing items variable is significant in 5% level and its coefficient is positive and equal to 2.297e-7. It can be said that by increasing optional committing items, prediction of future profitability with CFO_{it+1} index improves in a significant manner. In interpretation of beta coefficient, it can be said that by changing the variable of optional committing items by 1 unit, response variable increases by 0.096 units if other variables are kept unchanged.
3. p-value obtained for family ownership represents significance of the variable in 5% level. Coefficient of this variable is negative and equal to -1.237 which suggests the inverse effect on future profitability. In interpretation of beta coefficient, it can be said that if family ownership coefficient increase by 1 unit from zero, response variable reduces by -0.101 if other variables are kept unchanged.
4. p-value obtained for company size illustrates significance of the variable in 5% level. Coefficient of this variable is positive and equal to 3.198 which suggests its direct effect on future profitability. In interpretation of beta coefficient, it can be said that by increasing the variable of company size by 1 unit, response variable increases by 0.441 if other variables are kept unchanged.

Regression equation is as follows:

\[
\text{Ln(CFO}_{it+1}) = 19.027 + 8.906E^{-7}\text{CFO}_{it} + 0.363\text{NDAC}_{it} + 2.297E^{-7}\text{DAC}_{it} + 1.237\text{DFAM}_{it} + 3.198\text{DSIZE}_{it} + 0.007\text{INST}_{it} + \epsilon
\]

As stated earlier, to investigate the type of profit management, we use optional committing items and as shown in the model, sign of b3 coefficient for optional committing items is positive. Therefore, management type tends to efficient type of profit management.

**Kolmogorov - Smirnov test for normality of error of residuals with response variable CFO_{it+1}**

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Kolmogorov – Smirnov Z</th>
<th>Maximum negative deviation</th>
<th>Maximum positive deviation</th>
<th>Absolute value of standard deviation</th>
<th>Standard deviation</th>
<th>Average</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.095</td>
<td>1.235</td>
<td>-0.063</td>
<td>0.033</td>
<td>0.063</td>
<td>0.99205285</td>
<td>0.0000</td>
<td>380</td>
</tr>
</tbody>
</table>

The value of sig is 0.95 and higher that significance level of 5% and the value of ks is as much as 1.235. Therefore, hypothesis of normality of residuals errors is accepted and it can be used in regression of the relationship between independent and dependent variables.

**Multiple regression of response variable of net profit of involuntary committing items in year t+1 (NDNI_{it+1}):**

H0: there is no significant relationship between profit management, ownership structure, company size and future profitability prediction.

H1: there is a significant relationship between profit management, ownership structure, company size and future profitability prediction.

To test the hypothesis with this index of test result, we have four outputs:

1° output:

Independent input variables, removed variables and method used in determination of regression.

**Input independent variables/ removed variables:**

<table>
<thead>
<tr>
<th>Method</th>
<th>Removed variables</th>
<th>Input independent variables</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter</td>
<td>0</td>
<td>Institutional ownership, company size, family ownership, operational cash flow in year t, optional committing items, involuntary committing items</td>
<td>1</td>
</tr>
</tbody>
</table>

Method enter is a strategy in which all input variables of one stage are used in determination of regression.
2nd output: Correlation factor, determination factor and Durbin – Watson test: between independent and variable and net profit of involuntary committing items in year t+1:

<table>
<thead>
<tr>
<th>Durbin - Watson</th>
<th>Estimation standard error</th>
<th>Moderation determination factor</th>
<th>Determination factor</th>
<th>Pearson correlation factor</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.925</td>
<td>E0.3012821452645</td>
<td>0.535</td>
<td>0.542</td>
<td>0.736</td>
<td>1</td>
</tr>
</tbody>
</table>

In multiple regression, instead of regular correlation factor, we have multiple correlation factor. This factor is as much as 0.736 between independent variables and dependent variable of NDNI_{t+1} which illustrates good correlation between response variable of independent variables.

Determination coefficient is 0.542. It means that 54.2% of response variable changes can be explained by the model. Moderated determination factor is 0.535. Difference between determination and moderated determination factor can result from sample volume and the number of variables. If sample is small, moderated factor is better for interpretation and as sample size increases, factors come close to each other. Value of standard error suggests low scatter of points around regression line.

Statistic of Durbin – Watson test is 1.925 which falls between 1.5 and 2.5. Therefore, H0 hypothesis is accepted and we can use regression.

3rd output includes variance analysis of regression to assess the certainty of the linear relationship between variables.

Regression variance analysis of independent variables and dependent variable of net profit of involuntary committing items in year t+1:

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Ready F</th>
<th>Squares mean</th>
<th>DOF</th>
<th>Sum of Squares</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>73.660</td>
<td>390.096</td>
<td>6</td>
<td>2340.574</td>
<td>Regression 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.296</td>
<td>373</td>
<td>1975.371</td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>379</td>
<td>4315.945</td>
<td>Total</td>
</tr>
</tbody>
</table>

Above table represents the variance analysis for significance of multiple regression. According to this output, overall significance of the regression model is tested by ANOVA and through the following statistical hypothesis:

H₀: β₁=β₂= ……..=βₖ= 0

H₁ : βⱼ≠0     at least one of the betas is not zero

Statistic F is obtained by dividing mean of squares of regression by means of residual squares. Statistics F is 73.66 which illustrates regression in 95% certainty. Obtained p-value confirms this claim. Therefore, H₀ is rejected and a significant relationship between type of profit management, ownership structure, company size and future profitability prediction is approved.

4th output: Coefficients of regression equation for independent variables and dependent variable of net profit of involuntary committing items in year t+1:

Tests corresponding to each of the regression coefficients of one of the actual tests of hypotheses corresponding to model parameters, are used for measuring the appropriateness of regression model. To assess the significance of coefficients of independent variables, t statistic is used.

Statistic t is significant for variables of CFO\textsubscript{it}, NDAC\textsubscript{it}, INST\textsubscript{it}, DFAM\textsubscript{it}, DSIZE\textsubscript{it} in 95% level and p-values obtained in corresponding column confirm this fact. As a result, hypothesis of equality with zero is rejected and variables cannot be removed from regression model.

In column of coefficients, constant value and coefficients of independent variable of regression equation are presented. In column of variance inflation factor, all values are less than 5 which shows lack of collinearity of independent variables. In column of standardized coefficients, value of beta for company size is 0.484 which suggests the strong relationship between company size and future profitability prediction compared to other variables.
Collinearity statistics

<table>
<thead>
<tr>
<th>Variance inflation factor</th>
<th>Tolerance</th>
<th>Standardized coefficient B</th>
<th>SE</th>
<th>Statistic T</th>
<th>Standard error of coefficient B</th>
<th>Non-standardized coefficients</th>
<th>Abbrev.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.000</td>
<td>.245</td>
<td>19.104</td>
<td>.000</td>
<td>7.666E-7</td>
<td>CFOt</td>
<td>Operational cash flow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.955</td>
<td>.338</td>
<td>2.888</td>
<td>.174</td>
<td>.000</td>
<td>7.666E-7</td>
<td>NDACit</td>
<td>Involuntary committing items</td>
</tr>
<tr>
<td></td>
<td>3.359</td>
<td>.298</td>
<td>2.926</td>
<td>.188</td>
<td>.011</td>
<td>.340</td>
<td>NDACt</td>
<td>Family ownership</td>
</tr>
<tr>
<td></td>
<td>1.201</td>
<td>.832</td>
<td>.699</td>
<td>.511</td>
<td>.020</td>
<td>.4415E-8</td>
<td>INSTit</td>
<td>Company size</td>
</tr>
<tr>
<td></td>
<td>1.177</td>
<td>.850</td>
<td>.326</td>
<td>.086</td>
<td>.437</td>
<td>.989</td>
<td>DFMIt</td>
<td>Optional committing items</td>
</tr>
<tr>
<td></td>
<td>1.178</td>
<td>.849</td>
<td>.000</td>
<td>.484</td>
<td>.258</td>
<td>3.284</td>
<td>DSIZEt</td>
<td>Family ownership</td>
</tr>
<tr>
<td></td>
<td>1.245</td>
<td>.803</td>
<td>.000</td>
<td>.141</td>
<td>.004</td>
<td>.014</td>
<td>INSTt</td>
<td>Institutional ownership</td>
</tr>
</tbody>
</table>

Interpretation of the effect of independent variables on response variable NDNI_{t+1}:

1. p-value obtained for institutional ownership suggests significance of the institutional ownership in 5% level. Sign of the coefficient is positive and hence, it directly affects future profitability prediction. In interpretation of the results, it can be said that is institutional ownership deviates as standard deviation unit, response variable increases by 0.141.

2. To investigate the effect of the type of profit management, we use the interpretation of optional committing items for prediction of future profitability prediction. As stated, coefficient of committing items is not significant in 5% level. Hence, it has no contribution to prediction of future profitability with index of NDNI_{t+1}.

3. Obtained p-value for family ownership illustrates the significance of the variable in 5% level. Coefficient of this change is negative and equal to -0.989 which suggests its inverse effect on future profitability prediction. In interpretation of beta, it can be said that if family ownership changes as a unit of standard deviation, response variable reduces by -0.86 if other variables remain unchanged.

4. Obtained p-value for company size illustrates the significance of the variable in 5% level. Coefficient of this change is positive and equal to 3.284 which suggests its direct effect on future profitability prediction. In interpretation of beta, it can be said that if company size changes by a unit of standard deviation, response variable increases by 0.484 if other variables remain unchanged.

Regression equation is as follows:

\[ \text{Ln(NDNI}_{t+1}) = 19.104 + 7.666E-7 \text{CFO}_t + 0.340 \text{NDAC}_t + 4.151E-8 \text{DAC}_t - 0.989 \text{DFAM}_t + 3.284 \text{DSIZE}_t + 0.014 \text{INST}_t + e \]

As stated earlier, to assess the type of profit management, we use optional committing items and as can be seen in model, sign of \(b_3\) for optional committing items is positive. Therefore, profit management tends to efficient style.

Kolmogorov – Smirnov test for normality of error of residual of response variable NDNI_{t+1}:

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Kolmogorov – Smirnov Z</th>
<th>Maximum negative deviation</th>
<th>Maximum positive deviation</th>
<th>Absolute value of standard deviation</th>
<th>Standard deviation</th>
<th>Average</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.140</td>
<td>1.399</td>
<td>0.572</td>
<td>0.047</td>
<td>0.572</td>
<td>0.99205285</td>
<td>0.000</td>
<td>380</td>
</tr>
</tbody>
</table>

The value of sig is 0.14 which is more than 5% and the value of KS is 1.399. Therefore, the hypothesis of normality of errors or residuals is accepted and we can use regression for the relationship between independent variables and dependent one.

Multiple regression o response variable of profit changes in year \(t+1\), \(\Delta \text{EARN}_{t+1}\).
H₀: there is no significant relationship between profit management type, company size and future profitability prediction.

H₁: there is a significant relationship between profit management type, company size and future profitability prediction.

Test of hypothesis with this index has four outputs:
1st output includes input independent variables, removed one, and the method used in determination of regression.

Independent input variable/ removed variables:

<table>
<thead>
<tr>
<th>Method</th>
<th>Removed variables</th>
<th>Input independent variable</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter</td>
<td>0</td>
<td>Institutional ownership, company size, family ownership, operational cash flow, optional committing items, optional committing items</td>
<td>1</td>
</tr>
</tbody>
</table>

Method enter is a strategy for selecting variables in which all input variables of one stage are used in determination of regression.

2nd output:

Correlation factor, determination factor and Durbin – Watson test: between independent variables and profit changes in year t+1:

<table>
<thead>
<tr>
<th>Durbin – Watson</th>
<th>Estimation standard error</th>
<th>Moderated determination factor</th>
<th>determination factor</th>
<th>Multiple correlation factor</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.195</td>
<td>E02.9535161879353</td>
<td>0.350</td>
<td>0.360</td>
<td>0.600</td>
<td>1</td>
</tr>
</tbody>
</table>

In multiple regression, instead of regular correlation factor, we have multiple correlation factor. Multiple correlation factor of independent variables and dependent variable of \( \Delta EARN_{t+1} \) is equal to 0.6 which suggests a good correlation between independent variables and dependent one.

Determination factor is 0.36. This means that 36% of changes in response variable can be explained by the model. Moderated determination factor is 0.35. Difference between determination factor and moderated one may result from sample volume and the number of variables. If the sample is small, moderated factor is better for interpretation. As sample become larger, factors come close to each other.

The value of estimation standard error suggests low scatter of points around regression line.

Statistic of Durbin – Watson test is 2.195 which is in the interval of 1.5 and 2.5. Therefore, H₀ hypothesis is accepted and we can use regression.

3rd output includes regression variance analysis to investigate the certainty of the linear relationship between variables.

Regression variance analysis of independent variable and dependent one for profit changes in year t+1:

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Statistic</th>
<th>Mean of Squares</th>
<th>DOF</th>
<th>Sum of Squares</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>35.039</td>
<td>8.723</td>
<td>373</td>
<td>3251.775</td>
<td>Remaining</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>379</td>
<td>5087.703</td>
<td>Total</td>
</tr>
</tbody>
</table>

Above table represents the variance analysis for significance of multiple regression. According to this output, significance of overall model is tested by ANOVA and through the following statistical hypothesis:

\[ H_0: \beta_1 = \beta_2 = \ldots = \beta_k = 0 \]

\[ H_1: \beta_i \neq 0 \text{ at least one bet is not zero} \]

Statistic F is obtained by dividing regression squares mean by residuals squares mean. In table 4-23, statistic F is 35.039 which illustrates the significance of regression in 95% certainty. Obtained p-value confirms this fact. Therefore, H₀ is rejected and the significant relationship between profit management type, ownership structure, company size and future profitability prediction is approved.

4th output:

Coefficients of regression equation for independent variable and dependent variable of profit changes in year t+1:
Tests corresponding to each of regression coefficients are used for measuring appropriateness of regression model. To investigate the significance of the coefficients of independent variables, statistic t is used.

Statistic t for variables NDACit, DACit, DFAMit, DSIZEit is significant in 95% level and obtained p-value confirms this fact.

Therefore, hypothesis of equality with zero is rejected and we cannot remove the variables from regression model.

In coefficients column, constant value and coefficients of independent variables are presented. In the column of variance inflation factor, all values are less than 5 which suggests lack of collinearity of independent variables. In the column of standardized coefficients, value of beta coefficient for company size is 0.361 which shows the strong relationship between company size and profitability prediction compared to other variables.

- Interpretation of independent variables on response variable, EARNitΔ
  1. Obtained p-value for institutional ownership suggests the insignificance of the coefficient of institutional ownership coefficient in 5% level. Therefore, it has no effect on future profitability prediction.
  2. To investigate the effect of profit management, interpretation of the effect of optional committing items on future profitability prediction is used. As stated before, committing items are significant in 5% level and coefficient of this variable is positive and equal to 2.434E-7. It can be said that by increasing optional committing items, future profitability prediction will be significantly better and regarding interpretation of beta coefficient, it can be said that if optional committing items change as much as a unit of standard deviation, response variable changes as much as 0.1 if all other variables remain unchanged.
  3. Obtained p-value for family ownership suggests the significance of the coefficient of variable coefficient in 5% level. Therefore, it has no effect on future profitability prediction. Coefficient of this variable is negative and equal to -2.064 which illustrates the inverse effect of it on profitability prediction. It can be said that by increasing optional committing items, future profitability prediction will be significantly better and regarding interpretation of beta coefficient, it can be said that if optional committing items change as much as a unit of standard deviation, response variable changes as much as -0.165 if all other variables remain unchanged.
  4. Obtained p-value for family ownership suggests the significance of the coefficient of variable coefficient in 5% level. Coefficient of this variable is positive and equal to 2.659 which illustrates the direct effect of it on profitability prediction. It can be said that if optional committing items change as much as a unit of standard deviation, response variable changes as much as 0.361 if all other variables remain unchanged.

Regression equation is as follows:
\[
\text{Ln}(\text{EARNit}) = 16.880 + 5.446E-7\text{CFOit} + 0.399\text{NDACit} + 2.434E-7\text{DACit} \\
2.064\text{DFAMit} + 2.659\text{DSIZEit} + 0.007\text{INSTit} + \epsilon
\]

As stated earlier, for investigation of the profit management type, we use optional committing items and as can be seen in model, sign of b2 is positive. Therefore, profit management tends to efficient type.

Kolmogorov – Smirnov test for normality of error of residual of response variable of profit changes:

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Kolmogorov – Smirnov Z</th>
<th>Maximum negative deviation</th>
<th>Maximum positive deviation</th>
<th>Absolute value of standard deviation</th>
<th>Standard deviation</th>
<th>Average</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.124</td>
<td>1.486</td>
<td>-0.576</td>
<td>0.036</td>
<td>0.576</td>
<td>0.9925285</td>
<td>0.000</td>
<td>380</td>
</tr>
</tbody>
</table>
The value of sig is 0.124 which is more than 5%. Therefore, hypothesis of normality of residual error is accepted and regression of the relationship between independent variables and dependent one can be used.

Summary of hypothesis test results for each of the future profitability indices:

<table>
<thead>
<tr>
<th>Index</th>
<th>Determination factor</th>
<th>Durbin-Watson</th>
<th>F-Statistic</th>
<th>p-value</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td>0.000</td>
<td>52.375</td>
<td>1.814</td>
<td>45.0</td>
<td>Operational cash flow for year t+1</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>73.660</td>
<td>1.925</td>
<td>53.5</td>
<td>Net profit of optional committing items in year t+1</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>689.039</td>
<td>2.195</td>
<td>59.0</td>
<td>Profit changes in year t+1</td>
</tr>
</tbody>
</table>

Summary of test results of effect of variables on future profitability prediction:

<table>
<thead>
<tr>
<th>Test result</th>
<th>p-value</th>
<th>Statistical components</th>
<th>Durbin-Watson</th>
<th>Determination factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive effect</td>
<td>0.022</td>
<td>-7E/2/297</td>
<td>379</td>
<td>2/291</td>
</tr>
<tr>
<td></td>
<td>0.060</td>
<td>-8E/4/415</td>
<td>379</td>
<td>0/511</td>
</tr>
<tr>
<td></td>
<td>0.029</td>
<td>-7E/2/434</td>
<td>379</td>
<td>2/197</td>
</tr>
<tr>
<td>Negative effect</td>
<td>0.015</td>
<td>-1.237</td>
<td>379</td>
<td>-2.435</td>
</tr>
<tr>
<td></td>
<td>0.024</td>
<td>-0.989</td>
<td>379</td>
<td>-2.262</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>-2.064</td>
<td>379</td>
<td>-3.677</td>
</tr>
<tr>
<td>No effect</td>
<td>0.115</td>
<td>0.007</td>
<td>379</td>
<td>1.579</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.014</td>
<td>379</td>
<td>3.618</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.007</td>
<td>379</td>
<td>1.397</td>
</tr>
<tr>
<td>Positive effect</td>
<td>0.000</td>
<td>3.198</td>
<td>379</td>
<td>10.678</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>3.824</td>
<td>379</td>
<td>12.734</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>2.659</td>
<td>379</td>
<td>8.036</td>
</tr>
</tbody>
</table>

Regression equations obtained by means of each of the future profitability indices:
1) $$\ln(CFO_{t+1}) = 19.027 + 8.906E-7CFO_{it} + 0.363NDAC_{it} + 2.297E-7DAC_{it} - 1.237DFAM_{it} + 3.198DSIZE_{it} + 0.007INST_{it} + e$$
2) $$\ln(NDNI_{t+1}) = 19.104 + 7.666E-7CFO_{it} + 0.340NDAC_{it} + 4.415E-8DAC_{it} - 0.989DFAM_{it} + 3.284DSIZE_{it} + 0.014INST_{it} + e$$
3) $$\ln(\Delta EARN_{t+1}) = 16.880 + 5.446E-7CFO_{it} + 0.399NDAC_{it} + 2.434E-7DAC_{it} - 2.064DFAM_{it} + 2.659DSIZE_{it} + 0.007INST_{it} + e$$
For example, financial information of three companies will be inserted in regression equation in order to evaluate the future profitability. Required information are derived from company’s financial bills. For separation of committing items, moderated model of Jones is used.

**Company financial information:**

<table>
<thead>
<tr>
<th>Sandblast and forging</th>
<th>Isfahan Petrochemical</th>
<th>IKCO</th>
<th>Abbrev.</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>72</td>
<td>64</td>
<td>INSTi</td>
<td>Ownership ratio</td>
</tr>
<tr>
<td>17083</td>
<td>34065</td>
<td>2110031</td>
<td>CFOit</td>
<td>Operational cash flow</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>DFAMi</td>
<td>Family ownership</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
<td>DsiZEi</td>
<td>Company size</td>
</tr>
<tr>
<td>-260008</td>
<td>667907</td>
<td>8,870654</td>
<td>NDACit</td>
<td>Involuntary committing items</td>
</tr>
<tr>
<td>-20625.26</td>
<td>87324.33</td>
<td>-707995.9</td>
<td>DACit</td>
<td>Optional committing items</td>
</tr>
<tr>
<td>21.194</td>
<td>353.033</td>
<td>3591722</td>
<td></td>
<td>Net profit of year 2005</td>
</tr>
</tbody>
</table>

**Interpretation of test result:**

According to analysis performed in section 4 about hypothesis, we investigate the results of each hypothesis with indices of future profitability and then, general conclusion of the findings will be presented.

“There is a significant relationship between profit management, ownership structure, company size and future profitability prediction.”

**Interpretation of test results and study of the effects of ownership structure with index of operational cash flow in year t+1:**

- Statistic F is equal to 52.375 and dig is zero which represents the significance of multiple regression in 95% level. Therefore, $H_0$ is rejected and the relationship between profit management, ownership structure and company size with profitability prediction is approved.
- Values of statistic t obtained for all variables except institutional ownership suggests significance of the coefficients of variables. Effect of variables on future profitability prediction according to statistic t is as follows: institutional ownership (negative or inverse), company size (direct or positive) and optional committing items (direct or positive).
- According to relationship obtained for regression, $b_3$ is positive and as much as 2.297e7. Hence, profit management tends to efficient style.

**Interpretation of test results and study of the effects of company size with index of operational cash flow in year t+1:**

- Statistic F is equal to 73.66 and sig is zero which represents the significance of multiple regression in 95% level. Therefore, $H_0$ is rejected and the relationship between profit management, ownership structure and company size with profitability prediction is approved.
- Values of statistic t obtained for all variables except institutional ownership suggests significance of the coefficients of variables. Effect of variables on future profitability prediction according to statistic t is as follows: institutional ownership (direct or positive), company size (direct or positive) and optional committing items (no effect).
- According to relationship obtained for regression, $b_3$ is positive and as much as 4.415e8. Hence, profit management tends to efficient style.

**Interpretation of test results and study of the effects of company size with profit changes in year t+1:**

- Statistic F is equal to 39.039 and sig is zero which represents the significance of multiple regression in 95% level. Therefore, $H_0$ is rejected and the relationship between profit management, ownership structure and company size with profitability prediction is approved.
- Values of statistic t obtained for all variables except institutional ownership and operational cash flow suggests significance of the coefficients of variables. Effect of variables on future profitability prediction according to statistic t is as follows: institutional ownership (no effect), family ownership (negative or inverse), company size (direct or positive) and optional committing items (direct or positive).
- According to relationship obtained for regression, $b_3$ is positive and as much as 2.434e7. Hence, profit management tends to efficient style.

**Summary of hypothesis testing results for each three indices of future profitability:**

Since statistic F in all three indices represents the significance of the regression in 95% level, therefore, $H_0$ is rejected and the relationship between profit management, ownership structure and company size with profitability prediction is approved.
• Variable of optional committing items using indices $\Delta$EARN$_{i,t}$ and CFO$_{i,t}$ are significant in 95% level and using index NDNI$_{i,t}$ is not significant in 95% level. Since this variable is significant in two indices out of three, therefore, it can be concluded that profit management in sample companies tends to efficient style.

Results of studies performed by Gall, Krishnen, Sebermeni, Veronica and Utama [27], Mik Kenani et al., Anderson and Rib, Fiyalko, Elgerz, Blu et al, Chira and Lee and Choy are in agreement. These researchers found out that the behavior of optional committing items is compatible with efficient scope since these items have a positive and significant relationship with future profitability. Results obtained for the relationship between future profitability are not in agreement with findings of western researchers.

Fiyalko, Veronica and Utama [27], Mik Kenani et al., Anderson and Rib, Fiyalko in their works discovered that there is a positive and significant relationship between family ownership structure and future profitability prediction and stated that companies having family ownership have better performance in predicting future profitability. Results obtained for institutional ownership structure are not in agreement with the works of Elgerz, Blu et al, Chira, Lee and Choy. Blu in a research found out that institutional investors have better performance in predicting future profitability prediction using current information compared to non-institutional investors.

**Conclusion:**

What is expressed as summary and conclusion of the test of the effects of profit management, ownership structure and company size on optional committing items and future profitability of the companies, represent signs of efficient profit management and another conclusion is that institutional ownership has no contribution to future profitability prediction. Company size and family ownership have a significant effect on future predictability prediction. The difference is that company size has positive effect while family ownership has negative and inverse contribution.

**Suggestions for further research:**

Since research hypothesis is approved, more attention to the contribution of optional committing items as an opportunity for managers in applying profit management policy. It is suggested that standard codifiers set standards for these committing items to prevent managers from opportunistic profit management using these items.

According to findings about the effects of ownership structure and company size, it is suggested that investors take the composition of investors and company size into account before investing in company.

**REFERENCES**


