The relationship between overconfidence of managers and audit fees in the companies approved by Tehran Stock Exchange

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Abstract

Most of the managers suppose their own company is more likely to succeed than the other companies. Such a manager is called overconfident. In the present study it is proposed that the relationship between overconfidence of managers and audit fees are influenced by the degree of Auditor’s efforts, so that if the auditors recognize the personal qualities of managers, it is likely that they consider it as a risk factor in auditing plans, so put it in the center of their attention and demand higher fees for their more efforts to reduce the risk of not being discovered. On the other hand overconfident managers may not value the auditing services as the other managers, and due to the overconfidence which is the result of the financial reporting of their company, may be seeking a way to reduce the auditing fees. The present study aims at investigating the effect of overconfidence of the managers on audit fees. The statistical society of the study includes the companies approved by Tehran Stock Exchange during the period 2006-2012. To measure the degree of overconfidence we used regression residual. The results of the study showed that there is a positive meaningful relationship between managers’ overconfidence and audit fees.

Keywords: managers’ overconfidence, audit fee.
Introduction

Audit and accountability have place in every dimension of every system and are used widely from the highest governmental level of the country to the smallest commercial unit. Each system to survive needs supervision and feedback, but in spite of the wide audit activities, establishing wage for this service in our country is not based on a scientific model, and it is not possible to say on a reasonable basis how much it costs, regarding the characteristics of the unit under audit. Pricing audit services is one of the most interesting topics for audit researchers and many studies have been done about it so far, most of which are seeking a main goal that is recognizing the factors influencing audit fees. Awareness of this is useful for both employer and auditor (Nikbakht&Tanaei, 2010). Reviewing the studies about pricing of audit services reveals that the factors influencing audit fees are identified using the factors influencing audit workload as a motive for audit fees (Rajabi and Muhammadi Khashouei, 2008).

Research shows that managers of the companies have motivations for keeping their career state, to show their performance higher than reality by delaying the bad news hoping that their weak performance is covered by their better performance in the future (Foulad et al, 2012). The most important phenomenon which is discussed with regard to self-deception among executives, is overconfidence. There is evidence showing that individuals rely too much on their knowledge and capabilities. People predict the likely of occurring events either extremely low or extremely high. Also when there are not enough capabilities or evidence for predicting the events, managers and experts are exposed to overconfidence risk more than ordinary people, such that overconfidence leads the managers to seek for ways in which they can justify the consequences of their decisions, and in this way they can attract the respect of others. Overconfidence of managers leads them to show their performance higher by delaying the projects with negative net present value as well as postponing bad news (Malmendier et al, 2011). Today, auditors are faced with growing pressure for controlling and reducing audit fees. This has led both the auditor and employer to start investigating the relationship between wage and audit work (Hazrati & Pahlavan, 2012). The present study proposes that the relationship between overconfidence of managers and audit wage is affected by the level of auditor’s effort. The theories related to overconfidence of managers show that overconfident managers fail to acquire information and provide low quality information for shareholders and the board (Goel and Thakor, 2008). Therefore, the auditors should increase their surveys to maintain a favorable level of the total audit risks related to companies that because of the overconfidence of their managers have weak internal information. In this study we consider whether the auditors of the companies receive different wages due to overconfidence of the managers. In line with the study by Yang et al (2012), the present study is going to answer this question of what the relationship between overconfidence of managers and audit fees?
Related literature and theoretical principles

Identifying the minimum audit fee and breaking the rate by some audit institutes are two important conflicts for audit professionals. But this formula is not efficient in countries in which there is not economical competition and the price is identified either by monopolies or minimum wage. Each year, according to the recommendation of the Ministry of economic affairs and finance, the economic council determines the audit fees for audit corporate to audit the companies with budgetary (public companies) (Amani & Davani, 2009).

Since the financial interest of auditors is determined by the wage obtained from contracts with employers, they use various factors to price their service, and there have been a lot of studies to identify these factors. Descriptive factors which are considered in most of the studies include risk, and the volume and complexity of the operations of the department under study (Rajabi & Khashouei, 2008). The employer companies may reveal more actively if they become aware of the factors impacting the audit fees. Awareness of audit fees is also useful for auditors because they can price their audit services more efficiently.

Overconfidence is one of the most important findings in psychology in the area of judgment and decision making. Researchers found that people overestimate their capabilities in well doing their tasks, and this overestimation increases with the importance of the tasks. Also the psychologists have concluded that people in decision making give more weight to outstanding information. People trust the news which seem correct, neglecting reliability of its source, and make certain decisions according to it. People also overestimate their capability in predicting and the accuracy of the information they receive. They act weakly in estimating the possibilities and often consider the events with probability less than 100% as imminent. Most of the people consider themselves smarter than what they really are, and believe that they have better information. Since overconfident managers believe that they have special information at hand and others don’t, they overestimate the accuracy of the information and hence profits and future cash flows of their business unit and have a positive perspective of the risk and productivity of their companies. Overconfident managers consider the favorable events more probable to impact the cash flows of their companies and underestimate the negative events. Overconfidence of the managers influence the way in which costs and benefits and the carrying amount of assets and debts are identified. So it has been argued that manager’s overconfidence is a kind of recognition before occurrence which justifies incorrect financial reports and leads to redelivery of the reports. In addition, it is claimed that since an overconfident manager may not be aware of his/her bias, they unwantedly promote the financial statements too optimistically, incorrect and unreal (Presley & Abbot, 2013).

Therefore manager’s behavior and his/her decision making is a main and important factor in improving the performance of the company. A manager’s responsibility is to provide
independent supervision on company performance as well as accountability to shareholders and beneficiaries. There is a public belief that optimistic and self-confident managers have more effective supervision on the performance of their companies (Dechow et al, 2012).

It can be then said that audit fee is determined by risk assessment by the auditors from employer, competition in audit market, and negotiation between auditor and employer. An auditor should identify and estimate the risk of misstatement (evaluating the manager’s competence and merit, moral atmosphere of the organization, accounts capabilities, and revealing misstatement). These factors influence the capability of auditor in revealing financial misstatements which are significant threats for an audit institutes. Auditors usually collect more evidence to reduce the risk of not discovering misstatements, which leads to increased audit fee. The risk of financial reporting is also one of the most important risk factors influencing pricing process of audit service. And since overconfident managers overestimate the expected output of the investment projects and underestimate the influence of negative events, it may lead to increased risk of financial reporting for auditors. So if the auditor recognizes this characteristic in managers and overestimates the risk of financial reporting due to the overconfidence of managers, he/she can demand higher wage and complete his/her actions in order to decrease the risk of not discovery. Research indicates that audit fee has a direct relationship with the number of working hours of the auditors. Employers negotiate with auditors regarding the audit plans and range to reduce audit fees (Ball et al, 2012). Since overconfident managers trust in financial reporting process, they try to reduce the range and wage of auditors through negotiating. Overconfident managers give less value to corrective feedbacks by auditors. In addition, as the investigating domain and consequently audit fees reduce, actions and accurate investigations by auditors to reveal aggressive accounting procedures will decrease as well. Also, it is less likely that overconfident managers employ industry expert auditors; because it is more probable that industry expert auditors reveal aggressive accounting procedures by their employers. In addition, overconfident managers may employ non specialist auditors to pay lower fees.

**Studies out of country**

Duellman et al (2015) studied the relationship between overconfidence of managers and audit fees. The results of their study revealed that companies with overconfident managers pay lower fees for auditing. Also it is less likely that overconfident managers employ industry expert auditors. According to the results found by Bouwman (2014) there is a positive relationship between overconfidence of managers and benefit smoothing. In other words, overconfident managers are more likely to perform smoothing than other managers. Chen et al (2014) studied the effect of manager’s overconfidence on internal controls. They concluded that in companies with overconfident managers it is more likely that ineffective internal controls are maintained. Also in companies with overconfident managers and Strong corporate governance structures the
probability of maintaining effective internal controls is higher. Deshmukh et al (2013) believe that overconfident managers tend to pay lower dividends compared to other managers. In companies with fewer growth opportunities, lower cash flow, and higher information asymmetry, reduction in paying dividends is more probable. Ahmed and Duellman (2013) studied the effect of manager’s overconfidence on accounting conservatism. Their findings indicated that overconfidence has a negative impact on accounting conservatism and external control doesn’t reduce this negative effect. Ahmed and Scott (2012) note in their research “managers’ overconfidence and accounting conservatism” that overconfidence of managers leads them to be too optimistic to the future outcomes of their company investments. They suggest that applying accounting conservatism leads the managers with high overconfidence to act better in recognizing and postponing the projects with lower outcomes. They also claim that external controls on managers’ performance can be helpful in reducing managerial biases and delusions. Harribar et al (2012) in their study “mutual response of managers’ overconfidence” establish a relationship between personal characteristics of managers and a few decisions in the company including overinvestment, external demands and managing benefits. Their findings raise the question whether the partners recognize the differences in individual behavior of general director, and how they react to these differences. They considered credit rating agencies in their studies and their findings indicate that there is appositive relationship between audit fee and overconfidence of managers, and there is a negative relationship between overconfidence of managers and credit rating, such that overconfidence of mangers associates with higher agency costs and higher credit risk.

Kim et al (2011) studied managers’ sense of ownership and audit fees in order to find out whether managers’ sense of ownership would impact the audit fees. They showed that director’s stock option is positively related to audit fees after controlling abnormal accruals and other factors determining audit fees. They also showed that in companies with more effective corporate governance the positive relationship between granting director’s stock option and audit fee is reduced.

Desender et al (2011) studied the relationship between corporate governance features and audit fees and concluded that when ownership is dispersed auditory services and independence of board of directors are complementary, which indicates that concentrated ownership and the composition of the board are appropriate substitutes for each other in monitoring managers; they also concluded that there is a relationship between compositions of the board of directors (independence and dichotomy of director) and audit fees.

Schrand and Zechman (2011) claim that since overconfident managers are under pressure to manage the profit, their overconfidence would associate with the likeness of cheating in
financial statements; they also believe that more internal and external supervisions through management mechanisms will not decrease this effect.

Hribar and Yang (2011) concluded in a study that overconfident managers tend to make mistakes in profit predictions; by too optimistic predictions and non-optimal investments, they put themselves in situations that they may have high motivation to manage profit in order to hide their weak performance.

Studies in the country

Hasas Yeganeh et al (2015) studied the effect of overconfidence of managers on audit fees. Their findings show that there is a negative meaningful relationship between overconfidence of managers and audit fees. According to further studies overconfidence of managers have no meaningful effect on employing industry specialist auditor.

The findings of the research by Chavoushi et al (2015), “the relationship of overconfidence of managers and selecting financing policies in the companies approved in Tehran stock exchange” indicated lack of relationship between overconfidence and financial decisions. In addition, the relationship between growing opportunities, profitability, company size, and risk of failure with financial decisions is meaningful.

Sajadi et al (2014) studied the relationship between audit fee and board bonus. Their findings showed that there is a positive relationship between audit fees and board bonus. In addition, increased board bonus is due to complexities and company operations which require high quality audit and hence paying higher wage to auditors.

Heydari (2014) in his study “investigating the effect of behavioral factor of overconfidence of managers on adhesion price: moderating role of economic factors and the factors based on agency theory”, studied the effect of overconfidence of managers on increased adhesion costs of distribution, sale, and administrative. The results showed that overconfidence of managers leads to increased adhesion costs. Pirmoradi et al (2013) studied the effect of overconfidence on the quality of accruals; in their study managers’ overconfidence was measured upon the quality of accruals by three criteria and the results showed that managers’ overconfidence has no meaningful effect on the quality of accruals.

Banimahd et al (2013) in their study “the effect of audit fee on auditor’s comment” found that high audit fee may lead to dependency between auditor and employer. This may cause a fundamental doubt with regard to auditors’ independence. Because auditors may deliver more favorable reports to keep their customers and earning higher wage. The findings of this study show that there is a meaningful relationship between audit fees, employer’s size, loss reporting by employer and the age of the company under study with issuing favorable auditory report.
According to the findings of the study there is a direct relationship between auditor’s wage and issuing favorable audit reports. Size of the company, age of the company, and loss reporting have reverse relationships with acceptable audit report. Also, there is no relationship between changing auditors, kind of auditors, and duration of auditing with issuing acceptable audit reports.

**Methodology**

The time scope of the study is a seven-year period from 2006 to 2012, and its spatial domain included the companies approved in stock exchange and for comprehensiveness and availability reasons Tehran was selected as the spatial domain of the research. The information and data required for analysis and hypothesis testing was elicited from financial statements and the reports delivered to stock exchange by the companies as well as Rahavard Novin software and financial information CD of the companies, and regression model was applied to test the hypotheses of the research. No special method has been used for determining statistical sample, and estimating sample size, and elimination method was applied for this purpose. In other words, those companies with the following qualifications were selected as the sample and the other companies were eliminated.

1. For comparability reason, the financial year of the companies should end to the last day of month Esfand (19th of March)
2. The companies have had no activity pause during the time domain (2006 to 2012) and they have not changed their financial year
3. All the information required for the study should be available
4. The companies should not belong to banks and financial institutions (investment companies, financial intermediaries, holding companies, leasing companies, and insurance companies)

By applying the above restrictions 80 companies, totally 560 years, were selected as the sample of the study.

**Variables of the study and measuring them**

Since in the present study the relationship between overconfidence of managers and audit fees in the companies accepted in Tehran stock exchange is considered, audit fee is considered as dependent variable. Also overconfidence of managers is considered as independent variable which is measured separately and by remained regression method. Some special features of the companies including the kind of auditors, size of company, the ratio of debts to assets, ratio of operating income to assets, losses of the company, kind of auditor’s comments, logarithm of auditor’s tenure, total accruals, and current ration are considered as control variables.
Dependent variables

Audit fee (LNAUDEFEES): in the present study natural logarithm of audit fee is used. The reason for using the natural logarithm in calculating audit fees is homogenizing audit fees of small and big companies. This method has been used in all previous studies.

Independent variable

In financial researches, various criteria including maintaining dealing options (by senior managers) for a long time, maintaining dealing options (by senior managers) until the due date and addiction to buy shares as well as the criterion of media covering by Malmendier and Tate (2008), criteria for capital expenditure and overinvestment by researchers like Malmendier and Tate (2005) and Ben-David et al (2010), criteria for relative wage of senior managers by Heward and Hambrick (1997) and criteria for predicted profits of senior managers by Lin et al (2005) have been used to study managers’ overconfidence. Since criteria based on deal options, criteria for media covering, and criteria for relative wage of senior managers don’t have any instance in Iran and the criteria for predicted profits of managers have not been existed for a long time (Atri & Azizzadeh, 2013), in order to measure overconfidence of managers (CONFIDENET) a regression model called new investment has been used according to the studies by Schraund and Zchman (2011), Richardson (2006), and Huang et al (2011), in which regression error is considered as independent variable of overconfidence as follows:

Regression analysis is a technique to study and model the relationship between variables and is used as return to a mean or average value; that is some phenomena tend to an average value with time. In the present study after obtaining the regression of sample companies data, if residual error of regression of one company is equal or greater than zero, then overconfidence of the managers of that company is confirmed and is assigned to number 1 and if residual error of regression of a company is negative, then overconfidence of the managers of that company is not confirmed. This model which was proposed by Richardson, is as follows:

\[
\text{Newint} = \beta_1 + \beta_2 \text{Grow} + \beta_3 \text{Lev} + \beta_4 \text{Cash} + \beta_5 \text{Age} + \beta_6 \text{Size} + \beta_7 \text{Return} + \beta_8 \text{Sqnewinv} + \varepsilon
\]

Where

Newint: new investments of the company in year i and is obtained from the difference between long-term investments of years i and i-1.

Grow: rate of income growth of the company which is obtained from the difference between proceeds from the sale and services in years i and i-1.
Lev: is the financial leverage that shows the degree to which debts are used for financing assets. Financial leverage is obtained by total sum of debts plus total sum of assets. Total sum of debts and total sum of assets are reflected in balance sheet according to Richardson (2006).

Cash: the cash of the company which is calculated by summing up the total cash and investments in short-term securities.

Age: is the age of the company and how long it has been founded. This variable is calculated based on the interval between date of establishment and the end of time period of the research.

Size: various methods have been used to measure the size of the company in previous studies, the most important of which are:

- Total net sale of the company
- Current value of total future flows
- Total assets
- Value of company in the market (stock market price * number of shares)

Following Huang et al (2011) we used calculating natural logarithm of total assets to measure the size of the company.

Return: annual stock returned last year

Sqnewinvt: new investments last year which is obtained from the difference between long term investments in year i-1 and year i-2

ε: regression residual and remaining error of this model is considered as the criteria for overconfidence, that if positive it equals to 1, otherwise it equals to 0.

Control variables

In the present study some of the special features of the companies were used as control variables.

1. Kind of auditor (BIG4): it is a variable index which is assigned to 1 if the auditor is audit corporate, and otherwise is assigned to 0. This variable indicates the public or private auditor. In Iran, audit corporate as a public audit organization has a higher volume of employers compared to other audit institutes. Due to public structure and involuntary selection in accepting work and determining fees for professional services, this corporate benefits from a margin of safety which has led it to be in a particular place in competition with private organizations.

2. LNAssets: it is calculated by natural logarithm of the book value of total assets indicating the size of the company (SIZE), which has been used as an independent variable in calculating the criteria for overconfidence and as a control variable in the main model.
Control variable is used to distinguish the effect of independent variable on the dependent variable from the effect of other variables. The findings of previous studies indicate that the size of company is one of the most important factors determining audit fees. In large companies with strong internal control, the audit work is complicated but they pay higher wages for it, while the audit work is simple in small companies and so they pay lower wages for it.

3. The ratio of inventory to total assets (INV): this variable is obtained from dividing inventory of materials and goods to total assets. Since the inventory of materials and goods is a main source of the assets of the business unit and can easily be exposed to errors and violations, and in many cases the main falsification of the inventory of materials and goods is to escape from tax paying, covering the shortages resulted from different violations and mislead the investors to the profits and financial status of the company, it can be expected that the effort and fees for doing audit services are influenced.

4. The ration of receivable accounts to total assets (REC): companies perform part of their sales in credit to grow and develop their activities. These assets consist a main part of assets in the balance sheet and correct evaluating and regular plans for them influence the value of company. In other words due to inclusion of judgement in correctly assessing the receivable accounts by the accountants the risk of this part of assets increases. So the ratio of receivable accounts to total assets probably influence the audit fees and effort.

5. The ratio of sum of the debts to total assets (DEBT): it is calculated by summing up the debts with total assets and is used to measure the financial risks of the company. As the financial leverage increases, the risk of audit increases as well and is used as the indicator of audit risk (Duellman et al, 2015). The higher the ratio of debts to total assets, the higher the risk and hence the higher audit fees (Heidarpour et al, 2010).

6. The ratio of operating profit to total assets (INCOME): it is an indicator of profitability of the company depending on the total assets of the company indicating the performance of managers regarding how successful the company has been in making profit from its assets. In addition, if the companies are in normal conditions they are less likely to cheat, but once the situation changes and tends to losses, the risk increases and the auditors must pay closer attention in their audits. Because the companies prefer not to be considered as loss making.

7. Company loss (LOSS): it is the index calculating inherent risk such that if the company profit is negative it is assigned as 1 and otherwise it is assigned as 0. The loss from the last years increases the audit risk (Duellman et al 2015).

8. Kind of auditor’s opinion (AUDOPIN): this index gets 1 if the company receives unacceptable auditor opinion and 0 otherwise. This index is used because according to the literature conflicts between auditors and company regarding the articles of the
represented audit report lead to increased delay time in performing and accomplishment of auditory operations which is expected to impact the audit fees.

9. Logarithm of auditor’s commission period (LNCLIENT): the number of the years that the company has been the client of the current auditor. This variable is one of the criteria for measuring the quality of audit and refers to the number of successive years that an audit corporation investigates and audits a certain employer. Audit operation being done by a certain auditor during continuous years can be more effective because of the familiarity of the audit team to the employer’s audit operations; if the audit corporation has the experience of doing the audit operations of employer organization for several successive years not only the audit team members are more familiar with the employer’s business, but also it leads to accelerated audit operations, decreased audit costs, and increased audit quality (Myers et al 2003).

10. Total accruals (ABSTACC): the difference between income and operational cash flow. Researchers believe that based on two reasons there may be a positive relationship between accruals and inherent risk of audit: first, in the case that managers are opportunism, accruals is the means by which they can manipulate the profits in their own favor. Second, because of dependence of accruals on high risk items like receivable accounts and inventory, the auditors pay much attention to these items. Therefore it is expected that judgement nature of accruals leads to increased audit risk and hence more effort by auditor and higher audit fees.

11. Current ratio (CASCLS): current ratio equals to dividing current assets to currents debts. The larger this ratio, the more the power to return current debts and creditors provide loans, goods and services with higher confidence. When interpreting the current ratio, its fluctuations with time should be noticed because it is possible that companies at the end of financial year and temporarily depositing some debt items and returning them at the beginning of next year, show this account better which can lead to increased audit fees.

**Research hypothesis**

Contemplating in literature and previous studies in the world to answer and achieve the research goals, a hypothesis was formed as follows:

There is a relationship between overconfidence of managers and audit fees.

**Findings of the research**

**Descriptive analysis**

In descriptive analysis, the researcher describes the data collected using the tables and indices of descriptive statistics like central index and index of diffusion. This helps to transparence and
explaining research data. The findings of descriptive analysis of the data is presented in tables 1 and 2.

Table 1. the results of descriptive analysis of quantitative data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sign</th>
<th>Number of observations</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit fee logarithm</td>
<td>LNAUDFEES</td>
<td>560</td>
<td>6.118</td>
<td>0.767</td>
<td>4.248</td>
<td>8.482</td>
</tr>
<tr>
<td>Company size</td>
<td>LNASSETS</td>
<td>560</td>
<td>13.546</td>
<td>1.423</td>
<td>10.784</td>
<td>18.454</td>
</tr>
<tr>
<td>Ratio of inventory to total assets</td>
<td>INV</td>
<td>560</td>
<td>0.233</td>
<td>0.130</td>
<td>0.000</td>
<td>0.676</td>
</tr>
<tr>
<td>Ratio of receivable accounts to total assets</td>
<td>REC</td>
<td>560</td>
<td>0.293</td>
<td>0.165</td>
<td>0.000</td>
<td>0.750</td>
</tr>
<tr>
<td>Ratio of sum of debts to total assets</td>
<td>DEBIT</td>
<td>560</td>
<td>0.635</td>
<td>0.267</td>
<td>0.096</td>
<td>3.060</td>
</tr>
<tr>
<td>Ratio of operational profit to total assets</td>
<td>INCOME</td>
<td>560</td>
<td>0.151</td>
<td>0.120</td>
<td>-0.285</td>
<td>0.635</td>
</tr>
<tr>
<td>Natural logarithm of term time</td>
<td>LNCLINET</td>
<td>560</td>
<td>0.827</td>
<td>0.647</td>
<td>0.000</td>
<td>1.945</td>
</tr>
<tr>
<td>Total accruals</td>
<td>ABSTACC</td>
<td>560</td>
<td>0.019</td>
<td>0.123</td>
<td>-0.587</td>
<td>0.401</td>
</tr>
<tr>
<td>Current ratio</td>
<td>CASCLS</td>
<td>560</td>
<td>1.333</td>
<td>0.683</td>
<td>0.239</td>
<td>7.244</td>
</tr>
</tbody>
</table>

Table. 2 frequency analysis of nominal data of the study
<table>
<thead>
<tr>
<th>Variable</th>
<th>Sign</th>
<th>Number of observations</th>
<th>answer</th>
<th>Frequency</th>
<th>Percentage of frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overconfidence of managers (regression error)</td>
<td>Confident</td>
<td>560</td>
<td>Overconfidence</td>
<td>214</td>
<td>38.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lack of</td>
<td>346</td>
<td>61.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>overconfidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kind of auditor</td>
<td>Big 4</td>
<td>560</td>
<td>Audit organization</td>
<td>130</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other institutes</td>
<td>430</td>
<td>76.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company loss</td>
<td>LOSS</td>
<td>560</td>
<td>Losing company</td>
<td>56</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Profitable company</td>
<td>504</td>
<td>90</td>
</tr>
<tr>
<td>Auditor comment</td>
<td>AUDOPIN</td>
<td>560</td>
<td>Unacceptable</td>
<td>368</td>
<td>65.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acceptable</td>
<td>192</td>
<td>34.3</td>
</tr>
</tbody>
</table>

The results of descriptive analysis indicate that the average of audit fees logarithm equals to 6.118. Also the average of ratio of inventory to assets in sample companies equals to 0.233. The average ratio of receivable accounts to assets equals to 0.293. The average ratio of debts to assets is 0.635. The average current ratio for the sample companies equals to 1.333 the minimum and maximum value of which are 0.239 and 7.244 respectively. Low standard deviation in most of the variables indicate that distribution of quantitative variables is not so much diffused and is concentrated around the mean.

The results of descriptive statistics of qualitative data also indicate that overconfidence of the managers is 38.2% of the total observations in 214 year-company. The findings also show that from 560 year-companies observed in 130 year-companies 23.2% of total audit observations have been done by audit organization and in 430 year-companies that is 76.8% of total audit observations have been done by other audit institutes.

The findings also show that 10% of sample companies that is 56 year-companies are losing companies and other observations that is 504 observations in the financial year reported profitability. 192 year-companies that is 34.3% of total observations the auditors’ opinions were acceptable and in 368 observations the auditors’ opinions were unacceptable. Other information related to descriptive statistics is presented in tables 1 and 2.

Investigating the distribution of data
The first phase in hypotheses testing is investigating normality of data. In order to study normality of data hypotheses are formed as follow:

Data distribution is normal: H0

Data distribution is not normal: H1

To test the above hypotheses, we used Jarque-Bera test and due to the higher meaningfulness level of Jarque-Bera than the acceptable error level, the findings show that distribution of variables audit fees logarithm, company size, and ratio of receivable accounts to assets follow normal distribution as is shown in table 3.

Table. 3 the results of Jarque-Bera test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sign</th>
<th>statistic</th>
<th>Meaningfulness level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit fees logarithm</td>
<td>LNAUDFEES</td>
<td>3.117</td>
<td>0.236</td>
</tr>
<tr>
<td>Company size</td>
<td>LNASSETS</td>
<td>14.147</td>
<td>0.098</td>
</tr>
<tr>
<td>Ratio of inventory to total assets</td>
<td>INV</td>
<td>32.279</td>
<td>0.000</td>
</tr>
<tr>
<td>Ratio of receivable accounts to total assets</td>
<td>REC</td>
<td>9.710</td>
<td>0.117</td>
</tr>
<tr>
<td>Ratio of sum of debits to total assets</td>
<td>DEBIT</td>
<td>167.714</td>
<td>0.000</td>
</tr>
<tr>
<td>Ratio of operational profit to total assets</td>
<td>INCOME</td>
<td>82.443</td>
<td>0.000</td>
</tr>
<tr>
<td>Term time natural logarithm</td>
<td>LNCLINET</td>
<td>40.331</td>
<td>0.000</td>
</tr>
<tr>
<td>Total accruals</td>
<td>ABSTACC</td>
<td>207.679</td>
<td>0.000</td>
</tr>
<tr>
<td>Current ratio</td>
<td>CASCLS</td>
<td>54.149</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The results of hypothesis test

The following hypothesis is tested in this study:

There is a meaningful relationship between overconfidence of managers and audit fees.

In order to test the above hypothesis, we used linear multivariable regression model according to the model provided by Haribar et al (2012) and the results are shown in table 5:
According to the results of the hypothesis test shown in Table. 5, the meaningfulness level of statistic F Limer (Chaw) is higher than the acceptable error level and pooled data model is selected to fit the regression. The results of variance heterogeneity test (White test) indicate the existence of variance heterogeneity; in such cases in order to eliminate variance heterogeneity we use the estimating model after resolving heterogeneity. Also, the results of Lagrange Multiplier test (Lagrange Multiplier test method) show that there is no serial autocorrelation in the regression model Durbin-Watson statistic is between 1.5 to 2.5 indicating that there is no correlation between the error components of the model. The meaningfulness level of statistic F (0.000) is less than the acceptable error level (5%) and the total regression model is meaningful. Due to the lower probability (prob.) of statistic t than the acceptable error level for the factor $\beta_1$, the results show that there is a positive and statistically meaningful relationship between overconfidence of managers (remaining regression error) and audit fees. So research hypothesis with the confidence level of 95% couldn’t be rejected.

The findings also indicate that of the control variables entered into the regression, there is a positive significant relationship between the variables kind of auditor, company size and term time logarithm with audit fees, and at the opposite point there is a negative meaningful relationship between debit ratio and ratio of operational profits with audit fees. The experimental evidence of the study shows that there is no significant relationship between other control variables in the model and audit fees. Also the coefficient of determination and adjusted coefficient of determination show that the control and independent variables in the model determine 34.5% of the changes in dependent variable.

Table. 5: the results of regression test of hypothesis

<table>
<thead>
<tr>
<th>variable</th>
<th>Sign</th>
<th>Coefficient</th>
<th>T statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>C</td>
<td>2.796</td>
<td>8.097</td>
<td>0.000</td>
</tr>
<tr>
<td>Overconfidence of managers</td>
<td>$\beta_1$ (CONFIDENT)</td>
<td>0.196</td>
<td>3.443</td>
<td>0.000</td>
</tr>
<tr>
<td>(regression error)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditor type</td>
<td>$\beta_2$ (BIG+)</td>
<td>0.198</td>
<td>2.467</td>
<td>0.014</td>
</tr>
<tr>
<td>Company size</td>
<td>$\beta_3$ (LNASSETS)</td>
<td>0.251</td>
<td>11.292</td>
<td>0.000</td>
</tr>
<tr>
<td>Ratio of inventory to assets</td>
<td>$\beta_4$ (INV)</td>
<td>-0.029</td>
<td>-0.119</td>
<td>0.905</td>
</tr>
</tbody>
</table>
### Conclusion

In this study we performed a comprehensive analysis on the relationship between overconfidence of managers and audit fees in companies approved in Tehran stock exchange. The population of the study contained 560 year-companies (80 companies in 7 financial periods from 2006 to 2012. A hypothesis was established in the research. We considered overconfidence of managers as the independent variable and audit fees as the dependent variable. In addition, we considered some control variables which could influence the dependent variable including auditor type, company size, ratio of inventory to assets, ratio of receivable accounts to assets, ratio of debits to assets, current ratio, F statistic, meaninglessness level (Prob.), Durbin-Watson statistic, F-test Limer (Chaw), meaninglessness level (Prob.), serial autocorrelation test (Breusch-Godfrey test), meaninglessness level (Prob.), variance heterogeneity test (White H test), meaninglessness level (Prob.), determination coefficient (R2), and adjusted determination coefficient (AdjR2).
ratio of operational profit to assets, company loss, auditor comment type, natural logarithm of term time, accruals, and current ratio. In order to investigate the correlation between variables of the research we used Pearson correlation coefficient and finally to test the study hypotheses we used linear multivariable regression. The results of the hypothesis test showed that there is a meaningful positive relationship between overconfidence of managers (according to the approach of remaining regression error) and audit fees. Therefore, it can be said that as overconfidence increases in managers, the audit fees also increase accordingly, and this is not for maintenance of the interests of shareholders and investors and doesn’t lead to increase efficiency in investments and higher current net value of investments. Therefor overconfidence could lead to losing the financial resources of the business unit. Also, according to the results of hypothesis test it can be said that overconfidence can lead managers to seek for solutions to justify their decisions and attracts others’ respect. In fact, overconfidence of the managers lead them to show their performance as better by delaying the termination of the projects with negative current net value and delaying bad news.

Therefor considering the above issues as well as the negative aspects of overconfidence of managers it can be said that overconfidence of managers can lead them to accustom themselves to provide unreal information and sometimes manipulate or mange profits. The subsidiary results also indicated a positive meaningful relationship between auditor type, company size, and auditor enterprise period, with audit fees, and at the opposite point a negative meaningful relationship between ratio of debt and ratio of operational profit with audit fees.

The results of the present study showed that there is a positive meaningful relationship between overconfidence of managers and audit fees. So it is consistent with the findings by Gole and Takur (2008), Bahn and Kang (2005), Hang et al (2010), Malmandear et al (2011), Harybar and Yang (2011), Disender et al (2011), Harybar et al (2012), Eslami Bidgoli and Tehrani (2007), Darougheh Hazrati and Pahlavan (2012), and malekian et al (2013). And since it was confirmed that there is a meaningful relationship between overconfidence of managers and audit fees, the study is not consistent with the research by Kim et al (2011), Darougheh Hazrati and Pahlavan (2009), Alavi Tabari et al (2011), and Hasas Yeganeh et al (2015).

Recommendations based on the results of the study

- Considering the results of this study it is recommended that investors pay close attention to positive effect of auditor enterprise period on audit fees when receiving information for analysis to purchase the stocks of the companies.
- It is suggested to potential investors to pay considerable attention to the positive effect of auditor type on audit type when they decide to invest.
- Considering the results and theoretical principles of the research and the necessity of increased investigations in companies with overconfident managers, it is suggested that
the society of official accountants increase the quality of audit operations by attending in-service courses about overconfidence of managers.
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