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The Relationship between the Size of Audit Firms and Cash-Flow-Based Earnings Management of Listed Companies in Tehran Stock Exchange

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Abstract

The main objective of this paper is to examine the relationship between the size of audit firms and cash-flow based earnings management. This study is a positive funding research. Given the nature and method used in this study, it is a descriptive correlational study. To analyze the relationship between the under-studied variables, the regression model is used and it is based on the actual data of firm’s financial statements. Given that data include cross-sectional and time series data, data integration techniques were used to combine data.

The population of study includes all companies listed on the Stock Exchange in Tehran. In this study, the systematic deletion sampling method is used.

Microsoft Excel software is used in the collection and classification steps as well as initial processing of data. At this point, the data related to the size of audit firms and earnings management which has been extracted from financial statements of listed companies in Tehran Stock Exchange and information and transactional application of exchange is directly entered into Excel. After appropriate classification of data and after performing calculations and initial processing of the data, information output is implemented to run the model and hypotheses test using Eviews 7 software.

Results showed that there is a significant relationship between proportion of variance (additional fluctuations of stock prices) and expected stock returns. Based on the results from fitness of research hypothesis model, and according to the obtained P-value, there is no significant relationship between the sizes of audit firms cash-flow based earnings management dependent variable. In this hypothesis, additional variables deletion test was also performed. However, the lack of a significant relationship between the size of audit firms and cash-flow based earnings management is still existed, which is addressed in the appendix. The Durbin-Watson statistic equal to 1.84 shows the lack of correlation among errors. According to the results of hypothesis testing, it can be said that the hypothesis of this study was not confirmed at 95% confidence level. As a result, it can be stated that there is no significant level between the size of audit firms and cash-flow based earnings management.

Key words: firm size, earnings management, corporation cash flow, Securities Stock Exchange organization
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Introduction

Nowadays, earnings management is one of the interesting and challenging subjects in the accounting studies. Since, investors devote a special attention to the profit figure as one of the most important factors of decision making, these studies are behaviorally important. The researches have shown that low volatility and stable income is an indication of its quality. Therefore, investors tend to invest more confidently in the stocks of companies which have more stable profits. When companies are under increasing pressure at undesirable economic situation, their managers ask accounting unit to improve last line of financial statements (that is profit), and thereby alter their information content. Accounting, despite all of its financial flexibility, does not seem to be able to provide the required data for decision-making for management in such situation (Hoope and Hoope, 1996, p. 5).

One of the factors that affect the earnings management of firms is the firm size. The larger the company is, the more is under scrutiny of policies (receives more attention from the government and public), because plays an important role in the economy. A typical example of this case is Microsoft Company in the United States that has some problems with its legal organizations. It should be noted that the variable "size" may indicate influences other than political sensitivity. For example, smaller companies, have features such as a lower risk, which varies greatly with the political sensitivity (Guan, 2001, quoted by Norvash et al., 2005, p. 167). Large companies perform a variety of activities; this diversification will contribute to their profitability. Also, large companies can provide their required funds with a lower interest due to the credibility that they have in global capital markets. However, the smaller the company is the access to the capital markets is harder for them; in these markets, there exist a lower credibility for them with a high interest. Company size is often used as a proxy that represents information available for the market. In the capital market, large companies’ information is more available than small firms (Karbsi Yazdi et al, 2010, p50).

Some studies have shown that in the study of cross-sectional relationships, the relationship between profitability and efficiency over time is quite unstable; it means that accounting profit is not able to contribute to the prediction of future stock returns. To overcome this problem, many researchers have tested the ability of other variables other than profitability to improve profitability and initial efficiency. One of these variables that attracted the attention of academic circles was the firm size, Which is usually defined as a firm’s market value. It is argued that small firms have high profitability growth average. So it is expected that in changes of small corporate profits, the stock price be approved. On the other hand, large companies have low profitability growth average. Usually, major changes are not expected in their profitability, and the release of information may have a little effect on the stock price changes. Of course the existence of different channels of information may also be a justification for this. In addition, some researchers have investigated the ability of extending findings related to the company size within the life cycle of the firm. Financial theories claim that in average, the firms have high growth and profitability in the early stages of the life cycle. On the other hand, large size and low or even negative growth and profitability are characteristics of companies that are in the final stages of the life cycle (Rahmani et al., 2009p. 3-2).
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In multiple studies, company size represents different aspects of that firm. Company size can represent firm leverage. Leverage includes the existence of fixed costs in the cost list of a firm. Operating leverage depends on the fixed operational costs of the company (all fixed costs other than interest on debt), and financial leverage depends on the fixed financial costs such as interest or fixed interest of loans. Operating and financial leverages are tools to achieve higher profits. The company size can represent competitive advantage. Since the more market share requires more production and sales, sufficient financial resources and larger size can help the company for higher production and spending more on production and marketing costs to create competitive advantage. Company size can show the ability of management and the quality of the accounting schemes. Development of company size indicates a strong management that attempts to increase economic resources using accounting schemes (Parsaian, 2002).

Company size can represent information efficiency. Usually, larger firms receive more attention from analysts and investors. Therefore, accounting information has a more effective process in the larger firms. Finally, the company size can show the overall risk level of the company. More financial power can reduce the overall risk of the firm, since larger companies are more exposed to public safety, because they are better known for the financial analysts (Moasses, 2008).

The association between earnings management and company size has been considered by some analysts. Moasses believes that given the ambiguity that surrounds earnings forecast; only those managers can be successful that their earnings quality is high. In his test, he also concluded that the larger companies have less incentive to smooth income due to the fact that they are better known to the analysts. Also, Albert and Richardson have tested the company size along with the type of industry (central or peripheral) in relation to earnings management, and they concluded that industrial companies in central section which are larger have smoother earnings than large companies working in the peripheral section. In general, the question of researchers who have focused on the size of the company was that whether companies with various sizes show different reactions to the smoothing and earnings management or not (Shoorvarzi, and Pahlavan, 2010, p71). Therefore, in this article we are going to investigate the relationship between the size of audit firms and cash-flow based earnings management.

Methodology

This study is a positive funding research. Given the nature and method used in this study, it is a descriptive correlational study. To analyze the relationship between the under-studied variables, the regression model is used and it is based on the actual data of firm’s financial statements. Given that data include cross-sectional and time series data, data integration techniques were used to combine data.

The population of study includes all companies listed on the Stock Exchange in Tehran. In this study, the systematic deletion sampling method is used. The sample of this research is based on the following criteria:
1- They must be accepted in the stock exchange before 2009
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2- The companies must work in production section and therefore, financial institutions, investment banks are not included in the sample due to their different nature.
3- The end of the financial year of under-studied companies is 19 March every year.
4- The companies must not have trading interval more than three months.
The number of companies that use this type of sampling is as follows:

<table>
<thead>
<tr>
<th>The sampling method</th>
<th>total number of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>The first filter: They must be accepted in the stock exchange before 2009</td>
<td>(48)</td>
</tr>
<tr>
<td>The second filter: The companies must work in production section and therefore, financial institutions, investment banks are not included in the sample due to their different nature.</td>
<td>(50)</td>
</tr>
<tr>
<td>The third filter: The end of the financial year of under-studied companies is 19 March every year.</td>
<td>(150)</td>
</tr>
<tr>
<td>The forth filter: The companies must not have trading interval more than three months.</td>
<td>(156)</td>
</tr>
</tbody>
</table>

The sample size calculated for each year 74

The names of the companies are given in Annex Table (A.1)

Time domain of this study includes the beginning of 2009 to the end of 2013 and location domain of the study includes capital market of the country – especially Tehran stock exchange, which is extracted and classified based on the required data from compressed reports of Stock exchange as well as visiting Tehran stock exchange library.

The required data and information are extracted, gathered, and classified from multiple sources by the following methods and they are used in the relevant sections:

a) Library resources: to develop second chapter including a review of theoretical concepts, literature review in the realm of audit firms and cash flow-based earnings management as well as introducing statistical models used in this context, the information contained in the available documents, including books, articles, theses related to the topic and internet are used.

b) Stock Exchange information and Trading System: date required to calculate related variables are extracted using Rahavard Novin software and Tehran stock exchange library.

c) Statistical and econometric software: Microsoft Excel is used in the steps such as collection and classification and initial processing data. At this point, the data related to the size of audit
firms and earnings management which has been extracted from financial statements of listed companies in Tehran Stock Exchange and information and transactional application of exchange is directly entered into Excel. After appropriate classification of data and after performing calculations and initial processing of the data, information output is implemented to run the model and hypotheses test using Eviews 7 software.

Variables

According to the experiences of others in terms of hypotheses, three fundamental groups of variables including independent variable, dependent and control variables that have been used for modeling and testing hypotheses are introduced.

Independent variable

In this study, the size of the audit firm (AFS) is used as the independent variable. In this study, to measure this variable if a company is audited through audit organization gets number 1 and if it is examined by audit firm, it gets number 0.

Dependent variable

The dependent variable in this research is cash-based earnings management. In this study, dependent variable is obtained through collecting abnormal levels of cash-flow from operational performance and abnormal levels of production costs as well as abnormal levels of discretionary costs, which calculation of each abnormal level is mentioned in statistical models section of the study.

Control variable

Operational cash flow (CFO):
Cash flow related to operating activities.

The company's growth prospects (Gwth):
It is obtained by dividing the market value of equity to book value of assets.

Company size (Coysize):
It is calculated using the natural logarithm of the company's overall assets.

Leverage (Lev): it is obtained by dividing total debt by total assets.

Statistical models
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In order to assess the general level of earnings management through manipulation of the cash flow, we develop and evaluate normal level of cash flow based earning management activities using three manipulation programs. Next, abnormal levels of each manipulation in the real activities are calculated as the related estimation model residuals, they are as follows:

Abnormal levels of operational cash flow (CFO)

All variables in this model are measured using overall assets. This model is expressed as a function and it serves as a cross-sectional regression for each company and each year as follows:

$$\frac{CFO_i,t}{Assets_{i,t-1}} = \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \epsilon_{it}$$

Where:
CFO= Normal cash flow (expected) of operations.

1- Assetsi, t= Total assets of company i in year t-1.

Salesi, t= Revenues from sale.

Δ Salesi, t= Changes in sales revenue over time (St-St-1).

εit= Error correction

Then abnormal CFO which is estimated as actual CFO minus normal level of CFO is calculated using coefficient resulted from the above equations.

Abnormal level of production costs (Prod):

In order to estimate normal level of production costs as the overall costs of goods sold (COGS) and changes in inventory during the defined year, we estimate COGS as the linear function of simultaneous sales:

$$\frac{COGS_i,t}{Assets_{i,t-1}} = \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \epsilon_{it}$$

We use the following model, which is expressed for increasing stock, as the simultaneous linear function and delayed change in sale amount for estimating inventory costs:

$$\frac{\Delta INV_{it}}{Assets_{i,t-1}} = \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}}$$

We use the two above equations to estimate normal level of production costs:

$$\frac{Prodi,t}{Assets_{i,t-1}} = \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \beta_2 \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}}$$

Where:

COGSi, t = Prodi, t as well as ΔINVit , which we consider as normal production (expected) for the company i in the year t.

1- Total assets of company i in year t-1.

Salesi, t= Revenues from sale.
Δ Salesi,t = Changes in sale amount for company i in the year t.

Δ Salesi,t-1 = Changes in sale amount for company i in the year t-1

Abnormal levels of discretionary spending (Disex):

Reducing discretionary spending which includes advertising (Adv); spending on research and development (D & R); cost of sales, general expenses and administration costs (A & SG).

Finally, we use regression to test the main hypothesis:

CBEMi,t = α0 + β1AFSi,t + β2AFi,t + β5CFOi,t + β6Gwthi,t + β7CoySizei,t + β8Levi,t + εi,t

Theoretical framework

Earnings management methods

Managers have two general ways to achieve their Earnings management goals. They must either manipulate discretionary accruals or make changes in the operational decisions of the entity. Previous studies (Gauni, 2005) have classified these operational decisions into 4 groups: 1- Reducing discretionary spending for research and development 2- Reducing discretionary spending for advertisement and sales 3- timing of the fixed assets sales for profit report 4- Overproduction to reduce final cost of the sold good and to increase credit sale (Ghorbani et al,2011, p134).

The lack of doing some research and development activities that lead to projects with positive net present value in the future, the lack of doing advertising to increase sales, the sale of fixed assets that helps to increase operational efficiency and performance of the business unit, blocking the company’s capital in inventory, increased credit sales that would reduce the company’s cash flows input, all of them indicate that the four above mentioned activities leads to reduce future operating cash flows of the company and therefore will reduce future operating performance of the company. Hence, it is expected that there have been a negative relationship between real earnings management (which is extended in the four above mentioned activities) and future operating performance of the company (Ghorbani et al ,2011, p134).

Most of the existing evidence, focused on the manipulating real activities to opportunistic reduction of discretionary spending, including research and development cost (for example, the studies of Bush (1998), Baber et al. (1991)). Although reducing discretionary spending could improve profitability in order to meet some specific goals, it will cause the risk of future operating cash flow (CFO); because, this generally reduces cash outflow and instead has a positive impact on the current operating cash flow. In subsequent years, the direct impact may be reversed (Ghorbani et al, 2011, p135).

It should be noted manipulating real activities, is not a way for changing the order of accounts. In this method, managers change the time of operation, the way of resource allocation, or the time of investment projects. Accrual-based earnings management activities do not pose a direct
consequence of the cash flow (Cohen and Zaroveen, 2008). Real earning management has a direct impact on the cash flow of a company. In this method, cash flows are sacrificed to accrual interest, and the most important consequence is losing of company value due to the reduction of cash flow in the future periods. Also, managing accruals has some expenses. Discovering manipulation of accruals would likely require a special review by the auditors. It may also lead to financial penalties by regulatory bodies (such as the Stock Exchange), the need for restatement of the profit and re-examine the matter in the civil courts (Mojtahedzadeh and Valizadeh Larijani, 2009).

discretionary spending

Reducing discretionary spending is also another method of real earnings management. Discretionary spending, such as research and development expenses, advertising and maintenance are usually reported in the period incurred. Therefore, managers can reduce the reported costs and they can increase the profit by reducing discretionary spending. This approach is more likely when such costs will not immediately generate income. If managers reduce discretionary spending in order to meet profit targets, they must unusually report low discretionary spending. Discretionary spending often includes capital expenditures. If these are cash expenses, reduction of these costs leads to less loss of cash from the company, and this has a positive effect on the operational cash flows, and probably leads to lower risk of cash flows in the future period (Revichudary, 2006).

Company size (ME)

Various measures are expressed for the introduction of firm size. In some studies, the book value of total assets of the company is used as an indicator of company size. Another indicator of the company size is sales rate of the company. Fama and French (1993) and Johnson, Jensen and Mercier in (1997) used the total market value of the company as the size indicator. In this study, because inflation has a significant effect on the total asset of companies and in fact book value of total assets is significantly different from their market value, market value is used for measuring company size. In this study, company size means the company’s total value of the stock market, which is obtained from the number of shares multiplied by the market price of its latest share in the stock exchange bulletin boards. Last price (P) and the total number of shares outstanding for each company in each of the year 1997 to 2004 were extracted. This information collected through Software named Sahra and Tadbirpardaz to analyze and test the research hypotheses. Since the size of the company is much larger than the other variables, log is used at the time of computing the value of the stock market, in order to get close to other variable in terms of the size (Poor Heidari and Shahbazi, 2008, p40).

Firm size calculation index

Firm size variable is ordered with researcher’s desired log index based on the size, and median is obtained from all companies. Number 1 is given to companies that their size is lower than median and are small. Number 0 is given to big companies which have the size higher than median, these indices are as follows:
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1. The value of assets
2. Sales amount
3. Market share value
4. Share number
5. Personnel number

Advantages and disadvantages of Firm size calculation index

<table>
<thead>
<tr>
<th>Calculation index</th>
<th>Advantages and disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of assets</td>
<td>Advantages: objectivity level, documentary, easy access to the information&lt;br&gt;Disadvantages: including book value of assets that are related to previous years and the less relevance level.</td>
</tr>
<tr>
<td>Personnel number</td>
<td>Advantages: Ease of measurement&lt;br&gt;Disadvantages: The difference between the skills, expertise and efficiency of employees, the presence of part-time employees and indirect employees in organizations</td>
</tr>
<tr>
<td>Sales amount</td>
<td>Advantages: High degree of relevance and objectivity&lt;br&gt;Disadvantages: high fluctuations in annual sales of the companies</td>
</tr>
<tr>
<td>Firm market value</td>
<td>Disadvantages: In countries without efficient capital market, shares may not show the true value</td>
</tr>
</tbody>
</table>

(Taghipoorian and Rajabzadeh 2014, p4)
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Findings

Results from descriptive statistics of variable data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Jarg Bra statistics</th>
<th>Elongation</th>
<th>Skewness</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
<th>Mean</th>
<th>Variability</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBEM</td>
<td>0.15</td>
<td>157646.0</td>
<td>3.35</td>
<td>-0.20</td>
<td>0.56</td>
<td>1.09</td>
<td>-0.69</td>
<td>-0.55</td>
<td>CBEM</td>
</tr>
<tr>
<td>AFS</td>
<td>0.00</td>
<td>257.62</td>
<td>4.56</td>
<td>1.88</td>
<td>0.36</td>
<td>1.00</td>
<td>0.00</td>
<td>0.15</td>
<td>AFS</td>
</tr>
<tr>
<td>CFO</td>
<td>0.00</td>
<td>19597.46</td>
<td>36.90</td>
<td>5.50</td>
<td>2759917.0</td>
<td>2499452.0</td>
<td>24771235.0</td>
<td>91263.5</td>
<td>72099</td>
</tr>
<tr>
<td>GWTTH</td>
<td>0.00</td>
<td>139.20</td>
<td>5.24</td>
<td>1.00</td>
<td>2.43</td>
<td>3.00</td>
<td>8.35</td>
<td>8.63</td>
<td>GWTTH</td>
</tr>
<tr>
<td>COYSiz</td>
<td>0.00</td>
<td>82.24</td>
<td>4.25</td>
<td>0.96</td>
<td>1.43</td>
<td>11.31</td>
<td>18.81</td>
<td>13.73</td>
<td>COYSiz</td>
</tr>
<tr>
<td>LEV</td>
<td>0.00</td>
<td>171234.6</td>
<td>107.33</td>
<td>7.43</td>
<td>0.31</td>
<td>0.01</td>
<td>4.98</td>
<td>0.59</td>
<td>LEV</td>
</tr>
</tbody>
</table>

The skewness coefficient is positive for all variables except the CBEM, which indicates that there is skewness to the right and the desire of this variable to smaller amounts, and it is negative for the CBEM variable, which shows that it is skewed to the left and the desire of this variable to larger amounts. Also, the positive coefficient of elongation indicates that it has been more than a normal distribution and data are focused around the mean. Finally, given that the calculated error is smaller than 0.05, Jarg Bra test indicates abnormal distribution for variables except for variable CBEM. However, due to the large number of samples and, according to the central limit theorem, the non-normality is justified.

<table>
<thead>
<tr>
<th>Method</th>
<th>df</th>
<th>Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett</td>
<td>5</td>
<td>51061.05</td>
<td>0.00</td>
</tr>
<tr>
<td>Levene</td>
<td>2214(5)</td>
<td>72.41203</td>
<td>0.00</td>
</tr>
<tr>
<td>Brow-Forsythe</td>
<td>2214(5)</td>
<td>28.18794</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Based on the obtained p-value in the above table which is less than 0.05, in this study we are faced with heterogeneity of variance, which we use EGLS estimators in order to resolve the inconsistency.
Co linearity test output

<table>
<thead>
<tr>
<th>Variable</th>
<th>Centered VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS</td>
<td>1.00</td>
</tr>
<tr>
<td>CFO</td>
<td>1.52</td>
</tr>
<tr>
<td>GWTH</td>
<td>1.00</td>
</tr>
<tr>
<td>COYSize</td>
<td>1.52</td>
</tr>
<tr>
<td>LEV</td>
<td>1.02</td>
</tr>
</tbody>
</table>

According to the above table can be seen that in this study we are facing with the lack of co-linearity.

Stability test

<table>
<thead>
<tr>
<th>Test method</th>
<th>Levin, Lin and Chu</th>
<th>Im Pesaran and Shin</th>
<th>Fisher Dickey Fuller</th>
<th>Fisher - Phillips-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td>variable</td>
<td>statistic</td>
<td>probability</td>
<td>statistic</td>
<td>probability</td>
</tr>
<tr>
<td>CBEM</td>
<td>-11.52</td>
<td>0.00</td>
<td>-3.60</td>
<td>0.00</td>
</tr>
<tr>
<td>AFS</td>
<td>-1.18</td>
<td>0.01</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CFO</td>
<td>-15.36</td>
<td>0.00</td>
<td>-3.37</td>
<td>0.00</td>
</tr>
<tr>
<td>GWTH</td>
<td>-0.15</td>
<td>0.03</td>
<td>4.89</td>
<td>0.00</td>
</tr>
<tr>
<td>COYSize</td>
<td>-19.03</td>
<td>0.00</td>
<td>-8.89</td>
<td>0.00</td>
</tr>
<tr>
<td>LEV</td>
<td>-50.43</td>
<td>0.00</td>
<td>-11.05</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The results of stability test indicate that variables CBEM, COYSize, CFO and LEV are all viable methods, and AFS variable is only viable with Levin, Lin and Chu method, and GWTH variable is viable with Levin, Lin and Chu method and Im Pesaran and Shin method. According to the obtained results, the null hypothesis that there is a unit root for variables cannot be accepted.
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Chow test output – the first main hypothesis

<table>
<thead>
<tr>
<th>Redundant Fixed Effects Tests</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBEM_{it} = \alpha_0 + \beta_1 AFS_{it} + \beta_3 CFO_{it} + \beta_4 Gwth_{it} + \beta_5 COYSize_{it} + \beta_6 LEV_{it}</td>
<td></td>
</tr>
</tbody>
</table>

Test Cross – Section Fixed Effects

<table>
<thead>
<tr>
<th>Test effect</th>
<th>statistics</th>
<th>Freedom degree</th>
<th>P-Value Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross – Section F</td>
<td>10.44</td>
<td>(73,291)</td>
<td>0.00</td>
</tr>
<tr>
<td>Cross – Section Chi - Square</td>
<td>476.13</td>
<td>73</td>
<td>0.00</td>
</tr>
</tbody>
</table>

As it can be observed, according to the obtained P-value, the null hypothesis based on the intercept equality is not accepted in the hypothesis. So, in this hypothesis, fixed effects model is chosen as the preferred model.

Hausman test output- the first sub- hypothesis

<table>
<thead>
<tr>
<th>Correlated Random Effects – Hausman Tests</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBEM_{it} = \alpha_0 + \beta_1 AFS_{it} + \beta_3 CFO_{it} + \beta_4 Gwth_{it} + \beta_5 COYSize_{it} + \beta_6 LEV_{it}</td>
<td></td>
</tr>
</tbody>
</table>

Test Cross – Section Random Effects

<table>
<thead>
<tr>
<th>Test effect</th>
<th>statistics</th>
<th>Freedom degree</th>
<th>P-Value significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross – Section Random</td>
<td>19.20</td>
<td>5</td>
<td>0.00</td>
</tr>
</tbody>
</table>

As we can see, the obtained p-Value for the hypothesis developed in this study is less than 0.05. As a result, H1,that states there is a correlation between individual effects and the explanatory variables is accepted, in contrast, H0, that states there is no correlation between individual effects and the explanatory variables is not accepted. In this hypothesis, therefore, the fixed effect method is used to estimate the model.

Hypothesis test

| Model: |
| CBEM_{it} = \alpha_0 + \beta_1 AFS_{it} + \beta_3 CFO_{it} + \beta_4 Gwth_{it} + \beta_5 COYSize_{it} + \beta_6 LEV_{it} |
| Method: Panel EGLS (Cross – Section Weights) |
| Liner estimation after – one – step Weighting matrix |

<table>
<thead>
<tr>
<th>P-Value significance</th>
<th>t-statistics</th>
<th>Standard deviation</th>
<th>Variable coefficient</th>
<th>variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>3.39</td>
<td>0.027</td>
<td>0.93</td>
<td>(C)</td>
</tr>
<tr>
<td>0.58</td>
<td>-0.54</td>
<td>0.080</td>
<td>-0.04</td>
<td>AFS</td>
</tr>
<tr>
<td>0.00</td>
<td>5.49</td>
<td>5.56</td>
<td>3.06</td>
<td>CFO</td>
</tr>
</tbody>
</table>
Based on the results from fitness of model hypothesis, and according to the obtained P-value, there is no significant relationship between the sizes of audit firms cash-flow based earnings management dependent variable. In this hypothesis, additional variables deletion test was also performed. However, the lack of a significant relationship between the size of audit firms and cash-flow based earnings management is still existed, which is addressed in the appendix. The Durbin-Watson statistic equal to 1.84 shows the lack of correlation among errors.

**Conclusion**

The main objective of this paper is to examine the relationship between the size of audit firms and cash-flow based earnings management. Results showed that there is a significant relationship between proportion of variance (additional fluctuations of stock prices) and expected stock returns. Based on the results from fitness of research hypothesis model, and according to the obtained P-value, there is no significant relationship between the sizes of audit firms cash-flow based earnings management dependent variable. In this hypothesis, additional variables deletion test was also performed. However, the lack of a significant relationship between the size of audit firms and cash-flow based earnings management is still existed, which is addressed in the appendix. The Durbin-Watson statistic equal to 1.84 shows the lack of correlation among errors.

According to the results of hypothesis testing, it can be said that the hypothesis of this study was not confirmed at 95% confidence level. As a result, it can be stated that there is no significant level between the size of audit firms and cash-flow based earnings management.

Comparison of the results with previous research

The result of this paper is consistent with the results of research implemented by Okolie (2014) and Cheny and Jitter (1997) in terms of the type of relationship, but it is different from their research in terms of significance level, and it is consistent with the results of research performed by Badri (2002).

**Practical recommendations**

- Companies should increase their profit quality just through cost control and sales growth strategies, and they should provide clear reports about the quality of earnings and revenues.
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- Company auditors must issue integrated quality assurance reports based on earnings quality assessments which are legally supported by monitoring corporate profits in Nigeria.

Recommendations for future research

It is recommended that in other researches, the differentiation of existing industries in the Tehran Stock Exchange must be tested to determine the effect of industry.

Research limitations

Since the limitations of this research are divided into two categories:

• Constraints imposed by the researcher

• Environmental restrictions

In this study, the limitation which is imposed by the researcher is time series, and the companies which their end of financial period is in March are included. As a result, their results cannot be extended to the later periods. Also in this study, only the perspectives of manufacturing companies at Tehran Stock Exchange were evaluated. In the future researches, we may expand the scope of research and analyze the view of other users.

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