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Convertible Debt Issuance and Earnings Management: Evidence from Japanese Issuers

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1. Introduction

Earnings management is not a new topic for either standard setters or researchers. Flexibility in Generally Accepted Accounting Principles (GAAP) has provided the means for managers to manipulate reported earnings. The accounting failure to present accurate pictures of firms has resulted in substantial losses in market value for many public companies. Pressure to manage earnings does not come from a single force. Factors such as analyst forecasts, access to capital markets, competition, contractual obligations, new financial transactions, merger attractiveness, management compensation, short-term focus, unrealistic plans and budgets, and job retention are among the many reasons for such pressure discussed in the literature (Schipper and Vincent, 2003 and Healy and Wahlen, 1999). Earnings management has become the focus of much of the current research after former Securities and Exchange Commission (SEC) Chairman Arthur Levitt cautioned about earnings manipulation by managers in a series of speeches in 1998 and after the publicity that resulted from the corporate scandals in the United States including those surrounding Enron and WorldCom. Dechow and Skinner (2000) suggest that academic research efforts should focus on capital market incentives, including raising equity capital, for earnings management. While a significant body of research has been conducted on earnings management around various security issuances in the U.S. markets, such investigation is limited in an international setting.

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In this study, we investigate whether Japanese convertible debt issuing firms manipulate earnings around the issuance and whether such manipulated earnings help explain the long-term post-issue stock performance. The Japanese stock market is tremendous in size and has significant global influence. Japan is one of the most important economic nations in the world, and at one point during our sample period, the Tokyo Stock Exchange (TSE) was the largest stock exchange in the world, as measured in terms of total market capitalization of listed firms. Therefore, understanding the role of accounting numbers in convertible debt issues of Japanese firms has significant global implications.

We find that managers of Japanese convertible debt issuers engaged in income-increasing earnings management around the time of issuance. The mean and median of discretionary accruals, a proxy for earnings management, of 1,718 sample firms from 1977 to 2002 are 3.64 percent and 3.02 percent of total assets in the year of issuance. To explore the relation of discretionary accruals at the time of convertible debt issuance with post-issue stock performance, the sample is divided into four groups based on the discretionary accruals in the issuing year. The quartile group with the smallest discretionary accruals is called the conservative group and the one with the largest discretionary accruals the aggressive group. We find that the aggressive group has consistently poorer post-issue stock performance than the conservative group. For example, the five-year post-issue market excess return of the aggressive group lags behind that of the conservative group by 11.07 percent, and the five-year post-issue abnormal return of the aggressive group lags behind that of the conservative group by 5.49 percent. This result suggests that firms that inflate their earnings more aggressively

around the time of convertible debt issuance experience poorer long-term stock performance subsequent to the issuance.

Kang et al. (1999) argue that investors are over-optimistic when firms issue convertible debt. To explore a possible cause of this optimism, we run regressions of the post-issue stock performance on discretionary accruals at the time of convertible debt issuance, along with control variables such as size, book to market ratio, and industry dummies. Three-year and five-year post-issue stock raw returns, market excess returns and abnormal returns of issuing firms are all negatively correlated with the discretionary accruals made in the year of the issuance. This evidence supports the hypothesis that the discretionary accruals around the issuance of convertible debt predict the post-issue stock underperformance. Thus, earnings manipulation around the time of convertible debt issuance could be a cause of over-optimism among investors at the time of the issuance.

The findings of our study have important implications to external auditor as well as the audit committee of the issuing firm. In particular, if a firm reports unusually high earnings around the time of convertible debt issuance, the auditor and audit committee should be concerned about why such number is reported. Does the management intend to manipulate the perception of the market participants regarding the value of the firm's stocks? If the auditor and audit committee have determined that the reported earnings number is not reflecting the true performance of the firm, they can then look for the areas where the management could have used to attain the reported number and whether such evidence, if any, would indicate fraudulent reporting practices. Furthermore, since the auditing process helps mitigate earnings management, the audit committee and the board of directors may consider to involve additional audit services before earnings numbers are released to the financial markets around the time of convertible debt issuance. While

this work will increase the overall cost of audit, it may be worthwhile because the quality of earnings of the firm, and therefore the credibility of the firm's financial statements, will be improved in the process.

2. Literature Review and Hypotheses Development

Following the pioneering work of Ritter (1991) and Jain and Kini (1994) on poor subsequent long-run firm performance of initial public offerings, the empirical literature on long-run post-issue performance of security offerings has largely evolved into two categories. The first category examines the post-issue performance of seasoned equity offerings (SEOs). The findings of this research suggest that firms conducting SEOs in the U.S. (Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995; McLaughlin et al., 1996; Loughran and Ritter, 1997; Teoh et al., 1998; and Rangan, 1998), in the U.K. (Levis, 1995) and in Japan (Cai and Loughran, 1998) experience significant downward drift in firm's stock performance for up to five years after the offering. The second category investigates the post-issue firm performance of convertible debt issuance[i]. Bae et al. (2002), Lee and Loughran (1998) and McLaughlin et al. (1998) find that U.S. issuers of convertible debt experienced improved firm performance during the pre-issue period, and deteriorating performance during the post-issue period. Abhyankar and Ho (2006) and Kang et al. (1999), respectively, document similar phenomena in the U.K. and in Japan. The most often-cited explanation for the poor post-issue firm performance is that, to maximize the wealth of existing shareholders, managers have incentive to issue equity or convertible debt when the firm's shares are overvalued.

Many practitioners, such as Kellogg and Kellogg (1991), argue that managers of publicly listed firms manipulate reported earnings to increase the firm's stock price. Similar to the SEO, the incentive to manage reported earnings is particularly important around the time of a convertible debt offering. Current shareholders of the issuing firm would benefit if earnings management influences market perceptions of the value of the firm. Specifically, the firm can raise the debt under more favorable terms than if earnings were not managed. Sloan (1996) documents that the stock market does temporarily overvalue firms that have high levels of accounting accruals. However, the benefit of earnings management is partially offset by its expected costs to issuing firms and their managers if earnings management is discovered. In the U.S., investors can sue firms and their managers for misleading disclosures or false statements in offering materials filed with the SEC. For example, DuCharme et al. (2004) study the post issue lawsuits against U.S. SEO firms and find that earnings management had frequently occurred around the time of the SEO issuance. Finally, the discovery of earnings can reduce the credibility of issuing firms' financial statements and hence impair their subsequent ability to raise capital in favorable terms.

Leuz et al. (2003) document that both outside investor rights and legal enforcement are lower in Japan than in the U.S. According to Leuz et al. (2003), earnings management occurs more frequently in countries where legal protection provided to outside investors is weak, and less frequently in countries where outside investors are provided more stringent protection by the country's legal system. Therefore, it is likely that earnings management is present among Japanese firms around the time of the convertible debt issuance. Thus, our first hypothesis is:

H1: Managers of Japanese convertible debt issuing firms manipulate reported earnings upward around the time of issuance.

The issuances of equity and convertible debt are directly related. The most prominent feature of convertible debt is that it can be converted into common shares at a conversion ratio determined at debt issuance. Stein (1992) argues that firms can use convertible debt as "backdoor" equity financing, mitigating the adverse-selection costs of information asymmetries associated with SEOs. If investors are over-optimistic about the earnings potential of issuing firms, and if firms take advantage of this overvaluation, researchers should find poor subsequent firm performance for issuing IPOs and SEOs. Similarly, managers, who possess superior information about the firm's future prospects, should be able to inflate stock price prior to the convertible debt issuance so that the conversion ratio of the debt is in favor of the existing shareholders. Therefore, it is conceivable that convertible debt issuance is followed by poor firm performance.

Studies on IPO and SEO hypothesize that investors fail to recognize earnings management at the time of issuance and naively extrapolate pre-offering earnings increases (Aharoney et al., 1993; Rangan, 1998; Teoh et al., 1998). As a result, these studies find that the income increasing earnings management at the time of IPO or SEO is associated with poor post-issue stock performance. Since convertible debt has an equity-like characteristic, it is therefore likely that the overvaluation of the offering firm's stock is caused by earnings management around the time of the issuance. If so, the income increasing earnings management around the time of convertible debt issuance should be associated with poor post-issue stock performance. Thus, our second hypothesis is stated as follows:

H_2: The poor long-term post-issue stock performance of Japanese convertible debt issuers is negatively associated with the income-increasing discretionary accruals at the time of the issuance.

3. Sample and Methodology

The sample of Japanese convertible debt issues is obtained from the Needs Corporate Action Related Data. The time period covered is from 1977 to 2002. The firms' financial statement data and stock return data are obtained from the PACAP database. To qualify for inclusion in the sample, firms issuing convertible debt must have the necessary financial data to allow for a calculation of discretionary accruals in the year prior to the issuance, matching measurements, and stock returns for five years after the issuance.[ii] Financial and utility firms are excluded from the sample because these firms are subject to special financial reporting regulations. In order to reduce the confounding effects on earnings management from public equity offerings, firms conducting public equity offerings in the same year are also excluded from the sample. If a firm issued multiple convertible debts in any three-year period, only the first issue is maintained in the sample.

The final sample contains 1,718 observations. Table 1 presents the sample size and gross proceeds by year and industry classification for the Japanese convertible debt issuances. Six years (1984, 1985, 1987, 1988, 1989, and 1996) are particularly active and contain more than 100 issues each year.

The study employs the cross-sectional modified Jones (1991) model to estimate discretionary accruals in the years around the convertible debt issuances. Since firm past performance may affect the level of the accruals, the lagged return on assets (ROA) is

also included in the regressions to estimate nondiscretionary accruals for each firm (Kathori et al., 2005).

Total accruals are measured using the balance sheet approach:

$$TA_t = [\ (\Delta CA_t - \Delta CASH_t) - (\Delta CL_t - \Delta CMLTD_T) - DEP_t\ ] / A_{t-1} \quad (1)$$

where

TA_t = total accruals in year *t*,
ΔCA_t = change in current assets in year *t*,
$\Delta CASH_t$ = change in cash in year *t*,
ΔCL_t = change in current liabilities in year *t*,
$\Delta CMLTD_t$ = change in current portion of long-term debt in year *t*,
DEP_t = depreciation and amortization expense in year *t*, and
A_{t-1} = total assets at the end of year *t*-1.

We measure nondiscretionary accruals for firm *i* in year *t* (NDA_{it}) as:

$$NDA_{it} = \beta_{0it}(1/A_{it-1}) + \beta_{1it}\ (\Delta REV_{it}\ /A_{it-1} - \Delta REC_{it}\ /A_{it-1}) + \beta_{2it}\ (PPE_{it}\ /A_{it-1}) + \beta_{3it}\ (ROA_{t-1}) \quad (2)$$

where:

ΔREV_{it} = change in revenue for firm *i* in year *t*,
ΔREC_{it} = change in net receivables for firm *i* in year *t*,
PPE_{it} = gross property, plant, and equipment for firm *i* at the end of year *t*,
ROA_{t-1} = Return on average assets in year *t-1*, and
$\beta_{0it}, \beta_{1it}, \beta_{2it}, \beta_{3it}$ = firm-specific parameters for firm *i* in year *t*.

In equation (2), the firm-specific parameters, β_{0it}, β_{1it}, β_{2it} and β_{3it}, are estimated cross-sectionally using the two-digit SIC code as defined by Needs' industry classification (see Cai and Loughran 1998, p.401) for firm *j*'s data ($j \neq i$):

$$TA_{jt} = \beta_{0it}\ (1/\ A_{jt-1}) + \beta_{1it}\ (\Delta REV_{jt}\ /\ A_{jt-1}) + \beta_{2it}\ (PPE_{jt}\ /\ A_{jt-1}) + \beta_{3it}\ (ROA_{t-1}) + \varepsilon_{jt} \quad (3)$$

Once the nondiscretionary accruals are estimated, the discretionary accruals for firm *i* in year *t* (DA_{it}) are calculated as the prediction error:

$$DA_{it} = TA_{it} - NDA_{it} \quad (4)$$

Managers of issuing firms may have managed earnings for reasons other than to induce investor optimism. Two prominent reasons relate to firm desire to reduce political cost and debt default cost (Watt and Zimmerman, 1986). Empirically, a firm's political cost is usually proxied by firm size, and debt default cost is proxied by the firm's leverage. To mitigate the impact of these two factors on the measurement of earnings management, this study employs a matched control sample of non-issuers. If the discretionary accruals of the issuing firms differ significantly from those of the non-issuing control firms in year *t*,[iii] then there is evidence of earnings management among the issuing firms in year *t* and the results of earnings management of the issuers are not likely due to incentives other than inducing investors to accept terms more favorable to the issuers.

For the matching procedure, one control firm is selected for each convertible debt issuing firm by matching the total assets and debt-to-asset ratio in the same industry at the end of year –1. The control firm should not have conducted equity and convertible debt issuance in the following three years. Because there are two continuous variables involved in matching, this study employs the procedure proposed by Murray (1983). In particular, for each potential matched firm, the Mahalanobis distance is calculated as:

$$D^2 = (\mathbf{M}_b - \mathbf{M}_c)' W^{-1} (\mathbf{M}_b - \mathbf{M}_c), \qquad (5)$$

where:

D^2 = the distance measure of firm b from convertible debt issuing firm c,
$\mathbf{M}_b$= a vector of matching variables for firm b,
$\mathbf{M}_c$= a vector of matching variables for convertible debt issuing firm c, and
W = the covariance matrix of the cross-section of matching variables.

D^2 is considered to be a univariate measure of multidimensional differences and is calculated for all non-issuing firms within the same two-digit SIC code as the issuing firm. The control firm is the firm with the smallest D^2. The Mahalanobis distance

approach provides a more precise matching measurement than does the Euclidean distance approach in that it considers the variance and covariance of each matching variable (Murray, 1983).

Three measures of stock performance are used in this study - raw return, market excess return, and abnormal return. All measures are the buy-and-hold returns. The raw returns and market excess returns do not adjust for firm risk and, therefore, are biased estimates of stock performance. The purpose of including these two measures is to serve as benchmarks for the abnormal returns.

The abnormal return of an issuing firm is calculated as the difference between the buy-and-hold raw return of the issuer and that of its matched non-issuer. Finding the correct matching firm is critical in this process, as measures of long-term abnormal stock returns can be subject to greater measurement errors than measures of short-term returns (Kothari and Warner 1997). Barber and Lyon (1997) analyze the empirical power and specification of test statistics in event studies designed to investigate long-run abnormal stock performance and conclude that the control firm approach, in which sample firms are matched by similar size and book-to-market ratios of industry peers, yields well specified test statistics. The matching procedure in this study will employ the Mahalanobis distance approach using two continuous variables—firm size and book-to-market ratio—for a firm within the same two-digit SIC code as the issuer. The firm with the smallest D^2 in the same two-digit SIC code is the control firm for the issuer.

With the issuing year defined as year 0, discretionary accruals of issuing firms in years -2, -1, 0, +1, +2 are calculated. The most important measures used to test Hypothesis 1 are discretionary accruals in years -1 and 0, since discretionary accruals for other years are not expected to be significantly different from zero. A statistically

significant positive measure of discretionary accruals in either year -1 or year 0 (or both) will lend support to Hypothesis 1.

Testing Hypothesis 2 involves two steps. In the first step, four portfolios of issuers are formed based on the quartiles of discretionary accruals around the issue year; the discretionary accruals for the year that are significantly positive are used to form the portfolios, and the two extreme portfolios are labeled the aggressive (quartile 4) and the conservative (quartile 1) convertible debt issuers. The abnormal returns for each portfolio are calculated as the cumulative buy-and-hold return on sample firms less the simple cumulative buy-and-hold return on control firms over the three-year post-issue period. Hypothesis 2 predicts that the most aggressive issuers will exhibit the most negative post-issue abnormal returns and that the most conservative issuers will exhibit the least negative post-issue abnormal returns in terms of magnitude. This first step provides a view of the relationship between the earnings management around the time of convertible debt issuance and the post-issue stock performance.

Building upon the results of the first step, the second step is a formal statistical test of Hypothesis 2. Specifically, OLS regressions are run using the individual issuer's three and five year post-issue raw returns, market access returns, and abnormal returns as the dependent variable. The independent variable of primary interest to the study is the abnormal accruals for year -1 or year 0, whichever is significantly positive. The regressions also include an industry dummy, firm size, and book to market variables as control variables. The industry dummy accounts for post-issue stock performance across industries and firm size and book to market variables control for firm characteristics. A significantly negative estimate of the coefficient of the discretionary accruals variable will lend support to Hypothesis 2.

The OLS regression model is specified as:

$$R_i = \beta_0 + \beta_1 (DA_i) + \beta_2 (Size_i) + \beta_3 (BtoM_i) + \Sigma \gamma (Industry\_dummies_i) + \varepsilon_i \quad (6)$$

where:

R_i = issuer's raw return, market excess return, or abnormal return,
DA_i = issuer's discretionary accruals around issuance,
$Size_i$ = issuer's market value of equity,
$BtoM_i$ = book to market ratio, and
$Industry\_dummies_i$ = industry dummy variables.

4. Empirical results

a. Earnings management around the issuance of convertible debts

Table 2 reports five years of asset-scaled discretionary accruals around the issue of convertible debts for Japanese issuers and those for the control firms. Figure 1 depicts the median of discretionary accruals for the issuers and control firms over the same period. For years -2 and -1, the mean and median are not significantly different from zero except for the mean for year -2 which is 0.3 percent of total assets -- only marginally greater than zero. For years 0, the issue year, the discretionary accruals for issuing firms have a mean of 3.64 percent and a median of 3.02 percent of total assets, and both are significantly great than zero. For years +1 and +2, the means and medians are not statistically different from zero at the conventional levels. The results show that in the issue year Japanese convertible debt issuing firms show significant positive discretionary accruals which is the signal for earnings management.

Incentives for managers to manage earnings may also be due to firm size and leverage; therefore the results from the modified Jones model should be compared with

those of the control group to draw an overall inference about earnings management around the convertible debt issuance. Table 2 also reports the means and medians for those control firms over the same time period. All of the means and medians of the control firms are less than 0.5 percent of the total assets, although the mean (0.49 percent of total assets) and the median (0.41 percent of total assets) in year -1, and the mean (0.3 percent of total assets) in year +1 are significantly positive. The study conducts pair-wise comparison tests on the differences in discretionary accruals between convertible debt issuers and their control firms, and the result shows that in year 0, convertible bond issuers have significantly greater discretionary accruals in both their mean and median than their none-issuing peers, suggesting that the observed abnormally high magnitude of earnings managements in year 0 cannot be attributed to firm size, leverage or the industry-specific categories of the sample. In year -1, both the mean and median of the issuing firms are significantly less than those of their control firms, but the magnitude of the discretionary accruals of issuing firms are very close to zero (-0.05 percent of total assets in mean and -0.34 percent of total assets in median). The comparison of the means and medians of discretionary accruals between the issuing firms and the control firms does not reveal any statistically significant difference in other years. Thus, the empirical results support the argument that Japanese managers tend to manipulate earnings upward when issuing convertible debts.

There exist some prominent differences in the timing of earnings management between U.S. and Japanese equity and convertible debt issuers. Existing literature on U.S. equity and convertible debt issuance documents that managers of U.S. issuers tend to manipulate earnings in the year prior to the issuance and in the year of issuance (Friedlan, 1994; Aharony et al., 1993; DuCharme et al., 2001; Teoh et al., 1998; Rangan,

1998), while we find that Japanese managers tend to manipulate earnings only in the year during which they issue the convertible debt. DuCharme et al. (2004) document that U.S. equity issuers may become the target of legal action when they manipulate earnings. Thus, U.S. managers that issue equity and convertible debt are likely to choose to manipulate earnings in the year prior to the issue and continue to management earnings in the issue year, rather than just immediately before the issue. This litigation avoidance behavior is also found in Frankel et al. (1995) who find that forces such as legal liability deter managers from more frequent forecasting around the time of an actual equity offering, even though the tendency to issue management forecasts and to finance externally are positively associated over a long period of time.

Existing literature documents that investor protection is weaker in Japan (La Porta et al., 2000; Leuz et al., 2003; and Lang et al., 2004), so managers are more likely to manipulate their earnings immediately before the issuance of convertible debt without worrying about the risk of litigation. One way to manipulate investors' expectations about a firm's future performance is to voluntarily disclose the (inflated) earnings forecast before issuing convertible debt.[iv] Consequently, issuing firms are more likely to make income increasing-accounting decisions to meet these earnings predictions when they prepare financial statements at the end of the issue year (Kasznik, 1999).[v]

b. Discretionary accruals and post-issue stock performance

We examine the relationship between discretionary accruals in the year of convertible debt issuance and the post-issue stock performance. Existing literature documents that after issuing convertible debt, firms experience negative abnormal stock performance (Kang et al., 1999; McLaughlin et al. 1998). This study examines the

sample firms and finds results consistent with existing literature. The literature postulates that the negative abnormal stock return is due to over-optimism among investors about the future performance of issuing firms. This study argues that earnings management around the convertible debt issue could be a cause of investor over-optimism, because the inflated earnings around the issuance could mislead investors about the issuer's future performance. The reversal of accruals in the following years results in a drop in the issuer's stock price, thus, the more the earnings are manipulated, the poorer the post-issue stock performance will be.

To test this hypothesis, we first classify the issuing firms according to the level of their discretionary accruals in the issue year to derive four portfolios. The quartile group with the lowest discretionary accruals is called the conservative group, and the group with the highest discretionary accruals is called the aggressive group. Buy-and-hold raw returns are developed for each portfolio, and the portfolio is rebalanced every year. Market excess returns for each portfolio are also calculated. In addition, we adopt the Mahalanobis distance approach to develop a control firm for each sample firm with a similar size and book to market ratio in the same industry. The buy-and-hold excess returns over their control firms for each portfolio are also calculated as abnormal returns.

Table 3 reports the raw returns, the market excess returns, and the abnormal returns for the conservative and aggressive portfolios for each year over a five-year post-issue period. The three-year buy-and-hold returns of the conservative group are consistently greater than those of the aggressive group; the three-year raw return of the conservative group is 28.85 percent and that of the aggressive group is 7.55 percent; the three-year market excess return of the conservative group is -12.31 percent and that of the aggressive group is -21.40 percent; and the three-year abnormal return of the

conservative group is -14.72 percent and that of the aggressive group is -16.93 percent. The five-year buy-and-hold returns show a similar pattern: the five-year raw return of the conservative group is 52.31 percent and that of the aggressive group is 22.42 percent; the five-year market excess return of the conservative group is -15.20 percent and that of the aggressive group is -26.27 percent; and the five-year abnormal return of the conservative group is -18.05 percent and that of the aggressive group is -23.54 percent. The results show that the aggressive quartile performs more poorly than the conservative quartile, suggesting that the higher the level of discretionary accruals prior to convertible debt issuance, the poorer the post-issue stock performance will be.

The study runs OLS regressions of three-year and five-year post-issue stock raw returns, market excess returns, and abnormal returns on discretionary accruals for the issue year, as well as on the control variables of market value, book-to-market, and industry dummies (see equation (6)). The regression is run at the firm level, and Table 4 reports the results of the regressions of post-issue stock returns on discretionary accruals in the year in which convertible debts are issued. The results show that both three-year and five-year post-issue buy-and-hold returns are significantly associated with discretionary accruals in the issue year: the coefficient of discretionary accruals on three-year raw returns is -1.2130 with t = -4.95; the coefficient of discretionary accruals on three-year market excess returns is -0.4928 with t = -3.56; and the coefficient of discretionary accruals on three-year abnormal returns is -0.2360 with t = -1.39. The coefficient of discretionary accruals on five-year raw returns is -1.7749 with t = -4.40; the coefficient of discretionary accruals on five-year market excess returns is -0.5156 with t =

-2.77; and the coefficient of discretionary accruals on five-year abnormal returns is -4246 with t = -1.88.

The results in table 4 support our argument that higher discretionary accruals in the issue year are associated with poorer the three-year and five-year post-issue raw returns, market excess returns, and abnormal returns. Therefore, the level of earnings management is associated with the post-issue stock underperformance, suggesting that earnings management could be a factor causing investors' over-optimism around the time of the issue of convertible debts.

5. Conclusion

Convertible debt issuance provides a direct incentive to Japanese managers to manipulate earnings. In doing so, managers may portray a rosy picture of the firms' prospects to attract new investors and obtain more favorable terms for selling the convertible debt. This study examines whether Japanese convertible debt issuers manipulate their earnings around the time of issuance, and the empirical results suggest that managers did engage in income-increasing earnings management around the time of convertible debt issuance.

The study also examines the effect on stock performance of earnings management around the issue of convertible debt for Japanese firms. Investors can be misled by manipulated earnings and become over-optimistic about the issuers' future performances. When the income-increasing accruals reverse in subsequent periods, investors become disappointed and push down the stock price to the firms' fundamental values. The study finds that post-issue stock underperformance is associated with earnings management

around the time of convertible debt issuance and that the higher the level of earnings management, the poorer the post-issue stock performance will be.

The study is important because of the importance of Japanese stock markets in the world. The outcome of the study could have significant implications for future research in this area. For example, a similar argument can be made that managers have motivation to report higher earnings at the time of the issuance of other seasoned equity offerings. Although Kang et al. (1997) report that low stock returns followed equity offerings by Japanese firms, they made no attempt to investigate whether earnings management causes this poor performance. Future Research can also examine whether the convertible preferred stock issuances in U.S. and Japanese markets are also followed by poor stock returns, and may thus investigate whether earnings management at the time of the issuance causes the poor performance.

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Table 1: Summary of Japanese convertible debt issuance sample size and gross proceeds

Panel A: Sample size and average gross proceeds by calendar year

Year	Sample size	Average gross proceeds (billion yen)
1977	44	7.48
1978	55	4.97
1979	65	6.81
1980	43	7.42
1981	68	8.21
1982	73	6.38
1983	87	8.31
1984	108	8.24
1985	118	10.70
1986	85	12.30
1987	136	14.90
1988	134	14.10
1989	136	18.40
1990	58	13.10
1991	64	12.10
1992	24	14.20
1993	64	15.10
1994	77	17.40
1995	36	13.00
1996	108	19.20
1997	26	8.05
1998	13	7.84
1999	27	10.80
2000	24	13.20
2001	21	7.29
2002	24	24.70
Total	1718	12.30

Table 1: Summary of Japanese convertible debt issuance sample size and gross proceeds (continued)

Panel B: Sample size and average gross proceeds by industry classification

Industry classification	Sample size	Average gross proceeds (billion yen)
Construction	129	9.40
Foods	103	9.98
Textiles	53	8.21
Pulp And Paper	30	10.60
Chemicals	227	9.69
Rubber	18	7.71
Glass And Ceramics	34	15.40
Iron And Steel	43	18.00
Nonferrous Metals	48	13.20
Metal Products	31	6.45
Machinery	141	8.45
Electric Machinery	245	17.80
Transportation Equipment	142	14.60
Precision Equipment	39	9.52
Other Manufacturing	54	8.76
Wholesale	89	14.50
Retail	109	11.40
Real Estate	36	18.50
Shipping	11	8.99
Land Transportation	62	15.40
Air Transportation	9	32.30
Warehousing And Wharfing	14	8.78
Services	39	8.79
Others	12	14.92
Total	1718	12.30

Table 2: Discretionary accruals for issuing firms versus control firms

Variable	Mean	Std. Dev.	Median	Min	Max
Year –2 (N=1669)					
CB firms	0.0030*	0.0682	0.0008	-0.9900	0.4740
	(t=1.83, pr=0.067)		(pr=0.186)		
Control firms	0.0013	0.6384	0.0014	-0.3304	0.4713
	(t=0.86, pr=0.389)		(pr=0.518)		
Test of difference	(t=0.75, p=0.456)		(pr=0.858)		
Year –1 (N=1718)					
CB firms	-0.0005	0.0676	-0.0034	-0.8334	0.3973
	(t=-0.31, pr=0.754)		(pr=0.109)		
Control firms	0.0049***	0.0721	0.0041***	-0.9714	0.4461
	(t=2.78, pr=0.006)		(pr=0.004)		
Test of difference	(t=-2.25, pr=0.025)		(pr=0.017)		
Year 0 (N=1716)					
CB firms	0.0364***	0.0760	0.0302***	-0.5214	0.4611
	(t=19.82, pr=0.000)		(pr=0.000)		
Control firms	0.0016	0.0686	0.0003	-0.5514	0.3122
	(t=0.988, pr=0.324)		(pr=0.201)		
Test of difference	(t=14.04, p=0.000)		(pr=0.000)		
Year +1 (N=1713)					
CB firms	0.0024	0.0677	0.0006	-0.4011	0.4584
	(t=1.49, pr=0.135)		(pr=0.694)		
Control firms	0.0030**	0.0630	0.0010	-0.4013	0.3802
	(t=1.96, pr=0.05)		(pr=0.148)		
Test of difference	(t=-0.24, p=0.807)		(pr=0.653)		
Year +2 (N=1686)					
CB firms	0.0019	0.0649	0.0016	-0.5497	0.5303
	(t=1.216, pr=0.224)		(pr=0.426)		
Control firms	0.0029*	0.0675	0.0011	-0.4454	0.5269
	(t=1.75, pr=0.081)		(pr=0.141)		
Test of difference	(t=-0.419, p=0.675)		(pr=0.966)		

Notes:

a. Paired-sample t-test is used to evaluate difference in means, and Wilcoxon rank-sum test is used to evaluate the difference in medians.
b. ***, **, *: Significant different from zero at 0.01, 0.05, and 0.10, respectively, two-tailed test.

Table 3: Post-issue stock returns by discretionary accruals around issuance quartiles

Years after issuance	Raw returns		Market excess returns		Abnormal returns	
	Conservative	Aggressive	Conservative	Aggressive	Conservative	Aggressive
1	5.12	1.60	-8.03	-8.70	-7.13	-7.54
2	16.08	1.76	-11.06	-16.37	-12.23	-12.68
3	28.85	7.55	-12.31	-21.40	-14.72	-16.93
4	40.36	13.46	-13.3	-23.41	-15.83	-21.33
5	52.31	22.42	-15.2	-26.27	-18.05	-23.54

Footnote:

The total sample is classified into four groups by the issuer's discretionary accruals in the issuing year. The conservative group is the quartile group with smaller discretionary accruals and the aggressive group is the one with larger discretionary accruals.

Table 4: The regressions of post-issue returns on issue-year discretionary accruals and controls

		Raw returns		Market excess returns		Abnormal returns	
		Three-year returns	Five-year returns	Three-year returns	Five-year returns	Three-year returns	Five-year returns
Discretionary Accruals	Coef	**-1.2130*** **	**-1.7749*** **	**-0.4928*** **	**-0.5156*** **	**-0.2360***	**-0.4260****
	(t)	**(-4.95)**	**(-4.40)**	**(-3.56)**	**(-2.77)**	**(-1.39)**	**(-1.88)**
Market Value	(t)	(-5.68)	(-7.40)	(-1.74)	(-1.11)	(3.75)	(3.11)
Book to Market	(t)	(-2.84)	(-0.43)	(-1.92)	(-0.75)	(0.56)	(-0.04)
Industry dummies		Not reported		Not reported		Not reported	
Observations		1715	1683	1715	1683	1715	1683
R-square		3.99%	4.12%	1.51%	4.63%	5.19%	2.51%

Footnotes:

a. ***, **, *: Significant different from zero at 0.01, 0.05, and 0.10, respectively, one-tailed test.

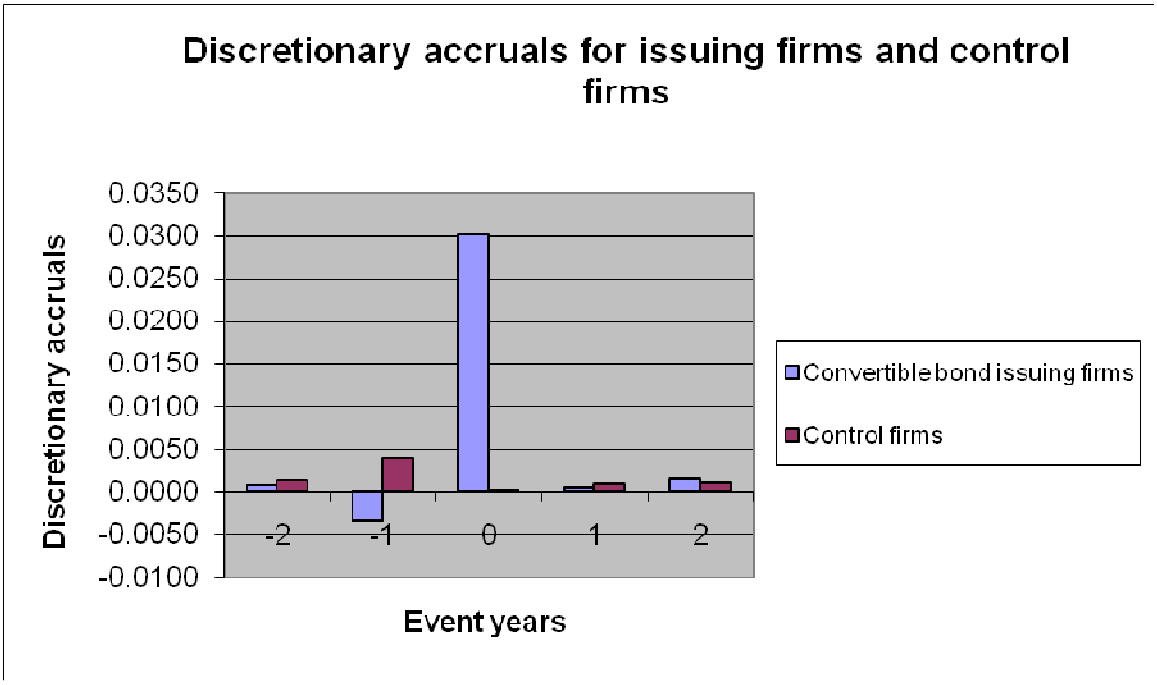
b. The regression model is as following,

$$R_i = \beta_0 + \beta_1 (DA_i) + \beta_2 (Size_i) + \beta_3 (BtoM_i) + \Sigma \gamma (Industry\_dummies_i) + \varepsilon_i$$

where,

R_i = issuer's raw return, market excess return, or abnormal return
DA_i = issuer's discretionary accruals around issuance
$Size_i$ = issuer's market value of equity
$BtoM_i$ = book to market ratio
$Industry\_dummies_i$ = industry dummy variables

Figure 1: Discretionary accruals for Japanese issuing firms and control firms



Endnotes:

[i] Billingsley and Smith (1996) surveyed the chief financial officers or treasurers of 243 firms and found that firms issuing convertible debts for two major reasons: lower coupon rate compared to straight debt, and as "delayed equity" financing, expecting that the debt would be converted.

[ii] Requiring firms to have five years of post-issue stock return data may generate survivorship bias. However, only 30 issuers have post-issue stock return data of less than five years and therefore we do not believe that survivorship bias has significant impact on the results of the empirical analysis.

[iii] Paired-sample t-test is used to evaluate differences in means and the Wilcoxon rank-sum test is used to evaluate differences in medians.

[iv] Frankel et al. (1995) find that U.S. firms issuing more capital tend to issue more forecasting. Francis et al. (2005) using a sample of 672 observations from 34 countries outside of the United States also document that firms in industries with great external financing needs have higher levels of voluntary disclosure.

[v] Gramlich and Sorensen (2004) examine a sample of 58 Danish firms that issue voluntary earnings forecasts in connection with IPOs and find that managers of Danish firms exercise discretionary accruals to mitigate earnings forecast errors.