

# How Different Is Japanese Corporate Finance?

## An Investigation of the Information Content of New Security Issues

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*This article studies the shareholder wealth effects associated with 875 new security issues in Japan from January 1, 1985, to May 31, 1991. The announcement of convertible debt issues has a significant positive abnormal return of 1.05 percent. There is an abnormal return of 0.45 percent at the announcement of equity issues that is offset by an abnormal return of 1.01 percent on the issue day. Abnormal returns are negatively related to firm size, so that large Japanese firms have abnormal returns less different from those of U.S. firms than small Japanese firms. Our evidence is consistent with the view that Japanese managers decide to issue shares based on different considerations than American managers.*

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The stock price reaction to new security issues by American firms has been examined extensively. The existing literature convincingly shows that the announcement of new public domestic (as opposed to offshore) security issues by U.S. firms is associated with a decrease in the announcing firm's stock price that increases with the risk of the security issued: there is no significant effect for AAA debt, a significant drop for convertible debt, and a larger drop for equity issues.<sup>1</sup> The most widely accepted interpretation for these results is that new issues convey information about the value of the issuing firm's equity. If managers maximize the wealth of existing shareholders, they avoid issuing securities at prices such that the buyers of new securities would benefit at the expense of the existing shareholders. Therefore, an issue of a risky security is evidence that managers believe that the firm is not too undervalued by the market.

It is widely argued that managers in Japan pursue different objectives than managers in the United States.<sup>2</sup> Some view this difference in a favorable light, arguing that Japanese managers do not have to focus on short-term results and can take a long view that allows them to produce more wealth for shareholders. Others view this difference as evidence that Japanese managers are more interested in pursuing objectives such as the maximization of market share than in maximizing shareholder wealth. The purported difference in the objectives of managers between Japan and the United States makes Japan a good testing ground for corporate finance theories developed in the United States. In particular, similar stock price reactions to new security issues in the two countries would make it harder to believe that there are significant differences in managerial incentives between the two countries.

There exists some evidence that stock price reactions to new issues are different for Japanese firms. Kato and Schallheim (1992) show that the stock price reaction to equity issues is significantly positive from January 1984 to March 1988.<sup>3</sup> However, their study uses as the event date the board meeting date when the firm decides to issue equity, so their evidence is not directly comparable to American evidence, which uses event dates obtained from public announcements and controls for confounding announcements.

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<sup>1</sup> See Masulis (1988) and Smith (1986) for a review of the evidence and of its interpretation. Shyam-Sunder (1991) finds that the stock price reaction to debt issues is not related to the rating.

<sup>2</sup> See, for instance, Kester (1991) and Porter (1992). In contrast, Kaplan (1994) stresses the commonalities in managerial compensation and turnover between Japan and the United States.

<sup>3</sup> Hanaeda (1993) investigates the stock price reaction of seasoned equity issues from 1975 to 1983. His study provides estimates of monthly market model prediction errors, where month 0 is the month of the offering. He finds a positive abnormal return for the offering month and the month before of slightly more than 1 percent. He provides no estimates of statistical significance.

Kang et al. (1995) investigate the stock price reaction to offshore warrant bond issues for Japanese firms using announcements in the *Financial Times*. Their study has the advantage of using event dates similar to the ones used for offshore issues by American firms. However, its disadvantage is that it focuses on offshore markets and does not include equity. Nevertheless, they find a positive significant stock price reaction to warrant bond issues and argue that Japanese firms do not behave like American firms in their decision to issue new securities. American firms issue risky securities such as stock and convertible debt following periods of positive excess returns. In contrast, excess returns prior to warrant bond issues by Japanese firms are insignificantly negative. This piece of evidence suggests that Japanese managers do not care as much about the wealth redistribution effects of new issues. Kang et al. (1995) argue that one possible explanation is that corporate control arrangements in Japan are such that the long-term investors are like the fixed-fraction investors analyzed in Admati and Pfleiderer (1994), that is, investors who hold a fixed fraction of all the firm's securities and receive a fixed fraction of all its payouts. This is because (1) these investors want to keep their stake in the firm constant, so that they participate in new issues, (2) some of them hold debt as well as equity, and (3) these investors have business relationships with the firms in which they invest, so they gain when these firms invest even if their shares do not increase in value.<sup>4</sup> If it is correct to view Japanese long-term investors as fixed-fraction investors and if managers maximize the wealth of these investors, the existing theoretical literature suggests that security issues should not be informative about the mispricing of existing securities [see Admati and Pfleiderer (1994), Dybvig and Zender (1991), and Persons (1994)].

In this article, we investigate further the stock price reaction to new issues in Japan by using a large database of new issues for which we have announcement dates from the morning edition of the *Nihon Keizai Shinbun*, which is the equivalent of the *Wall Street Journal* for Japan. This sample covers the period from January 1, 1985, to May 31, 1991. Hence, the sample allows us to investigate whether the abnormal returns to new issue announcements are related to the bull market. With this database, our announcement dates and sample selection procedures are equivalent to what researchers have used for U.S. domestic issues. Our sample includes public equity, private equity, rights offerings, straight debt, warrant debt, and convertible debt issues. The number of straight debt and warrant debt issues is too

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<sup>4</sup> See Gerlach (1992), Gilson and Roe (1993), and Kester (1991) for analyses that stress the complex relationships between long-term investors in Japan and the firms they invest in.

small to permit a detailed analysis, however. We first use our sample to establish that stock price reactions to new issues are indeed different for Japanese firms. In particular, we find positive announcement returns that are significant at the 0.10 level for equity issues and at the 0.01 level for convertible issues. We then explore four possible interpretations for the difference in results.

**1. Institutional differences and/or market inefficiencies.** The institutional setting for security issues in Japan is different from the one in the United States. It could therefore be that the Japanese institutional setting allows firms to manipulate security prices around security offerings. Alternatively, the disclosure process could be such that issues are not a surprise when announced. Our evidence is inconsistent with the view that the announcement is fully anticipated, since we find significant positive abnormal returns on the announcement date. We find a significant negative abnormal return at the offering date of equity issues which is much larger in absolute value than the abnormal return observed in the United States and which is larger than the announcement abnormal return. We do not find this pattern with convertible bond issues: for convertible bond issues there is a positive announcement effect and a positive issuance date return.

**2. Deregulation effects.** The 1980s were an abnormal period in Japan because of deregulation. We find the stock price reaction for convertible debt issue announcements of firms that have no convertible debt on their balance sheet is significantly higher than the stock price reaction for issues by other firms. A plausible interpretation of this result is that, because of the relaxation of eligibility criteria for the issuance of convertible debt, a firm's first convertible debt issue provides information to the markets that the firm is becoming more independent from banks [see Hoshi, Kashyap, and Scharfstein (1993)].

**3. "Bubble" economy effects.** The Japanese stock market experienced very large positive returns during the second half of the 1980s followed by a spectacular crash at the beginning of the 1990s, so that the Nikkei 225 index tripled from 1985 to 1989 and then lost the gains it had made. Some observers believe that the increase in the Japanese stock market corresponds to a "bubble" that cannot be explained by changes in fundamentals.<sup>5</sup> These observers might argue that positive abnormal returns to risky security issues is just another example of irrationality associated with the bubble economy and point to the fact that Kato and Schallheim (1992) find negative abnormal returns for equity issues in the first half of the 1970s. Though the positive stock price reactions associated with equity issue announcements are high-

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<sup>5</sup> See French and Poterba (1991) for a discussion of this period.

est in 1985 and 1987 in our sample, our evidence does not indicate that abnormal returns in 1990 and 1991 are similar to those observed in the United States, and consequently, the differences in abnormal returns between the two countries persist after the end of the bull market in Japan.

**4. Differences in corporate control mechanisms.** If differences in control mechanisms explain part or all of our results, one would expect that the Japanese firms that are most similar to U.S. firms should have stock price reactions similar to U.S. firms. We first explore whether non-Keiretsu firms have stock price reactions similar to those of U.S. firms, and find that in our sample the distinction between Keiretsu and non-Keiretsu firms is largely uninformative. We then explore whether large Japanese firms, where management is presumably less constrained by the web of relationships in which Japanese firms operate, have different stock price reactions. There we find strong differences. In fact, large Japanese corporations have stock price reactions closer to those of American corporations for equity issues. However, even though stock price reactions to convertible issues are negatively related to firm size, large Japanese corporations still have significant positive stock price reactions to convertible issues. Finally, we explore the relation between abnormal returns and the extent to which a firm is financed by bank loans. For equity issues, firms with more bank loans have more positive abnormal returns. Firms with no reported bank loans have an average abnormal return of  $-0.92$  percent on announcement of an equity issue, in contrast to a matched sample of firms of similar size issuing equity in the same year which has an average abnormal return of  $1.60$  percent. However, bank loans are not helpful in understanding the cross-sectional variation in the abnormal returns for convertible bond issue announcements.

This article proceeds as follows. We describe our sample in Section 1. In Section 2, we provide abnormal returns for various subperiods of interest. In Section 3, we explore possible explanations for the stock price reactions we observe. We conclude in Section 4.

## **1. The Sample of Issues and Firm Characteristics**

To obtain our sample, we proceed as follows. We start from the list of new issues from the Tokyo Stock Exchange (TSE) Annual Securities Statistics for the period from January 1, 1985, to May 31, 1991. We then exclude all new issues that do not satisfy the following criteria:

1. The issuing firm is listed on the TSE and stock price data are available on the daily returns files from the Pacific-Basin Capital Market (PACAP) Research Center. The daily returns files include returns

**Table 1**  
**Distribution of announcements of security offerings by type and by year**

Type of offering	Year							Total
	1985	1986	1987	1988	1989	1990	1991	
Stock, public	9	9	19	33	82	30	3	185
Stock, private	13	9	9	13	10	9	6	69
Stock, rights	4	2	0	1	5	12	4	28
Straight bond	8	2	0	0	0	0	3	13
Warrant bond	0	4	1	0	5	7	2	19
Convertible bond	70	73	122	117	124	42	13	561
Total	104	99	151	164	226	100	31	875

The announcements are by firms listed on the Tokyo Stock Exchange for which an event date could be obtained from the *Nihon Keizai Shinbun* during the period from January 1, 1985, to May 31, 1991, and for which information is available from the PACAP files.

for all First and Second Section stocks on the Tokyo Stock Exchange. We exclude utilities and financial companies.<sup>6</sup>

2. The date of the initial public announcement is available from the morning edition of the *Nihon Keizai Shinbun*.

3. The issue involves a single type of security, is not accompanied by a stock dividend, and the firm does not release important information, such as earnings, with the announcement of the issue. (Firms that simultaneously issue the same type of security on the domestic market and offshore are excluded.)

These sample selection criteria produce a sample of 875 issues described in Table 1.<sup>7</sup> Our sample contains mostly convertible debt issues and public equity issues. The predominance of convertible debt issues is not surprising given the aggregate statistics on security offerings published by Niimi (1992a). Niimi (1992a) shows that convertible debt is the principal source of public funds for Japanese companies throughout the 1980s. Our sample understates the importance of equity-linked debt for Japanese firms since it includes only domestic issues. As discussed in Kang et al. (1995), dollar-denominated warrant

<sup>6</sup> The required data for financial companies are not available on the PACAP files that are used in this study. Utilities companies have generally been excluded from studies investigating new issues in the United States because they tend to be highly regulated. Japanese utilities are atypical companies also because of regulation and different access to capital markets.

<sup>7</sup> Kato and Schallheim (1992, 1993) use the *Commercial Law Review* to construct samples of private and public equity issues. Their study has only 3 full years that overlap with our sample — 1985, 1986, and 1987. For these years, they have 19 private placements and 76 public equity issues in contrast to our 31 private placements and 37 public issues that are not rights offerings. The samples differ because (1) we require an announcement in the *Nihon Keizai Shinbun*, (2) they consider only firms listed on the First Section of the Tokyo Stock Exchange, (3) we exclude firms with confounding announcements, and (4) we exclude issues by utilities and financial companies. The second difference may explain their smaller number of private issues, whereas the exclusion of firms with confounding announcements and of financial companies may help explain why we have fewer public equity issues.

bond issues were a major source of funds for Japanese companies during the 1980s. We found few straight debt issues. In addition, we found almost no warrant bonds. Again, this is not particularly surprising in light of the statistics in Niimi (1992a). There is some clustering of the issues during the height of the bubble economy period. More than 40 percent of the equity issues and about 25 percent of the convertible issues are in 1989.

Hanaeda (1993) shows that firms issued only rights offerings in the 1950s, but that over time the proportion of underwritten equity offerings among equity issues increased to reach the point where most equity issues are underwritten offerings. This shift toward underwritten offerings has made Japanese firms more similar to American firms in their issuing practices. It is interesting that more than half of the rights offerings in our sample take place after the spectacular growth in the Nikkei 225 index stopped. Based on our sample, we cannot tell whether this corresponds to a resurgence of rights offerings or to the unique circumstances associated with the end of the bubble economy.<sup>8</sup>

Table 2 shows the characteristics of firms issuing the various types of securities. These financial data are obtained from the PACAP Research Center database and from the *Analyst's Guide* by Daiwa Institutes of Research Ltd. It is apparent from Table 2 that, compared to firms issuing convertible debt, firms issuing equity are smaller, and that the size of the issue is large relative to the value of existing equity. Price-earnings ratios are similar across firms issuing equity and convertible debt in public offerings, but obviously are high compared to the United States. Our proxy for Tobin's  $Q$  is similar across firms. Leverage ratios are slightly higher for firms issuing equity. These measures use the market value of equity in the denominator, which explains why they are not higher.

## 2. The Stock Price Reaction to Security Offerings

In Table 3, we provide estimates of excess returns over various subperiods. The excess returns are computed in the following way. Every year, we group the TSE securities into 10 control portfolios ranked according to their Scholes and Williams (1977) beta estimates computed with respect to the PACAP equally weighted portfolio for Japan. Then, we assign each issuing firm to the control portfolio that corresponds

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<sup>8</sup> Hanaeda (1993) provides evidence on the total number of each type of equity issue for each year from 1970 to 1990. He finds that the proportion of rights offerings as a fraction of the total number of issues is larger in 1990 than in any year during the 1980s, but he does not note this fact in his analysis.

**Table 2**  
**Characteristics of the issuing firms**

Variable	Type					
	Common stock			Straight bond	Warrant bond	Convertible bond
	Public (185)	Private (69)	Rights (28)			
Amount offered	16	7	6	27	31	24
	5	3	4	10	30	15
Market value of equity	185	56	76	778	411	346
	46	30	47	140	340	142
Amount/market value of equity	0.14	0.22	0.09	0.04	0.09	0.12
	0.13	0.13	0.09	0.03	0.09	0.10
PE ratio	54.54	328.98	117.03	71.24	67.76	55.51
	47.98	131.97	55.86	39.34	48.90	44.84
Beta	1.02	1.06	1.15	1.05	1.27	1.15
	1.00	1.07	0.94	0.86	1.01	1.10
Q proxy	1.94	2.14	2.19	1.66	1.84	1.97
	1.81	1.74	1.93	1.21	1.86	1.79
Leverage ratio	0.42	0.46	0.40	0.55	0.38	0.36
	0.40	0.44	0.41	0.65	0.35	0.33

The announcements are by firms listed on the Tokyo Stock Exchange for which an event date could be obtained from the *Nihon Keizai Shinbun* during the period from January 1, 1985, to May 31, 1991, and for which information is available from the PACAP files. The yen amounts are in billion yen. Beta is estimated from day -220 to day -20, where day 0 is the announcement date of the issue. The Q proxy is (total liabilities + market value of equity)/(total liabilities + book value of equity). Leverage is measured as (total liabilities)/(total liabilities + market value of equity). The first number in each cell is the mean and the second is the median.

to the beta decile of the issuing firm. We compute the abnormal return on a particular day by taking the difference between the return on the issuing firm's shares and the return on the equally weighted control portfolio assigned to the firm. We report cross-sectional *t*-statistics for the mean abnormal returns and significance levels for the signed-rank test for the null hypothesis that the abnormal returns are distributed symmetrically around zero. There is no study for Japanese security markets evaluating the empirical properties of test statistics for event studies, suggesting that our test statistics ought to be interpreted with caution, especially in the cases where the parametric and nonparametric test statistics lead to different conclusions.<sup>9</sup> Though the event period comprising the day of the announcement and the day before is the one researchers typically focus on for U.S. studies, we also pay

<sup>9</sup> In many ways, the Tokyo Stock Exchange is more similar to NASDAQ than it is to the NYSE. In particular, there is no specialist and bid-ask spreads tend to be wider than on the NYSE. There is evidence for NASDAQ that the usual parametric test statistics used in event studies perform poorly empirically in contrast to some nonparametric test statistics. See Campbell and Wasley (1993).



**Table 3**  
**Average cumulative abnormal returns around the announcement (AD) and issuance (ID) of security offerings**

Interval	Type of Issue					
	Common stock			Straight debt	Warrant bond	Convertible bond
	Public offering (185)	Private offering (69)	Rights offering (28)	Public offering (13)	Public offering (19)	Public offering (561)
AD -60 to AD -2	-0.69% (-0.58) (-0.83)	11.85% (3.28)*** (3.78)†††	10.68% (7.47)*** (2.93)†††	-1.51% (-3.10) (-0.45)	-9.57% (-9.69)*** (-4.26)†††	-2.31% (-2.39)*** (-4.78)†††
AD -1 to AD	0.51 (0.31)* (2.32)††	3.88 (2.13)*** (3.66)†††	2.21 (2.13)*** (2.99)†††	0.85 (0.06) (1.37)	-0.21 (-0.02) (-0.33)	0.83 (0.51)*** (6.33)†††
AD -1 to AD +1	0.45 (0.34) (1.73)†	3.13 (1.51)** (2.39)††	2.02 (2.11)** (2.34)††	0.64 (1.48) (0.95)	0.07 (-0.30) (0.09)	1.05 (0.72)*** (6.99)†††
AD +1 to ID -1	0.33 (0.30) (0.56)	1.32 (-0.58) (0.78)	-5.58 (-6.81)* (-1.34)	0.83 (-0.19) (0.73)	1.61 (0.50) (1.17)	2.79 (1.15)*** (6.67)†††
ID -1 to ID	-0.62 (-0.82)*** (-2.87)†††	-0.12 (-0.27) (-0.22)	-0.28 (0.22) (-0.35)	0.59 (1.11) (0.85)	0.93 (0.28) (1.54)	0.21 (0.00) (1.76)†
ID -1 to ID +1	-1.01 (-1.36)*** (-3.82)†††	-0.48 (-0.85) (-0.82)	0.70 (0.55) (0.69)	0.89 (1.23) (1.29)	1.26 (0.58)* (1.95)†	0.42 (0.04) (2.88)†††
Sum of AD -1 to AD +1 and ID -1 to ID +1	-0.55 (-0.88)** (-1.52)	2.65 (2.06)** (1.96)††	2.72 (5.17)*** (1.92)†	1.53 (1.23) (1.45)	1.34 (1.36) (1.45)	1.47 (0.96)*** (7.05)†††
AD -1 to ID +1	-0.19 (-0.80) (-0.32)	4.70 (2.07) (2.10)††	-2.54 (-2.61) (-0.61)	2.29 (2.00)* (1.75)	2.13 (0.14) (1.45)	3.80 (2.51)*** (8.70)†††
ID +1 to ID +20	-0.86 (-2.25)*** (-1.35)	-0.52 (-1.94) (-0.35)	0.10 (0.76) (0.07)	1.15 (0.85) (0.88)	-1.62 (-0.28) (-0.99)	-1.21 (-1.70)*** (-3.66)†††
AD -60 to ID +20	-1.35 (-1.51)* (-1.05)	16.39 (4.02)*** (3.57)†††	7.27 (6.46) (1.51)	1.63 (1.78) (0.48)	-9.39 (-9.76)*** (-3.27)†††	0.06 (-1.07) (0.09)

The sample includes 875 announcements between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. Medians and *t*-statistics are in parentheses. \*, \*\*, and \*\*\* indicate significance of the signed-rank test at the 0.10, 0.05, and 0.01 levels, respectively. †, ††, and ††† indicate significance of the *t*-statistic at the 0.10, 0.05, and 0.01 levels, respectively.

attention to the period that includes the day after the announcement. Including this additional day eliminates some of the microstructure effects that could arise because of order flow imbalances on the day

of the announcement and because of the existence of price limits. In Table 3, we report results for both event periods and in the following discussion we compare these results when appropriate. We now discuss the abnormal return estimates for each type of issue in turn.

## **2.1 Public equity offerings**

The announcement return, defined as the cumulative return for the 3-day window surrounding the publication of the announcement, is positive but small, 0.45 percent with a  $t$ -statistic of 1.73 significant at the 0.10 level. The median is 0.34 percent, and the signed-rank test statistic is not significant at the 0.10 level. The results are stronger for the 2-day window which includes the announcement day and the day before. The magnitude of the 2-day abnormal return is less than the bid-ask spread for the typical TSE stock. This suggests that bid-ask bounce could explain the results we obtain with the 2-day window. This suspicion is heightened by the fact that the results for the 3-day period suggest that we cannot reject the hypothesis that the positive abnormal returns are distributed symmetrically around zero. During the 19 days preceding the announcement, there are 9 negative abnormal returns and 10 positive abnormal returns. Only one of these abnormal returns is significantly different from zero, namely day  $-19$ , which is  $-0.22$  percent with a  $t$ -statistic of  $-1.74$ . This evidence indicates that our announcement date is meaningful. Day  $-1$ , with an abnormal return of 0.41 percent, has the highest abnormal return in absolute value from day  $-20$  to day 0 and the highest  $t$ -statistic. None of the 10 days following the announcement have a significant abnormal return. On the issue day, the abnormal return is negative. Its mean, median, and  $t$ -statistic are all greater in absolute value than for the announcement day abnormal return. For the 10 days preceding the issue day, one abnormal return is significantly positive and two are significantly negative. The abnormal return the day after the issue is significantly negative, but none of the next nine days are significantly different from zero. Seven of these next nine days have a positive abnormal return. Table 3 shows that the cumulative abnormal returns from the day before the announcement to the day after the issue are insignificant. Further, after the issue, the cumulative returns for the next 20 days are negative, but the mean is insignificant. Finally, returns from day  $-60$  before the announcement to day  $+20$  after the issuance day are insignificantly negative. Since the issuance day abnormal return is significant, we provide a measure of the total abnormal return associated with the announcement and issuance dates. To get this measure, we add up the abnormal return for the 3 days surrounding the announcement date and the 3 days surrounding the issuance date. For equity issues, the mean of this total effect

measure is insignificantly negative; the median is also negative and the signed-rank test is significant at the 0.05 level.

## **2.2 Private equity issues**

Here, the effect is largely similar to what is found in the United States [see Wruck (1989)]. There is a large significant effect for the 3 days surrounding the announcement day. The stock price reaction is 3.13 percent with a  $t$ -statistic of 2.39. There is no additional effect on issuance day. Private equity financings are shown here for the sake of completeness. They have been analyzed extensively by Kato and Schallheim (1993) over the period 1974 to 1988. They report an abnormal return of 4.98 percent on the board date and the day following the board date for their sample.

## **2.3 Rights offerings**

The stock price reaction to rights offerings is strongly positive on the announcement day. There is no further effect on the issuance day. In contrast, the announcement day effect in the United States is close to zero [see Eckbo and Masulis (1992)].

## **2.4 Straight bond issues**

Neither the announcement nor the issue day abnormal returns are statistically significant. Since there are so few issues, however, the average abnormal returns are not estimated precisely. It is interesting to note that the economic significance of the total abnormal return for straight bond issues is similar to the economic significance of the total abnormal returns for the warrant bond issues and the convertible bond issues discussed next. The total average abnormal return is 1.53 percent with a  $t$ -statistic of 1.45.

## **2.5 Warrant bond issues**

We have 19 offerings, in contrast to the 368 offshore offerings in Kang et al. (1995). There is no significant stock price reaction to the issue announcement, but a positive stock price reaction to the issuance is found when the 3 days surrounding the issuance are considered. The total average abnormal return is 1.34 percent with a  $t$ -statistic of 1.45.

## **2.6 Convertible bond issues**

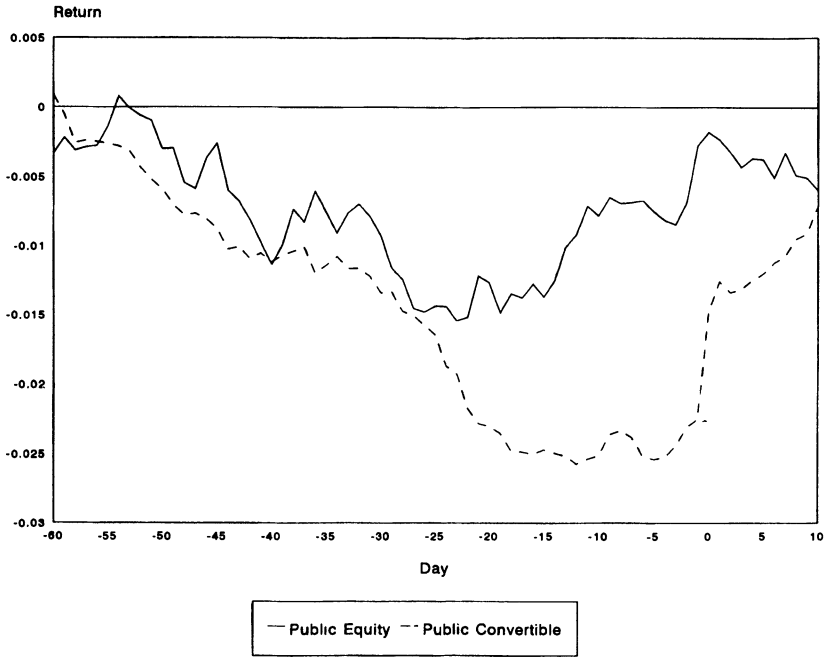
The stock price reaction to convertible bond issues is surprisingly similar to the reaction documented in Kang et al. (1995) for offshore warrant bonds. We find a significant positive reaction of 1.05 percent for the 3 days surrounding the announcement. In the 19 days prior to the announcement period, there is one significant abnormal return on day  $-9$ . On that day, there is an increase of 0.15 percent with a  $t$ -

statistic of 1.70. The day  $-9$  abnormal return is the largest of these 19 days. It is much smaller than the day 0 announcement return of 0.77 percent, which has a  $t$ -statistic of 7.20. Following the announcement, all abnormal returns from day  $+1$  to day  $+10$  are positive except for day  $+2$ . In addition, three of these abnormal returns are significantly positive. This positive drift is clear from the table, which shows that from day  $+1$  after the announcement day to day  $-1$  before the issuance date, the cumulative abnormal return is 2.79 percent with a  $t$ -statistic of 6.67. Kang et al. (1995) also find a positive drift after the announcement of offshore warrant bond issues. Over the 3 days surrounding issuance, the abnormal return is significantly positive. There is some negative drift from day  $+1$  after the issue to day  $+20$ . Over these days, the cumulative abnormal return is  $-1.21$  percent with a  $t$ -statistic of  $-3.66$ . The total effect measure is positive and significant.

### **3. Interpretation of the Results**

In this section, we focus on public equity and convertible debt issues. Figures 1a and 1b summarize the evidence discussed in Section 2 for these issues. Figure 1a shows average cumulative abnormal returns from day  $-60$  before the announcement to day  $+10$  after the announcement. For both types of issues, the issuing firm's stock price experiences a slight downward drift until 20 days before the announcement. After that date, the stock price experiences a very modest upward drift for equity issuing firms and very little change for convertible issuing firms until the announcement day. Around the announcement day, there is a positive return for both types of issues. Figure 1b shows the cumulative abnormal returns from day  $-10$  before the issue date to day  $+20$  after the issue date. The plots for the two types of issues are sharply different. For convertible issuing firms, there is an upward drift until day 6 followed by a downward drift, so that after 20 days the average cumulative abnormal return is zero. For equity issuing firms, not much happens until the issue day, where there is a negative abnormal return. After the issue day, the abnormal returns average to zero.

In studies of Japanese corporate finance, it is tempting to focus first and foremost on differences in the organization of firms with respect to the United States. However, there are also differences in how markets are organized, and these differences may be important for our sample. Before focusing on the implications of the organization of firms for our results, we first address other potential explanations for our results, which include the organization of markets, the regulation of corporate finance in Japan, and the bubble economy.



**Figure 1a**  
**Cumulative abnormal returns from day -60 before the announcement to day +10 after the announcement**

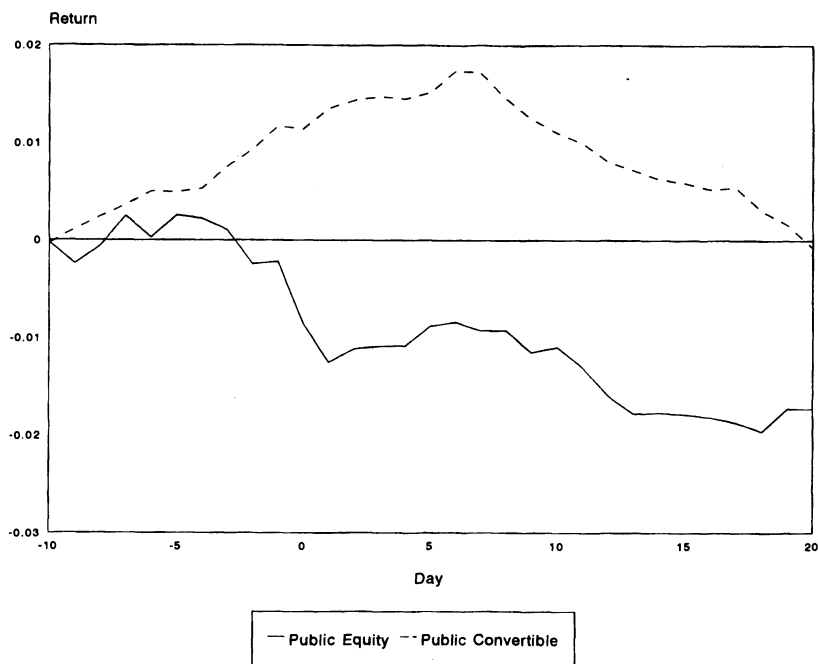
The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar beta estimate. The daily excess returns are averaged across firms and then cumulated. The sample includes 185 equity issues and 561 convertible bond issues from January 1, 1985 to May 31, 1991. The announcement day is the day that the issue announcement is published in the *Nihon Keizai Shinbun*.

### 3.1 Market organization effects

We consider here the puzzling aspects of our results for equity and convertible issues that might be explained by differences in the organization of the markets.

**3.1.1 Equity issues.** For equity issues, there is a significant positive abnormal return for the 3 days surrounding the announcement. This suggests that the market views an equity issue as a positive event. Since the issuance itself confirms that a positive event is taking place for sure, one would expect a slight positive return. Instead, we observe a significant negative return of -1.01 percent on the 3 days surrounding the issuance date, with a  $t$ -statistic of -3.82.

Lease, Masulis, and Page (1991) propose an explanation for the fall of 0.3 percent on the day of the issue for industrial firms in the United States. They argue that there is an order flow imbalance on that



**Figure 1b**

**Cumulative abnormal returns from day -10 before the issue to day +20 after the issue**

The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar beta estimate. The daily excess returns are averaged across firms and then cumulated. The sample includes 185 equity issues and 561 convertible bond issues from January 1, 1985 to May 31, 1991. The issue day is obtained from the Tokyo Stock Exchange Annual Securities Statistics.

day because individuals who want to buy the stock use the primary market to do so, so that on the secondary market there are more sell orders than buy orders and the recorded prices are more likely to be bid prices than ask prices. Since trading costs are substantially higher in Tokyo than in the United States, the same explanation could be at work here.<sup>10</sup> Evidence that prices bounce back after the issue would be supportive of this explanation. However, in the United States, there is no such evidence. Lease, Masulis, and Page (1991) argue that this is because in the United States specialists accumulate stock and subsequently seek to lower their inventories. There is no evidence of

<sup>10</sup> See Hamao and Hasbrouck (1992) for a description of the Tokyo market and estimates of the spread for the limit order book. They investigate three stocks, all of which have a substantially higher capitalization than the average stock of a firm issuing equity in our sample. Their highest average spread is 1 percent. One would expect the spread for the stocks in our sample to exceed 1 percent, so that the negative abnormal return on issue day would be comparable in its relation to the spread with the negative abnormal return on issue day in the United States.

reversals for Japan either, even though the absence of specialists on the TSE suggests that reversals should occur more quickly there. The median abnormal return is never positive for the 10 days following the issue day. Although only three of the mean abnormal returns are negative in these 10 days, the highest *t*-statistic is 1.06 and the highest mean abnormal return, 0.205 percent on day +5, is lower in absolute value than the lowest mean abnormal return, -0.226 percent, on day +9. Finally, for the 20 days following the issue announcement, both the average abnormal return and the median are negative. Though the *t*-statistic is insignificant, the signed rank test statistic is significant at the 0.01 level. If the order flow hypothesis is correct, one would expect the abnormal return to be larger in absolute value for small firms since these firms have a larger spread. In Table 7, we report that the mean abnormal return on the 3-day period centered on issue day is -0.67 percent for the firms above the median capitalization in our sample and -1.34 percent for the firms below the median capitalization. While this evidence is supportive of the order flow hypothesis, the difference between the two average abnormal returns has a *t*-statistic of only 1.28.

An additional explanation could be that, rather than the price at the end of the issuance day being abnormally low, the price the day before is abnormally high because of price support. In Japan, the issue day is the day when those who subscribed pay for the shares they have bought. Hence, there is no reason to support the share price after the issue day. Underwriters are allowed to support the stock price between the day when the issue is priced and the issue day. Issues are typically priced at least 10 days before issue day at a discount from the market price, which is very different from the United States where pricing typically takes place the day before the registration statement becomes effective and which is usually the day before issue day. In the United States, investors learn new information about the firm through amendments to the registration until the day before the issue day, but not in Japan, since there the registration statement is effective well before the issue day.<sup>11</sup>

Though price support or ramping seems to be a plausible explanation for the pattern of stock returns we observe, we had no success in finding traces of price support in the data. In our investigation, we focused on two samples of raw returns. The first sample (presample)

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<sup>11</sup> See Hanaeda (1993), Japan Securities Research Institute (1988), and Kunimura and Iihara (1985) for information on the issuance process. Japan Securities Research Institute (1988) provides a detailed time table of the issuance process. Shin (1995) provides a detailed analysis of the U.S. issuance process and provides evidence of the information content of amendments to the registration statement.

includes the raw returns for the 10 days before the issue for each firm. The second sample (postsample) includes the raw returns for the 10 days starting 30 days after equity issues take place for each firm. The presample has 1,766 returns and the postsample has 1,827. The presample has a mean return of 0.068 percent in contrast to 0.147 percent for the postsample; the variance of the returns in the presample is slightly lower than in the postsample (4.76 percent versus 5.55 percent) and the skewness is slightly higher (0.92 versus 0.80). At best, the variance and skewness results indicate faint evidence of price support. However, this evidence becomes even weaker when one looks at the proportion of negative returns. In the presample, 33.24 percent of the returns are below  $-0.6$  percent compared to 36.45 percent in the postsample. If we focus on returns lower than  $-3$  percent, we find that 5.78 percent of the presample are below  $-3$  percent in comparison with 6.13 percent of the returns in the postsample. We tried to relate the offering day abnormal return to the number of days in the previous 10 days that the firm experienced a negative stock return in excess of one standard deviation of the firm's return. If a firm's stock price benefits from price support, one would see few such large negative returns, but one would expect a sharp drop on the offering day. Therefore, it is likely that there is a positive relation between the number of large negative returns and the offering day abnormal returns. Instead, we found a negative insignificant relation.

**3.1.2 Convertible debt issues.** The announcement effect for convertible debt is positive and significant. The issue day announcement effect is also positive and significant, but much smaller. This is consistent with market efficiency if there is some probability that the issue will not take place and the stock market reacts negatively to the news that the issue will not take place. What seems harder to explain is the existence of positive abnormal returns from the time of the issue announcement to the day before the issue. We find a cumulative abnormal return of 2.79 percent with a  $t$ -statistic of 6.67. This result suggests that a trading strategy of investing in the stock when the firm announces a convertible issue and selling the stock immediately after the issue day has a positive abnormal return that exceeds potential transactions costs. One concern is that these trading profits could reflect the use of an inappropriate benchmark for returns computed over long periods of time. However, although we do not report the results in a table, we investigated whether these cumulative abnormal returns depend on firm size by splitting our sample of firms into large and small firms. We found that the cumulative abnormal return from the day after the announcement to the day before the issue is 2.67 percent for the large firms with a median of 1.29 percent and is



2.90 percent for the small firms with a median of 1.06 percent. Neither the mean nor the median difference is significant. It therefore seems unlikely that these cumulative abnormal returns are due to a misspecified benchmark.

In summary, the negative abnormal returns around the issue day for equity issues are troublesome. Although their magnitude is consistent with the order flow bias discussed in Lease, Masulis, and Page (1991), the evidence in support of this hypothesis that we could provide with our data set is not statistically significant. Adding these negative abnormal returns to the announcement abnormal returns yields the result that equity issues are accompanied by a small price drop compared to the United States. In contrast to the equity issues, aggregating the abnormal returns around the issue day and the announcement day for convertible issues reinforces the result that convertible debt issues have positive wealth effects for Japanese firms.

### **3.2 Deregulation effects**

In the 1980s, there was considerable deregulation in Japan. Before the 1980s, financing through domestic bond issues was extremely difficult for Japanese companies.<sup>12</sup> First, unsecured issues were not allowed. Second, firms wishing to issue secured bonds could only do so if they satisfied restrictive balance sheet conditions. Qualifying firms could issue only at specified times determined both by a queuing system and the practice of only issuing bonds at the end of the month. The choice of maturity for bonds was restricted. Lead managers were assigned to firms on a rotating basis to ensure a balance of underwriting income among the Big Four securities firms. Finally, interest rates on public bonds were regulated.

In 1979, Sears Roebuck made the first unsecured foreign bond issue on the Japanese market. Immediately following that issue, a regulatory standard for issuing unsecured bonds was adopted. It was so stringent that, until January 1983, only Toyota Motors and Matsushita Electric were allowed to issue domestic unsecured bonds. In January 1983, 9 additional firms were allowed to issue unsecured straight debt and 23 more firms were allowed to issue unsecured convertible debt. The standards were progressively relaxed, so that by 1987, 180 firms were allowed to issue unsecured straight debt and 330 firms were allowed to issue unsecured convertible debt. A revision to the Commercial Code in April 1991 made the issuing standards less of an obstacle for most firms.

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<sup>12</sup> See Hoshi, Kashyap, and Scharfstein (1993) and Niimi (1992 a,b) for discussions of the evolution of the Japanese bond market and of the evolution of the eligibility criteria for bond issuance.

Changes in eligibility requirements to issue debt- and equity-linked debt could explain positive abnormal returns. To see this, suppose that long-term shareholders allow firms to access capital markets, after they become eligible, only if their prospects are good enough that close monitoring of their actions through banks is no longer necessary.<sup>13</sup> In this case, the first issue after a firm becomes eligible would convey information to the markets that a firm has good prospects. Hence, a first issue could reveal different information for Japanese firms during this sample period than for American firms because Japanese firms were allowed, for the first time, to choose the amount of public debt in their capital structure.

Table 4 provides evidence on abnormal returns for firms that already have convertible debt and firms for which the convertible debt issue appears to be the first one. The stock price reaction is significant for both groups of issues, but the stock price reaction to a second issue is significantly smaller than the stock price reaction to a first issue. There is therefore no evidence that firms unconstrained by eligibility requirements have stock price reactions more comparable to those of American firms. Some convertible issues are secured, but most are not. Since it was easier to issue a convertible secured bond, it may be that looking at the whole sample obscures the effects of deregulation. We found 47 secured convertible issues and 385 unsecured convertible issues; for 129 issues, we could not determine whether the issue is secured or not. The average abnormal returns for secured and unsecured convertibles are 0.79 percent and 0.73 percent, respectively. The average abnormal return for a firm's first unsecured issue (82 issues) is 1.10 percent versus 0.65 percent for other issues. The difference is not statistically significant.

Another way to look at the role of deregulation is to investigate the relation between a firm's credit rating and the stock price reaction to a convertible issue. Firms with a high rating are less likely to be affected by deregulation. Table 4 separates firms between those with a rating of A, AA, and AAA on the one hand and those with a rating of B, BB, and BBB on the other hand. The ratings are collected from the *Nihon Keizai Shinbun*. The firms with a low rating have significantly higher stock price reactions, but the stock price reactions are positive for both groups of firms.

If deregulation explains our results, it should be the case that stock price reactions become similar to the stock price reactions of Amer-

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<sup>13</sup> Hoshi, Kashyap, and Scharfstein (1993) provide a model where the best firms raise funds on public markets because they do not benefit from close monitoring as much as other firms. They provide some empirical support of their model by investigating how reliance on bank loans changed across firms during the 1980s in Japan.

**Table 4**  
**Abnormal returns by convertible debt outstanding and by bond ratings for convertible bond issues**

Issue	Number of observations	Average stock price reaction (Median)	<i>t</i> -statistic (Wilcoxon <i>z</i> )
A. Convertible debt outstanding			
First issue	190	1.76 (1.50)***	6.66
Issues by firms with convertible debt outstanding	371	0.68 (0.37)***	3.82
Difference		1.08 (1.13)	3.37 (3.72)
B. Rating differences			
Rating of A, AA or AAA	304	0.62 (0.35)**	3.07
Rating of B, BB or BBB	253	1.54 (1.21)***	6.95
Difference		-0.92 (-0.86)	-3.10 (-3.67)

The sample includes 561 public offerings of convertible debt between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. The *t*-statistic for the difference is under the assumption of unequal variance. \*\*\*, \*\*, \* denote significance of the signed-rank test at the 0.01, 0.05, and 0.10 levels, respectively. All *t*-statistics and the Wilcoxon *z* statistics are significant at the 0.01 level.

ican firms in the later years in the sample. In Table 5, we provide estimates of stock price reactions year by year for equity issues and for convertible debt issues. For public equity issues, it appears that two years have much higher abnormal returns, namely 1985 and 1987.<sup>14</sup> For each of these two years, the average stock price reaction is more than three times higher than the next highest average stock price reaction. We recomputed the average stock price reaction for equity issues without 1985 and 1987. The 3-day announcement abnormal return without these two years is 0.24 percent with a *t*-statistic of 0.86.<sup>15</sup> This evidence suggests that the positive stock price reaction to the announcement of equity issues for Japanese firms is unlikely to be a permanent feature of Japanese corporate finance.

<sup>14</sup> These two years constitute half of the sample of announcements for the 1980s used by Kato and Schallheim (1992), who find an average abnormal return of 0.76 percent with a *t*-statistic of 2.14 for the board date and the following day for a sample from January 1984 to March 1988.

<sup>15</sup> In light of the evidence uncovered in this section, we reexamined the evidence on price supports discussed in Section 3.1 year by year. It turns out that returns in both the presample and the postsample periods are less skewed in 1985 and 1987 than in other years. This evidence is inconsistent with the hypothesis that price support was more important during these two years.

**Table 5**  
**Abnormal returns by year for equity and convertible issues**

Year	Public equity issues		Public convertible issues	
	AD -1 to AD +1	ID -1 to ID +1	AD -1 to AD +1	ID -1 to ID +1
1985	1.75 (1.95) (1.18) (9)	-0.88 (-0.83) (-0.79) (9)	1.11 (0.06)* (2.43) <sup>††</sup> (70)	0.50 (0.07) (1.26) (70)
1986	-0.23 (1.38) (-0.16) (9)	0.40 (-0.17) (0.26) (9)	0.80 (0.52)* (2.25) <sup>††</sup> (73)	1.56 (0.78)*** (3.28) <sup>†††</sup> (73)
1987	1.64 (2.48) (1.77) <sup>†</sup> (19)	-0.24 (-0.96) (-0.26) (19)	1.31 (1.23)*** (3.93) <sup>†††</sup> (122)	0.73 (0.43)* (2.16) <sup>††</sup> (122)
1988	0.23 (-0.29) (0.38) (33)	-2.60 (-2.66)*** (-4.36) <sup>†††</sup> (33)	1.32 (0.80)*** (3.48) <sup>†††</sup> (117)	0.17 (0.04) (0.59) (117)
1989	0.54 (0.14) (1.51) (82)	-0.95 (-1.54)*** (-2.42) <sup>††</sup> (82)	0.69 (0.31)** (2.50) <sup>††</sup> (124)	-0.15 (-0.68) (-0.54) (124)
1990	-0.25 (-0.17) (-0.41) (30)	-0.35 (-0.82) (-0.60) (30)	0.80 (0.61) (1.47) (42)	-0.10 (0.10) (-0.23) (42)
1991	-1.76 (-2.25) (-0.44) (3)	-1.22 (-1.42) (-1.43) (3)	1.44 (1.71)* (2.07) <sup>††</sup> (13)	0.13 (-1.04) (0.10) (13)

The sample includes 185 public equity offerings and 561 public convertible debt offerings between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. AD denotes the day the issue is announced in the *Nihon Keizai Shinbun* and ID denotes the day of issuance. Medians, *t*-statistics, and the sample size are in parentheses. \*, \*\*, and \*\*\* indicate significance of the signed-rank test at the 0.10, 0.05, and 0.01 levels, respectively. †, ††, and ††† indicate significance of the *t*-statistic at the 0.10, 0.05, and 0.01 levels, respectively.

### 3.3 Bubble economy effects

We now briefly consider the effect of the bubble economy on the stock price reaction. The dramatic increase in the Nikkei 225 index stopped at the end of 1989. If we split the sample between issues before 1990 and issues in 1990 and 1991, the stock price reaction to the 33 issues in 1990 and 1991 is -0.38 percent with a *t*-statistic of -0.61, whereas the stock price reaction to the 152 issues before 1990 is 0.64 percent with a *t*-statistic of 2.21. The difference between these two samples is an economically significant 1.02 percent with a

*t*-statistic of 1.47. This provides further evidence that the significant positive abnormal returns for equity issue announcements are limited to a subset of our sample. It provides only limited evidence about the effect of the bubble economy because all but five of the issues in our sample for 1990 and 1991 are in January and February 1990.

No year seems to be particularly influential for the stock price reaction to convertible bond issues. In particular, four years have an average announcement abnormal return in excess of 1 percent with a *t*-statistic in excess of 2. For convertible debt issues, the post-bull market sample shows the highest average abnormal return and the highest median in our sample. The mean abnormal return for issues before 1990 is 1.06 percent with a *t*-statistic of 6.65 in contrast to 0.96 percent with a *t*-statistic of 2.13 for issues in 1990 and 1991. The difference between these two subsamples is not significant at the 0.10 level.

### **3.4 The role of differences in the organization of firms**

It is often argued that Japan and the United States differ in that Japanese managers have long horizons and U.S. managers have short horizons. One possible explanation for this difference, if it truly exists, is that long-term shareholders play an important role in Japanese firms. These shareholders, however, have a complex relationship with the firm in that they hold shares, hold debt, and conduct business transactions with it. As argued in Kang et al. (1995), it may well be that the best analogy for such investors is Admati and Pfleiderer's (1994) fixed fraction investors. If the controlling investors hold a constant fraction of all payouts from the firm, then new issues convey little or no information about the mispricing of existing securities, and the arguments of Myers and Majluf (1984) for why share prices fall following issues of risky securities are unlikely to be important.<sup>16</sup>

In the United States, firms issue stock following periods of positive abnormal returns.<sup>17</sup> The explanation for this phenomenon advanced by Lucas and McDonald (1990) is that the shares are least likely to be underpriced following a period when they have increased in value. If the wealth redistribution resulting from the sale of mispriced se-

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<sup>16</sup> The complicating issues that arise here in contrast to the theoretical literature are that (1) the long-term investors in a Japanese firm own only a fraction of its shares and (2) they derive benefits from their position as long-term investors in addition to the return from their shares because of their trading relationships with the firm. A model of the firm with long-term investors similar to those of Japanese firms would make it possible to derive precisely the information conveyed by new security issues. It should be clear, however, that management has few reasons to care about short-term investors in Japanese firms and hence that the Myers and Majluf (1984) model is inappropriate for these firms.

<sup>17</sup> See Asquith and Mullins (1986). Korajczyk, Lucas, and McDonald (1990) provide a detailed analysis of the excess returns before an issue.

**Table 6****Excess returns prior to the issue announcement and their correlation with the announcement abnormal return**

	Public equity issues	Public convertible issues
A. Stock return for AD -220 to AD -20	31.39% (26.95)*** (12.03)†††	24.38% (19.76)*** (18.15)†††
B. Portfolio return for AD -220 to AD -20	30.75 (32.34)*** (27.28)†††	29.30 (29.51)*** (39.34)†††
C. Excess return	0.36 (-3.81) (0.21)	-3.63 (-7.13)*** (-3.97)†††
Correlation between AR and A ( <i>p</i> -value)	-0.07 (0.36)	0.02 (0.65)
Correlation between AR and B ( <i>p</i> -value)	-0.04 (0.55)	-0.01 (0.84)
Correlation between AR and C ( <i>p</i> -value)	-0.07 (0.36)	0.02 (0.60)

The sample includes 185 public equity offerings and 561 public convertible debt offerings between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. The announcement day (AD) is the day the issue is announced in the *Nihon Keizai Shinbun* and AR denotes the abnormal return for the 3 days surrounding the announcement day. Medians and *t*-statistics are in parenthesis. \*\*\* indicates significance of the signed-rank test at the 0.01 level. ††† indicates significance of the *t*-statistic at the 0.01 level.

curities is unimportant for Japanese managers because of differences in the organization of firms or other reasons, these managers are less willing to sacrifice positive NPV projects to avoid such wealth redistribution. This means that they are less likely to issue following positive abnormal stock returns for their shares than American managers. Table 6 shows that Japanese firms do not issue equity or convertible bonds following significant positive excess returns. Further, there is no significant relation between announcement abnormal returns and abnormal returns preceding the announcement. These results hold equally if we use raw returns instead of abnormal returns. Hence, the adverse selection explanation for the abnormal returns associated with new issues does not appear to hold for Japanese firms.

An alternative way of investigating the role of institutional arrangements is to compare the abnormal returns for firms where management is more likely to behave like the management of American firms. Table 7 provides evidence on this issue. First, we divide the sample between firms that belong to a horizontal Keiretsu and those that do not.<sup>18</sup> We find some difference between the two groups for equity

<sup>18</sup> We use the 1985 edition of *Industrial Groupings in Japan* by Dodwell Marketing Consultants to determine each firm's Keiretsu affiliation.

issues: the Keiretsu firms are the only ones with a significant abnormal return on the announcement day, but the difference between the two groups of firms is not significant. This result is similar to the one found in Kang et al. (1995) for offshore warrant bond issues. In contrast, when we look at convertible bond issues, there is no difference whatsoever between the two groups on the announcement date. In regressions 1 and 2 of Table 8, we estimate the Keiretsu effect in a regression of abnormal returns on the log of firm size, the offering size relative to firm size, and a dummy variable for whether a firm belongs to a Keiretsu. The regression results lead to similar conclusions.

As emphasized by Saxonhouse (1993), alternative Keiretsu classifications lead to very different lists of member firms. Consequently, the fact that Keiretsu membership is not very helpful in predicting abnormal returns could mean that our Keiretsu classification is not precise enough. This problem suggests an alternative approach to identify the firms that resemble American firms the most, namely the use of firm size. Large firms are less likely to be constrained in their actions by their shareholders or by a main bank. Panel B of Table 7 provides strong evidence that size matters. For equity issues, large firms have a significant negative abnormal return for the 3-day window surrounding the announcement day, in contrast to small firms which have a significant positive abnormal return. For convertible bond issues, the announcement effect is also significantly larger for small firms, but the announcement effect is positive for both sets of firms. On issue day, there is no significant difference.

An obvious concern with the size results is that they are subject to alternative interpretations.<sup>19</sup> For instance, size might help understand the cross-sectional variation in abnormal returns because of microstructural effects or because size is related to the degree of information asymmetry about a firm.<sup>20</sup> The argument that size proxies for microstructural effects is that small firms tend to have lower stock prices, so that the fixed part of transaction costs is more important for these firms relative to the stock price. In regressions not reported here,

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<sup>19</sup> One concern is that size could matter because of biases in beta estimates correlated with firm size. We computed abnormal returns using net of market returns and found that size matters in the same way with these abnormal returns.

<sup>20</sup> A third possibility suggested to us by Ken Singleton is that small firms trade less frequently, so that when an important event occurs for these firms in an increasing market, they get marked to market and hence earn a positive abnormal return. This possibility may contribute to our findings and may lead us to understate the importance of the bubble economy for our results. We hope therefore to investigate this in future work. However, it is still the case that because of the results for large firms, equity issues do not result in a fall in firm value comparable to the one observed in the United States. Further, this possibility cannot explain the result we find later that, in a size-matched sample, firms with bank loans experience more positive abnormal returns than firms without bank loans.

**Table 7**  
**Abnormal returns by Keiretsu membership, firm size, and bank loans**

	Public equity issues		Public convertible issues	
	AD -1 to AD +1	ID -1 to ID +1	AD -1 to AD +1	ID -1 to ID +1
<b>A. Firms that belong to a Keiretsus versus those that do not</b>				
Keiretsu firms	0.81 (1.02)* (1.93) <sup>†</sup> (68)	-1.11 (-1.59)*** (-2.47) <sup>††</sup> (68)	1.13 (0.72)*** (5.07) <sup>†††</sup> (208)	0.26 (-0.11) (1.08) (208)
Non-Keiretsu firms	0.25 (-0.24) (0.74) (117)	-0.95 (-1.06)*** (-2.98) <sup>†††</sup> (117)	1.00 (0.72)*** (5.03) <sup>†††</sup> (353)	0.52 (0.14)** (2.81) <sup>†††</sup> (353)
Mean difference	-0.56	0.16	-0.13	0.26
Median difference	(-1.26)	(0.53)	(0.00)	(0.25)
<i>t</i> -statistic	(-1.04)	(0.28)	(-0.42)	(0.83)
Wilcoxon <i>z</i>	(-0.92)	(0.99)	(-0.60)	(1.34)
<b>B. Large firms versus small firms</b>				
Large firms	-0.55 (-1.12) (-1.71) <sup>†</sup> (92)	-0.67 (-1.04)*** (-1.93) <sup>†</sup> (92)	0.46 (0.13) (2.22) <sup>††</sup> (281)	0.25 (0.04) (1.33) (281)
Small firms	1.45 (1.45)*** (3.71) <sup>†††</sup> (93)	-1.34 (-1.67)*** (-3.38) <sup>†††</sup> (93)	1.64 (1.34)*** (7.73) <sup>†††</sup> (280)	0.60 (0.08) (2.63) <sup>†††</sup> (280)
Mean difference	2.00	-0.67	1.18	0.35
Median difference	(2.57)	(-0.63)	(1.21)	(0.04)
<i>t</i> -statistic	(3.94) <sup>†††</sup>	(-1.28)	(4.01) <sup>†††</sup>	(1.18)
Wilcoxon <i>z</i>	(4.07) <sup>†††</sup>	(-1.27)	(4.66) <sup>†††</sup>	(0.47)
<b>C. Firms with bank loan financing versus firms with no bank loan financing, matching by the market value of equity and by the year of issue</b>				
Firms with no bank loans	-0.92 (-1.28) (-0.90) (17)	-0.47 (-0.49) (-0.49) (17)	1.06 (0.59)* (2.23) <sup>††</sup> (66)	0.45 (0.59) (1.16) (66)
Firms with bank loans (matched by size and year)	1.60 (2.48)* (1.93) <sup>†</sup> (17)	-1.71 (-1.93)*** (-3.62) <sup>†††</sup> (17)	1.28 (1.18)*** (3.56) <sup>†††</sup> (66)	0.96 (0.53) (2.12) <sup>††</sup> (66)
Mean difference	-2.52	1.24	-0.22	-0.51
Median difference	(-3.76)	(1.44)	(-0.59)	(0.06)
<i>t</i> -statistic	(-1.92) <sup>†</sup>	(1.15)	(-0.36)	(-0.86)
Wilcoxon <i>z</i>	[1.76] <sup>†</sup>	[0.83]	[-0.83]	[0.43]

The sample includes 185 public equity offerings and 561 public convertible debt offerings between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. AD denotes the day when the issue is announced in the *Nihon Keizai Shinbun* and ID denotes the issuance day. Medians, *t*-statistics, and the sample size are in parenthesis. \*, \*\*, and \*\*\* indicate significance of the signed-rank test at the 0.10, 0.05, and 0.01 levels, respectively. †, ††, and ††† indicate significance of the *t*-statistic and of the Wilcoxon *z*-statistic at the 0.10, 0.05, and 0.01 levels, respectively.



**Table 8**  
**Multivariate regression of 3-day announcement abnormal returns on firm characteristics**

Regression	Security issue					
	1. Equity	2. Convertible	3. Equity	4. Convertible	5. Equity	6. Convertible
Constant	7.93 (2.77) <sup>^^^</sup>	7.89 (3.55) <sup>^^^</sup>	10.01 (3.49) <sup>^^^</sup>	7.33 (3.98) <sup>^^^</sup>	5.79 (1.90) <sup>^</sup>	8.55 (3.79) <sup>^^^</sup>
Log MV	-0.73 (-3.22) <sup>^^^</sup>	-0.57 (-3.54) <sup>^^^</sup>	-0.56 (-2.70) <sup>^^^</sup>	-0.52 (-4.20) <sup>^^^</sup>	-0.53 (-2.30) <sup>^^</sup>	-0.55 (-3.67) <sup>^^^</sup>
Log price			-0.48 (-1.11)	-0.01 (-0.06)		
Amount/ MV	0.54 (0.12)	-1.09 (-0.33)			-1.70 (-0.37)	-1.25 (-0.37)
Keiretsu dummy	1.00 (1.87) <sup>^</sup>	0.30 (0.99)			0.74 (1.31)	0.51 (1.57)
PE					-0.02 (-2.70) <sup>^^^</sup>	-0.00 (-0.67)
Debt/TA					1.79 (0.98)	-1.10 (-0.84)
Loans/TA					3.80 (2.40) <sup>^^</sup>	-2.04 (-1.90) <sup>^</sup>
R <sup>2</sup>	0.09	0.04	0.07	0.04	0.11	0.04
p-val.						
F-test	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

The sample includes 185 public equity offerings and 561 public convertible debt offerings between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a similar Scholes-Williams beta estimate. The announcement day is the day when the issue is announced in the *Nihon Keizai Shinbun*. MV denotes the market value of the firm in million yen. Amount is the proceeds from the issue in billion yen. Leverage is the ratio of total liabilities to total assets (TA). Debt/TA is leverage minus loans to total assets. The Keiretsu dummy takes value one if the firm belongs to a horizontal Keiretsu. All coefficients are multiplied by 100. <sup>^</sup>, <sup>^^</sup>, <sup>^^^</sup> indicate significance of the *t*-statistic at the 0.10, 0.05, and 0.01 levels, respectively.

we find that there is a significant relation between price and abnormal return in regressions that do not control for size. However, when abnormal returns are regressed on size and price as in regressions 3 and 4 of Table 8, price is never significant and size is always significant. Hence, the explanation for the role of size is not a mechanical microstructural explanation having to do with the stock price.

In the United States, it is often argued that informational asymmetries are greater for small firms than for large firms. In the context of the Myers and Majluf (1984) model, this would suggest a greater price drop for small firm equity issues than for large firm equity issues, which obviously is the opposite result from the one observed here. It could be, though, that equity issues have a positive effect and that issues by small firms are more unexpected than issues by large firms. This interpretation would be promising if the average abnormal

return for large firms was insignificantly different from zero; instead, it is significantly negative.

Even if large firms are more similar to U.S. firms, this may be because they have better access to capital markets rather than because of corporate control differences. To make sure that this is not the case, we compare abnormal returns for issues made within the same year by firms with no bank loan financing and firms of similar size with loan financing by banks or other financial intermediaries (these two categories of loans are aggregated in the accounting data reported by PACAP). By controlling for firm size, we hopefully eliminate the effect of size on a firm's ability to access capital markets. Therefore, if abnormal returns differ across firms with different reliance on bank loans, it should be because firms with bank loans are monitored by banks in contrast to the firms with no bank loans. The results reported in panel C of Table 7 are striking: firms with bank loans have significantly higher abnormal returns than the firms without bank loans for equity issues. The difference of 2.52 percent is not only statistically significant, but it is also economically large. There is no significant difference between convertible issuing firms that rely on bank loans and those that do not, but the sign of the difference is the same as the one for the comparison of firms issuing equity.<sup>21</sup>

### **3.5 Multivariate regression estimates**

Regressions 5 and 6 in Table 8 relate abnormal returns to several different variables that one might expect to be related to abnormal returns based on U.S. results and on the analysis conducted so far in this article.<sup>22</sup> Since past excess returns are not informative for the abnormal returns, we use the price-earnings (PE) ratio as an explanatory variable instead. With the adverse selection model, one would expect PE to have a negative effect on abnormal return for Japan because high PE firms would be more likely to issue, so their issues would be more anticipated. We find that the PE ratio is negatively related to the abnormal return. The coefficient is significant at the 0.01 level for equity issues but is insignificant for convertible issues. One would expect highly levered firms to be more likely to issue if high leverage

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<sup>21</sup> Although we do not report these results in the table, we also split the sample into two groups according to loans to total assets. For equity issues, firms with loans to total assets above the sample median have a 3-day abnormal return of 1.16 percent that is significantly larger than the abnormal return of -0.26 percent of the firms with loans to total assets below the sample median. There is no difference between abnormal returns of the convertible issuing firms with loans to total assets above the sample median and those with loans to total assets below the sample median.

<sup>22</sup> The regressions use the 3-day abnormal return as the dependent variable. We also estimated all the regressions using a 2-day abnormal return as the dependent variable and found similar results.

means that firms are farther away from their equilibrium capital structure. We allow for a different relation between loans and abnormal returns and between the remainder of the firm's liabilities and abnormal returns. It turns out that the abnormal return for equity issues is positively related to loans normalized by total assets and is unrelated to the magnitude of other liabilities normalized by total assets. With convertible debt issues, loans have a negative impact. However, this negative impact is suspect. Since PEs can take extremely high values, it makes sense to investigate whether the regression results are affected by outliers. If we remove the 5 percent of firms with the highest and lowest PEs in each sample, the regression for equity abnormal returns is essentially unchanged, but loans/TA is no longer significant in the convertible regression.

In regressions not reported here for the convertible debt sample, we also include a dummy variable for secured debt, the Gensaki rate, and a variable equal to the difference between the coupon rate and the Gensaki rate as a proxy for the magnitude of the equity component of the convertible issue. The coefficients on secured debt and the Gensaki rate are never significant. In contrast, the difference between the coupon rate and the Gensaki rate has a positive coefficient and is always significant. This suggests that the stock price reaction increases as the equity component falls. Since coupon rates were fairly standardized, this result should be interpreted with caution.

The coefficient on PE raises the question of whether Japan is as different from the United States as argued so far. It could indicate that Japanese firms are as likely as U.S. firms to issue equity when their valuation is high, so that in both countries high valuation firms have abnormal returns close to zero. With this view, past excess returns are not significantly related to abnormal returns because they are poor valuation proxies for Japanese firms. If this view is correct, we would expect PE to be related to abnormal returns in the same way across firm size classes. In Table 9, we divide the sample into large and small firms and high and low PE firms. Within firm size classes, PE does not matter. Within PE classes, size matters. There is no evidence that issues by firms with high PEs are more anticipated within a firm size class.

It is interesting to note that for equity issues in panel A, the large firms with high PEs have the lowest average abnormal return of  $-0.91$  percent with a  $t$ -statistic of  $-2.13$ , indicating that these firms have announcement returns more similar to those of U.S. firms. The small firms with high PEs have the highest average abnormal return. For convertible issues in panel B of Table 9, small firms with high PEs have the highest abnormal returns and large firms with high PEs have the lowest abnormal returns. The large firms with high PEs do not

**Table 9**  
**3-day announcement abnormal returns according to PE and firm size classes**

	Small firms (median) { <i>t</i> -statistic} no. of firms	Large firms (median) { <i>t</i> -statistic} no. of firms	Difference (median) { <i>t</i> -statistic} [Wilcoxon- <i>z</i> ]
Panel A. Equity issues			
Low PE firms	1.36% (1.38)*** {2.71}^^^ 47	−0.20% (−0.83) {−0.43} 46	1.56% (2.21) {2.26}^^ {2.33}^^
High PE firms	1.53 (1.84)*** {2.54}^^ 46	−0.91 (−1.24)** {−2.13}^^ 46	2.44 (3.08) {3.30}^^^ {3.43}^^^
Difference (median) ( <i>t</i> -statistic) (Wilcoxon- <i>z</i> )	−0.17 (−0.46) {−0.21} [−0.41]	0.71 (0.41) {1.10} [0.93]	
Panel B. Convertible issues			
Low PE firms	1.40 (1.09)*** {4.48}^^^ 140	0.65 (0.35)* {2.31}^^ 141	0.75 (0.74) {1.80}^ {1.81}^
High PE firms	1.89 (1.60)*** {6.56}^^^ 140	0.27 (−0.04) {0.88} 140	1.62 (1.64) {3.88}^^^ {4.87}^^^
Difference (median) { <i>t</i> -statistic} [Wilcoxon- <i>z</i> ]	−0.49 (−0.51) {−1.13} [−1.17]	0.38 (0.39) {0.92} [1.42]	

The sample includes 185 public equity offerings and 561 public convertible debt offerings between January 1, 1985, and May 31, 1991, by firms listed on the Tokyo Stock Exchange. The daily excess return is the issuing firm's return minus the return on a control portfolio with a beta estimate in the same decile as the issuing firm's beta. The announcement day is the day when the issue is announced in the *Nihon Keizai Shinbun*. Large firms have a market value in excess of the median of firms issuing the same security. High PE firms are firms with a PE greater than the median of firms issuing the same security. \*, \*\*, and \*\*\* denote significance of the sign-rank test at the 0.10, 0.05, and 0.01 levels, respectively. ^, ^^, ^^^ indicate significance of the *t*-statistic and of the Wilcoxon *z*-statistic at the 0.10, 0.05, and 0.01 levels, respectively.

have significant positive abnormal returns and hence again are more similar to American firms than the other firms.

#### 4. Conclusion

Our main findings are as follows. First, the average total abnormal return for equity-linked debt issues by Japanese companies is unambiguously positive, whereas the average total abnormal return for public equity issues is negative but insignificant. Hence, Japanese com-

panies have stock price reactions to security issues that are different from those of American companies.

Second, for Japanese companies, the announcement day return is smaller in absolute value than the issue day return for public equity issues, but not for convertible issues. The large issue day return for public equity issues is puzzling in that it cannot be explained directly by microstructure considerations or price support.

Third, deregulation seems to explain part of the significant positive abnormal return associated with convertible issues, but not all of it.

Fourth, large Japanese companies have lower abnormal returns and hence have abnormal returns that are closer to those experienced by American companies. In particular, the largest Japanese companies in the sample have a significant negative stock price reaction to public equity issue announcements. There is also weak evidence that companies that do not belong to a horizontal Keiretsu have lower abnormal returns and strong evidence that firms with less loans in their capital structure have lower abnormal returns than firms with more loans.

Fifth, in contrast to American companies, Japanese companies do not issue equity or equity-linked debt following a period of positive abnormal returns.

The evidence in this article is consistent with the view that during our sample period Japanese managers behaved differently from American managers. In particular, they were not as concerned about mispricing of existing securities as American managers seem to be, and consequently the stock market's reaction to issues of risky securities was not as negative as it typically is in the United States. This is consistent with the view that Japanese managers care less about short-term shareholders than American managers.

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