

An Analysis of the Wealth Effects of Japanese Offshore Dollar-Denominated Convertible and Warrant Bond Issues

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Abstract

Offshore dollar-denominated equity-linked issues were a more important source of funds for Japanese companies during the 1980s than domestic equity and straight debt issues combined. Using a sample of Japanese equity-linked offshore issues from 1977 to 1989, we find that the announcement of these issues is accompanied by a significant positive abnormal return. This contrasts with evidence that U.S. equity-linked issues have a significant negative stock price reaction. We provide an explanation for the difference in stock price reactions between U.S. and Japanese issues that is based on the greater influence on managers' security issue decisions of long-term investors and banks in Japan than in the U.S.

I. Introduction

Japanese companies raised more dollar equity-linked debt offshore during the second half of the 1980s than the combined total of equity and straight debt raised at home.¹ The advantage of the offshore dollar market for Japanese firms is that it is an unregulated market. Although the 1980s saw the securities markets in Japan become less regulated, domestic issues were expensive and cumbersome because of regulatory constraints.² There were numerous formal and informal restrictions concerning the firms that could issue, when issues could take place, how issues were underwritten, the coupon payments allowed, and so on. In addition, firms

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¹See Campbell and Hamao (1993), Hodder and Tschoegl (1993), and Niimi (1992a) for statistics on sources of funds for Japanese firms.

²See Rosenbluth (1989) for an extensive account of these restrictions and of their evolution during the 1980s.

issuing debt securities had to pay hefty fees to banks for serving as trustees. Many of these restrictions and fees could be avoided by issuing unsecured debt offshore. Although offshore dollar issues have exchange rate risk for Japanese issuers, firms found that this risk was easy to hedge after restrictions on swaps and forward contracts were eliminated in 1984 and after they became able to issue bonds with detachable warrants at the end of 1985. The fact that after 1985 firms could issue abroad with lower issuing costs and more flexibility explains why offshore markets were so important for Japanese firms in the second half of the 1980s.

In this paper, we investigate the stock price reaction to issues of offshore dollar-denominated equity-linked debt by Japanese corporations using a sample of 451 issues from 1977 to the end of 1989. We find a significant positive abnormal return of 0.5 percent over the three days surrounding the issue announcement in the *Financial Times*. Our results differ sharply with the evidence for U.S. domestic convertible issues. For these issues, Dann and Mikkelson (1984) show that equity falls by 2.31 percent on the day before and the day of the announcement in the *Wall Street Journal*. We further show that the abnormal return associated with offshore Japanese equity-linked issues is significantly larger than the abnormal return associated with convertible debt issues by American firms on the same market. There is, however, no significant difference between offshore and domestic equity-linked issue announcements by Japanese firms.

Why didn't Japanese firms experience an adverse stock price reaction to offshore issues of equity-linked debt during the 1980s? Equity-linked issues are the sum of two securities: a bond and a fractional holding of shares. For Japanese offshore issues, the principal and coupon payments of equity-linked issues are often insured by banks; further, because of the potential of bank rescues to prevent bankruptcy in Japan, even uninsured issues are implicitly insured by banks.³ Therefore, an issue conveys positive information about the issuing company because of the willingness of banks to insure the issue explicitly or implicitly. The equity component of an equity-linked issue should be expected to have a negative effect on the stock price if the information content of equity issues is similar for Japanese and U.S. firms. However, from Kato and Schallheim (1992) and Kang and Stulz (1995), we know that equity issues have a nonnegative stock price reaction for Japanese firms in contrast to American firms. Hence, the stock price reaction to equity-linked issues reflects the positive information that banks are letting the firm issue and a nonnegative effect associated with the equity issue.

The paper is organized as follows. Section II introduces our sample of offshore issues. In Section III, we present our evidence on stock price reactions. Section IV compares Japanese offshore issues to Japanese onshore issues and to American offshore issues. Section V provides our explanation of the difference in abnormal returns between American and Japanese issues. In Section VI, we try to explain why the abnormal returns associated with the announcement of new issues increase during our sample period. Concluding remarks are provided in Section VII.

³See Hoshi, Kashyap, and Scharfstein (1990) for examples of banks coming to the rescue of distressed firms.

II. The Sample

The sample we use to investigate the shareholder wealth effect of offshore equity-linked issues is constructed as follows. To collect data on issues, we use Euromoney from 1977 to 1982 and the Standard & Poor's International Credit Week from 1983 to 1989. For each bond, we use as the announcement date the first date on which the bond is mentioned in the Financial Times. Excluded from the sample are bonds for which no announcement date is available, bonds issued by utilities and financial companies, and bonds denominated in currencies other than the U.S. dollar. We then exclude all firms for which we have no accounting information. Our final sample has 451 issues by 265 different firms. The sample includes 368 warrant bond issues and 83 convertible bond issues.

An example of a warrant bond is the bond issued by Best Denki in April 1986.⁴ The five-year bond matured on April 14, 1991. The issue size was \$45 million and the coupon was 3 percent. The bond was guaranteed by Sanwa Bank and listed in London. The warrants were immediately detachable, exercisable at any time, and expired on March 22, 1991. The warrants allowed the purchase of 636 shares at an exercise price of Y1,423.3. The exchange rate was fixed at Y181.05. The yen exercise price was just 2 percent over the share price at the time of issuance.

Several characteristics of the Best Denki issue make it typical. First, contrary to an American convertible debt issue, the warrant is almost at-the-money, indicating the presence of a substantial equity component. Second, the issue has a short maturity. Third, contrary to American offshore debt, the issue is guaranteed by a bank, which makes it possible for firms to access a market that they otherwise would not be able to. This is because, as argued in Kim and Stulz (1988), offshore markets are advantageous only for relatively safe debt since, for other debt, the higher costs of enforcing bond covenants make these markets disadvantageous for issuers.⁵

Table 1 describes the sample for each year. Convertible bonds have maturities typically in excess of 10 years, whereas warrant bonds have an average maturity of less than five years. The average issue size is greater for warrant bonds than for convertible bond issues. The number of issues per year increases dramatically over the sample period from less than 10 per year in the first four years to more than 100 in each of the last two years. The sample has mostly convertible debt issues until the mid-1980s and then almost only warrant bonds. In Section VI, we discuss the regulatory changes that made warrant bond issues more attractive in the second half of the 1980s.

Table 2 shows some issue and firm characteristics. The firms issuing warrant bonds are larger than those issuing convertible debt when size is measured by the market value of equity. Share prices increased dramatically over our sample period. Not surprisingly, therefore, the difference between the ratio of issue size

⁴This example is discussed in Andersen (1990).

⁵Campbell and Hamao (1993) document the degree to which offshore bonds are guaranteed by banks. They show that the extent to which warrant bonds are explicitly guaranteed fell from 77.1 percent for issues from 1984 to 1987 to 33.7 percent for the period from 1988 to 1991. They show that bonds of firms affiliated to main banks are more likely to be guaranteed than the bonds of unaffiliated firms and that the fraction of guaranteed bonds fell over time.

TABLE 1
Description of the Sample

	Total Sample #	Convertible Issues			Warrant Bond Issues		
		#	Size	Maturity	#	Size	Maturity
Total	451	83	12285	14.19	368	27354	4.74
1977	5	5	5920	15.00	0		
1978	1	1	10255	15.00	0		
1979	6	6	10520	14.00	0		
1980	4	4	7798	13.75	0		
1981	20	20	9738	14.67	0		
1982	10	8	9387	14.86	2	11535	5.00
1983	11	9	17599	14.11	2	17586	5.00
1984	31	15	15167	12.94	16	12753	5.67
1985	28	13	15215	14.44	15	14693	5.13
1986	42	0			42	15267	5.32
1987	86	2	15969	15.00	84	18530	5.10
1988	103	0			103	21044	4.66
1989	104	0			104	50178	4.12

The sample contains all convertible and warrant bonds issued by Japanese companies (except utilities and financial companies) on the dollar offshore market from 1977 to the end of 1989 for which an event date could be found in the Financial Times and for which complete accounting data are available. The size is the average yen amount in millions and average maturity is in years.

and the market value of equity, which adjusts for the increase in share prices, is not as striking as the difference in average issue sizes. A useful comparison of firm size is with the sample of 561 domestic convertible issues examined by Kang and Stulz (1995) that covers the period from January 1, 1985, to May 31, 1991. The average market value of equity is 346 billion yen in their sample, with a median value of 142 billion yen. The firms issuing warrant bonds in our sample issue mostly over the same period as firms issuing domestic convertible issues in the Kang and Stulz (1995) sample. The average market value of equity for the firms issuing warrant bonds in our sample is 481 billion yen with a median value of 228 billion yen. Therefore, firms issuing offshore are substantially larger than firms issuing domestically. Irrespective of whether firms issue warrant bonds or convertible bonds, there is no evidence of positive average abnormal returns before the issue. This contrasts with the evidence in the U.S. reported by Mikkelsen and Partch (1986) that firms issuing convertible debt experience average cumulative abnormal returns of 10.94 percent in the 58 trading days before the issue, and by Asquith and Mullins (1986) that firms issuing equity have cumulative excess returns of 40 percent for the two years preceding the issue. The median coupon yield on convertible bonds also is lower than the coupon yield on contemporaneous offshore American convertible bonds by about 100 basis points, which is consistent with lower default risk because of bank guarantees and a more valuable conversion feature because the Japanese bonds are closer-to-the-money than the American bonds.

TABLE 2
Issue Characteristics and Firm Sizes

Characteristics	Total Sample Average (median)	Warrant Issues Average (median)	Convertible Issues Average (median)	Average Difference (<i>t</i> -statistic)
Yen issue amount (millions)	24581 (14295)	27354 (15630)	12285 (10255)	15070 (8.26)
Market value of equity (millions)	440540 (209698)	481008 (228878)	261116 (183620)	219891 (5.06)
Yen issue amount/Market value of equity	0.10 (0.08)	0.10 (0.08)	0.08 (0.06)	0.02 (2.71)
Coupon rate	4.19 (4.13)	4.02 (4.13)	4.95 (5.25)	-0.93 (4.72)
CXR	-1.58 (-7.13)	-1.98 (-7.32)	0.22 (-2.94)	-2.20 (0.77)

The sample contains all convertible and warrant bonds issued by Japanese companies (except utilities and financial companies) on the dollar offshore market from 1977 to the end of 1989 for which an event date could be found in the Financial Times and for which complete accounting data are available. Firm size is obtained from the PACAP database. The issue characteristics are obtained from Euromoney and S&P International Credit Week. CXR denotes the cumulative excess returns computed from day -220 to day -20 before the issue.

III. Stock Price Reactions to Warrant and Convertible Bond Issues

In this section, we use daily stock returns from the Pacific-Basin Capital Markets (PACAP) Research Center Database, which includes all stocks on the Tokyo Stock Exchange, to estimate stock price reactions. To compute a stock's abnormal return on a given day, we subtract from its return the return of a matching beta portfolio obtained by dividing the stocks on the PACAP file into 10 portfolios ranked at the beginning of each year according to Scholes and Williams (1977) betas.⁶

Abnormal returns for various subperiods are reported in Table 3. Day 0 is the day of the announcement in the Financial Times. Because of time-zone differences, day +1 is actually the first day that investors who learned about the announcement through the Financial Times could trade on the information. To allow for the possibility that the announcement could be made in Japan one day before, we include day -1 in our event window. We discuss first our results for the whole sample and then consider the results for the subsamples in turn.

i) Whole sample. From day -1 to day +1, the whole sample abnormal mean return is 0.50 percent with a *t*-statistic of 3.40. There is evidence of a positive drift over days +2 to +5. Given the apparent upward drift following date 0, the -5 to +5 window is important to assess the stock price reaction. For this window, the average abnormal return is 1.45 percent and the median is 0.96 percent.

ii) Convertible bond sample. There is a significant negative average cumulative abnormal return of -0.62 percent for days -5 to -2. The abnormal return for

⁶Estimates of abnormal returns using the market model method are similar.

TABLE 3
Cumulative Abnormal Returns for Selected Periods

Period	Whole Sample	Convertible Bond Issues		Warrant Bond Issues		Difference (t-statistic)
	Mean CAR (median) [t-statistic]	Mean CAR (% positive)	t-Statistics (median)	Mean CAR (% positive)	t-Statistics (median)	
-20 to -6	-0.172 (-0.716) [-0.636]	-0.024 (43.37)	-0.040 (0.700)	-0.205 (43.75) [^]	-0.677 (-0.751)*	0.18 (0.27)
-5 to -2	-0.017 (-0.305) [-0.111]	-0.620 (37.35) [^]	-2.070 (-0.691)*	0.119 (48.91)	0.672 (-0.104)	-0.74 (-2.12)
-1 and 0	0.455 (0.323)* [3.664]	-0.224 (49.40)	-0.966 (-0.031)	0.608 (56.79) [^]	4.288 (0.401)*	-0.83 (-3.06)
-1 to +1	0.498 (0.209)* [3.400]	-0.226 (44.58)	-0.875 (-0.289)	0.661 (55.98) [^]	3.920 (0.394)*	-0.89 (-2.87)
+2 to +5	0.967 (0.649)* [5.441]	0.411 (56.63)	1.187 (0.366)	1.092 (59.24) [^]	5.383 (0.800)*	-0.68 (-1.69)
+6 to +20	0.891 (-0.021) [2.493]	0.488 (45.78)	0.708 (-0.289)	0.982 (50.82)	2.397 (0.162)	-0.49 (-0.62)
-5 to +5	1.448 (0.958)* [5.623]	-0.43 (38.55) [^]	-0.790 (-0.732)	1.872 (61.68) [^]	6.550 (1.352)*	-2.31 (-3.72)
-20 to +20	2.167 (1.098)* [4.019]	0.030 (48.45)	0.024 (-0.964)	2.649 (57.07) [^]	4.422 (1.371)*	-2.62 (-1.93)

Convertible and warrant bonds issued by Japanese companies (except utilities and financial companies) on the dollar offshore market from 1977 to the end of 1989 for which an event date could be found in the Financial Times and for which complete accounting data are available. The stock returns are obtained from the PACAP database. Excess returns are computed by subtracting from a firm's return the return of a portfolio with a comparable beta and are expressed in percentages.

*Denotes that the Wilcoxon sign-rank test statistic is significant at the 0.05 level and [^] that the sign test statistic is significant at the 0.05 level.

days -1 to +1 is insignificantly different from zero. There is an insignificant positive drift after the issue. Given the negative returns before the issue, it is important to consider the event window for days -5 to +5. For that window, the cumulative average abnormal return is -0.43 percent with a *t*-statistic of -0.79. There is no evidence of a negative stock price reaction of the magnitude observed in the U.S.

iii) Warrant bond sample. This sample has an insignificant positive abnormal return for days -5 to -2, a significant positive abnormal return for days -1 to +1, and a significant positive drift from days +2 to +5. The event windows for days -1 and 0, -1 to +1, and +2 to +5 all have significant positive abnormal return significantly larger than for convertible debt issues. Finally, for days -5 to +5, the cumulative average abnormal return is 1.87 percent with a *t*-statistic of 6.55.

IV. A Comparison with Offshore Issues by U.S. Firms and by Japanese Firms on the Japanese Domestic Market

The evidence reported in Section III raises two questions. First, both American and Japanese firms issue equity-linked debt on the Euro-markets. Therefore, issues by American and by Japanese firms can be compared directly and it can be established whether American and Japanese firms have significantly different abnormal returns when they issue equity-linked debt on the same market. Secondly, Japanese firms also issue equity-linked debt on their home market, which raises the question of whether they experience different abnormal returns onshore than offshore. In this section, we answer these two questions. It would be better if we could compare offshore warrant bond issues by Japanese firms to warrant bond issues by U.S. firms and to domestic warrant bond issues by Japanese firms, but there are too few such issues to perform meaningful comparisons. Consequently, we compare offshore Japanese equity-linked issues to offshore convertible debt issues by American firms, and Japanese offshore warrant bond issues to domestic convertible debt issues by Japanese firms.

In Panel A of Table 4, we use the sample of Kim and Stulz (1992) to compare the abnormal returns for offshore convertible issues by American firms with those for offshore equity-linked issues by Japanese firms. Their sample was collected from a variety of sources in an effort to include all offshore convertible issues by U.S. firms. The announcement dates for the issues by U.S. firms were obtained from the Financial Times. For this comparison, we use market model residuals with the market model parameters estimated over days -220 to -20 . We provide two size-based comparisons. For the first comparison, we create a matching sample of American issues and Japanese issues such that, for each issue in the sample, the American and Japanese issuing firms issue in the same year and have a dollar market value within 20 percent of each other so that we are looking at firms of similar size. In this matching sample, we include both warrant bond issues and convertible bond issues. The advantage of this sample is that it extends to 1987. For the second comparison, we include only convertible debt. This leads to a much smaller sample. Irrespective of the comparison method, we have similar results showing a substantial difference between American and Japanese announcement abnormal returns.

In Panel B of Table 4, we provide a size-based comparison of abnormal returns between offshore warrant bond issues and onshore convertible issues by Japanese firms. The sample of domestic issues is obtained from Kang and Stulz (1994) and contains all completed convertible bond issues from 1985 to 1991 for which data on the issuing firm could be obtained from the PACAP database. The comparison in Table 4 is done in two ways. First, for each offshore warrant issue, we select a convertible issue in the domestic sample that takes place in the same year and by the firm issuing domestically that year that has a market value of equity closest to the market value of the firm issuing offshore. Second, we require that the domestic issue be by a firm issuing domestically whose market value of equity is within 5 billion yen of the market value of the firm issuing offshore. Since there are no significant differences between offshore and domestic issues, we cannot attribute the positive abnormal returns to firms benefiting from issuing offshore.

TABLE 4

Comparison of Abnormal Returns for Offshore Dollar-Denominated Equity-Linked Issues by Japanese Firms with Offshore Convertible Issues by American Firms and Domestic Convertible Issues by Japanese Firms

Type of Match [# of Issues]	Matching Issues Average AR (<i>t</i> -statistic)	Japanese Issues Average AR (<i>t</i> -statistic)	Difference (<i>t</i> -statistic)
<i>Panel A. Comparison between Japanese Offshore Issues and American Offshore Convertible Issues (1977–1987)</i>			
Matching firms within 20% in firm size [48]	–1.36% (–3.20)	0.43% (1.09)	1.79% (3.10)
Convertible issues only, firms within 20% in firm size [23]	–1.35 (–2.17)	0.39 (0.89)	1.74 (2.29)
<i>Panel B. Comparison between Japanese Offshore Warrant Bond Issues and Japanese Domestic Convertible Issues (1985–1989)</i>			
No restrictions on matches [333]	0.91 (4.65)	0.70 (3.74)	0.21 (0.77)
Matching firms within 5 billion yen in firm size [189]	1.11 (4.40)	0.74 (3.09)	0.37 (1.08)

The sample of American offshore issues is the sample of convertible issues used in Kim and Stulz (1992). The sample of Japanese domestic issues is the sample of convertible issues used in Kang and Stulz (1995). The sample of Japanese offshore issues includes issues by Japanese companies (except utilities and financial companies) from 1977 to the end of 1987 for which an event date could be found in the Financial Times and for which complete accounting data are available. The stock returns are obtained from the PACAP database for Japanese firms and from the CRSP database for American firms. Excess returns are market model prediction errors for Panel A and portfolio excess returns for Panel B.

V. Why Do the Results Differ from the Issues by U.S. Firms?

The adverse selection argument advanced by Myers and Majluf (1984) is often used to explain the negative stock price reaction associated with the announcement of equity and convertible debt issues in the U.S. With this argument, managers do not issue equity when they know that equity is substantially underpriced since issuing equity would decrease the wealth of the old shareholders to the benefit of the new shareholders. Outside investors know that managers maximize the wealth of old shareholders and do not sell severely underpriced equity. They therefore interpret an equity issue as evidence that equity is overpriced. Lucas and McDonald (1990) build on this model to argue that firms are more likely to issue equity following periods of positive abnormal returns since that is when it is most likely that equity will be overvalued. They argue further that the abnormal return should be lower in absolute value for issues by firms that experienced greater abnormal returns before the issue. The evidence of Asquith and Mullins (1986) and Mikkelsen and Partch (1986) supports these two predictions of the adverse selection model for the U.S. Our evidence in Table 2 shows, however, that Japanese firms do not issue equity-linked issues following positive abnormal returns, on average. Further, for the issues in our sample, we found no significant relation between the cumulative abnormal returns before an issue and the announcement abnormal return for either the warrant bond issues or the convertible bond issues.

Why is it that the predictions of the adverse selection model do not hold for Japan? The Myers and Majluf (1984) argument requires the assumption that management's objective function puts a lot of weight on the maximization of the wealth of current shareholders. If managers focus instead on maximizing total firm value, in the sense of investing in all positive NPV projects irrespective of whether they are financed with inside or outside funds, they always issue equity when a positive NPV project can only be financed with outside funds. In this case, as emphasized by Myers and Majluf (1984), firm value is higher and an equity issue conveys no information about whether management thinks that the firm's equity is overpriced.

There is a strong case to be made that Japanese firms have insiders who are similar to investors who hold a fixed fraction of all securities. Admati and Pfleiderer (1994) point out that in a firm that has only such investors, management that maximizes shareholder wealth always invests in positive NPV projects.⁷ This is because such investors do not care whether the new securities issued by the firm are mispriced because the loss from the mispricing is offset by the gain on their existing securities. Although Japanese firms also have other investors who resemble more the investors in American firms, one can argue that the incentives of management in some types of Japanese firms are similar to the incentives of management in a firm dominated by fixed-fraction investors. Consider a Japanese firm that belongs to a horizontal keiretsu.⁸ Such a firm's management is concerned about its long-term investors, mostly other keiretsu members. The typical keiretsu long-term shareholder faces incentives that are quite different from the ones a typical American shareholder faces. The typical American shareholder's stake is limited to his shares, so that if the firm issues underpriced equity, he loses because wealth is transferred to new shareholders. This is not the case for the keiretsu shareholder. First, this shareholder attempts to keep his proportional stake in the firm constant and, therefore, has incentives to buy some of the shares for sale. Second, if the shareholder also holds debt, an underpriced security issue increases the value of the debt. Third, if the firm invests, the value of the shareholder's business transactions with the firm increases. All this suggests that the Japanese firm is more concerned about taking advantage of positive NPV projects than about the possible mispricing of new equity. Hence, equity and equity-linked debt issues should not convey information that equity is overpriced for typical Japanese firms.⁹

Another important feature of Japanese corporate finance is the role of banks. The issues in our sample would not take place if the banks closely associated

⁷See also Dybvig and Zender (1991) and Persons (1994). Dybvig and Zender (1991) point out that managerial compensation contracts that induce management to take all positive NPV projects maximize ex ante firm value and remove the adverse selection effect of equity issues. Persons (1994) shows that such contracts are not time-consistent. Admati and Pfleiderer (1994) argue that fixed-fraction investment contracts do not suffer from the time-consistency problem.

⁸See Gerlach (1992) for an analysis of the links among keiretsu members.

⁹Although the case for viewing keiretsu shareholders as fixed-fraction investors seems strong, it is unlikely to apply literally to the security issues considered in this paper. Viewed literally, fixed-fraction investors would buy a fixed fraction of every issue. Although it is widely argued that Japanese investors as a whole bought a substantial fraction of offshore issues by Japanese corporations, we have no direct information on the buyers of the issues and, hence, do not know which fraction, if any, of these issues was bought by keiretsu shareholders. One would expect, though, that keiretsu shareholders benefited from projects financed with these issues indirectly through their dealings with the issuing firm.

with the issuing firms did not agree to these issues taking place. Often, the banks guarantee the issue but, in addition, they also typically have enough influence on the issuing firm that they could prevent the firm from issuing offshore. We know, however, that in the U.S., financing decisions that reveal that banks have positive information, namely bank loan renewals, have a positive impact on firm value as evidenced by James (1987) and Lummer and McConnell (1989). If the issue is guaranteed by a bank, it is effectively equivalent to a loan by the bank, in the sense that the bank will lose money if the firm does poorly. In this sense, the debt portion of security issues guaranteed by banks that have existing relationships with the issuing firm are similar to the loan renewals and extensions known to have a positive stock price reaction. The explicit guarantee does not seem to be essential in this context. Though most warrant bonds have explicit bank guarantees, few offshore convertible bond issues have an explicit bank guarantee and none of the domestic convertible bond issues do.¹⁰

The U.S. evidence on bank loan renewals cannot by itself explain the Japanese evidence reported here if one believes that the debt portion of a warrant bond is equivalent to a bank loan renewal. To see this, note that Lummer and McConnell (1989) show that bank loan renewals for healthy firms have a two-day abnormal return of 0.87 percent in their sample. Their average abnormal return is slightly smaller than the average abnormal return for warrant bonds issued after 1985, which are the bonds most likely to have an explicit bank guarantee. However, the warrant bond involves an equity component, which we know from the American evidence reported earlier has a significant negative average abnormal return of at least 1.25 percent. The sum of the abnormal return for loan renewals and the negative abnormal return associated with U.S. convertible bonds is negative. In addition to the existence of an explicit or implicit bank guarantee, it must, therefore, be the case that the equity component of the warrant bond issue does not convey as much adverse information as for U.S. firms.

To investigate whether differences in corporate control mechanisms help explain the difference in the stock price reaction between Japanese firms and American firms, we compare the average abnormal return between keiretsu and non-keiretsu firms for warrant issues after December 1985. This comparison is reported in Panel A of Table 5. We focus on the warrant issues after December 1985 because these issues provide a homogeneous sample in terms of the securities issued and the firm's decisions are least affected by regulations as explained in the next section. In contrast to the firms belonging to a keiretsu, the average abnormal returns of the firms not belonging to a keiretsu are not significantly different from zero. The difference between the two sets of firms is not statistically significant, but the mean abnormal return of the keiretsu firms is slightly less than twice the mean abnormal return of the non-keiretsu firms.

VI. Additional Determinants of Abnormal Returns

In this section, we try to understand the result in Table 3 that the abnormal returns for warrant bond issues are higher than the abnormal returns for convertible

¹⁰See Campbell and Hamao (1993) for statistics on explicit bank guarantees.

TABLE 5
 Three-Day Abnormal Returns for Subsamples of Offshore Issues by Japanese Firms

	Mean (<i>t</i> -statistic)	Median (% positive)
<i>A. Warrant Bond Issues after December 1985 by Keiretsu and Non-Keiretsu Firms</i>		
By firms that do not belong to a keiretsu (97)	0.53 (1.48)	0.22 (52.58)
By firms that belong to a keiretsu (236)	0.90 (4.35)	0.63 (59.32)
Difference [Sign test <i>p</i> -value]	-0.36 (-0.87)	-0.41 [0.29]
<i>B. Firms that Issue Equity-Linked Debt before and after December 1985</i>		
Issues before December 1985 (68)	-0.26 (-0.87)	-0.10 (44.12)
Issues after December 1985 (85)	0.97 (2.92)	0.74 (61.18)**
Difference [Sign test <i>p</i> -value]	-1.23 (-2.76)	-0.84 [0.01]
<i>C. Firms that Issue Warrant Bonds after December 1985</i>		
First issue (83)	0.71 (1.97)	0.90 (60.24)*
Subsequent issues (106)	0.89 (3.11)	0.69 (60.38)**
Difference [Sign test <i>p</i> -value]	-0.18 (-0.39)	0.21 [0.88]

These are dollar-denominated convertible and warrant bonds issued from 1977 to 1989 for which a Financial Times event date is available and for which complete accounting data are available. The stock returns are obtained from the PACAP database. Excess returns are computed by subtracting from a firm's return the return of a portfolio with a comparable beta and are expressed in percentages.

* and ** denote a sign test statistic significant at the 0.05 and 0.10 levels, respectively.

bond issues. Since most issues before 1986 are convertible bond issues and most issues after 1985 are warrant bond issues, this change in abnormal returns could be the result of the switch from convertible bond issues to warrant bond issues or from changes in abnormal returns over time. The average abnormal return of 0.79 percent for warrant bond issues after 1985 is significantly higher at the 0.01 level than the average abnormal return of -0.29 percent for convertible issues before 1986 and the average abnormal return of -0.56 percent for warrant bond issues before 1986. Since there are only two convertible bond issues after 1985 in our sample, we cannot directly compare abnormal returns for convertible bond issues and for warrant bond issues after 1985. Therefore, this evidence suggests that there is a change in abnormal returns for equity-linked issues at the end of 1985. Since the previous section cannot explain this change in abnormal returns, we investigate whether changes in the Japanese economy can help understand this change. First, we consider the deregulation of the domestic bond market. Second, we consider deregulation affecting offshore markets.¹¹

¹¹In a multivariate regression framework, we found that the increase in issue size cannot explain the increase in abnormal returns. Regressing abnormal returns on a constant, a dummy variable for

A. Japanese Financial Liberalization and Abnormal Returns

Before the 1980s, financing through domestic bond issues was extremely difficult for Japanese companies.¹² First, unsecured issues were not allowed. Second, firms could only issue secured bonds if they satisfied restrictive balance sheet conditions. 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. 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. Warrant bonds were not allowed until 1981.

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. 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. If changes in eligibility requirements are to explain the change in abnormal returns in our sample, it must be that firms that issue both before and after December 1985 have the same abnormal returns in the two subperiods since, for these firms, the relaxation in eligibility requirements for equity-linked issues is irrelevant. Panel B of Table 5 provides this evidence and shows clearly that this is not the case. The same firm issuing offshore after 1985 experiences a significantly higher abnormal return than when issuing before 1986. This result holds irrespective of whether we consider all issues or only warrant bond issues. Further, as shown in Panel C of Table 5, if the sample is restricted to the subperiod after 1985, a firm's first warrant bond issue does not have a significantly different abnormal return from its subsequent warrant bond issues. These results are inconsistent with the view that the positive abnormal returns are due to the possible certification effect from issuing offshore for the first time.

B. Deregulation and Offshore Issues

Two important regulatory changes occurred during our sample period that made warrant bonds better instruments for regulatory and tax arbitrage and, hence, could make their issuance more advantageous. First, starting on April 1, 1984, Japanese firms were allowed to use swaps and other hedging instruments to hedge

warrant bond issues, and the size of the issue, the coefficient on the size of the issue is insignificant and the coefficient on the dummy variable is positive and significant. If we replace the size of the issue by the ratio of the size of the issue to the market value of the firm, the coefficient on that variable is positive and significant, contrary to the evidence for the U.S. presented in Asquith and Mullins (1986), but the coefficient on the dummy variable is essentially unchanged.

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

foreign currency issues. Bonds with detachable warrants are good swap vehicles once the warrants have been detached whereas convertible bonds are not since the value of the bond fluctuates with firm value and the number of bonds outstanding depends on how many bonds have been converted into shares. Second, detached warrants became tradeable in Japan in December 1985. Before December 1985, Japanese firms could bypass the domestic bond market through offshore issues, but only at a substantial cost, since they were forced to take on foreign currency risks that could not be eliminated easily. This problem disappeared after December 1985.

The liberalization of the trading of detached warrants in December 1985 enabled investors to trade warrants on Japanese firms and for foreign investors to trade equity-like securities on Japanese firms without using Japanese markets. Conrad (1989) documents that the introduction of a market for options on an individual firm is accompanied by a positive abnormal return of the same order of magnitude as the one we have documented here for the announcement of warrant issues. If the introduction of a market for warrants can explain the higher abnormal returns after December 1985, one would expect a firm's first issue of a bond with detachable warrants to have higher abnormal returns than subsequent issues. Panel C of Table 5 shows that this is not the case.

Although deregulation would seem to be a promising avenue to explain the change in abnormal returns observed in our sample, this avenue is not successful and hence, as a result, we cannot explain the change in abnormal returns occurring around 1985. It is possible that a richer database containing more information on the characteristics of issues, on the underwriters, and on the issuing firm's banking connections would provide a resolution of the puzzle discussed in this section.

VII. Concluding Remarks

In this paper, we document that the stock price reaction to offshore equity-linked issues by Japanese firms is significantly positive, but that this is due to the warrant bond issues taking place starting in 1986. The abnormal returns associated with Japanese equity-linked issues are significantly higher than those associated with American offshore convertible issues and insignificantly different from those corresponding to Japanese convertible issues.

We argue that the difference in stock price reaction between American issues and Japanese issues is due to i) Japanese managers who are less concerned about possible wealth transfers associated with new security issues because they maximize the wealth of investors who have multiple, long-term stakes in the firm, and ii) a larger role of banks in the issuing process. We explore alternative explanations for our results having to do with the advantages of issuing offshore and with the deregulation of Japanese capital markets. These alternative explanations do not receive much support. In particular, there is no evidence that the positive stock price reaction to warrant bond issues results from firms accessing offshore markets for the first time and hence benefiting from a certification effect.

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