Investigation the Effect of Investment Opportunities on Relationship between Audit Quality and Debt Maturity

Sareh Shabanipour ¹, Dr. Houshang Amiri ²

¹. Department of Accounting, Persian Gulf International Branch, Islamic Azad University, Khorramshahr, Iran
². Department of Accounting, Abadan Branch, Islamic Azad University, Abadan, Iran

Abstract

All Lenders Monitor Their Borrowers, But the Monitoring Advantage of Short-Term Debt Vis-à-Vis Long-term Debt, Is the Greater Potential for Withdrawal of Funds, And for Incurring of Higher Renegotiation Costs If Insiders Shirk, Because Short-term Debt Comes Up For Renewal More Frequently Than Does Long-term Debt. Although Prior Research Suggests a Natural Link Between Auditor Choice And Debt Maturity Given The Importance Of External Monitoring To Lenders, There Is No Empirical Evidence On This Question. So The Main Purpose Of This Study Is To Examine The Relationship Between Audit Quality And Debt Maturity In The Companies Listed In Tehran Stock Exchange. The Sample Of This Study Includes 99 Companies Listed In The Tehran Stock Exchange During The Period 1389-1393 And For Testing Hypotheses; Fixed Effects Model And Estimated Generalized Least Squares (EGLS) Method Are Used. The Study Findings Support The Positive And Significant Relationship Between Audit Quality And Debt Maturity In The Companies Listed In Tehran Stock Exchange. The Results Also Showed Significant Negative Impact Investment Opportunities On The Relationship Between Audit Quality And Debt Maturity Structure.

Keywords: Debt Maturity Structure, Audit Quality, Investment Opportunities.
Introduction

Some researchers (Frankis, 2004; Watkins et al., 2004) have investigated previous evidence extensively and showed that expert audit firms are better credit services providers and they have credibility and brand. The above inference is synonymous with the theory that the auditors have more precise monitoring on financial reporting process in order to avoid harm to their reputation, and respond to losses incurred to investors. Some recent evidence also suggests that expert audit firms have higher incentives to identify important deviations of accounting. We can also expect that in the event of the lender’s inability to determine the interest expense, he would abolish the long-term credit.

While explaining the inherent relationship between the auditor and debt maturity in previous studies suggests the importance of the external monitoring to the creditors, there is little empirical evidence for this. Therefore, this study investigates if there is significant relationship between quality of auditing and debt maturity in companies listed on the Stock Exchange of Tehran or not.

Review of literature

External studies

In a study entitled “rotation of audit firm and audit quality: evidence from US companies”, Brooks et al (2013) investigated the effect of audit firm rotation on audit quality. They evaluated the audit firm rotation period in USA companies from 12 to 16 years. They concluded that mandatory rotation is not necessary.

In a study, Gomariz and Ballesta (2013) examined the relationship between financial reporting quality and investment efficiency and impact of debt maturity structure on this relationship. They showed that the debt maturity structure of the debt maturity structure has a negative effect on the relationship between financial reporting quality and investment efficiency.

Cameran et al (2014) in a study “entitled as mandatory rotation of audit firm and audit quality” investigated the audit tenure and auditor change on quality of audit. They concluded that increasing the audit tenure period increases the audit quality.

Acheck and Ghelani (2015) in a study entitled as “audit quality, timely disclosure, and cost of debt in 32 companies listed on the Tunisian stock exchange concluded that there is a significant inverse relationship between audit quality and cost of debt. In addition, results showed that there is a significant positive relationship between end of financial year and date of providing auditing report (timely disclosure criteria) and the cost of debt.

Internal studies

Hajiha and Akhlagli (2011) in a study titled as the impact of certain factors on the company's debt maturity structure showed a positive relationship between profit sharing policy and debt maturity structure of organizations. This result is consistent with the tax hypothesis, but it is not in line with the signaling hypothesis.
Rahimian et al (2013) investigated the effect of moderated audit commenting on the structure of debt maturity at the 102 companies listed in Tehran stock exchange from 2006 to 2011. The results of the research showed no significant relationship between the moderated commenting and debt maturity structure.

Badavar Nahavandi Khaneghah (2013) conducted a study with the aim of studying the aspect of the economic consequences of the status of audit services in Iran. They examined the relationship between audit quality and efficiency of investment in companies listed in Tehran Stock Exchange. The study was applied in terms of goal, and it was correlational and ex post facto in terms of methodology.

Mashayekhi and Mohammadpur (2014) in a study examined the relationship between financial reporting quality and investment efficiency and the impact of debt maturity structure on this relationship in 110 companies listed on Tehran Stock Exchange in the period between 2007 and 2011. Results showed the quality of financial reporting and shorter debt maturity increase the efficiency of investment.

### Hypotheses

First hypothesis: there is a significant relationship between auditor tenure and debt maturity structure.

Second hypothesis: there is a significant relationship between auditor industry specification and debt maturity structure.

Third hypothesis: investment opportunities have significant impact on auditor tenure and debt maturity structure.

Fourth hypothesis: investment opportunities have significant impact on auditor industry specification and debt maturity structure.

### The method of data collection and calculation of research variables

This study is based on real stock market statistics and annual audited financial statements of companies listed in Tehran stock exchange. in this study, the required financial information was obtained from audited financial statements and notes related to studied companies have been obtained by Cds of Tehran Stock Exchange organizations. Firstly, with the use of the companies listed in Tehran stock exchange, from the beginning of the year 2010 until the end of the year 2014, research samples were selected. After collecting the required data, Excel and Eviews8 software is used in order to analyze the data. The research hypotheses were tested using multiple regression and simultaneous relationship between independent and control variables and the dependent variable has been investigated.

### Research model

According to theoretical principles and literature of study, Alghal et al (2011) model was used test hypothe.
In this model:
DEBTM: debt maturity; TEN: auditor tenure; SPEC: auditor industry specialization; INVOPP: investment opportunities; ROA: Return on assets; PPE: Properties, machinery and equipment; LEVE: financial lever; MB: market value to book value; GROTH: growth rate

Population of study

A sample of 99 companies among the 478 companies listed in Tehran Stock Exchange in the period between 2010 and 2014 was selected. Due to the unavailability of some information during this period of 5 years, a number of observations were removed from the original sample.

Research Model Analysis

To estimate the first model of study during the period 2010-2014 within the framework of the combined data, Chow test was used firstly. This test determines the use of pooled model or fixed effects model. If the F statistic is significant at the level of 5 percent, the null hypothesis (Pooled model) will be rejected and fixed effects model will be accepted. Chow test results are provided in Table 4-4:

Table 4-4: Chow test

<table>
<thead>
<tr>
<th>Description</th>
<th>F statistic</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow test to investigate</td>
<td>8/605</td>
<td>0/0000</td>
</tr>
<tr>
<td>the model</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table (4-4), the F statistic is significant at the 5% level. Therefore, panel data method is used to test the hypotheses of study. Next, to determine whether fixed effect model or random effects to be used to estimate model parameters, the Hausman test is used that results of this test are presented in Table 4-5.
TABLE (4-5): Hausman test

<table>
<thead>
<tr>
<th>Description</th>
<th>Test statistic</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hausman test to investigate the model</td>
<td>19/854</td>
<td>0/03</td>
</tr>
</tbody>
</table>

According to Table (4-5), computational Hausman test statistic is significant at the 5% level. Therefore, the lack of correlation between individual effects and explanatory variables was rejected. Thus, fixed effects model will be used to estimate the model.

Results of research model estimate

Table (4-6) shows the results of the estimating the first research model parameters. For this model, Durbin-Watson statistic is equal to 2.136 that at the error level of 5 percent, self-correlation of disrupting statement is rejected. The possibility of value related to F statistic to specify the model is 0.000 that is less than 5%. Hence, the null hypothesis is rejected. As a result, at the 95% confidence level, the significance of model is accepted. Value of coefficient of determination is 0.929* indicating high explanatory power of the independent and control variables.

TABLE (6-4): RESULTS OF research MODEL ESTIMATE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Test statistic</th>
<th>Error probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>The auditor industry specialization</td>
<td>•••36</td>
<td>6.687</td>
<td>•••</td>
</tr>
<tr>
<td>Auditor tenure</td>
<td>•••7</td>
<td>5.821</td>
<td>•••</td>
</tr>
<tr>
<td>TENUR*INVOPP</td>
<td>-•••1</td>
<td>-3.61</td>
<td>•••2</td>
</tr>
<tr>
<td>SPEC*INVOPP</td>
<td>-•••1</td>
<td>-3.83</td>
<td>•••</td>
</tr>
<tr>
<td>Growth rate</td>
<td>•••9</td>
<td>4.406</td>
<td>•••</td>
</tr>
<tr>
<td>investment opportunities</td>
<td>•••2</td>
<td>.427</td>
<td>.67</td>
</tr>
<tr>
<td>Financial Leverage</td>
<td>-•••23</td>
<td>-3.211</td>
<td>•••1</td>
</tr>
<tr>
<td>Ratio of property, plant and equipment</td>
<td>•••7</td>
<td>1.991</td>
<td>•••47</td>
</tr>
</tbody>
</table>
Hypotheses testing
First hypothesis testing
The first hypothesis of study has been developed as follows:

First hypothesis: there is a significant relationship between auditor tenure and debt maturity structure.

The error level of the null hypothesis stating lack of impact of auditor tenure on debt maturity is 0.000 that is smaller than 0.05. Therefore, the null hypothesis is rejected with confidence level of 95%. Determination coefficient of auditor tenure as independent variable is 0.007. As coefficient is positive, it can be concluded that as auditor tenure is higher, debt maturity will be higher.

Second hypothesis
The second hypothesis has been developed as follows:

Second hypothesis: there is a significant relationship between auditor industry specification and debt maturity structure.

The error level of the null hypothesis stating lack of impact of auditor industry specification on debt maturity is 0.000 and smaller than 0.05. Therefore, the null hypothesis is rejected with confidence level of 95%. Determination coefficient of auditor industry specification as independent variable is 0.036. As coefficient is positive, it can be concluded that as auditor industry specification is higher, debt maturity will be higher.

Third hypothesis
The third hypothesis has been developed as follows:

Third hypothesis: investment opportunities have significant impact on auditor tenure and debt maturity structure.

The error level of the null hypothesis stating lack of impact of investment opportunities on the relationship between auditor tenure and debt maturity is 0.002 and smaller than 0.05. Therefore,
the null hypothesis is rejected with confidence level of 95%. Determination coefficient of independent variable is -0.001. As coefficient is negative, it can be concluded that investment opportunities have negative impact on auditor tenure and debt maturity structure

**Fourth hypothesis**

The fourth hypothesis has been developed as follows

Investment opportunities have significant impact on auditor industry specification and debt maturity structure

The error level of the null hypothesis stating lack of impact of investment opportunities on the relationship between auditor industry specification and debt maturity is 0.000 that is smaller than 0.05. Therefore, the null hypothesis is rejected with confidence level of 95%. Determination coefficient of independent variable is -0.01. As coefficient is negative, it can be concluded that investment opportunities have significant negative impact on auditor industry specification and debt maturity structure

**Conclusion**

The first and second hypothesis of this study show the relationship between auditor tenure and auditor industry specialization (audit quality criteria) and the debt maturity structure. The results of this hypothesis indicate that the auditor tenure and auditor industry specialization increase debt maturity. Evidence showed that by increasing the auditor industry specialization and auditor tenure, audit quality increases. The above inference is synonymous with the theory that the auditors have more precise monitoring on financial reporting process in order to avoid harm to their reputation, and respond to losses incurred to investors. Some recent evidence also suggests that expert audit firms have higher incentives to identify important deviations of accounting. We can also expect that in the event of the lender’s inability to determine the cost of profit, he would abolish the long-term credit. Some recent evidence also shows that high-quality institutions have more incentives to identify key accounting distortions. However, Frankis (2005) and Baras et al (2008) showed that the company that has high quality of accounting information would have less debt cost. We can also expect that in the case of lender inability to determine interest expense, he would abolish the long-term credit.

Short-term debt in the company's capital structure increases the power of contract extension for creditors.

The third and fourth hypotheses of this study show the effect of investment opportunities on the relationship between auditor tenure and auditor industry specialization and the debt maturity structure. The results of this hypothesis indicate investment opportunities have significant negative effect on the relationship between auditor tenure and auditor industry specialization and the debt maturity structure. Studies conducted on Australian companies showed that companies with high growth have lower debt. Alkuk et al (2010) argue that in the conflict between shareholders and creditors in Australia is reduced, because companies are strongly depend on credit funds of banks, since monitoring on their operations is reduced by this way. The results of this research are in line with results of studies conducted by Anthony et al. (2003) and Terra (2011) and Akhlaghi and Hajiha (2012).
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