

Hiring a High-Quality Auditor and Debt Maturity Structure: Evidence from Iranian Firms

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Abstract: *The current research is an attempt to offer new insights into the association between hiring high-quality audit firms and corporate debt maturity structure. To this end, 94 firms listed on the Tehran Stock Exchange were scrutinized for the period 2011-2015. To test the research hypotheses, multiple regression and data panel were employed. The findings confirm that a high-quality audit firm can enhance the debt maturity. The results of testing the research hypothesis point to a significant correlation between the hiring of a high-quality audit firm and corporate debt maturity structure, in that short-term debt and quality audit are two alternative mechanisms used to mitigate information asymmetry and monitor managerial behavior. Therefore, in firms audited by high-quality audit firms, due to the effective monitoring imposed by auditors on debt convent, creditors experience information asymmetry and less agency costs, thereby desiring to extend the debt maturity. The findings of current study not only fill existing gaps in the field, but also contribute to decision-making practices in stock exchange.*

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Literature Review

New corporate theories are premised on the assumption that the separation of ownership and management causes serious conflicts of interest, which, in turn, result in agency problem, which can be traced to the information asymmetry between managers and owners (Watts and Zimmerman, 1986). Asymmetric information is characterized as the information provided to two or more individuals. In the capital market, information asymmetry typically takes place when some insiders (often managers), in comparison to some outsiders (investors), have access to privileged information about the current condition and future outlook of the business. The presence of information asymmetry in the marketplace may bring about adverse individual and collective consequences like minimum participation of the investors, high transaction costs and liquid markets (Bathacharia et al, 2008). The overwhelming amount of theoretical literature seems to suggest that short debt can trigger a reduction in information asymmetry and agency costs between managers and creditors. Flannery (1986) stated that firms with profitable projects prefer debts with short-term maturity to reduce information asymmetry.

In the presence of information asymmetry, creditors are inclined to believe that adopting short debt will ensure effective monitoring of the firm, rather than long debt. Furthermore, short-term maturity of debts facilitates better controlling of managerial performance by persuading managers to negotiate with creditors. Under such circumstances, creditors frequently meet managers, track the firm performance during the early periods of debt covenant, and thus deciding whether to extend their covenant or change its conditions. Therefore, short debt is expected to reduce information asymmetry and agency costs between managers and creditors (Ghoul et al, 2014). On the other hand, a need to resolve the agency problem together with the rise of information symmetry sheds light on the importance of the monitoring role of an external auditor in improving the information about financial conditions, performance and flexibility of a firm, and reducing information asymmetry. That is because external auditors promote transparency and accuracy in the financial disclosures made by a firm. Information risk and creditors' uncertainty will diminish as information quality increases, resulting in a decrease in the information asymmetry of the market (Francis et al, 2004). Hence, on these grounds, the research has provided ample support for the assertion that short-term debt maturity and quality audit play pivotal roles in controlling managerial opportunistic behavior and reducing information asymmetry. As a result of such strict controls, creditors confront with less information asymmetry and agency costs in the firms audited by high-quality audit firms and thus desire to extend their debt maturity. Nevertheless, most of the Iranian accounting research has ignored such an important issue. Therefore, the present research sets out to figure out whether hiring a high-quality

audit firm is significantly related to corporate debt maturity structure or not? If so, how?

Theoretical Framework and Research Hypotheses

The term structure of corporate debt, which has already attracted considerable attention among economists and financial experts, points up the disciplinary role of debt in restraining the opportunistic behavior of managers. Recent global financial crises have underlined the importance of term structure of the corporate resource in financial stability (Ball et al, 2009).

Current research appears to validate the view that the maturity of corporate resource seems to provoke future global crises. Most companies use debt in their capital structure. Debt structure is considered as one of the most important indicators of firm success, which stimulates corporate sustainable growth. Therefore, decisions made on debt structure is of paramount significance to the business survival of company (Ghoul et al, 2014). Greater debts prevent managers from making value-reducing decisions for company. Additionally, Jensen (1986) propounds the view that constant payment of debts will attenuate corporate free cash flow, thereby preventing managers from wasting firm resources to their own interests. On the other hand, creditors prefer short debt to long debt due to more opportunities they have for monitoring their company, and they recommend such debts to their firms in the presence of information asymmetry and agency costs. This is because short debt impedes managers' efforts to undertake ambitious and risky projects (Ghoul et al, 2014). The importance of short-term debt and high-quality audit in lowering the information asymmetry and monitoring the purposes has assisted creditors to experience less information asymmetry and agency costs in firms audited by 4 big audit firms due to the effective control over debt covenant by auditors, and thus desiring to extend the debt maturity. Given this argument, Chung et al (2009) put forward the view that firms audited by 4 big audit firms employ debt with longer maturity in their financial decisions. Similarly, Ghoul et al (2014) also presented evidence confirming a significant relationship between high-quality auditor choice and debt maturity structure. On this logical arguments, the research hypothesis is developed as follows:

Research hypothesis: Hiring a high-quality audit firm is significantly associated with debt maturity structure.

Review of Literature

Huag et al (2016) in a study entitled “CEO overconfidence and corporate debt maturity” sampled 4309 firm-year observations during the years 2006-2012 and then examined the impact of CEO overconfidence on debt maturity structure. Their findings lent support to the claim that overconfident CEOs make use of short-term debts to finance their firm. Deramadi (2016) investigated the relationship between family ownership and ownership concentration with audit choice for a sample of 787 firm-year in the firms listed on the Indonesian Stock Exchange. The results of their study demonstrated that increasing ownership concentration may increase the likelihood of choosing a big audit firm. Having studied the correlation between hiring a high-quality audit firm and debt maturity structure for a sample of 42679 firm-year in 42 firms throughout the world, Ghoul et al (2014) concluded that firms audited by big (high-quality) audit firms enjoy long-term debt. Kirch et al (2012) addressed the issue of the factors affecting South-American corporate debt maturity structure and reported that variables like firm size, business risk and fixed tangible asset ratio exert significant influence on corporate debt maturity structure. Ge et al (2012) examined the effect of corporate governance on corporate debt maturity structure on a sample of firms from 22 countries during the years 2003-2007 and discovered that firms with stronger corporate governance experience long-term debt. In an article named “The effect of auditor choice on financing decisions”, Chung et al (2009) employed firm size as a measure of audit quality and examined the effect of hiring a high-quality audit firm on Chinese corporate debt maturity structure. They documented that firms audited by high-quality audit firms use long-term debt in their financing decisions.

Goodarzi and Babazadeshirvan (2015) provided confirmatory evidence for the positive and significant association between the quality of financial statements and debt maturity, and investment efficacy. Rahimian and Tiregari (2013) studied the effect of modified audit opinion on the debt maturity structure of 102 firms listed on the Tehran Stock Exchange during the years 2006-2011. Their findings nullified the effect of modified audit opinion on corporate debt maturity structure.

Methodology

As an applied, quasi-experimental and ex post facto research, this study is conducted in the domain of positive accounting using multivariate regression method and econometric models. The statistical population is composed of all firms listed on the Tehran Stock Exchange during the years 2011-2015, among which 94 firms meeting the following conditions were selected:

- 1- They have been listed on the Tehran Stock Exchange from 2011 to 2015.

- 2- To increase comparability, their fiscal years end March 31.
- 3- They have been engaged in the same business during the proposed fiscal year.
- 4- They are not classified as investment companies or financial intermediaries.

Data Analysis

In this research, there is one dependent variable, one independent variable, and four control variables that are used to test the research hypotheses.

Dependent Variable

The corporate debt maturity structure serves as the dependent variable in the research model, which, following Ghoul et al (2014) and Chang et al (2009), is calculated using long-term debt-to-total debt ratio.

Independent Variable

The independent variable used to test the research hypothesis is hiring a high-quality audit firm. To do so, audit firms were divided into two groups, namely big and small firms. Audit organization and Private audit firms affiliated with Society of CPAs were selected as big and small audit firms, respectively. Accordingly, if the auditor is the audit organization, it is a big and high-quality audit firm and thus valued 1, otherwise 0. Theoretically speaking, previous literature has confirmed that audit firm size is directly associated with audit quality since big audit firms have experienced auditors and better monitoring system, and refused to lose their reputation due to low-quality audit. Hence, the bigger the audit firm is, the higher the quality of the information of the audited firm is. Many other attempts like those made by Banimahd (2012), Namazi et al (2011) and Saghafi and Motamedifazel (2011) have employed this method to conduct their research.

Control Variables

The present study considers the following control variables as the most important variables affecting debt maturity structure:

- Firm size: Following Johnson (2003), Bilt et al (2007) and Ghoul et al (2014), firm size is calculated through natural logarithm of firm's net sales.
- Financial leverage: Similar to Ghoul et al (2014) and Chang et al (2009), financial leverage is computed by dividing total debt by total assets.
- Profitability: following Ge et al (2012) and Chang et al (2009), return on owner's equity is used to calculate the corporate profitability.

- Firm growth: Similar to Ghoul et al 92014), firm growth is computed with respect to annual sales change.

Table 1: Summarizes the Measurement of Variables Used in This Paper.

Variables	Measurement
Dependent Variable	
MATURITY	long-term debt-to-total debt ratio.
Independent variable	
AUD	if the auditor is the audit organization, it is a big and high-quality audit firm and thus valued 1, otherwise 0
Control Variables	
SIZE	Firm size measured as natural logarithm of firm's net sales.
LEV	Leverage measured as the total debts divided by total assets.
ROE	Profitability measured through dividing net income by market value of the corporate equity.
GWTH	Firm growth measured as the annual sales change.

To test the research hypothesis, the model proposed by Ghoul et al (2014) was adopted and then modified based on the Iranian context. The model is as follows:

$$\text{MATURITY}_{it} = \beta_0 + \beta_1 \text{AUD}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Lev}_{it} + \beta_4 \text{ROE}_{it} + \beta_5 \text{GWTH}_{it} + \varepsilon_{it} \quad (1)$$

Where:

MATURITY_{it}: is debt maturity structure of firm i in year t.

AUD_{it}: hiring a high-quality auditor for firm i in year t.

Size_{it}: the size of firm I in year t.

Lev_{it}: financial leverage of firm i in year t.

ROE_{it}: net income-to-market value of equity for firm i in year t.

GWTH_{it}: annual salegrowth rate for firm i in year t.

Since the panel data are superior to time-series, cross-sectional models with respect to the number of observations, low probability of collinearity among variables, bias reduction in estimation and heterogeneity of variance (Gujarati, 2009), the multivariate regression model based on panel data was employed to test the research hypothesis.

Results/Findings

Descriptive Statistics

Table 2 presents the descriptive statistics of the research variables for a sample of 470 firm-year during the years 2011-2015.

Table 2: Descriptive Statistics

Variables	N	Mean	Median	Minimum	Maximum	Std. Deviation
MATURITY	470	0.185	0.161	0.071	0.644	0.139
AUD	470	0.383	0.000	0.000	1.000	0.466
SIZE	470	12.023	11.934	9.912	14.563	0.746
LEV	470	0.618	0.605	0.091	1.714	0.238
ROE	470	0.131	0.128	-1.820	3.754	0.308
GWTH	470	0.211	0.189	-0.436	2.041	0.681

As can be seen, the audit organization has audited about 38% of the sampled firms on average. The mean and median for the variable of firm size were obtained 12.023 and 11.934, respectively, for which the minimum and maximum values are 9.912 and 14.563, respectively. Likewise, about 62% of the assets of the sampled firms used debt to finance their assets. The net income calculated for the sampled firms equals to 13% of the market value of the firm's equity.

The Results of Testing the Research Hypothesis

Regarding the panel data analysis, F-limer needs to be tested to distinguish the usage of pool or panel data method, and Hausman test was also used to determine the fixed effect or random method usage. Additionally, Jarque-Bera test is performed to examine whether residuals show normal distribution or not, and to identify heteroscedasticity and serial autocorrelation, the Likelihood Ratio (LR) test and Wooldridge test were employed, respectively. The results of the tests are represented in table 3.

Table 3: The Results of Tests Used for the Research Model

Test	Statistics	Result
F-limer test	9.018**	The efficacy of panel data
Hausman Test	17.844*	The efficacy of fixed effects method
Jarque-Bera test	2.215	Normality of residuals
LR test	375.06**	Heteroscedasticity
Wooldridge test	2.139	Lack of autocorrelation
Notes: ** and * denote significance at the 0.01 and 0.05 levels, respectively .		

As can be seen, F-limer test and its level of significance suggests the use of panel data method. The results of Hausman test and its level of significance indicate that the model has to be estimated using fixed effects method. Since the significance level of Jarque-Bera test is greater than 0.05, the normal distribution of residuals is confirmed. The results of LR test reveal that the research model suffers from heteroscedasticity, which can be removed by estimating the model using Generalized Least Square method. The level of significance for Wooldridge test points to the lack of serial autocorrelation in the model. In addition, to ensure the lack of multicollinearity among explanatory variables, the multicollinearity was assessed using Variance Inflation Factor (VIF). As indicated in Table 4, the values of this statistics for the explanatory variables are less than 10, thereby confirming the lack of multicollinearity. The results of testing the research hypothesis are presented in Table 4.

Table 4: Results of Testing Research Hypotheses

$MATURITY_{it} = \beta_0 + \beta_1 AUD_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \beta_4 ROE_{it} + \beta_5 GWTH_{it} + \varepsilon_{it}$					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	VIF
C	1.633	0.454	3.591	0.000	-
AUD	0.085	0.027	3.055	0.002	1.181
SIZE	0.084	0.060	1.391	0.165	1.214
LEV	-0.099	0.038	-2.588	0.010	1.163
ROE	0.067	0.025	2.655	0.008	1.233
GWTH	0.068	0.051	1.309	0.191	1.218
F-statistic (prob)	13.850 (0.000)	Durbin-Watson stat		1.930	
R ²	0.640	Adjusted R ²		0.619	

Considering F-statistics and level of significance, one can come to the conclusion that the fitted regression model is significant at 95% level. Given the value of adjusted R², the researchers reached the conclusion that independent and control variables explain about 62% of changes incorporate debt maturity structure. As indicated in the above table, the estimated coefficient and t-statistics of the variable of AUD are positive and significant at 0.05 levels, thereby confirming the existence a positive and significant relationship between hiring a high-quality audit firm and debt maturity structure of the sampled firms. Therefore, the research hypothesis is accepted at 0.05 level. Previous research carried out by El-Ghoul et al (2014), Pittman & Fortin (2004), Stohs & Mauer (1996) and Sweeney (1994) concurred with the findings of this research.

Conclusion

This study is primarily concerned with investigating the relationship between hiring a high-quality auditor and corporate debt maturity structure. To do so, a sample of 94 firms listed in Tehran Stock Exchange during the years 2011-2015 was selected. The results of testing the research hypothesis indicated that hiring a high-quality audit firm is significantly correlated with corporate debt maturity structure, i.e. short-term debt and quality audit are two alternative mechanisms to reduce information asymmetry and monitor managerial behavior. Therefore, in firms audited by quality audit firms, owing to the effective monitoring imposed by auditors on debt convent, creditors experience information asymmetry and less agency costs, thereby desiring to extend the debt maturity. Indeed, audit quality by larger-scale audit firms show that corporate accounts and liabilities are more orderly, and this can increase the transparency of corporate financial statements and reduce the asymmetry of information between Shareholders and corporations. The findings of the current research corroborate those reported by Chang et al (2009) and Ghoul et al (2014). According to the results, investors and market activists are recommended to consider the audit firm as an important factor influencing the corporate debt maturity structure. Moreover, general assembly of shareholders and CEOs are also suggested to choose big audit firms to promote their audit quality and achieve debt with long-term maturity.

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