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Earnings Management by Debt Financing Types

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Abstract: The purpose of this study is to verify whether firms manage earnings using discretionary accruals differently before financing in accordance with the choice of financing between bank loans and corporate bonds. Samples of this study are the firms listed in the Korea Exchange between 1993 and 2014. Discretionary accruals as proxy of earnings management are measured using Modified Jones Model and Performance Matched Model. The analysis compared the balances of corporate bonds and bank loans along with comparative analysis of changes in amount of bonds and loans. The results of all analysis show that the firms that use a lot of bonds adjust earnings upwardly significantly more than the firms that use bank loans before financing.

Key words: Earnings management, discretionary accruals, debt financing, corporate bonds, bank loans

INTRODUCTION

Firms need capital for project investment or working capital, etc. Firms raise capital by equity financing or debt financing. A typical way for equity financing is seasoned equity offerings. Main ways to raise debt capital are to borrow from banks or to issue corporate bonds directly to the capital market. In general, firms are known to be motivated to manage earnings before financing. In particular, earnings management before seasoned equity offerings using discretionary accruals has been proven in many previous studies by Rangan (1998), Teoh *et al.* (1998a, b), Shivakumar (2000) and Hong (2016). Firms that finance capital manage earnings upward more than firms that do not finance. Further, firms that raise their capital by issuing equity manage earnings upward more than firms that issue bonds. Some studies have analyzed earnings management before debt financing but the empirical results do not seem to be identical (Lee and Kim, 2010; Liu *et al*., 2010; Lee and Heo, 2013).

The causes of earnings management can differ across selections of detailed types of debts, namely; loans and bonds. This study verifies the difference in discretionary accruals between the firms financing by loans and the firms financing by issuing bonds. Only large firms or the firms of good credit rating can issue bonds because it finances by a number of unspecified individuals. These unspecified individuals are less capable of collecting and analyzing the information of the firms they invest. Information intermediaries such as credit rating agencies are solving these issues. Loans are made through individual contract between the financing firm and financial lending institution, thereby granting loans to firms that are smaller or have less than good credit rating. Therefore, the firms that have good credit rating can choose how to raise capital between bonds and loans, however, the effects in the financial statements are the same. There may be reasons for large firms with good credit ratings to choose one of these two debt capital financing methods, both of which have similar accounting characteristics. Among the reasons, this study focuses on earnings management using discretionary accruals.

Literature review: Bhattacharya and Chiesa (1995) argued that private debt investors have access to inside information on companies raising capital easier than public debt investors do. Financial institutions which are private debt investors are able to access the companie's internal information such as credit rating and investment planning of the companies. The study assumed that the provision of internal information to a few specific, private debt investment financial institutions is easier for a firm that finances capital by itself than the provision of internal information to numerous, unspecified public debt investors.

Kim and Bae (2006) researched the relationship between conservatism and characteristics of firms such as debt ratio, loan ratio, institutional ownership ratio, foreign ownership ratio and listing status. The result showed that conservatism of firms tend to be stronger as the debt ratio is higher, loan ratio is lower, the foreign ownership ratio is higher and if the firm is listed on the stock market. In the analysis, separating debt ratio and bank loan ratio, the result shows that the conservative inclination is especially stronger when the debt ratio is high and loan ratio is low. Further, the inclination is the weakest when the debt ratio is low and loan ratio is high. The study

assumed that the loan ratio affects firm's conservative inclination. As there are different perspectives regarding the conservatism of business accounting according to the loan ratio, the analysis was conducted empirically without hypothesizing specific directions.

Bharath *et al.* (2008) stated that private debt investors are more efficient in monitoring capital financing than public debt investors. Meanwhile, it is difficult to control agency problems for the public debt. Agency cost due to information asymmetry is relatively low for the private debt investors. Additionally, despite the fact that firms weaken or are exposed to danger due to an executive's opportunistic management toward his or her personal gain, firms can flexibly handle the situation through adaptable, constant renegotiation and exchange of information.

Chun *et al.* (2011) studied earnings management when raising capital through debt. They verified how the different private and public debt characteristics affect earnings management with a focus on the characteristics of firms' capital financing methods and how these can influence both financial reporting and business behavior. They conducted a regression analysis by establishing an absolute value of discretionary accruals estimated by the model of Kothari *et al.* (2005) as the dependent variable and the loan ratio = loan/total asset), bond ratio = bond/total asset) and bond dummy =1 if the bond balance is >0, otherwise 0) as independent variables. The result illustrated that the bond dummy variable's regression coefficient was a significant negative value which indicated that firms that issued public debt had lower earnings management that used discretionary accruals. Alternatively, the loan ratio's regression coefficient was significant and positive, indicating that firms that issued private debt had higher earnings management that used discretionary accruals. An additional analysis of the total sample was conducted by classifying the sample into sub-samples with a positive value for discretionary accruals and those with a negative value for discretionary accruals. Regarding the sub-sample with the positive discretionary accrual value, no regression coefficients for the loan and bond ratio and bond dummy variables were significant. Regarding the sub-sample with the negative discretionary accrual value, the loan ratio's regression coefficient illustrated a significant, negative value, indicating that the range of discretionary accruals expands when the loan ratio is higher. In other words as the loan ratio is higher, the more earnings are managed downward.

Park (2013) hypothesized that the debt characteristics may affect earnings management and verified it empirical analysis. Result was not significant in the analysis for the entire samples. The analysis of the sub-sample with the positive discretionary accrual value illustrated the negative relationship between public debt ratio and discretionary accruals the analysis of the sub-sample with the negative discretionary accrual value illustrated the negative relationship between private debt ratio and discretionary accruals.

Although, a few financial institutions provide firms with capital in case of loans, numerous and unspecified individuals provide firms with capital in case of bonds. When firms issue the bonds, a free-riding problem could occur as numerous investors are unspecified which leads to agency costs larger than when firms initiate the loans. When this occurs, a financial institution can monitor the firms directly or indirectly as an investor and a financial institution can protect itself by establishing various clauses. In addition, financial institutions are generally superior in collecting and analyzing information than the investors for corporate bonds. As in several previous studies claiming, bonds and loans appear to have different characteristics. Although, many preceding researches of literature have attempted to analyze this by establishing the loan and bond ratios as main variables, an analysis is rare that directly compares and analyzes both loans and bonds as in this study. Further, the research models in preceding literature have established the dependent variable (discretionary accruals) and independent variables (loan and bond ratios) within the same time frame. This indicates that the models attempt to explain the firm's characteristics at a specific time, rather than discovering the cause of earnings management. Thus, this study conducts an analysis by hypothesizing that the cause of upward earnings management before financing bonds can differ from the cause of upward earnings management before financing loans.

- H_1: Firms that use bonds more than loans will conduct more upward earnings management before financing
- H_{1-1}: Firms with a higher bond balance will conduct upward earnings management before financing more than firms with a higher loan balance
- H_{1-2}: Firms with greater changes in bonds will conduct upward earnings management before financing more than firms with greater changes in loans

MATERIALS AND METHODS

There are two models mainly used in earnings management related researches to measure discretionary accruals. One is Modified Jones Model (Dechow *et al.*,

1995) which Supplemented Jones Model (Jones, 1991) and the other is Performance Matched Model (Kothari *et al*., 2005) which improved the measurement error of Modified Jones Model. In this study, both Modified Jones Model and Performance Matched Model are used for a robust analysis Modified Jones Model (Dechow *et al*., 1995):

$$\frac{TA_t}{TA_{t-1}}=\beta_0\left(\frac{1}{A_{t-1}}\right)+\beta_1\left(\frac{\Delta REV_t-\Delta AR_t}{A_{t-1}}\right)+\beta_2\left(\frac{PPE_t}{A_{t-1}}\right)+\varepsilon_t$$

Performance Matched Model (Kothari *et al*., 2005) is:

$$\frac{TA_t}{TA_{t-1}}=\beta_0+\beta_1\left(\frac{1}{A_{t-1}}\right)+\beta_2\left(\frac{\Delta REV_t-\Delta AR_t}{A_{t-1}}\right)+\beta_3\left(\frac{PPE_t}{A_{t-1}}\right)+\beta_4 ROA_t+\varepsilon_t$$

Where:

TA_t = Total accruals
A_{t-1} = Beginning total assets
ΔREV_t = ΔRevenue $REV_t = REV_{t-1}$
ΔAR_t = ΔAccount receivable = AR_t-AR_{t-1}
PPE_t = Property, plant and equipment
ROA_t = Return on assets = Net income/total assets

To test the hypothesis that the firms use corporate bonds more than bank loans would manage upward earnings before raising capital, research model is designed and conduct regression analysis described as.

Research model:

$$DA_{t-1}=\beta_0+\beta_1 BOND\_D_t\begin{pmatrix}\text{or } BOND\_C_t \text{ or } \Delta BOND\\ \_D_t \text{ or } \Delta BOND\_C_t\end{pmatrix}+\beta_2 LEV_{t-1}+\beta_3 GW_{t-1}+\beta_4 OCF_{t-1}+\beta_5 SIZE_t+\beta_6 LOSS_{t-1}+\sum YD+\sum IND+\varepsilon_{t-1}$$

Where:

DA : DA_D = Discretionary Accruals measured by Modified Jones Model (Dechow *et al*., 1995)
DA_K = Discretionary Accruals measured by Performance Matched Model (Kothari *et al*., 2005)
BOND_D = 1 if bond is bigger than loan, otherwise 0
BOND_C = $(Bond_t\text{-}Long_t)$/total $assets_{t-1}$
ΔBOND_D = 1 if Δbond is bigger than Δloan, otherwise 0
ΔBOND_C = $(\Delta bond_t\text{-}\Delta loan_t)$/total $assets_{t-1}$ = $\{(bond_t\text{-}bond_{t-1})\text{-}(loan_t\text{-}loan_{t-1})\}$/total $assets_{t-1}$
LEV = Leverage = Debt ratio
FW = Sales growth rate
OCF = Cash Flows from operating scaled by beginning total assets
SIZE = Natural logarithm of total assets
LOSS = Loss dummy variables = 1 if the firm reported negative net income, otherwise 0
YD = Year Dummy variables
IND = Industry dummy variables
ε = Residuals

Research model to test $H_{1\text{-}1}$ is designed of which dependent variable is discretionary accruals DA (DA_D or DA_K) and a main variable BOND_D is 1 dummy variable which is 1 if the bond balance is greater than loan balance, otherwise 0. Same test is performed as well as dummy variable with continuous variable BOND_C as a main variable that deducts loan balance from bond balance for robust analysis. Research model to test $H_{1\text{-}2}$ is designed of which dependent variable is discretionary accruals DA (DA_ or DA_K) and a main variable is dummy variable ΔBOND_D which is 1 if ΔBOND is greater than ΔLOAN, otherwise 0. Same test is performed as well as dummy variable with continuous variable ΔBOND_C as a main variable that deducts Δloan from Δbond for robust analysis. LEV is included in order to control financial soundness of the firms and GW is included to control opportunities for growth. OCF is included in order to control the profitability of the firms and SIZE is included to control size effect. Also, LOSS is included in the independent variables to control the effect of loss firms to discretionary accruals.

Samples of this study are KOSPI firms listed on the Korea Exchange and the sample period is from 1993 through 2014. Firms that use different accounting methods, financial firms of which balance sheets are not reasonably comparable and the firms that do not settle in December were excluded from the sample. Data of the sample is winsorizing 1% of outlier and the final selection of samples is the total 8.076 firm year.

RESULTS AND DISCUSSION

Table 1 is descriptive statistics of the samples. Average of discretionary accruals measured by Modified Jones Model (Dechow *et al*., 1995) is -0.001 and the average of discretionary accruals measured by Performance Matched Model (Kothari *et al*., 2005) is -0.002 and both are close to zero which is the market average. The average of the main variable BOND_D is 0.405 which means there are more firms that have greater balance in loan than bond balance and the average of ΔBOND_D is 0.548 which mean there are more firms that

Table 1: Descriptive statistics

Variables	N	Mean	SD	Median	Min.	Max.
DA_D_{t-1}	8.076	-0.001	0.074	0.000	-0.250	0.221
DA_K_{t-1}	8.076	-0.002	0.059	0.000	-0.171	0.176
$BOND\_D_t$	8.076	0.405	0.491	0.000	0.000	1.000
$\Delta BOND\_D_t$	8.076	0.548	0.498	1.000	0.000	1.000
$BOND\_C_t$	8.076	0.002	0.120	-0.002	-0.450	0.327
$\Delta BOND\_C_t$	8.076	0.002	0.089	0.001	-0.293	0.323
LEV_{t-1}	8.076	0.601	0.242	0.587	0.123	1.404
GW_{t-1}	8.076	0.090	0.228	0.072	-0.565	1.097
OCF_{t-1}	8.076	0.050	0.086	0.048	-0.210	0.303
$SIZE_{t-1}$	8.076	26.434	1.506	26.163	23.715	30.801
$LOSS_{t-1}$	8.076	0.200	0.400	0.000	0.000	1.000

DA : DA_D = Discretionary Sccruals measured by Modified Jones Model (Dechow *et al*., 1995); DA_K = Discretionary Accruals measured by Performance Matched Model (Kothari *et al*., 2005); BOND_D = 1 if bond is bigger than loan, otherwise 0; BOND_C = $(bond_t\text{-}long_t)$/total $assets_{t-1}$; ΔBOND_D = 1 if ΔBOND is bigger than Δloan, otherwise 0; ΔBOND_C = $(\Delta bond_t\text{-}\Delta loan_t)$/total $assets_{t-1}$ = $\{(bond_t\text{-}bond_{t-1})\text{-}(loan_t\text{-}loan_{t-1})\}$/total $assets_{t-1}$; LEV = Leverage = debt ratio; FW = Sales growth rate; OCF = Cash flows from operating scaled by beginning total assets; SIZE = Natural logarithm of total assets; LOSS = Loss dummy variables = 1 if the firm reported negative net income, otherwise 0; YD = Year Dummy variables; IND = Industry Dummy variables; ε = Residuals

Table 2: Pearson correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11
DA_D_{t-1}	1.00										
DA_K_{t-1}	0.81***	1.00									
$BOND\_D_t$	0.06***	0.06***	1.00								
$\Delta BOND\_D_t$	0.03***	0.02*	0.15***	1.00							
$BOND\_C_t$	0.08***	0.06***	0.69***	0.26***	1.00						
$\Delta BOND\_C_t$	0.05***	0.05***	0.26***	0.66***	0.41***	1.00					
LEV_{t-1}	0.03***	0.14***	0.19***	-0.04***	0.02	0.05***	1.00				
GD_{t-1}	0.10***	0.09***	0.04***	0.01	0.04***	0.02**	0.23***	1.00			
OCF_{t-1}	-0.07***	-0.14***	0.13***	-0.04***	0.06***	0.01	-0.07***	0.02**	1.00		
$SIZE_{t-1}$	0.01	-0.03**	0.29***	-0.02**	0.19***	0.01	0.07***	0.04***	0.35***	1.00	
$LOSS_{t-1}$	-0.23***	0.01	-0.04***	-0.02*	-0.09***	-0.01	0.17***	-0.20***	-0.06***	-0.08***	1.00

Refer to Table 1 for the definition of variables; ***, ** and *Significant at the 1, 5 and 10% levels, respectively

Table 3: Univariate analysis

	Panel A: H_{1-1}			Panel B: H_{1-2}		
Variables	$BOND\_D_t = 1$	$BOND\_D_t = 0$	Difference	$\Delta BOND\_D_t = 1$	$\Delta BOND\_D_t = 0$	Difference
DA_D_{t-1}	0.004	-0.005	0.009*	0.001	-0.004	0.005***
DA_K_{t-1}	0.003	-0.004	0.007***	-0.001	-0.003	0.002***

Refer to Table 1 for the definition of variables; ***,** and *Significant at the 1, 5 and 10% levels, respectively

have greater change in bond balance than loan balance. Descriptive statistics of the other control variables are not significantly different from the values in prior studies.

Table 2 is Pearson correlation between variables. As expected, DA_D and DA_K are in a strong positive correlation. Similarly, BOND_D, ΔBOND_D, BOND_C and ΔBOND_C have a significant positive correlation with each other. Two discretionary accruals and four main variables are all in significantly positive correlation and it seems to be consistent with the hypothesis.

Panel A in Table 3 is t-tests result of the H_{1-1}. It tested the difference between average discretionary accruals of the firms which the bond balance is greater and average discretionary accruals of the firms which the loan balance is greater. Both of the test results using discretionary accruals measured by Modified Jones Model (Dechow *et al*., 1995) and Performance Matched Model (Kothari *et al*., 2005) were consistent with the hypothesis.

Panel B in Table 3 is t-tests result of the H_{1-2}. It tested the difference between average discretionary accruals of the firms which the amount change in bond balance is greater and average discretionary accruals of the firms which the amount change in loan balance is greater. Both of the test results using discretionary accruals measured by Modified Jones Model (Dechow *et al*., 1995) and Performance Matched Model (Kothari *et al*., 2005) were consistent with the hypothesis.

Panel A in Table 4 is the result of a regression analysis that verified H_{1-1} by setting the discretionary accruals estimated through the Modified Jones Model (Dechow *et al*., 1995) as the dependent variable; the dummy variable which indicates that the bond balance is greater than the loan balance is set as the main variable.

Table 4: Regression analysis using dummy variables for H_{1-1}

$DA_{t-1} = \beta_0+\beta_1 BOND\_C_t+\beta_2 LEV_{t-1}+\beta_3 GW_{t-1}+\beta_4 OCF_{t-1}+\beta_5 SIZE_{t-1}+\beta_6 LOSS_{t-1}+\Sigma YD+\Sigma IND+\varepsilon_{t-1}$

	Panel A:DA = DA_D			Panel B: DA = DA_K		
Variables	Coefficient	t-value	VIF	Coefficient	t-value	VIF
Intercept	0.017	0.95	0.00	0.016	1.07	0.00
BOND_D	0.010	5.35***	1.24	0.008	5.80***	1.24
LEV	0.020	4.78***	1.57	0.037	10.98***	1.57
GW	0.015	3.86***	1.19	0.016	5.10***	1.19
OCF	-0.008	-7.37***	1.24	-0.010	-10.97***	1.24
SIZE	-0.001	-1.10	1.59	-0.001	-2.52**	1.59
LOSS	-0.043	-20.11***	1.17	-0.002	-1.05	1.17

YD: Included; Included; IND: Included, Included; Adj. R^2 = 0.069, 0.048; F-value = 14.81, 10.46; N = 8.076, 8.076; Refer to Table 1 for the definition of variables; ***, ** and *Significant at the 1, 5 and 10% levels, respectively

Table 5: Regression analysis using continuous variables for H_{1-1}

$DA_{t-1} = \beta_0+\beta_1 BOND\_C_t+\beta_2 LEV_{t-1}+\beta_3 GW_{t-1}+\beta_4 OCF_{t-1}+\beta_5 SIZE_{t-1}+\beta_6 LOSS_{t-1}+\Sigma YD+\Sigma IND+\varepsilon_{t-1}$

	Panel A:DA = DA_D			Panel B: DA = DA_K		
Variables	Coefficient	t-value	VIF	Coefficient	t-value	VIF
Intercept	0.013	0.75	0.00	0.012	0.83	0.00
BOND_C	0.044	6.26***	1.11	0.038	6.68***	1.11
LEV	0.023	5.61***	1.57	0.040	11.88***	1.57
GW	0.014	3.62***	1.19	0.015	4.84***	1.19
OCF	-0.008	-7.09***	1.24	-0.010	-10.68***	1.24
SIZE	-0.001	-0.83	1.52	-0.001	-2.24**	1.52
LOSS	-0.043	-19.92***	1.17	-0.001	-0.85	1.17

YD: Included, Included; IND: Included, Included; Adj. R^2 = 0.070, 0.049; f-value = 15.07, 10.73; N= 8.076. 8.076; Refer to Table 1 for the definition of variables; ***, ** and *Significant at the 1, 5 and 10% levels, respectively

The result illustrates that the BOND_D coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more when the bond balance is greater than the loan balance.

Panel B in Table 4 illustrates the results of the regression analysis that verified H_{1-1} by setting the discretionary accruals estimated through the Performance Matched Model (Kothari *et al*., 2005) as the dependent variable and the dummy variable which indicates that the bond balance is greater than the loan balance as the main variable. The result illustrates that the BOND_D coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when the bond balance is greater than the loan balance. The results from the two analyses are consistent with the argument in H_{1-1}.

Panel A in Table 5 is the result of a regression analysis that verified H_{1-1} by setting the discretionary accruals estimated through the Modified Jones Model (Dechow *et al*., 1995) as the dependent variable and the continuous variable which indicates the difference between the bond balance and the loan balance as the main variable. The result illustrates that the BOND_C coefficient β_1 is significant and positive indicating that firms conduct upward earnings management more often when the bond balance is greater than the loan balance.

Panel B in Table 5 is the result of a regression analysis that verified H_{1-1} by setting the discretionary accruals estimated through the Performance Matched Model (Kothari *et al*., 2005) as the dependent variable and the continuous variable which indicates the difference between the bond balance and the loan balance as the main variable. The result illustrates that the BOND_C coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when the bond balance is greater than the loan balance. The results from the two analyses are consistent with the argument in H_{1-1}.

Panel A in Table 6 is the result of a regression analysis that verified H_{1-2} by setting the discretionary accruals estimated through the Modified Jones Model (Dechow *et al*., 1995) as the dependent variable and the dummy variable which indicates that changes in bonds are greater than the change in loans as the main variable. The result illustrates that the ΔBOND_D coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when changes in bonds are greater than changes in loans.

Panel B in Table 6 is the result of a regression analysis that verified H_{1-2} by setting the discretionary accruals estimated through the Performance Matched Model (Kothari *et al*., 2005) as the dependent variable and the dummy variable which indicates that changes in bonds are greater than changes in loans as the main variable. The result illustrates that the ΔBOND_D

Table 6: Regression analysis using dummy variables for H_{1-2}

$DA_{t-1} = \beta_0+\beta_1 BOND\_C_t+\beta_2 LEV_{t-1}+\beta_3 GW_{t-1}+\beta_4 OCF_{t-1}+\beta_5 SIZE_{t-1}+\beta_6 LOSS_{t-1}+\Sigma YD+\Sigma IND+\varepsilon_{t-1}$

	Panel A: DA = DA_D			Panel B: DA = DA_K		
Variables	Coefficient	t-value	VIF	Coefficient	t-value	VIF
Intercept	-0.012	-0.66	0.00	-0.009	-0.63	0.00
ΔBOND_D	0.004	2.37**	1.02	0.002	1.66*	1.02
LEV	0.022	5.28***	1.57	0.038	11.49***	1.57
GW	0.014	3.74***	1.19	0.015	4.98***	1.19
OCF	-0.008	-7.05***	1.24	-0.010	-10.33***	1.24
SIZE	0.001	0.48	1.45	-0.001	-0.87	1.45
LOSS	-0.043	-20.04***	1.17	-0.002	-1.02	1.17

YD: Included, Included; IND = Included, Included; Adj. R^2 = 0.066, 0.044; F-value = 14.23, 9.70; N = 8.076, 8.076; Refer to Table 1 for the definition of variables; ***, ** and *Significant at the 1, 5 and 10% levels, respectively

Table 7: Regression analysis using continuous variables for H_{1-2}

$DA_{t-1} = \beta_0+\beta_1 BOND\_C_t+\beta_2 LEV_{t-1}+\beta_3 GW_{t-1}+\beta_4 OCF_{t-1}+\beta_5 SIZE_{t-1}+\beta_6 LOSS_{t-1}+\Sigma YD+\Sigma IND+\varepsilon_{t-1}$

	Panel A: DA = DA_D			Panel B: DA = DA_K		
Variables	Coefficient	t-value	VIF	Coefficient	t-value	VIF
Intercept	-0.009	-0.50	0.00	-0.007	-0.51	0.00
ΔBOND_C	0.037	4.15***	1.02	0.028	3.87***	1.02
LEV	0.021	5.07***	1.57	0.038	11.31***	1.57
GW	0.014	3.72***	1.19	0.015	4.96***	1.19
OCF	-0.008	-7.17***	1.24	-0.010	-10.75***	1.24
SIZE	0.001	0.45	1.45	-0.001	-0.89	1.45
LOSS	-0.043	-20.03***	1.17	-0.002	-0.99	1.17

YD: Included, Included; IND: Included, Included; Adj. R^2 = 0.067, 0.046; F-value = 14.52, 10.00; N = 8.076, 8,076; Refer to Table 1 for the definition of variables; ***, ** and *Significant at the 1, 5 and 10% levels, respectively

coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when changes in bonds are greater than changes in loans. The results from the two analyses are consistent with the argument in H_{1-2}. Panel A in Table 7 is the result of a regression analysis that verified H_{1-2} by setting the discretionary accruals estimated through the Modified Jones Model (Dechow *et al*., 1995) as the dependent variable and the continuous variable which indicates the difference between changes in bonds and changes in loans as the main variable. The result illustrates that the ΔBOND_C coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when changes in bonds are greater than changes in loans.

Panel B in Table 7 is the result of a regression analysis that verified H_{1-2} by setting the discretionary accruals estimated through the Performance Matched Model (Kothari *et al*., 2005) as the dependent variable and the continuous variable which indicates the difference between changes in bonds and changes in loans as the main variable. The result illustrates that the ΔBOND_C coefficient β_1 is significant and positive, indicating that firms conduct upward earnings management more often when changes in bonds are greater than changes in loans. The results from the two analyses are consistent with the argument in H_{1-2}. The results from the correlation, univariate and all regression analyses conducted in this study consistently support the hypotheses.

CONCLUSION

This study uses data from KOSPI-listed non-financial businesses from 1993-2014 to analyze how upward earnings management which uses discretionary accruals, differs across a selection of different financing methods. Small-sized firms or firms with low credit ratings experience limits when issuing bonds as a manner to curtail the public debt. Regular investors, who have limited access to information regarding the bond-issuing firm, focus on investing in KOSPI-listed firms among listed firms with well-established disclosure systems. Non-listed and small and medium-sized firms experience more difficulty in issuing bonds than KOSPI-listed firms; thus, they often use loans from financial institutions or private debt, when financing debt capital. Compared with other firms, KOSPI-listed firms are more flexible to choose loans or bonds. This study conducts its analysis under the hypothesis that firm's earnings management behavior will differ across debt financing methods or the choice between bonds and loans. This result illustrates that firms that use bonds conduct upward earnings management more often than firms that use loans do.

SUGGESTIONS

Contributions of this study are as follows: Bond investors need to be cautious noting that the firms may

have managed earnings upward. Credit rating agencies need to reflect the increased earnings when rating the firms that issuing bonds. Financial analysts and investment bankers need to decrease the portion of earnings from the price which was increased at the time of issuing bonds. In addition, external auditors need to take the appropriate efforts on the audit for the firms that issued bonds considering that these firms might have managed earnings.

LIMITATIONS

However, the study was limited to using bonds and loans data from financial statements, rather than actual data from bonds and loans issuances due to the limitation in collecting data. Therefore, this study's limitation is that it could not analyze the data precisely.

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