

Auditor Choice and Corporate Bond Ratings: International Evidence

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Abstract

Using a sample of 823 firms from 35 countries, we examine the impact of auditor's choice on bonds ratings. An Ordered Probit Regression Model was used to identify how the auditor choice affects the probability of bond ratings. We find strong evidence that the auditor's choice significantly affects the bond ratings. The model also shows that the quality of legal and extra-legal institutions plays an important role in improving debt ratings. More specifically, we find that the existence and the enforcement of creditor laws are associated with higher bond rating.

Keywords: credit ratings, auditor choice, investor protection

1. Introduction

The economic outcomes of audit quality have recently drawn the interest of numerous scholars who attempted to examine it through various angles. One strand of the literature examines the effect of auditor choice on equity pricing. In this regard, El-Ghoul, Guedhami, and Pittman (2010) explore the impact of auditor choice on equity pricing. Using a cross-country sample, they find evidence suggesting that firms with a Big Four auditor have cheaper equity financing. In the same vein, Chen, Chen, Lobo and Wang (2011) examine the impact of auditor choice on cost of equity in China. They report evidence suggesting that hiring a high quality auditor is associated with lower cost of equity in China. Another strand of literature examines the impact of auditor choice on capital structure. For example, Chang, Dasgupta and Hillary (2009) examine the impact of auditor choice in the US context. They find that firms with higher quality auditor are more likely to issue equity as opposed to debt than firms with lower quality auditor. Using a cross-country sample, El-Ghoul, Guedhami, Pittman and Rizeanu (2012) show that firms with a Big four auditor are more likely to use long term debt financing. Another strand of literature examines the impact of auditor choice on stock price synchronicity. For example, Gul, Kim and Qiu (2010) examine the impact of auditor choice on stock price synchronicity in China. They find that higher quality auditor is associated with more informative i.e., less informative stock prices. However, studies on the impact of auditor choice on cost of debt are scarce. Pittman and Fortin (2004), which examines the impact of Big Six auditor on the debt pricing of newly public firms. Using a sample of 371 IPOs, they find that Big Six auditor is associated with lower borrowing costs for young firms. This finding is consistent with the point of view that high quality auditors reduce debt-monitoring costs by improving the credibility of financial statements. Karjalainen (2011) examine the impact of auditor choice on debt financing for Finnish private small and medium sized enterprises. He finds that the choice of international brand name audit firm is associated with a lower cost of debt. In this paper, we extend this strand of literature by providing international evidence on the impact of auditor choice on the cost of debt. This allows us to better understand the functioning of the different debt markets around the world. More specifically, it allows us to examine whether higher quality auditors is associated with higher debt ratings. High quality auditors who may help mitigating information asymmetry problems should be associated with lower default risk and thus with higher debt ratings.

Using a sample of 823 firms from 35 countries, we find strong, robust evidence that bond rating is positively related to Big Five auditors, while controlling for the institutional environment as well as for firm- and country-level determinants of bond ratings.

Our paper has two main contributions to the literature. First, we contribute to the literature on cost of debt (e.g.,

Anderson, Mansi, & Reeb, 2003; Bhojraj & Sengupta, 2003; Ashbaugh, Collins, & LaFond, 2006; Ellul, Guntay, & Lel, 2005; Borisova & Megginson, 2011; Boubakri & Ghouma, 2008; 2010), by emphasizing the role of auditor choice in determining debt cost. Second, we contribute to the literature on the economic outcomes of auditor choice (e.g., Pittman & Fortin, 2004; Dasgupta & Hillary, 2009; Karjalainen, 2011) by providing a cross-country evidence on the role of auditor choice in determining bond ratings.

The rest of this paper is organized as follows. Section 2 develops the testable hypothesis. Section 3 describes our sample and our variables. Section 4 discusses the empirical evidence, while section 5 summarizes the main findings and concludes.

2. Hypothesis Development

Larger audit firms are expected to be associated with higher audit quality for two main reasons. First, larger audit firms are associated with higher audit quality because they are more able to monitor managers and limit their discretion in financial reporting (Watts & Zimmerman, 1981). Second, larger audit firms are expected to have more losses in case of audit failure, hence they are more likely for reputational concerns to produce higher level of audit quality (DeAngelo, 1981). Higher audit quality is associated with more credible financial statements, and therefore higher quality accounting information. Several empirical studies provide empirical evidence that is consistent with this point of view. For example, Teoh and Wong (1993) report that the earnings response coefficients of firms with Big Eight auditors are higher than those of firms with non-Big Eight auditors. Similarly, Becker, Defond, Jiambalvo and Subramanyam (1998) find that the discretionary accruals reported by firms with Big Six auditors are lower than those reported by firms with non-Big Six auditors. In the same vein, Kim, Chung, and Firth (2003) show that Big Six auditors limit income increasing earnings management. More recently, Chen et al. (2011) show for Chinese firms that hiring a Big four auditor is associated with less earnings management.

High quality information is expected to be associated with a lower cost of debt through two channels (Qi, Subramanyam, & Zhang, 2010). First, high quality accounting information reduces information asymmetry (Dopuch & Simunic, 1982), which leads to lower bid-ask spreads and more depth (Kyle, 1985), hence higher liquidity. Higher liquidity leads to a lower cost of debt (Chen, Lesmond, & Wei, 2007). Second, high quality accounting information is associated with lower uncertainty about asset values (Easley & O'Hara, 2010), which also lead to more liquidity, hence a lower cost of debt. In light of this discussion suggesting that larger audit firms are associated with high quality information, which reduces information asymmetry and/or information uncertainty, hence better liquidity, we can derive our hypothesis:

Having an auditor among the Big Five will increase the firm's credit ratings.

3. Data and Variables

3.1 Sample

The sample includes 823 bond issues from 35 countries between 1996 and 2006. Table 2 provides a description of our sample. We use S&P credit ratings as a measure of bond ratings. The ratings range from AAA to D and include 22 possible ratings which reflect the creditworthiness of firms. Following Ashbaugh et al. (2006) and Boubakeri and Ghouma (2010), we transform the S&P ratings to ordering numbers (*RATING*) ranging from 1 as being the lowest rating to 7 as being the highest rating as presented in Appendix A. The bonds data are from The Fixed Income Database.

Table 1. Sample description

Panel A: Sample Distribution per Country			Panel B: Sample Distribution per Years		
Country	Number	Percent	Years	Number	Percent
Argentina	19	2.31	1996	2	0.24
Australia	51	6.2	1997	35	4.25
Austria	8	0.97	1998	57	6.93
Brazil	34	4.13	1999	74	8.99
Canada	169	20.53	2000	109	13.24
Chile	7	0.85	2001	166	20.17
Colombia	1	0.12	2002	137	16.65

Denmark	7	0.85	2003	78	9.48
Finland	7	0.85	2004	77	9.36
France	49	5.95	2005	68	8.26
Germany	44	5.35	2006	20	2.43
Hong Kong	14	1.7	Total	823	100
Indonesia	3	0.36	Panel C: Sample Distribution per Industries		
Israel	4	0.49	Industry	Number	Percent
Italy	27	3.28	Manufacturing	336	40.83
Japan	14	1.7	Transport	24	2.92
Korea (South)	21	2.55	Trades	66	8.02
Malaysia	2	0.24	Financial Services	344	41.8
Mexico	23	2.79	Utility	53	6.44
Netherlands	25	3.04	Total	823	100
New Zealand	1	0.12			
Norway	10	1.22			
Philippines	6	0.73			
Poland	1	0.12			
Portugal	6	0.73			
Singapore	10	1.22			
South Africa	1	0.12			
Spain	8	0.97			
Sweden	26	3.16			
Switzerland	20	2.43			
Taiwan	16	1.94			
Thailand	7	0.85			
Turkey	1	0.12			
United Kingdom	175	21.26			
United States	6	0.73			
Total	823	100			

The panels below give a description of the sample that was used to derive the outputs. Panel A specifies the countries that firms in the sample operate in. Panel B gives the distribution of the observation on a yearly basis (starting from 1996 to 2006). Panel C gives a description of the observations based on the industry.

3.2 Auditor Choice

We use Big Five auditors (*AUDITOR*), a dummy variable which takes the value of 1 if the firm has an auditor from the big five and 0 otherwise, as a proxy of auditor quality. The big five auditors include PricewaterHouseCoopers, Deloitte Touch Tohmatsu, Ernst & Young, KPMG, and Arthur Andersen.

3.3 Investor Protection

We use the following indicators to assess the quality of investor protection:

Creditor Rights (*CRED_RIGHTS*): Inspired from Djankov et al. (2005), this index assesses the extent of creditor rights in the country. It ranges from zero (poor creditor protection) to four (strong creditor protection). We expect this index to be positively associated with bond ratings.

Public registry (*PUBREGIS*): Public credit registries are databases managed by governments (e.g., through Central Banks or any other public agency). Their main function is to provide lenders with information (that they have already collected) on borrowers. The existence of a public credit registry should positively affect debt

ratings. This variable is from Djankov et al. (2005).

Efficiency of the bankruptcy process (*EFFDBTENFORC*): As in Djankov et al. (2007), this variable is measured by the present value of the terminal value of the firm after bankruptcy costs. It reflects the value preserved in debt enforcement proceedings. Higher values indicate higher efficiency of debt enforcement. Thus, we expect this variable to be positively related to debt ratings.

Newspaper circulation (*NEWS*): Taken from Dyck and Zingales (2004), this variable is measured as the ratio of daily newspapers divided by population. It reflects the public pressure on dominant shareholders. Since it is expected to reduce expropriation, it should also be positively related to bond ratings.

3.4 Control Variables

We use the following control variables:

Firm Profitability (*ROA*): We use the firm's return on assets, defined as net income over total assets, as a proxy of profitability.

Firm Size (*FSIZE*): As a proxy of the firm's size we use the logarithm of the firm's total assets in US\$.

Firm Risk (*RISK*): We control for the firm's risk using the standard deviation of the firm's net income.

Bonds Maturity (*LMAT*): We use the logarithm of the weighted-average years to maturity on the firm's outstanding bonds. The issue size is used as weightings.

Convertible Provisions (*CONVRT*): The percentage of the firm's convertible bonds. It is a weighted-average of a dummy variable that equals one if the bond is convertible, and zero otherwise.

Issue Size (*ISIZE*): The weighted-average size (offering amount) of the firm's outstanding bonds in \$1,000 million.

Leverage (*LEVERAGE*): We use as a proxy of leverage the ratio of long term debt over total assets.

A detailed description of our variables is available in Appendix A.

4. Empirical Results

4.1 Descriptive Statistics

Panel A of Table 3 provides descriptive statistics for the variables that were used in our empirical analysis. Interestingly, we observe that the average of *RATING* is 4.453, which is equivalent to an S&P rating of BBB+. We also observe that the average of *AUDITOR* is 0.692; this means that 69.2% of our sample firms have a big five auditor. Panel B1 of table 3 illustrates the correlation between our dependent variable (Bond Rating) and the auditor's choice, legal variables, and control variables. Consistent with our predictions, we find that *AUDITOR* is positively and statistically related to bond ratings at the 1 percent level. This initial evidence is consistent with the conjecture that Big Five Auditors help to mitigate agency problems, which leads investors to require a lower bond cost, hence higher bond rating. Furthermore, the results of Panel B2 show that *RATING* is positively and significantly correlated with creditors' rights, public registry, and news circulation. This finding provides a support for Boubakri and Ghouma (2010) and suggests that stronger investor protection is associated with a higher bond ratings, hence a lower debt cost.

4.2 Univariate Analysis

To test our hypothesis, we first run the mean comparison tests. To do so, we split our sample into two sub-groups: the group of firms with big five auditors and the group of firms with non big five auditors. We observe that the mean of *RATING* for the sub-sample of firms with a big five auditor (4.563) is greater than the mean of *RATING* for the sub-sample of firms with non big five auditors (4.205). The T-Test and the Wilcoxon-Mann-Whitney test, reported in Panel C of Table 2, confirm that difference between the two means is significantly different from zero at the 1% level.

Table 2. Summary statistics

Panel A. Descriptive statistics

Variable	Observations	Mean	Standard Deviation
<i>RATING</i>	823	4.453	1.493
<i>AUDITOR</i>	823	0.692	0.461
<i>ROA</i>	823	3.122	33.911
<i>FSIZE</i> (in million of U.S Dollars)	823	77.900	1.950
<i>RISK</i> (in million of U.S Dollars)	823	0.334	788.007
<i>LMAT</i>	823	6.970	0.690
<i>CNVRT</i>	823	0.067	0.248
<i>ISIZE</i> (in million of U.S Dollars)	823	0.822	5558.158
<i>LEVERAGE</i>	823	511.101	2212.593

Panel B1. Correlation between the auditors' choice and bonds ratings

Variable	<i>RATING</i>	<i>AUDITOR</i>	<i>ROA</i>	<i>FSIZE</i>	<i>RISK</i>	<i>LMAT</i>	<i>CNVRT</i>	<i>ISIZE</i>
<i>AUDITOR</i>	0.1105 (0.0015)***							
<i>ROA</i>	0.1186 (0.0007)***	0.0798 (0.0220)**						
<i>FSIZE</i>	0.2374 (0.0000)***	0.0645 (0.0642)*	-0.1760 (0.6147)					
<i>RISK</i>	0.0209 (0.5500)	-0.0432 (0.2157)	-0.0289 (0.4084)	0.4270 (0.0000)***				
<i>LMAT</i>	-0.1546 (0.0000)***	0.0381 (0.2754)	-0.0041 (0.9062)	-0.1258 (0.0003)***	-0.0375 (0.2820)			
<i>CNVRT</i>	0.1814 (0.0000)***	0.0168 (0.6300)	0.0409 (0.2413)	-0.0940 (0.0070)***	0.0298 (0.3930)	0.0684 (0.0497)**		
<i>ISIZE</i>	0.0480 (0.1690)	-0.0212 (0.5431)	0.0057 (0.8700)	0.0268 (0.4432)	0.1655 (0.0000)***	-0.0751 (0.0312)**	-0.0174 (0.6175)	
<i>LEVERAGE</i>	0.0865 (0.0131)**	-0.0643 (0.0651)*	-0.0083 (0.8116)	0.1045 (0.0027)***	0.0001 (0.9978)	-0.1144 (0.0010)***	-0.0539 (0.1223)	0.0045 (0.8983)

Panel B2. Correlation between the bonds ratings and the institutional variables

Variable	<i>RATING</i>	<i>CRED_RIGHTS</i>	<i>PUBREGIS</i>	<i>EFFDTENFORC</i>
<i>CRED_RIGHTS</i>	0.1619 (0.0000)***			
<i>PUBREGIS</i>	0.1244 (0.0003)***	-0.2331 (0.0000)***		
<i>EFFDTENFORC</i>	0.0408 (0.2426)	0.3565 (0.0000)***	-0.6719 (0.0000)***	
<i>NEWS</i>	0.1623 (0.0000)***	0.5326 (0.0000)***	-0.1382 (0.0000)***	0.4270 (0.0000)***

Panel C. Mean comparison tests using the auditor choice as factor

Group	Observations	Mean	T-Test (P < t)	Wilcoxon-Mann-Whitney (P > t)
<i>AUDITOR</i> = 0	253	4.205	(0.0007)***	(0.0037)***
<i>AUDITOR</i> = 1	570	4.563		

The table is split into three panels. Panel (A) illustrates the descriptive statistics, Panel (B) illustrates the correlation analyses, and panel (C) presents a mean test comparison using the T-test and the Wilcoxon-Mann-Whitney tests. The variables that are used are the following: Bond Ratings which is an ordinal number that ranges from 1 to 7 as the later being the highest rating and the former the lowest rating. Auditor's Choice: a dummy variable that assigns 1 to firms that have their auditor from the big five group and 0 otherwise. Firm Profitability: the firm profitability measured in term of its return on assets. Firm Size: the total assets were used to get the size of the firms that are included in the sample. Firm Risk: it is measured by the standard deviation of net income. Bonds Maturity: the average maturity for the bonds portfolio issued by a firm; weights were assigned on the basis of the size of the issuance to the total issuances. Convertible Provisions: a dummy variable that gives 1 to firms with the convertible option and 0 otherwise. Issue Size: it represents the size of the issuance in term of dollars. Leverage: the firm leverage is measured by the debt to equity ratio. The stars that appear in the tables mean the following: *** for a significance that is lower than 1%, ** and * are for a significance that is lower than 5% and 10% respectively.

4.3 Multivariate Analysis

We estimate the following ordered probit model:

$$\Pr(RATING=r) = F[b_1AUDITOR_t + b_2CRED-RIGHTS_t + b_3EFFDTENFORC_t + b_5NEWS_t + b_6ROA_t + b_7FSIZE_t + b_8RISK_t + b_9LMAT_t + b_{10}CNVRT_t + b_{11}ISIZE_t + b_{12}LEVERAGE_t + INDUSTRY DUMMIES + YEAR DUMMIES + \varepsilon_i]; \text{ where } r \text{ belongs to } \{1,2,3,4,5,6,7\}$$

The results of this model reported in Table 3 support our hypothesis that big five auditors are associated with higher bond ratings. More specifically, we find that the coefficient of *AUDITOR* is positive and significant at the 5% level, suggesting that having an auditor from the big five increases the probability of having higher bonds ratings. This finding provides a support for the conjecture that high quality auditors play an important role in alleviating agency problems by enhancing the credibility of financial statements (Dopuch & Simunic, 1982). It is also consistent with the point of view that high quality auditors play an important role in limiting managerial discretion in financial reporting.

We estimate significant relations between bond ratings and the institutional variables. We find that the coefficient of *CRED_RIGHTS* is positive and significant at the 10% level, suggesting that firms from countries with strong creditor rights protections have higher bond ratings. We also find a positive and significant coefficient for *PUBREGIS* at the 1% level, suggesting that firms from countries having a public registry are more likely to have higher bond ratings. Furthermore, we find a positive and significant coefficient for *EFFDBTENFORC* at the 1% level, suggesting that firms from countries with more efficient debt enforcement are more likely to have a higher bond rating. Finally, we report a positive and coefficient for *NEWS* at the 10% level, suggesting that firms from countries with stronger extra-legal institutions are more likely to have higher bond ratings. Overall, these findings which are consistent with Ellul et al. (2005) and Boubakri and Ghouma (2010), suggest that high quality legal and extra-legal institutions are associated with higher bond ratings.

The regression results show also that the ROA is positively and significantly related to the rating suggesting that firms with higher profitability are more likely to have higher bond rating. We also report a positive and significant coefficient for the size of the firm, suggesting that big firms are more likely to have higher bond ratings. Furthermore, we find that the coefficient of *CNVRT* variable is positive and significant at the 1% level which implies that the existence of call or conversion provisions increase the probability of having higher bond ratings.

Table 3. The effect of auditor's choice on bond ratings

Variable	Expected Sign	Model
<i>AUDITOR</i>	+	0.201 (0.037)**
<i>ROA</i>	+	0.014 (0.008)***
<i>FSIZE</i> (in billions of U.S Dollars)	+	76.200 (0.000)***
<i>RISK</i> (in millions of U.S Dollars)	-	-409.000 (0.431)
<i>LMAT</i>	-	-0.774 (0.203)
<i>CNVRT</i>	+	0.800 (0.003)***
<i>ISIZE</i> (in billions of U.S Dollars)	-	3.940 (0.509)
<i>LEVERAGE</i>	-	-0.000 (0.216)
<i>CRED_RIGHTS</i>	+	0.203 (0.060)**
<i>PUBREGIS</i>	+	1.013 (0.000)***
<i>EFFDTENFORC</i>	+	0.008 (0.002)***
<i>NEWS</i>	+	0.215 (0.054)*
INDUSTRY DUMMIES		YES
YEAR DUMMIES		YES
N		823
Pseudo R ²		12.61%
10 ⁹ LR – Chi ²		364.67
Significance		(0.0000)***

The table gives the output for the Ordered Probit Regression of the Bond Ratings as being the dependent variable. The variables that are listed below are: Bond Ratings which is an ordinal number that ranges from 1 to 7 as the later being the highest rating and the former the lowest rating. Auditor's Choice: a dummy variable that assigns 1 to firms that have their auditor from the big five group and 0 otherwise. Firm Profitability: the firm profitability measured in term of its return on assets. Firm Size: the total assets were used to get the size of the firms that are included in the sample. Firm Risk: it is measured by the standard deviation of net income. Bonds Maturity: the average maturity for the bonds portfolio issued by a firm; weights were assigned on the basis of the size of the issuance to the total issuances. Convertible Provisions: a dummy variable that gives 1 to firms with the convertible option and 0 otherwise. Issue Size: it represents the size of the issuance in term of dollars. Leverage: the firm leverage is measured by the debt to equity ratio. Concerning the other variables, more description is given in table 1. The stars that appear in the tables mean the following: *** for a significance that is lower than 1%, ** and * are for a significance that is lower than 5% and 10% respectively.

5. Concluding Remarks

In our research we identified the relationship between the auditor's choice and the bond ratings on an

international context. The sample included 823 firms from 35 over a period of 10 years. The results of the Ordered Probit regression provide evidence that having an auditor from the big five auditing firms allows the firm to enjoy higher bond ratings compared to firms with a non-big five auditor. Consequently, the costs of contracting debts (in the form of bonds) would be lower since creditors ask for relatively lower premiums to lend their money. This finding adds to the literature on the impact of auditor choice on debt cost and bond rating (e.g., Pittman & Fortin, 2004; Boubakri & Ghouma, 2010) by providing an international evidence on the role of auditing firms in reducing debt costs.

Our results also show that the quality of legal and extra-legal institutions play an important role in improving debt ratings and hence in lowering debt costs. More specifically, we find that the existence and the enforcement of creditor laws are associated with higher bond rating, hence lower cost debt. This finding supports Ellul et al. (2005) and Boubakri and Ghouma (2010).

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References

- Anderson, C. R., Mansi, A. S., & Reeb, D. M. (2003). Founding family ownership and the agency cost of debt. *Journal of Financial Economics*, 68, 263–285. [http://dx.doi.org/10.1016/S0304-405X\(03\)00067-9](http://dx.doi.org/10.1016/S0304-405X(03)00067-9)
- Ashbaugh, H., Collins, D. W., & LaFond, R. (2006). The effects of corporate governance on firms' credit ratings. *Journal of Accounting and Economics*, 42, 203–243. <http://dx.doi.org/10.1016/j.jacceco.2006.02.003>
- Becker, C. L., Defond, M. L., Jiambalvo, K., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research*, 15, 1–24. <http://dx.doi.org/10.1111/j.1911-3846.1998.tb00547.x>
- Bhojraj, S., & Sengupta, P. (2003). Effect of corporate governance on bond ratings and yields: The role of institutional investors and the outside directors. *The Journal of Business*, 76, 455–475. <http://dx.doi.org/10.1086/344114>
- Borisova, G., & Megginson, W. (2011). Does government ownership affect the cost of debt? Evidence from privatization. *Review of Financial Studies*, 24, 2693–2737. <http://dx.doi.org/10.1093/rfs/hhq154>
- Boubakri, N., & Ghouma, H. (2008). *Managerial opportunism, cost of debt financing and regulation changes: Evidence from the Sarbanes-Oxley Act adoption*. SSRN Working Paper. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1127351
- Boubakri, N., & Ghouma, H. (2010). Control/ownership structure, creditor rights protection, and the cost of debt financing: International evidence. *Journal of Banking and Finance*, 2481–2499. <http://dx.doi.org/10.1016/j.jbankfin.2010.04.006>
- Brown, L., & Caylor, M. (2004). *Corporate governance and firm performance*. Working Paper Series. Retrieved from <http://ssrn.com/abstract=586423>
- Caramanis, C., & Lennox, C. (2008). Audit effort and earnings management. *Journal of Accounting and Economics*, 45, 116–138. <http://dx.doi.org/10.1016/j.jacceco.2007.05.002>
- Chang, X., Dasgupta, S., & Hilary, G. (2009). The effect of auditor choice on financing decisions. *The Accounting Review*, 84, 1085–1117. <http://dx.doi.org/10.2308/accr.2009.84.4.1085>
- Chen, H., Chen, J. Z., Lobo, G. J., & Wang, Y. (2011). Effects of audit quality on earnings management and cost of equity capital: Evidence from China. *Contemporary Accounting Research*, 28, 892–925. <http://dx.doi.org/10.1111/j.1911-3846.2011.01088.x>
- Chen, K. C. W., Chen, Z., & Wei, K. C. J. (2009). Legal protection of investors, corporate governance, and the cost of equity capital. *Journal of Corporate Finance*, 15, 273–289. <http://dx.doi.org/10.1016/j.jcorpfin.2009.01.001>
- Chen, L., & Lesmond, D. A. (2007). Corporate yield spreads and bond liquidity. *Journal of Finance*, 62, 119–149. <http://dx.doi.org/10.1111/j.1540-6261.2007.01203.x>

- Cheng, M., & Subramanyam, K. R. (2008). Analyst following and credit ratings. *Contemporary Accounting Research*, 25, 1007–1044. <http://dx.doi.org/10.1506/car.25.4.3>
- Chtourou, M., Bedard, B., & Courteau, L. (2001). *Corporate governance and earnings management*. Working Paper Series. Retrieved from <http://ssrn.com/abstract=275053>
- Claessens, S. (2003). *Corporate governance and development*. Working Paper Series. Retrieved from <http://ssrn.com/abstract=642721>
- DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of Accounting and Economics*, 3, 183–199. [http://dx.doi.org/10.1016/0165-4101\(81\)90002-1](http://dx.doi.org/10.1016/0165-4101(81)90002-1)
- Djankov, S., Hart, O., McLiesh, C., & Shleifer, A. (2007). *Debt enforcement around the world*. NBER Working Paper No 12807.
- Djankov, S., McLiesh, C., & Shleifer, A. (2005). Private credit in 129 countries. *Journal of Financial Economics*, 84, 299–329. <http://dx.doi.org/10.1016/j.jfineco.2006.03.004>
- Dopuch, N., & Simunic, D. (1982). *The competition in auditing an assessment*. Fourth Symposium on Auditing Research, Urbana University of Illinois.
- Dyck, A., & Zingales, L. (2004). Private benefits of control: An international comparison. *The Journal of Finance*, 2, 537–600. <http://dx.doi.org/10.1111/j.1540-6261.2004.00642.x>
- Easley, D., & O'Hara, M. (2010). Liquidity and valuation in an uncertain world. *Journal of Financial Economics*, 97, 1–11. <http://dx.doi.org/10.1016/j.jfineco.2010.03.004>
- El-Ghoul, S., Guedhami, O., & Pittman, J. (2010). *Cross-country evidence on the importance of big four auditors to equity pricing: The mediating role of legal institutions*. Working Paper, University of Alberta. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1567524
- El-Ghoul, S., Guedhami, O., Sorin, R., & Pittman, J. (2012). *Cross-country evidence on the importance of auditor choice to corporate debt maturity*. Working Paper, University of Alberta.
- Ellul, A., Guntay, L., & Lel, U. (2005). *External governance and debt agency costs of family firms*. Working Paper, Indiana University. Retrieved from <http://ssrn.com/abstract=687371>
- Fan, J., & Wong, T. J. (2005). Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of Accounting Research*, 43, 35–72. <http://dx.doi.org/10.1111/j.1475-679x.2004.00162.x>
- Fauver, L., & Fuerst, M. (2004). *Does good corporate governance include employee representation?* EFA Working Paper Series. Retrieved from <http://ssrn.com/abstract=534422>
- Ghouma, H. (2008) How do regulation changes impact the bondholders' perception of auditor choice and managerial ownership? Evidence from the Sarbanes-Oxley Act Adoption. *International Management Review*, 4, 30–36.
- Griffin, P., Lont, D., & Sun, Y. (2008). *Governance regulatory changes, IFRS adoption, and New Zealand Audit and Non-Audit Fees*. Working Paper Series. Retrieved from <http://ssrn.com/abstract=1093554>
- Gul, F. A., Kim, J. B., & Qiu, A. A. (2010). Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: Evidence from China. *Journal of Financial Economics*, 95, 425–442. <http://dx.doi.org/10.1016/j.jfineco.2009.11.005>
- Karjalainen, J. (2011). Audit quality and cost of debt capital for private firms: Evidence from Finland. *International Journal of Auditing*, 15(1), 88–108. <http://dx.doi.org/10.1111/j.1099-1123.2010.00424.x>
- Kim, J. B., Chung, R., & Firth, M. (2003). Auditor conservatism, asymmetric monitoring and earnings management. *Contemporary Accounting Research*, 20, 325–359. <http://dx.doi.org/10.1506/J29K-MRUA-0APP-YJ6V>
- Kisgen, D., & Strahan, P. (2009). *Do regulations based on credit ratings affect a firm's cost of capital?* NBER Working Paper Series. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1353327
- Klock, M., Mansi, S., & Maxwell, W. (2005). Does corporate governance matter to bondholders. *Journal of Financial and Quantitative Analysis*, 40, 693–720. <http://dx.doi.org/10.1017/S0022109000001940>
- Kyle, A. S. (1985). Continuous auction and insider trading. *Econometrica*, November, 1315–1335. <http://dx.doi.org/10.2307/1913210>

- Pittman, J. A., & Fortin, S. (2004). Auditor choice and the cost of debt capital. *Journal of Accounting and Economics*, 37, 113–136. <http://dx.doi.org/10.1016/j.jacceco.2003.06.005>
- Prevost, A. K., Ramesh, P. R. & Skousen C. J. (2008). *Earnings management and the cost of debt*. Working Paper Series. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1083808
- Qi, C. Z., Subramanyam, K. R., & Zhang, J. (2010). *Accrual quality, bond liquidity, and cost of debt*. Working Paper, University of Southern California. Retrieved from <https://msbfile03.usc.edu/digitalmeasures/jieying/intellcont/QSZ20100827-1.pdf>
- Sengupta, P. (1998). Corporate disclosure quality and the cost of debt. *The Accounting Review*, 73, 459–474.
- Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance*, 52(2). <http://dx.doi.org/10.1111/j.1540-6261.1997.tb04820.x>
- Teoh, S. H., & Wong, T. J. (1993). Perceived auditor quality and the earnings response coefficient. *The Accounting Review*, 68, 346–67.
- Watts, R. L., & Zimmerman, J. L. (1981). *The market for independence and independent auditors*. Working paper edn, University of Rochester.

Appendix

Appendix A. Variables description and sources

Variable	Description
<i>RATING</i>	Appendix A gives detailed information about this ordinal variable. The bond ratings that are used by S&P are converted to a range from 1 to 7 where 1 is the lowest rating and 7 the highest rating. The rating of bonds depends on the firm bonds portfolio.
<i>AUDITOR</i>	A dummy variable that is assigned 1 if the firm's auditor is from the big Five and 0 otherwise.
<i>ROA</i>	A variable that measures the profitability of the firm by dividing its net income to its total assets
<i>FSIZE</i>	The firm size is determined by its total assets in dollar amounts.
<i>RISK</i>	The firm's risk is measured by the standard deviation of the net income of every firm in the sample.
<i>LMAT</i>	A variable that measures the log maturity in years. The weights are determined by the size of the issuance of the maturity class to the total size of the issuance for a given year. Then, the weights are multiplied to the respective maturity and added to get the bonds weighted average maturity.
<i>CNVRT</i>	A dummy variable that gives 1 to firms with convertible provisions and 0 to firms with no convertible provisions. These provisions allow the bondholder to convert his or her bonds to shares.
<i>ISIZE</i>	A variable that identifies the size of the issuance.
<i>LEVERAGE</i>	A variable that identifies the leverage of the firm; measured as the ratio of total debt over total equity.
<i>CRED_RIGHTS</i>	This variable is an index that ranges from 0 to 4. When a country imposes restrictions in the favor of creditors, 1 is added to its score. When the secured creditors ensure that they will get their investment back, the score becomes 2. When the secured creditors are the first to receive their money in case of bankruptcy, the score becomes 3. At the end, when the secured creditors don't wait till the problems are solved to get their money back, the score becomes 4.

<i>PUBREGIS</i>	Public registry is a database that is developed by public authorities. This database includes all the debt positions of borrowers in the economy. The collected information is available to all financial institutions. The variable is assigned 1 if the country has a public registry and 0 otherwise.
<i>EFFDTENFORC</i>	When a firm incurs bankruptcy costs, these costs are deducted from the firm terminal value and this value is discounted to get the present value. The higher the value, the better the firm.
<i>NEWS</i>	Daily newspapers sold divided by the number of citizens

Appendix B. S&P credit ratings conversion

S&P Bonds Ratings	From D to CCC+	From B- to B+	From BB- to BB+	From BBB- to BBB+	From A- to A+	From AA- to AA+	AAA
<i>RATING</i>	1	2	3	4	5	6	7

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