The Investigation of the Relationship between Growth Opportunities and Earnings Management in Tehran Stock Exchange Companies

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Abstract
The main goal of this study is investigation the relationship between growth opportunities and earnings management of listed companies in Tehran Stock Exchange at the period of 2011-2015. Before data analysis, test the adequacy of the data, being normal, difference variance and reliability of variables was performed. Then Chaw and Houseman test was used to determine the appropriate model for estimating the parameters and influence of independent variables on the dependent variable. Based on research results in high-growth opportunities, motivation for information earnings management using discretionary accruals be increased, but it is appeared that in low levels of growth opportunities, motivation of earnings management will be more efficient.

Key words: Earnings management, opportunities for growth, information earning management, information management, opportunistic earnings management, efficient earning management

Introduction
In recent years, a number of researchers try to classify earning management. Gaa and Dunmore (2007) raised "performance measuring hypothesis" that according to it, managers use earnings management to reflect the effect of current economic events in the current reporting profits accurately. Instead, they define "hypothesis of accruals opportunistic earnings management” that according to it, that managers use earnings management to reduce the accuracy of reported profit. Christie and Zimmerman (1994) suggest "An efficient management practices" that increases the wealth of parties, including owners, developers and managers. In contrast, they define “opportunistic management actions” as affairs that according to it, managers increase their wealth instead of increasing the wealth of all parties. An important aspect of the accounting standards and its process with the available corporate governance structures is providing the flexibility for managers and personal judgment. Some personal discretions and judgments in reporting enable managers to solely transfer their personal information to shareholders. This application of discretion and personal judgment, indicate efficient earnings management. On the other hand, the disadvantage of imposing personal judgments and discretion in reporting financial performance is that managers may use this ability to avoid information transferring about the current or future potential weak performance. Such a manner in reporting decreases the aspect of profit informing and indicates opportunistic earnings management. Opportunistic behavior of management in relation to financial reporting may be due to agency problems in representation theory. Following the recent corporate scandals, there is a negative attitude toward earnings management and income management is considered a harmful practice for companies. Enron and WorldCom are two most prominent commercial bankruptcy in U.S. history of which opportunistic earnings management has a role in their bankruptcy. However, there are arguments that earning management can be profitable since it can improve the informational value of the earning with transferring the company personal information to shareholders and public. Li Lin (2001) and Zayene and...
Jilani (2010) in their study divide earning management into three categories: opportunistic earnings management, messaging, and efficient and believe that earning management is more in under-studied companies than in opportunistic ones. Factors that can affect the behavior of managers are the rate of growth opportunities and investment companies. Therefore, in the present study we try to test is the effect of growth opportunities on earnings management more than evaluation of the type of earning management.

Theories and background of the research:
Gaa and Dunmore (2007) believe that earning management is conscious manipulation of financial information for creating predetermined results. Managers have idea about what results should be reported and then they interfere in the financial reporting process to create those numbers. Archibald (1967), Cushing (1969) and Copland (1968) show in their researches that managers have different motivations for doing earning management and use various methods for achieving this goal. Tucker and Zarowin (2006) believe that companies’ managers do earning management for different motivations and reasons including transferring information about profits in future courses, profit falsified, improve the welfare of shareholders and directors. According to the motivations of economic units’ management for earning management, two opposite views are presented. One view stated that managers do earning management in order to achieve rewards or maintain their current career. In contrast, another view defines earning smoothing as a tool for managers that reveals their private information about future earnings. In the following, the research’s background for these different views about earning management is survived:

Informational earning management (Messaging):
According to this approach, managers provide some information about different aspects of economic institutions that people out of the organization are not informed about them and therefore, they help to the informational mechanism. In other words, managers probably can affect the share prices with involvement in earning management discussion and cause a stable trend of profitability during the time and in the economical institution. Moreover, sometimes informational mechanism describes that earning management creates as the result of shareholders demands of economic unit. Beidleman (1973) and Dye (1983) argue that shareholders ask earnings management for two reasons: Firstly, managers can decrease the cost of equity through creating smoother and more predictable profits. Secondly, having a stable flow of income effect the new investments’ deduction from the company’s value and cause selling current shareholders’ shares and increasing their wealth. In contrast, some other studies mention earnings management as a management tool for the transmission of confidential information about the company's future profitability. Kirschenheiter and Melumad (2002) show that reported profits have two duties. First, the levels of reported earnings making the estimation of future cash flows possible for investors. Also the reported earnings volatility reduces the investor confidence in the estimated fixed component. Sanker and Sabramanyam (2001) believe that managers smooth the profit for smoothing the consumption and therefore, they report private information about future earnings. Demski and Frimor (1999) shows that even in the absence of motivation, as long as managers use the future profit information for decision making about the necessity of the current profit smoothing, the future incomes are reported somehow in the current profits. Results of Kanagaretnam and his colleagues’ research (2001) show when banks have suitable current operation and predict weak future operation, managers keep some profit for the future. Moreover, when banks have weak current operation and predict a suitable operation for the future, the current profit is increased by borrowing from the future earnings. Hunt and his colleagues find that managers make the relation between price and profit in each period stronger and therefore, they claim that earning management improve the amount of earning informing. Tucker and Zarowin (2006) show that the current sticks’ prices of companies that try more to smooth income contain additional information about the company's future situation. Reviewing past researches including Shubita and Shubita (2008), Kallunki and Martikainen (2003) show that earning management affect the future profitability; in other words, earning management increases the stability and ability of reported earnings’ implications. Moreover, DA increases the predictive power of the profit about the future profitability. Frankel and et al (2002) and Matsumoto (2002) believe that increase the probability of profit growth increase the probability of earning management use; since, lack of earning management
increase the positive expectations of investors regarding the company’s future. Subramanyam (1996), conclude in a research that DA has a strong positive relationship with the future profitability and this positive relationship indicates the ability of DA in the transmission of information to the public about the company's future profitability power. Kasanen and et al (1996) indicate that companies use earning management actively to achieve a desired profit level (for the stable dividend policy and minimizing taxes). Ali and et al (2000) conclude by surveying New York stock companies that DA increases the capability of the future profits’ predictability. Kallunki and et al (2003) surveys the earning management role in the future profits’ predictability and concludes that earning management has informative increasing content compared to the past profits in the field of the future profits’ predictability. Tucker and Zarowin (2006) in surveying informative increasing content of profit smoothing compared to the past and current profits in the field of the predictability and future cash flow show that profit smoothing causes the increase of informative content about the profit and future cash flow. Tseng and Lai (2007) in surveying the relationship between profit smoothing and future profitability in Taiwan stock companies conclude that there is a significant negative relationship between profit smoothing and future profitability. Moreover, in this research, reaching to the minimum profitability is the main motivation for the reported profit smoothing. Surveying the effect of earning management of the future profitability, Shobita and et al (2010) survey the DA effect on three variables of future operating cash flows, net income free from future accruals and changes in future incomes. Their studies show that earning management can affect the future profit predictability. Arya and et al (2003) and Louis (2010) show in their researches that earning management increase informative increasing content. In their opinion, earning management decrease information transparency that is too simple idea and people gain different imperfect information in the decentralized agencies and in such environments, the earning management flow increases informative value comparing with non-managed profits. Bartov and (2002) and Lev (2003) conclude in their research that earning management provide better information transmission between managers and users and moreover; improve the relationship between information and increasing the capability of investors to better predicting the future operation of economic institution. Khodadadi and Janjani (2015) divide companies to two parts of profit smoothing and profit non-smoothing in surveying the relationship between profit and profitability. Results show comparing with companies without earning management; companies that have earning management have weaker operation in operational profit and net profit and they have more growth at the profit level before tax and net profit, bigger size in net profit level and finally higher dividend profit rates in earnings per share. Haghighat and Raygan (2010) survey the role of profit smoothing on profit informative content regarding the future profit predictability and show that the stocks ‘current price of companies that have more profit smoothing, have less information about profits and future cash flows. Hashemi and Samadi (2013) survey informative content of profit smoothing. The gained results of hypothesis tests show that profit smoothing increase the profit capability in predicting the cash flows of the future operations while the mentioned ability has not been increased in DA predicting via profit smoothing.

**Opportunistic earnings management:**

If the management uses its discretion and judgments in order its interests and distorts the profits, earnings management is opportunistic. In other words, if as a result of earnings management, firm’s value increases, earnings management is efficient and otherwise managers use earning management for increase their personal utility. Meaning of opportunistic behaviors of the managers is investment decision making of managers in risky and uncertain success that usually have different output from current flow of the company’s operation. The effects of these decisions usually cause fluctuate for the profit of commercial unit. Different factors cause opportunistic behaviors of the managers or limit them in this regard that the relation of some of them with earning management will discuss in the following. Defond and Jimbalvo (1994) state that the main motivation of the managers for earning management is their job security. The contract theory argue that profit distort is an equilibrium solution, otherwise, the employer may pay more
for satisfy its representative, that has information for assume additional risk. In these circumstances, even if the contract is effective, information reporting or transmission is distorted. Das and et al (2009) conclude if owners of a company want to have smooth reported profits, they can devote a reward to their managers for doing this. Demski and Frimor (1999) conclude of their research when managers smooth the profit that: a) managers are in a weakened situation and exposed to behavioral mistakes or, b) there is information asymmetry between shareholders and managers. Markarian and et al (2008) conclude that profit smoothing has negative relationship with systematic and nonsystematic risk. In the research of Ghaemi and et al (2014) and Noorani (2015), researchers survey the relationship between earning management and company’s output. The results show that profit has no significant effect of companies’ output. Research’s result of Poor Heydari and Aflatooni (2015) describe the smoothing motivation in Iranian companies of income tax and deviation in operating. Evidences of researches like sloan (1996) and Dechow and Skinner (2000) are according to this hypothesis that very large accruals indicate more opportunistic behavior by management to gain profitability level of interest. Noroosh and et al (2015) show in surveying the earning management in accepted companies in Tehran Stock Exchange within 2010 till 2014 that large companies in Iran do earning management and the motivation of management increases with increased liabilities. Moreover, research’s results show that managers of large companies use accruals for lowering tax or the manager trend to increase their earning management with make companies greater. Hashemi and Kamali (2015) survey the effect of a gradual increase in financial leverage and free cash flow rate and company’s growth as opportunistic behavior indicators of managers on earnings management. Three hypotheses are developed in this research and a sample is chosen within accepted companies in Tehran Stock Exchange for testing. Testing results of the study showed that the earnings management’s degree in firms with high financial leverage is not significantly different with companies that gradually involved increasing the financial leverage. Moreover, free cash flow and company’s growth are factors influencing in the rate of opportunistic behavior by managers who have influenced the level of earnings management.

Efficient earning management:
First time Christie and Zimmerman (1994) provided “efficient management practices" to increase the wealth of the parties, including shareholders, lenders and managers. Sabrmayam (1996) showed that if the management use personal justification and discretions in data transfer process to stakeholders outside the organization about the future profitability of the company, that is reflected in disclosed profits according to historic bases, and screen the profit, earning management would be efficient. In other words, in this case, the earning management process is done to improve the efficiency of business operations and more investments and it cannot consider same with earning opportunistic management that is for increase personal profits of the managers or enhance information of various parts that use the published data. Bahari Moghadam and Koohi (2015) survey the efficiency of opportunistically of earning management with a rest related to earning management and future profitability. In this research, the future profitability is measured with use of each of the three variables of future operating cash flows; net benefit without future discretionary accruals and change in future income. Findings show that in the period under review (2008 - 2014) in Tehran Stock Exchange, earning management intends to efficiency. Zayene and Jilani (2010) survey the impact of investment opportunities on the short-term and long-term discretionary accruals in a period of 9 years. Results show that high levels of investment opportunities has information content only in the short-term discretionary accruals and the relationship of short-term discretionary accruals increase only in the presence of investment opportunities. In other words, at a high level of investment opportunities, informative incentives to manage earnings are preferred on efficient and opportunistic earnings management.

Research hypothesis:
Among other effective factors on the amount of managers’ behavior, there are growth opportunities for the company. When the manager has a relatively high free cash flow and from the other side, the high investment and growth opportunities exist for the company, the manager can use these cashes in activates in order to the company’s growth. In such a situation, because these investments are to grow the company
and continue its current trend, they have lower risks and similar returns in comparison with the current output of the company and therefore, profit has not many fluctuations. In contrast, when investment and growth opportunities are limited, managers do such investments that have higher risks and different returns with the company's current operations. In this situation, company earnings are subject to fluctuations and manager do profit smoothing for harnessing these fluctuations that are due to the risky investment (Jill Ink, 2007). Surveying the main goal of research about the impact of growth opportunities on the relevance of discretionary accruals and based on previous research, some hypotheses are formulated in terms of three types of earnings management as follow:

**Theory of informative content (signal hypothesis):**

Gul and et al (2000) as well as Zayene and Jilani (2010) believe that in companies with high growth opportunities, informative motivations causes earning management to enhance investor confidence and solve problems regarding reduce investment in the future. Thus, the first hypothesis is proposed as follows:

*Hypothesis 1: there is a significant relationship between growth opportunities and informative earning management.*

**The opportunism hypothesis:**

Gul and et al (2000) as well as Zayene and Jilani (2010) believe that companies that have high growth opportunities will have to put a number of investment opportunities aside to pay their debt’s contracts on the determined time. Therefore, the cost of debt for these companies will be more compared to other companies. In other words, more pressure enters on these companies' managers for earning management opportunistically. This issue is discussed in the second hypothesis:

*Hypothesis 2: there is a significant relationship between growth opportunities and opportunistic earning management.*

**The efficiency hypothesis:**

Skinner (1993), Wang (2002) as well as Zayene and Jilani [36] believe that incentives for efficient operations of the company are one of the things that makes directors of companies that have a high level of investment opportunities (growth), are attempting to manage their earnings. Thus, the third hypothesis is proposed as follows:

*Hypothesis 3: there is a significant relationship between growth opportunities and efficient earning management.*

**Operational research models and variables:**

According to studies of Jones (2000), Shobita and Shobita (2010) as well as Zayene and Jilani (2010), we estimate the following regression model for the ultimate effect of growth opportunities on the relationship between returns and earnings management:

\[
AR_{i,t} = \alpha_0 + \alpha_1 NDA_{i,t} + \alpha_2 DA_{i,t} + \alpha_3 DUM_{los} + \alpha_4 DUM_{pers} + \alpha_5 PROFIT_{i,t} + \epsilon_{i,t}
\]

Where:

- \(AR_{i,t}\) = Abnormal return of firm's share \(i\) in year \(t\), including capital gains and dividends, which is calculated using the following method:

\[
R_{i,t} = \frac{(\text{clo logprice}_{i,t} - \text{clo logprice}_{i,t-1}) + \text{netprofit}_{i,t}}{\text{clo logprice}_{i,t-1}}
\]

- \(R_{\text{market}}\) = Market return (index):

\[
R_{\text{market}} = \frac{\text{clo logprice}_{i,t} - \text{clo logprice}_{i,t-1}}{\text{clo logprice}_{i,t-1}}
\]

- \(AR_{i,t} = R_{i,t} - R_{\text{market}}\)
NDA = Non-discretionary accruals (non-discretionary earnings) for firm i in year t.
DA = Discretionary accruals for firm i in year t as the residual of the modified Jones model (1991).
DUMios = Virtual variable of investment opportunity, so that if the index of investment opportunity is greater than the third quartile value, it is equal to 1, and if the index value is smaller than the lower quartile value, the amount of is virtual variable is zero.
DUMpers=Virtual variable of profit stability, if the profit changes are greater than the median, they equal to 1 otherwise and are zero.
PERS= profit sustainability Index that is calculated as the change in net profit of fiscal year compared to the previous year.
PROFIT= the profitability index that can be accounted by annual net profit.

Measure of earnings management:
Zhang (2008) believes that earning management can gain by different standards like accruals, changes in accounting estimates or choosing the accounting methods. The most common method used is the method of discretionary accruals. In this method, it is assumed that managers typically emphasize in their choice on accruals accounting as an earnings management logic method. Starting point for measuring discretionary accruals is total accruals, which is calculated as follows:

\[ TAC_{i,t} = Earn_{i,t} - CFO_{i,t} \]

In the mentioned equations:
TAC_{i,t} = total accruals in year t for company i
Earn_{i,t} = profit before extraordinary items in year t for company i
CFO_{i,t} = Cash flows arising from operating activities in year t for company i

Total accruals include discretionary accruals that are determined by the management and non-discretionary accruals that are determined in economic way. Hereafter discretionary accruals are used as representative for earning management. In this study to calculate the discretionary accruals, the modified Jones model (1991) is used. In this model, total accruals are estimated for each year separately. For smaller numbers and ease of computation on both sides of the equation, the first term assets are divided.

\[ \frac{TAC_{i,t}}{TA_{i,t-1}} = a_1 \left( \frac{1}{TA_{i,t-1}} \right) + a_2 \left( \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} \right) + a_3 \left( \frac{PPE_{i,t}}{TA_{i,t-1}} \right) + e_{i,t} \]

\[ \Delta REV_{i,t} = \text{Changes in the company's annual earnings in year t for company i} \]
\[ \Delta REC_{i,t} = \text{Change in receivable accounts in year t for Company i} \]
\[ PPE_{i,t} = \text{Property and machinery for that year (fixed assets of each year after deducting any accumulated depreciation) in year t for company i} \]
\[ TA_{i,t-1} = \text{Total assets in year t for company i} \]

\[ a_1, a_2 \text{ and } a_3 \] are the model coefficients that are gained by method of least squares estimation and \( e_{i,t} \) is the model error.

Non-discretionary accruals are calculated as follows:

\[ NDA_{i,t} = a_1 \left( \frac{1}{TA_{i,t-1}} \right) + a_2 \left( \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} \right) + a_3 \left( \frac{PPE_{i,t}}{TA_{i,t-1}} \right) \]

Finally, minus total accruals \( TAC_{i,t} \) and non-discretionary accruals \( NDA_{i,t} \), \( DA_{i,t} \) (profit smoothing indicator) is gained:

\[ DA_{i,t} = TAC_{i,t} - NDA_{i,t} \]
Measure of growth opportunities:
This variable is measured via different ways as ratio of market value to book value of assets (M / B), ratio of gross intangible property to company market price (PPE), and growth rate of company market Growth rate of market value (MVGR). But Adam and Goyal (2008) as well as Zayene and Jilani (2010) show that ratio of M/B has the most informative content in relation with growth opportunities. Therefore, in this study, the main standard of growth opportunities is M/B ratio since this standard is one efficient indicator and this study provides the possibility of comparison with other studies.

\[
M/B = \frac{\text{Stock price at year-end} \times \text{Number of outstanding shares}}{\text{book value of assets}}
\]

Hypotheses test method:
In this study, analysis of data, KMO index (sample adequacy) was analyzed. Then, the normality test of data through Jarque and Bera test, anisotropy variance using White test and reliability of the test variables with Levin test, Im, Pesaran and Shin(IPS) test and Dickey-Fuller was done. Moreover, determining a suitable model for measuring and effectiveness of independent variables on dependent variables was first done via Chaw and Hausman tests. Chaw test is used for determining panel data models against the fixed effects model and Houseman test is used for determining fixed effects model against random effects model. After determining the appropriate model for estimating the parameters and influence of independent variables on the dependent variable, necessary estimates were conducted to test the hypotheses.

Statistical population and research samples
Statistical population in this study consists of accepted firms in Tehran Stock Exchange. For choosing statistical sampling, the following conditions have been considered and all the companies that were members of the community have been studied. These conditions are:
1. Financial information of the company is available for the survey period.
2. The names of the company in the survey period within the accepted companies have not been removed in Tehran Stock Exchange.
3. The company is not investment or financial intermediation.
By applying the above criteria, 108 companies were selected as samples and related data to the past 5 years (2011 to 2015) were extracted from the financial statements.

Sample adequacy test (Kaiser Meyer Olkin):
Partial correlation coefficient is a suitable indicator to determine the powerful relationship between the agents; for this purpose, we use the KMO test. KMO measure that is called sampling adequacy index is an index that compares the observed correlation values with partial correlation values. If the values of this statistic are more than 0.70, the available correlations are generally suitable for analysis. If it is between 0.50 and 0.69, more care should be used in using factor analysis and amounts less than 0.50 means that the factor analysis is not appropriate for that category. This study was performed on the studied data and its amount is equal to 0.717 according to Table 1 which indicates the number of sample (data) has enough adequacies for the analysis.

<table>
<thead>
<tr>
<th>Table 1: KMO index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample adequacy index</td>
</tr>
<tr>
<td>0.717</td>
</tr>
</tbody>
</table>

Descriptive Statistics
The study’s variables in Table 2 are described using the central values (mean, median and standard deviation) scattering parameters (skewness and elongation) and the maximum and minimum values.
Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th>PERS_{it}</th>
<th>PROFIT_{it}</th>
<th>IOS_{it}</th>
<th>NDACCRL_{it}</th>
<th>DACCRL_{it}</th>
<th>AR_{it}</th>
<th>Index/ variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,229.432</td>
<td>150,373.6</td>
<td>0.794</td>
<td>0.029</td>
<td>0.016</td>
<td>16.901</td>
<td>Average</td>
</tr>
<tr>
<td>3,030</td>
<td>36,741.5</td>
<td>0.510</td>
<td>0.024</td>
<td>0.001</td>
<td>0.725</td>
<td>Minimum</td>
</tr>
<tr>
<td>1,355.841</td>
<td>4,832,017</td>
<td>18.459</td>
<td>0.233</td>
<td>1.881</td>
<td>3,282.270</td>
<td>Maximum</td>
</tr>
<tr>
<td>-2,559.688</td>
<td>2,664,467</td>
<td>0.016</td>
<td>-0.156</td>
<td>-2.628</td>
<td>-2.045.94</td>
<td>Minimum</td>
</tr>
<tr>
<td>209.837.2</td>
<td>448,072.6</td>
<td>1.189</td>
<td>0.029</td>
<td>0.196</td>
<td>176,678</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>-5.575</td>
<td>6.483</td>
<td>7.714</td>
<td>1.546</td>
<td>-2.692</td>
<td>8.876</td>
<td>Skewness</td>
</tr>
<tr>
<td>88.478</td>
<td>52.951</td>
<td>97.954</td>
<td>14.408</td>
<td>78.761</td>
<td>251.632</td>
<td>Elongation</td>
</tr>
</tbody>
</table>

As the results in Table (2) shows the average abnormal return is equal to 16.9 and its standard deviation is 176.678. Attention to scattering parameters of this variable show the existence of abnormal returns of companies with diverse and also various motivations of investors. The variable mean and median of optional items is positive and are equal to 0.016 and 0.001 respectively, which indicate increasing earnings management in most studied companies and its scattering parameters show more normal situation comparing to other variables. The variable mean and median of investment opportunities index are equal to 0.794 and 0.510 respectively, which studied companies have Investment opportunities relatively and the variables’ range (0.016 to 18.459) represents a good variety of studied companies from the view of existence and non-existence of investment opportunities.

Variable normality test:
Test to check the normality of the data related to variables, JarqueBera test is used that its results are presented in figure 3. The test statistic of difference between the skewness and elongation of one series is measured skewness and elongation of a normal distribution. Under the null hypothesis of a normal distribution, Jarque Bera statistics is distributed as X2 with two degrees of freedom. Thus, as the table (3) shows only discretionary accruals variables and investment opportunities at the 1% level are normal.

Table 3: JarqueBera test

<table>
<thead>
<tr>
<th>PERS_{it}</th>
<th>PROFIT_{it}</th>
<th>IOS_{it}</th>
<th>NDACCRL_{it}</th>
<th>DACCRL_{it}</th>
<th>AR_{it}</th>
<th>JarqueBera statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>167194.5</td>
<td>59923.6</td>
<td>208219.4</td>
<td>3143.478</td>
<td>129795.3</td>
<td>1397993</td>
<td></td>
</tr>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.04</td>
<td>0.00</td>
<td>P-Value</td>
</tr>
</tbody>
</table>

Stability and reliability:
Before analyzing the study’s data, reliability of studied variables are surveyed. Thus, Levine's test, Im test, boys and Shin, and Dickey Fuller test was used. Table 4 shows the results of these tests.

Table 4: Reliability test

<table>
<thead>
<tr>
<th>PROFIT_{it}</th>
<th>PERS_{it}</th>
<th>IOS_{it}</th>
<th>NDACCRL_{it}</th>
<th>DACCRL_{it}</th>
<th>AR_{it}</th>
<th>Method/ variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>-28.11</td>
<td>-34.92</td>
<td>-50.32</td>
<td>-52.67</td>
<td>-37.58</td>
<td>-41.32</td>
<td>T statistic</td>
</tr>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>Levin, Lou and Chow</td>
</tr>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>Im, boys and Shin</td>
</tr>
<tr>
<td>245.81</td>
<td>351.37</td>
<td>442.78</td>
<td>445.11</td>
<td>392.75</td>
<td>363.26</td>
<td>Chi statistic</td>
</tr>
<tr>
<td>0.08</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>Dickey Fuller</td>
</tr>
</tbody>
</table>

According to the results of these three tests (Table 4), since the P value was less than 0.05, all the variables are stable. It means that the mean and variance of variables are fixed over time as well as variables’ covariance in different years. As a result, use of these variables in the model does not cause spurious regression.

Correlation Analysis:
The following table (5) shows the results of correlation test between variables of the study. As results show, there is a positive correlation between the dependent variable and independent variables. The maximum value of the correlation relate to the relationship between discretionary and non-discretionary accruals and
with abnormal returns which are both equal to 0.118. Therefore, according to Shobita and Shobita findings ‘similarity (2010) we can say that the accruals have information content and investors can rely on this information to make investment. Moreover, correlation between the growth opportunities index and abnormal returns is equal to 0.056.

Table 5: Correlation Analysis

<table>
<thead>
<tr>
<th></th>
<th>PROFIT</th>
<th>PERS</th>
<th>IOS</th>
<th>NDACCRUAL</th>
<th>DACCRUAL</th>
<th>ARt</th>
<th>ARt</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.008</td>
<td>0.038</td>
<td>0.056</td>
<td>0.118</td>
<td>0.118</td>
<td>1.000</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>0.057</td>
<td>0.081</td>
<td>0.080</td>
<td>-0.081</td>
<td>0.081</td>
<td>0.056</td>
<td>0.056</td>
<td></td>
</tr>
<tr>
<td>-0.117</td>
<td>0.054</td>
<td>0.076</td>
<td>1.000</td>
<td>-0.081</td>
<td>0.118</td>
<td>NDACCRUAL</td>
<td></td>
</tr>
<tr>
<td>0.088</td>
<td>0.081</td>
<td>1.000</td>
<td>0.076</td>
<td>0.080</td>
<td>0.056</td>
<td>0.056</td>
<td></td>
</tr>
<tr>
<td>0.296</td>
<td>1.000</td>
<td>0.081</td>
<td>0.054</td>
<td>0.081</td>
<td>0.038</td>
<td>PERS</td>
<td></td>
</tr>
<tr>
<td>1.000</td>
<td>0.296</td>
<td>0.088</td>
<td>-0.117</td>
<td>0.057</td>
<td>0.008</td>
<td>PROFIT</td>
<td></td>
</tr>
</tbody>
</table>

Variance anisotropy test:
One of the classical assumptions is identical variance of the disturbing words in different periods (E(u^2)=δ^2). Violation of this assumption caused problem called variance anisotropy. Anisotropy variance refers to non-uniformity variance of dependent variable in different periods. One of the methods to detect the anisotropy variance is the White test. In this test H0 shows variance homogeneity and H1 is its contradictory. Results of this test for the research model are given in Table 6.

Table 6: Variance anisotropy test (White)

<table>
<thead>
<tr>
<th></th>
<th>Prob. F(18,521)</th>
<th>8.82</th>
<th>F-statistic</th>
<th>model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>Prob. Chi-Square(18)</td>
<td>126.10</td>
<td>Obs*R-squared</td>
<td></td>
</tr>
<tr>
<td>0.00</td>
<td>Prob. Chi-Square(18)</td>
<td>14603.30</td>
<td>Scaledexplained SS</td>
<td></td>
</tr>
</tbody>
</table>

White's test results (Table 6) show that estimated model has variance difference (H1). Thus, according to the results of this test, estimation of efficiency is not gained of ordinary least squares method and a convenient way to obtain efficient estimates is the generalized least squares method. In the generalized least squares method, variance dissonance is removed with the standardized variance-covariance. White's test was used in order to standardize.

Average comparison test:
Before showing the results of regression analysis, using comparison test via classification, the mean variables were compared between the two sub-samples. As Table 7 shows, statistically significant difference is in abnormal returns and earnings management among firms with regard to the availability of investment opportunities. So we can say that the impact of earnings management on shareholder returns is affected by the presence or absence of investment opportunities.

Table 7: Average comparison test

<table>
<thead>
<tr>
<th></th>
<th>Anova F-test</th>
<th>Average</th>
<th>Parameter/ variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-value</td>
<td>value</td>
<td>df</td>
<td>Without growth opportuity</td>
</tr>
<tr>
<td>0.044</td>
<td>4.06</td>
<td>-1428</td>
<td>9.13</td>
</tr>
<tr>
<td>0.048</td>
<td>3.92</td>
<td>1428-</td>
<td>0.001</td>
</tr>
<tr>
<td>0.00</td>
<td>12.27</td>
<td>1428-</td>
<td>0.022</td>
</tr>
<tr>
<td>0.00</td>
<td>110.2</td>
<td>1428-</td>
<td>0.267</td>
</tr>
<tr>
<td>0.22</td>
<td>1.84</td>
<td>1428-</td>
<td>7339.6-</td>
</tr>
<tr>
<td>0.029</td>
<td>1.1</td>
<td>1428-</td>
<td>143852.2</td>
</tr>
</tbody>
</table>

Chaw and Hausman test:
Evaluating the suitable model for regression model estimation first it should be evaluated whether or not there are heterogeneity or individual differences? (Chaw test). If there is heterogeneity, panel data method is used; otherwise, the combined method is used. Personal effects or heterogeneity appear in the mold of random effects or fixed effects (Houseman test).
Table 8: Chaw and Hausman test

<table>
<thead>
<tr>
<th>Test result</th>
<th>Houseman test</th>
<th>Chaw test</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>p-value</td>
<td>Freedom degree</td>
<td>Chi - square</td>
</tr>
<tr>
<td>Combined data</td>
<td>-</td>
<td>-</td>
<td>0.75</td>
</tr>
<tr>
<td>Fixed effects model</td>
<td>0.00</td>
<td>4</td>
<td>18.290</td>
</tr>
<tr>
<td>Fixed effects model</td>
<td>0.046</td>
<td>4</td>
<td>9.662</td>
</tr>
</tbody>
</table>

As it is shown in table (8), in total model, non-visible personal effects are not available (P>0.05). Therefore, combination data method is used. Chaw test in models 1 and 2 show that there are individual differences. Therefore, with Houseman test we showed that this individual heterogeneity in these models show itself in the mold of the fixed effects and random effects, respectively.

Hypotheses test:
Table 9 shows the results of model estimation. The F statistic for the model is equal to 31.553. Thus, one can say with 99% confidence that the zero assumption of all variables’ coefficient is rejected and the model is significant. Camera base Watson is 1.929, so in 5% error level, the assumption of disturbance statements’ solidarity’s rejected. Corrected determining factor of model is 0.22, it means that 48% of the variability can be explained using this model. Results of surveying the model show that non-accrual items are positive and significant (P-val= 0.00 and C=456.26). Therefore, it seems that non-accrual revenues for both groups of companies with investment opportunities and without investment opportunities is a related variable and has a meaningful relation with returns of investors. Also the relationship between discretionary accruals and returns is positive and significant (P-val=0.00 and C=35.98) that show it is a related variable for all studied companies. But our concentration is more on investment opportunities. Findings of the research show that dummy variable coefficients (DUMIOS) is positive and significant (P-val=0.00 and C=16.68). In other words, another relation is between discretionary accruals and returns affected by the presence or absence of investment opportunities and returns’ amount of firms has 16 percent of investment opportunities more than other companies.

Table 9: Total hybrid model

<table>
<thead>
<tr>
<th>Prob.</th>
<th>t-Statistic</th>
<th>Standard deviation</th>
<th>Coefficient</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>-5.044</td>
<td>3.0736</td>
<td>-15.504</td>
<td>C</td>
</tr>
<tr>
<td>0.002</td>
<td>3.166</td>
<td>11.355</td>
<td>35.958</td>
<td>DACCRUAL</td>
</tr>
<tr>
<td>0.000</td>
<td>4.073</td>
<td>112.001</td>
<td>456.267</td>
<td>NDACCRUAL</td>
</tr>
<tr>
<td>0.000</td>
<td>3.606</td>
<td>4.627</td>
<td>16.688</td>
<td>DUMIOS</td>
</tr>
<tr>
<td>0.000</td>
<td>6.549</td>
<td>3.129</td>
<td>20.494</td>
<td>DUMPERS</td>
</tr>
<tr>
<td>0.689</td>
<td>-0.401</td>
<td>0.000</td>
<td>0.000</td>
<td>PROFIT</td>
</tr>
</tbody>
</table>

Model statistics

<table>
<thead>
<tr>
<th>Durbin-Watson stat</th>
<th>Prob.(F-statistic)</th>
<th>F-statistic</th>
<th>Adjusted R-squared</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.929</td>
<td>0.000</td>
<td>31.553</td>
<td>0.221</td>
<td>0.228</td>
</tr>
</tbody>
</table>

White Heteroskedasticity-Consistent Standard Errors&Covariance

Convergence achieved after 8 iterations

Table 10 shows the results of model estimation. The F statistic for the model is 31.552, so one can say with 99% confidence that the zero assumption of simultaneously coefficient of all variables is rejected and model is significant. Camera base Watson is 1.929, so in 5% error level, the assumption of disturbance statements’ solidarity is rejected. Corrected determining factor of model is 0.22, it means that 48% of the variability can be explained using this model. Results of surveying the model show that non-accrual items are positive and significant (P-val= 0.00 and C=456.26). Therefore, it seems that non-accrual revenues for both groups of companies with investment opportunities and without investment opportunities is a related variable and has a meaningful relation with returns of investors. Also the relationship between discretionary accruals and returns is positive and significant (P-val=0.00 and C=35.98) that show it is a related variable for all studied companies. But our concentration is more on investment opportunities. Findings of the research show that dummy variable coefficients (DUMIOS) is positive and significant (P-val=0.00 and C=16.68). In other words, another relation is between discretionary accruals and returns affected by the presence or absence of investment opportunities and returns’ amount of firms has 16 percent of investment opportunities more than other companies.

A significant result is obtained for dummy variable (DUMIOS). The coefficient of dummy variable is positive and significant (P-val= 0.00 and C=35.98) that show it is a related variable for all studied companies. But our concentration is more on investment opportunities. Findings of the research show that dummy variable coefficients (DUMIOS) is positive and significant (P-val=0.00 and C=16.68). In other words, another relation is between discretionary accruals and returns affected by the presence or absence of investment opportunities and returns’ amount of firms has 16 percent of investment opportunities more than other companies.
opportunities more than other companies. Results of table (9) show a relationship between return and earning management for both groups of companies with investment opportunities and without investment opportunities. These results show a meaningful and positive relation between discretionary accruals and return of investment for companies that have IOS (P-val=0.03 and C=43.97). But this relationship is not confirmed for companies without IOS(P-val=0.13 and C=23.308). These results show that associated value with discretionary accruals in high levels of on investment opportunities increases. As the results in Table (9) shows, the coefficient of discretionary accruals increases up to 0.43. As a result, it can be said that motivation of informative earnings management is at high levels of IOS using discretionary accruals (signaling hypothesis). Moreover, it seems that at lower levels of IOS, because of lack of relationship between return indicators and earnings management(P-val=0.13 and C=23.308), the motivation is efficient earning management (efficiency hypothesis). According to these findings, it can be concluded that market (investors) consider discretionary accruals positive at high levels of IOS. These items maybe managed to provide main signals about future performance of the company.

Table 10: Fixed effects model for firms with IOS and without IOS

<table>
<thead>
<tr>
<th>Model statistics</th>
<th>PROFIT</th>
<th>PERSIST</th>
<th>NDACCRL</th>
<th>DACCRL</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P-Val</td>
<td>P-Val</td>
<td>P-Val</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>coefficient</td>
<td>coefficient</td>
<td>coefficient</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-W Stat.</td>
<td>Adj. R²</td>
<td>Prob.(F)</td>
<td>F</td>
<td>P-Val</td>
<td>coefficient</td>
</tr>
<tr>
<td>1.854</td>
<td>0.181</td>
<td>0.000</td>
<td>12.811</td>
<td>0.11</td>
<td>0.000</td>
</tr>
<tr>
<td>1.988</td>
<td>0.039</td>
<td>0.038</td>
<td>2.093</td>
<td>0.263</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Moreover, related value with non-discretionary accruals increases with investment opportunities. However, the nature of the information provided by non-discretionary incomes between companies with growth and without growth is different. In high levels IOS, these items include a major part of corporate value. Therefore, non-discretionary accruals primarily provide related information about the cash flows due to the investment opportunities available to the company. In addition, at low levels of IOS, company is at the direction (phase) of maturing, and the share of assets (current) is more important than investment opportunities. In this case, these items provide much information about the cash flows due to the existing assets.

**Conclusion**

The main objective of this study is to assess the value associated with earnings management (discretionary accruals) in the presence of growth opportunities. We hypothesized that at high levels of investment opportunities, related values with discretionary accruals may increase, decrease or remain unchanged. This matter depends to one of the signaling hypothesis, efficiency and opportunism. We find that motivation of earnings management information is provided by using discretionary accruals at the high levels of IOS (signaling hypothesis). Moreover, the value of non-discretionary accruals increases with investment opportunities. Also, it seems that, at low levels of IOS, the effective earnings management is available (efficiency hypothesis). Considering the limitations of the study and the results obtained by the researcher, the following suggestions are offered to users from the research results and future studies:

1. To financial analysts suggest considering earnings management techniques used by managers of the economic units in their investigation and try to use the ratios that the effects of these measures is included in them.
2. As the results of this study and previous research shows, most accepted companies in Stock are attempting to do earning management. Therefore, it is suggested that in the accounting and auditing standards and interpretation of accounting earnings, the earnings management be considered.
3. In the present study, the size of company and type of industry is considered, therefore, is recommended to consider these matters for future studies in the field of earning management.
References


