

Auditor Reporting and Corporate Debt Structure

Amy E. Ji
Saint Joseph's University

This paper examines whether auditor reporting is associated with corporate debt structure. Specifically, it examines whether modified audit opinions are related to debt conversion privilege, which is a significant debt contract term. I hypothesize a positive link between the presence of qualified audit reports and the likelihood of issuing convertible bonds. Modified opinions deliver warning signals about firms' financial statement quality. Debtholders are likely to demand conversion provision to protect themselves against shareholders-debtholders agency conflicts when lenders seem to have high information asymmetry. The results confirm the hypothesis, demonstrating the economic role of audit reports in debt contract design.

Keywords: Modified Audit Opinions, Auditor Reporting, Debt

INTRODUCTION

The goal of this study is to investigate the consequence of audit opinions in debt contracting. It examines whether auditors' reporting is associated with corporate debt structure. The audit report, which is an outcome of auditing process, is a primary communication channel between external auditors and financial statement users. Auditors evaluate their client firms' financial statements to issue their opinions on whether the financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP). That is, auditors evaluate the reliability and validity of financial statements. Under the Securities and Exchange Commission (SEC) requirements and Generally Accepted Auditing Standards (GAAS), auditors issue either unqualified opinions or modified opinions. Unqualified opinions are issued if auditors determine their client firms follow GAAP in preparing their financial statements. Modified opinions are issued if auditors have concerns about the reliability of their clients' publicly reported accounting numbers.

As issuing audit reports is an important responsibility of external auditors, the impact of audit opinions has been empirically examined. A majority of studies examines the impact that audit opinions have in the stock market. Prior studies show that qualified audit reports decrease earnings response coefficients as well as increase information asymmetry in the stock market and firms' cost of equity (Choi and Jeter, 1992; Menon and Williams, 2010; Ianniello et al., 2015; Amin et al., 2014; Abad et al., 2017). Some studies assess the impact that audit opinions have in the debt market. They show that firms with modified audit opinions face a higher cost of debt (Chen et al., 2016; Cano-Rodríguez et al., 2016).

While most studies examine the consequences of audit reports in the stock market, few studies investigate their impact on corporate economic decisions. The current study aims to fill this gap by examining whether audit reports are associated with corporate debt structure. According to the agency

theory, corporate debt structure is affected by agency conflicts between debtholders and shareholders. Shareholders prefer high-risk projects because they benefit from investment returns remaining after debt obligations are satisfied. Shareholders have limited liability when returns are small. Managers working on behalf of shareholders tend to accept high-risk projects, conflicting with bondholders who prefer low-risk projects (i.e., the “risk-shifting” problem) (Green, 1984; Lewis, Rogalski, and Seward, 1999). Corporate finance literature identifies convertible bonds, which give bondholders a right to convert the bond into shares of the issuing company’s common stock, as an important mechanism to mitigate agency conflicts between debtholders and shareholders. Studies argue that convertible debts can decrease risk-shifting agency conflicts between shareholders and debtholders (Green 1984; Brennan and Schwartz, 1988; Chakraborty and Yilmaz 2011; Dorion et al. 2014). Convertibles alleviate shareholders’ incentives to take risks because equity holders will need to share cash flows arising from high-risk projects with convertible debtholders (Green, 1984). Empirical studies confirm the agency theory, showing that firms with weaker corporate governance or a high level of information asymmetry are more likely to issue convertibles (Krishnaswami and Yaman, 2008; Dutordoir et al., 2014).

I hypothesize a positive association between the presence of qualified audit reports and the likelihood of issuing convertible bonds. Modified audit opinions deliver warning signals about firms’ financial statement quality and creditworthiness. If audit qualifications exacerbate debtholders’ information environment, shareholders-debtholders agency costs are likely to become more severe. If debtholders view that firms with modified audit opinions have higher information asymmetry, they are more likely to demand conversion provision to protect themselves against agency conflicts between shareholders and debtholders. Using firms covered in Compustat database, I empirically test the hypothesis. Confirming the hypothesis, the findings show that, relative to firms without audit qualifications, firms with audit qualifications are more likely to issue convertible debts.

Furthermore, I conduct several additional analyses. First, I conduct the main analysis using alternative measures of the dependent variable and test variable. As an alternative dependent variable of corporate debt structure, I use corporate debt maturity. The maturity of corporate debt is also a crucial tool used to reduce agency conflicts between debtholders and shareholders. Short-maturity debts provide external monitoring by the debt market because they allow creditors to frequently assess a firm’s ability to pay its debt payments (El Ghouli et al., 2016). If debtholders doubt the quality of borrowers’ accounting numbers because of audit qualifications, they are likely to increase their monitoring by grating short-term debt. I also use an alternative measure of the independent variable of interest. Second, I conduct the main analysis using three other different samples. The first sample consists of only financially distressed firm-years. The second sample excludes two heavily regulated industries from the main sample: financial firms and utilities. The third sample focuses on industrial firms only. Third, to mitigate the potential endogeneity issues, I use propensity score matching methodology. All the supplemental analyses support the main findings.

The study makes several contributions to the literature. First, the study extends previous research on the role of financial reporting quality in debt contracting. Financial reporting plays a crucial role in mitigating agency costs during the debt contracting process (Watts and Zimmerman, 1990). Bharath et al. (2008) showed that the quality of borrowers’ financial information influences their accessibility to the public and private debt market. Costello and Wittenberg-Moerman (2011) found that lenders modify debt contracts when borrowers’ external auditors issue an internal control weakness to borrowing firms. Adding to these studies, the current study documents the role that auditor reporting plays in the design of corporate debt contracts. It suggests that, as an indicator of financial reporting quality, audit qualifications have impact on debt contracting whereas prior audit report literature has primarily focused on the usefulness of audit reports in the stock market. By establishing an association between modified opinions and corporate debt structure, this study illustrates that auditors’ reporting is perceived by debtholders as being useful.

Second, the study contributes to the finance literature examining the determinants of the corporate debt structure. Whether firms issue convertible debts is determined by firm factors such as information asymmetry and corporate governance (Krishnaswami and Yaman, 2008; Dutordoir et al., 2014). Prior

studies also provide evidence that lower information asymmetry, Big Four auditors (i.e., KPMG, PricewaterhouseCoopers (PwC), Ernst & Young (EY), and Deloitte), and short-term institutional ownership are positively associated with corporate debt maturity (Barclay and Smith, 1995; El Ghoul et al., 2016; Chang et al., 2012). The results in the current article extend the literature by demonstrating the usefulness of audit reports in debt contract design.

The remainder of the paper is divided into seven sections. The next section provides a literature review and third section discusses a hypothesis. The fourth and fifth sections present research design and descriptive statistics, respectively. The sixth and seventh sections report empirical results and supplemental analyses, respectively. The last section concludes.

LITERATURE REVIEW

Auditor Reporting

The audit report, which is an outcome of auditing process, is a primary communication channel between external auditors and financial statement users. Auditors evaluate their client firms' financial statements to issue their opinions on whether the financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP). In other words, auditors evaluate the reliability and validity of financial statements. Under the Securities and Exchange Commission (SEC) requirements and Generally Accepted Auditing Standards (GAAS), auditors issue either unqualified opinions or modified opinions. Unqualified or clean opinions are issued if auditors determine their client firms follow GAAP in preparing their financial statements. Modified opinions are issued if auditors have concerns about the reliability of their clients' publicly reported financial information. There are different types of modified opinions: qualified opinions, adverse opinions, disclaimers of opinion, and unqualified opinions with explanatory language. Unqualified opinions with explanatory language may express a going concern (GC), cite accounting inconsistency, or indicate a material uncertainty.

As issuing audit reports is an important responsibility of external auditors, the impact of audit opinions has been empirically examined. A majority of studies examines the impact that audit opinions have in the stock market. For example, Abad et al. (2017) analyze whether qualified audit reports are related to information asymmetry in the stock market. They predict and find that, relative to firms with clean audit opinions, firms with qualified audit opinions are more likely to display information asymmetry because qualified opinions may cause concerns about the credibility of firms' financial statements. Amin et al. (2014) find that the issuance of going concern opinions increases a firm's cost of equity. Going concern audit opinions signal a violation of the going concern assumption and this violation potentially decreases the quality of information about the firm. Therefore, in the presence of going concern opinions, investors are likely to demand a higher risk premium and charge a higher cost of capital. Similarly, Menon and Williams (2010) and Ianniello et al. (2015) document a negative effect of audit qualifications on stock prices. Fleak and Wilson (1994) report an inverse relationship between unexpected going-concern qualifications and abnormal stock returns. Choi and Jeter (1992) find that audit qualifications reduce earnings response coefficients.

A stream of research more directly related to the current study examines the impact that audit opinions have on the debt market. For example, Chen et al. (2016) investigate the impact of modified audit opinions on private debt contracting. They posit that if lenders perceive auditor's modified opinions as a negative indicator of borrowers' financial reporting quality or credit risk, then lenders are likely to respond with higher interest rates. Consistent with their hypothesis, their findings show that, compared with firms with clean audit opinions, firms with modified audit opinions face higher interest spreads (17 basis points on average). Likewise, by studying a sample of private Spanish companies, Cano-Rodríguez et al. (2016) show that creditors demand a higher cost of debt from firms with qualified audit reports. They further provide evidence that the impact of audit qualifications on a cost of debt does not vary by auditor choice (i.e., Big Four vs. non-Big Four auditors).

Corporate Debt Structure

Corporate debt structure is affected by agency conflicts between debtholders and shareholders. Shareholders prefer high-risk projects because they benefit from investment returns remaining after debt obligations are satisfied. Shareholders have limited liability when returns are small. Managers working on behalf of shareholders tend to accept high-risk projects, conflicting with bondholders who prefer low-risk projects (i.e., the “risk-shifting” problem) (Green, 1984; Lewis, Rogalski, and Seward, 1999).

Corporate finance literature identifies convertibles as an important mechanism to mitigate agency conflicts between debtholders and shareholders. Studies argue that convertible debts can decrease risk-shifting agency conflicts between shareholders and debtholders (Green 1984; Brennan and Schwartz 1988; Chakraborty and Yilmaz 2011; Dorion et al. 2014). Convertible bonds are debt instruments that give bondholders a right to convert the bond into shares of the issuing company’s common stock. They alleviate shareholders’ incentives to take risks because equity holders will need to share cash flows arising from high-risk projects with convertible debtholders (Green, 1984). In other words, shareholders’ benefits obtained from engaging in high-risk projects are reduced because of convertibles and shareholders’ incentives to take risks are reduced as well.

Prior studies have empirically examined the factors affecting the issuance of convertible debts. Dutordoir et al. (2014) investigate the impact of corporate governance quality on firms’ likelihood to issue convertibles. They find that, relative to firms with stronger governance quality, firms with weaker governance quality are more likely to issue convertibles. Their results suggest that firms use convertibles as a substitute for high-quality governance mechanisms in reducing agency costs. Krishnaswami and Yaman (2008) find that, compared to firms with a low level of information asymmetry, firms with a high level of information asymmetry are more likely to issue convertibles. They further find that companies are more likely to issue convertible debts during periods of high interest rates and economic downturns.

HYPOTHESIS DEVELOPMENT

Accounting information and auditors play important roles in debt contracting. Agency costs between debtholders and shareholders are influenced by the quality of accounting information as more transparent accounting information decreases debtholders’ information disadvantage and assists more effective monitoring (Wang et al, 2017). Audited financial statements enable creditors to assess the creditworthiness and default risk of borrowing firms (Ohlson,1980). Additionally, accounting information may directly be included in debt contracting (e.g., in debt covenants). Hence, auditors, who evaluate the validity and reliability of publicly available financial information, also play an important role in debt contracting. For example, Pittman and Fortin (2004) investigate whether auditor choice affects debt pricing in firms’ early public years. They find that hiring Big Four auditors decreases young firms’ interest rates because Big Four auditors can decrease debt-monitoring costs through improving the reliability of financial information. Mansi et al. (2004) show that auditor quality and tenure are inversely associated with the cost of debt financing, suggesting that auditor characteristics are important to capital providers because of their dual roles of supplying information and insurance. Minnis (2011) investigates whether and how verification of financial statements affects a cost of debt. Using a proprietary database of privately held U.S. firms that are not required to audit financial statement, the study finds that the voluntary use of auditing is negatively associated with a cost of debt.

Especially, audit reports are a primary communication channel between external auditors and financial statement users. It expresses whether financial statements properly reveal firms’ economic activities. Modified audit opinions deliver warning signals about firms’ financial statement quality and creditworthiness. Prior empirical studies find that capital providers perceive modified audit opinions as an indication of low-quality financial information (Chen et al., 2016; Abad et al., 2017). Firms with lower quality of financial information experience more severe shareholder-debtholder agency costs, leading to higher demand to utilize debt contract as a way of decreasing such costs (Wang et al., 2017). If debtholders view that firms with modified audit opinions have higher information asymmetry, they are likely to demand conversion provision to protect themselves against agency conflicts between

shareholders and debtholders. Prior research argues that convertible debts can decrease risk-shifting agency conflicts (Green, 1984; Chakraborty and Yilmaz 2011). Lewis et al. (1999) show that companies issue convertibles rather than straight debts in order to alleviate agency costs between bondholders and stockholders. Accordingly, I test the following hypothesis, which is stated in the alternative form.

H₁: The presence of modified audit opinions is positively associated with the issuance of convertible debt.

RESEARCH DESIGN

The following multivariate regression is used to test the first hypothesis (the firm subscripts are omitted for brevity). The logistic model is applied because of the binary dependent variable and standard errors at the firm level are clustered.

$$\text{CONVER} = \beta_0 + \beta_1 \text{MAO} + \beta_2 \text{LnTA} + \beta_3 \text{ROA} + \beta_4 \text{MB} + \beta_5 \text{CARRY} + \beta_6 \text{BigFour} + \beta_7 \text{LIABILITY} + \beta_8 \text{TAX} + \beta_9 \text{ZSCORE} + \beta_{10} \text{MATURITY} + \varepsilon \quad (1)$$

The dependent variable, CONVER, is a dummy variable equal to 1 if a firm includes conversion provision in the debt contract and 0 otherwise. It measures the likelihood of issuing convertible debts. The variable of primary interest is MAO which measures the probability of issuing a modified audit opinion. It is a binary variable equal to 1 if an auditor issues a modified opinion and 0 if an auditor issues an unqualified opinion (Elder et al., 2009). Compustat lists an audit opinion as one of the following five types - unqualified/clean opinion (#1), qualified opinion (#2), no opinion (#3), unqualified opinion with explanatory language (#4), and adverse opinion (#5). MAO is equal to 0 for unqualified/clean opinion (#1) and 1 for all other opinions since only an unqualified opinion (#1) is a clean opinion. The hypothesis expects a positive link between the presence of modified audit opinions and the issuance of convertible debts. Accordingly, a positive coefficient ($\beta_1 > 0$) is predicted.

Following prior studies, I control for several firm characteristics that are likely to affect corporate debt structure: firm size (LnTA), profitability (ROA), growth opportunities (MB), non-debt tax shield (CARRY), auditor choice (BigFour), liabilities (LIABILITY), income taxes (TAX), bankruptcy risk (ZSCORE), and debt maturity (MATURITY). Industry and year fixed effects are controlled and continuous variables are winsorized at the 1% and 99% level.

SAMPLE AND DESCRIPTIVE STATISTICS

I collect an initial sample from Compustat for the period of 2011 through 2016. After deleting missing data, the final sample contains the firm-year observations of 43,147. Table 1 provides descriptive statistics. The mean and median values of CONVER are 0.11 and 0, respectively. The mean and median values of MAO are 0.21 and 0, respectively. Table 2 presents Pearson correlation among the variables. It provides preliminary support for H₁ by displaying statistically significant association between the presence of modified audit opinions and corporate debt structure. Besides, unreported variance inflation factors indicate that multicollinearity is not a serious problem in the multivariate analyses. The mean variance inflation factor is 1.85, which is lower than the threshold of 10 suggested by Kennedy (2008).

TABLE 1
DESCRIPTIVE STATISTICS OF REGRESSION VARIABLES

Variable	Mean	Std Dev	First Quartile	Median	Third Quartile
CONVER	0.11	0.31	0.00	0.00	0.00
MAO	0.21	0.41	0.00	0.00	0.00
LnTA	6.34	3.10	4.73	6.75	8.33
ROA	-0.54	2.78	-0.05	0.00	0.04
MB	3.26	14.31	0.23	0.75	1.42
CARRY	0.47	0.50	0.00	0.00	1.00
BigFour	0.62	0.49	0.00	1.00	1.00
LIABILITY	1.34	4.12	0.46	0.68	0.89
TAX	0.01	0.02	0.00	0.00	0.01
ZSCORE	0.69	0.46	0.00	1.00	1.00
MATURITY	0.47	0.39	0.10	0.37	0.95

TABLE 2
PEARSON CORRELATIONS AMONG VARIABLES

	1	2	3	4	5	6	7	8	9	10
1.CONVER	1									
2.MAO	0.07	1								
3.LnTA	-0.07	-0.40	1							
4.ROA	-0.05	-0.33	0.49	1						
5.MB	0.03	0.27	-0.43	-0.68	1					
6.CARRY	0.14	0.18	-0.27	-0.12	0.11	1				
7.BigFour	0.02	-0.17	0.53	0.22	-0.19	0.03	1			
8.LIABILITY	0.04	0.29	-0.44	-0.79	0.60	0.08	-0.20	1		
9.TAX	-0.07	-0.12	0.14	0.08	-0.03	-0.03	0.14	-0.06	1	
10.ZSCORE	-0.14	-0.40	0.57	0.31	-0.24	-0.26	0.24	-0.25	0.29	1
11.MATURITY	-0.06	0.21	-0.45	-0.21	0.17	0.15	-0.30	0.17	-0.06	-0.27

Correlation coefficients in bold are significant at 5% level.

RESULTS

Table 3 displays the results for the hypothesis that the presence of modified audit opinions is positively associated with the likelihood of issuing convertible debts. Such a positive relation is expected because debtholders are likely to demand conversion provision to protect themselves against potentially more severe agency costs in the presence of modified audit opinions. The findings resulted from estimating the logit regression model (1) is reported in Table 3. The dependent variable is an indicator variable equal to 1 if a firm issues convertible debts and 0 otherwise. Hence, it measures the likelihood of including conversion provision. Supporting the H₁, the variable of interest, MAO, displays a statistically significant and positive coefficient at the 1 percent level, showing that firms with modified audit opinions are more likely to issue convertible debts. This finding suggests that debtholders view modified audit

opinions as an indication of poor financial reporting quality and demand conversion option to protect themselves. In addition, the findings show that firms with a larger size, operating loss carryforward, or higher liability are more likely to issue convertibles whereas firms with higher profitability, a Big Four auditor, shorter debt maturity, or higher growth opportunities are less likely to issue convertibles.

TABLE 3
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
MAO	0.165	0.006
LnTA	0.054	0.003
ROA	-0.021	0.052
MB	-0.005	0.001
CARRY	0.617	0.000
BigFour	-0.253	0.006
LIABILITY	0.025	0.001
TAX	-5.293	0.000
ZSCORE	-0.695	0.000
MATURITY	-0.972	0.000
N	43,147	
Pseudo R ²	0.124	

This table presents the estimation results of H₁. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

ADDITIONAL INVESTIGATION

Alternative Variables

I conduct the main analysis using other alternative measures of the dependent variable and test variable. First, as an alternative dependent variable of corporate debt structure, I use corporate debt maturity instead of conversion provision. The maturity of corporate debt is also a crucial tool used to reduce agency conflicts between debtholders and shareholders. Short-maturity debts provide external monitoring by the debt market because they allow creditors to frequently assess a firm's ability to pay its debt payments (El Ghouli et al., 2016).

Barclay and Smith (1995) document that firms with higher information asymmetry use more short-term debts. When borrowers have less credible financial information, creditors grant short-term debts in order to subject firms to more frequent monitoring. El Ghouli et al. (2016) find that the presence of Big Four auditors (i.e., KPMG, PricewaterhouseCoopers (PwC), Ernst & Young (EY), and Deloitte) is positively associated with the maturity of corporate debt, suggesting that high-quality audit provided by Big Four auditors substitute for short-term debts for external monitoring. Auditors mitigate information asymmetry and provide external monitoring through assessing the validity and credibility of their clients' publicly available financial information. Chang, Chen, and Dasgupta (2012) document that short-term institutional ownership is positively associated with the maturity of corporate debt. Short-term institutional owners improve the quality of firms' information environment because they engage in informed trading and frequent monitoring. Consequently, they substitute for short-term debts for monitoring purposes.

If debtholders doubt the quality of borrowers' financial information because of audit qualifications, they are likely to increase their monitoring by granting short-term debts. Short-term debts enable debtholders to regularly evaluate firms' ability to satisfy their debt obligations and to retain a bargaining

position through the potential threat of eliminating financing at the renewal phase (El Ghouli et al., 2016). In this additional analysis, the dependent variable, which measures corporate debt maturity, is the proportion of short-term debts. Short-term debts are defined as the debt maturing in three years or less (Brockman, Martin, and Unlu, 2010; Huang, Tan, and Faff, 2016). Employing an ordinary least squares (OLS) model with this dependent variable yields a positive coefficient on MAO, suggesting that the presence of modified audit opinions is negatively associated with the maturity of debt (Table 4). Firms with modified audit opinions seem to carry higher proportion of short-term debts. It seems that debtholders view modified audit opinions as an indication of poor financial reporting quality and grant short-term debts to firms for better monitoring. This finding supports the main analysis by suggesting that debtholders perceive modified audit opinions as an indication of higher information asymmetry and attempt to protect themselves against potentially higher agency costs.

TABLE 4
MODIFIED AUDIT OPINIONS AND CORPORATE DEBT MATURITY

	Coef.	p-value
MAO	0.045	0.000
LnTA	-0.041	0.000
ROA	-0.004	0.002
MB	0.000	0.002
CARRY	0.040	0.000
BigFour	-0.063	0.000
LIABILITY	-0.002	0.005
TAX	0.185	0.080
ZSCORE	-0.034	0.000
CONVER	-0.109	0.000
N	43,269	
R ²	0.234	

This table presents the estimation results of using an alternative measure of corporate debt structure. The dependent variable is short-term debts maturing in three years or less divided by total debts. All variables are defined in the Appendix A.

Second, I use an alternative measure of the independent variable of interest (Table 5). This new variable is equal to 1 for unqualified opinion with explanatory language (#4) and 0 for unqualified/clean opinion (#1) (Anantharaman, Pittman, and Wans, 2016). Using this alternative measure yields similar results.

TABLE 5
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
AltMAO	0.166	0.006
LnTA	0.057	0.002
ROA	-0.024	0.030
MB	-0.005	0.001
CARRY	0.618	0.000
BigFour	-0.259	0.005
LIABILITY	0.025	0.001
TAX	-5.285	0.000
ZSCORE	-0.699	0.000
MATURITY	-0.972	0.000
N	42,748	
Pseudo R ²	0.124	

This table presents the estimation results of using an alternative measure of modified audit opinion. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

Alternative Samples

I conduct the main analysis using three other different samples. The first sample consists of only financially distressed firm-years in accordance with certain studies focusing on going concern modified opinions (Table 6). Going concern modified opinions are issued when auditors have doubt about their clients' ability to continue as a going concern. About the half of all modified opinions on Compustat is going concern uncertainties and the other half represents consistency issues, such as accounting policy changes (Butler et al., 2004). Financially distressed firm-years are defined as the firm-years that report both negative net income and negative cash flows from operations (Chen et al., 2017).

TABLE 6
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
MAO	0.499	0.000
LnTA	0.096	0.000
ROA	-0.002	0.407
MB	-0.001	0.055
CARRY	0.452	0.000
BigFour	-0.496	0.000
LIABILITY	0.003	0.029
TAX	0.037	0.979
ZSCORE	-0.740	0.000
MATURITY	-1.679	0.000
N	8,199	
Pseudo R ²	0.088	

This table presents the estimation results of using an alternative sample of only financially distressed firms. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

TABLE 7
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
MAO	0.261	0.000
LnTA	0.054	0.003
ROA	-0.010	0.106
MB	-0.003	0.003
CARRY	0.508	0.000
BigFour	-0.228	0.009
LIABILITY	0.013	0.003
TAX	-4.308	0.000
ZSCORE	-0.847	0.000
MATURITY	-1.056	0.000
N	26,482	
Pseudo R ²	0.074	

This table presents the estimation results of using an alternative sample excluding financial firms and utilities. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

The second sample excludes two heavily regulated industries from the main sample: financial firms (SIC codes 6000–6999) and utilities (SIC codes 4900–4949) (Table 7). Moreover, in accordance with Datta et al. (2005) and Harford et al. (2007), the third sample focuses on industrial firms only (SIC codes 2000-5999), yielding 18,903 firm-year observations (Table 8). All these three samples confirm the main findings.

TABLE 8
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
MAO	0.199	0.011
LnTA	0.082	0.001
ROA	-0.013	0.304
MB	-0.003	0.150
CARRY	0.524	0.000
BigFour	-0.398	0.001
LIABILITY	0.030	0.001
TAX	-7.969	0.000
ZSCORE	-0.975	0.000
MATURITY	-1.071	0.000
N	18,903	
Pseudo R ²	0.097	

This table presents the results of using an alternative sample including only industrial firms. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

Endogeneity

The results are potentially subject to endogeneity issues. For example, the documented association between modified audit opinions and convertibles may be caused by omitted variable issues. Certain firm-

level factors affecting modified opinions may also influence the likelihood of issuing convertibles. To mitigate the potential endogeneity issues, I use propensity score matching methodology. This technique constructs matched samples of firms with modified opinions and firms without modified opinions. Firms included in the control sample and treatment sample share the same dimensions except the presence of modified opinions. Consequently, any result can be attributed to modified opinions rather than to other factors.

To product matched samples, I first compute the likelihood (i.e., the propensity score) of issuing modified audit opinions, employing all variables contained in the primary model (1). By employing this propensity score, I conduct a neighbor match without replacement. To ensure that the control-sample observations are similar to the treatment-sample observations, I set the maximum disparity between the likelihood of the treatment observation and that of its matching firm at 0.001. I re-estimate the model (1) employing the propensity matched sample and continue to find a significantly positive coefficient on MAO (Table 9).

TABLE 9
MODIFIED AUDIT OPINIONS AND CONVERTIBLE DEBT ISSUANCE

	Coef.	p-value
MAO	0.167	0.016
LnTA	0.019	0.410
ROA	-0.028	0.171
MB	-0.009	0.017
CARRY	0.570	0.000
BigFour	-0.292	0.004
LIABILITY	0.042	0.001
TAX	-1.650	0.186
ZSCORE	-0.748	0.000
MATURITY	-1.002	0.000
N	12,374	
Pseudo R ²	0.076	

This table presents the estimation results of using propensity score matching. The dependent variable is the likelihood of issuing convertibles. All variables are defined in the Appendix A.

CONCLUSION

The study investigates the effect of audit reports on the reactions of debtholders. Specifically, it assesses whether firms receiving modified audit opinions are more likely to issue convertible debts, compared to those receiving clean opinions. I argue that modified audit opinions influence agency costs between debtholders and shareholders through their impact on information asymmetry and posit that the presence of modified opinions is positively associated with the likelihood of issuing convertibles. Modified audit opinions suggest lower quality of financial statement and higher information asymmetry. If financial reports are of doubtful quality, debtholders are more likely to demand conversion provision to protect themselves against agency conflicts between shareholders and debtholders. Using a sample of 43,147 firm-year observations, I find the results consistent with the hypothesis. Collectively, the evidence in this study illuminates the usefulness audit reports in debt contract design.

REFERENCES

- Abad, D., Sánchez-Ballesta, J. P., & Yagüe, J. (2017). Audit opinions and information asymmetry in the stock market. *Accounting & Finance*, 57(2), 565-595.
- Amin, K., Krishnan, J., & Yang, J. S. (2014). Going concern opinion and cost of equity. *Auditing: A Journal of Practice & Theory*, 33(4), 1-39.
- Anantharaman, D., Pittman, J. A., & Wans, N. (2016). State liability regimes within the United States and auditor reporting. *The Accounting Review*, 91(6), 1545-1575.
- Barclay, M. J., & Smith Jr, C. W. (1995). The maturity structure of corporate debt. *The Journal of Finance*, 50(2), 609-631.
- Bharath, S. T., Sunder, J., & Sunder, S. V. (2008). Accounting quality and debt contracting. *The Accounting Review*, 83(1), 1-28.
- Brennan, M. J., & Schwartz, E. S. (1988). The case for convertibles. *Journal of Applied Corporate Finance*, 1(2), 55-64.
- Brockman, P., Martin, X., & Unlu, E. (2010). Executive compensation and the maturity structure of corporate debt. *The Journal of Finance*, 65(3), 1123-1161.
- Butler, M., Leone, A. J., & Willenborg, M. (2004). An empirical analysis of auditor reporting and its association with abnormal accruals. *Journal of Accounting and Economics*, 37(2), 139-165.
- Cano-Rodríguez, M., Sánchez-Alegria, S., & Arenas-Torres, P. (2016). The influence of auditor's opinion and auditor's reputation on the cost of debt: evidence from private Spanish firms La influencia de la opinión de auditora y la reputación del auditor en el coste de la deuda: evidencia en las empresas españolas no cotizadas. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, 45(1), 32-62.
- Chakraborty, A., & Yilmaz, B. (2011). Adverse selection and convertible bonds. *The Review of Economic Studies*, 78(1), 148-175.
- Chang, X., Dasgupta, S., & Hilary, G. (2006). Analyst coverage and financing decisions. *The Journal of Finance*, 61(6), 3009-3048.
- Chen, P. F., He, S., Ma, Z., & Stice, D. (2016). The information role of audit opinions in debt contracting. *Journal of Accounting and Economics*, 61(1), 121-144.
- Chen, Y., Eshleman, J. D., & Soileau, J. S. (2016). Business strategy and auditor reporting. *Auditing: A Journal of Practice & Theory*, 36(2), 63-86.
- Choi, S. K., & Jeter, D. C. (1992). The effects of qualified audit opinions on earnings response coefficients. *Journal of Accounting and Economics*, 15(2-3), 229-247.
- Costello, A. M., & Wittenberg-Moerman, R. (2011). The impact of financial reporting quality on debt contracting: Evidence from internal control weakness reports. *Journal of Accounting Research*, 49(1), 97-136.
- Datta, S., Iskandar-Datta, M., & Raman, K. (2005). Managerial stock ownership and the maturity structure of corporate debt. *the Journal of Finance*, 60(5), 2333-2350.
- Dorion, C., François, P., Grass, G., & Jeanneret, A. (2014). Convertible debt and shareholder incentives. *Journal of Corporate Finance*, 24, 38-56.
- Dutordoir, M., Lewis, C., Seward, J., & Veld, C. (2014). What we do and do not know about convertible bond financing. *Journal of Corporate Finance*, 24, 3-20.
- Elder, R., Zhang, Y., Zhou, J., & Zhou, N. (2009). Internal control weaknesses and client risk management. *Journal of Accounting, Auditing & Finance*, 24(4), 543-579.
- El Ghouli, S., Guedhami, O., Pittman, J. A., & Rizeanu, S. (2016). Cross-country evidence on the importance of auditor choice to corporate debt maturity. *Contemporary Accounting Research*, 33(2), 718-751.
- Fleak, S. K., & Wilson, E. R. (1994). The incremental information content of the going-concern audit opinion. *Journal of Accounting, Auditing & Finance*, 9(1), 149-166.
- Green, R. C. (1984). Investment incentives, debt, and warrants. *Journal of financial Economics*, 13(1), 115-136.

- Harford, J., Li, K., & Zhao, X. S. (2007). *Corporate boards and the leverage and debt maturity choices*. Available at SSRN 891300.
- Huang, R., Tan, K. J. K., & Faff, R. W. (2016). CEO overconfidence and corporate debt maturity. *Journal of Corporate Finance*, 36, 93-110.
- Ianniello, G., & Galloppo, G. (2015). Stock market reaction to auditor opinions—Italian evidence. *Managerial Auditing Journal*, 30(6/7), 610-632.
- Kennedy P. (n.d.). *A Guide to Econometrics*, 6. Malden: Blackwell Publishing; 2008
- Krishnaswami, S., & Yaman, D. (2008). The role of convertible bonds in alleviating contracting costs. *The Quarterly Review of Economics and Finance*, 48(4), 792-816.
- Lewis, C. M., Rogalski, R. J., & Seward, J. K. (1999). Is convertible debt a substitute for straight debt or for common equity?. *Financial management*, 5-27.
- Menon, K., & Williams, D. D. (2010). Investor reaction to going concern audit reports. *The Accounting Review*, 85(6), 2075-2105.
- Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 109-131.
- Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: a ten year perspective. *Accounting Review*, 131-156.

APPENDIX A

Variable Definitions

CONVER = 1 if a firm includes conversion provision in the debt contract and 0 otherwise

MAO = 1 if an auditor issues a qualified opinion (#2), no opinion (#3), unqualified opinion with explanatory language (#4), and adverse opinion (#5) and 0 if an auditor issues an unqualified/clean opinion (#1)

AltMAO = 1 for unqualified opinion with explanatory language (#4) and 0 for unqualified/clean opinion (#1)

LnTA = natural logarithm of total assets

ROA = net income / total assets

MB = (long term debt + price*common shares outstanding) / total assets

CARRY = 1 if the firm has net operating loss carryforward and 0 otherwise

BigFour = 1 if an auditor is a Big 4 and 0 otherwise

LIABILITY = total debt / total assets

TAX = income taxes / total assets

ZSCORE = 1.2 (working capital / total assets) + 1.4 (retained earnings / total assets) + 3.3 (EBIT / total assets) + 0.6 (market value of equity / book value of total liabilities) + (sales / total assets)

MATURITY = short-term debt maturing in three years or less / total debt