Underwriter Switching in the Japanese Corporate Bond Market

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EXTENDED ABSTRACT

The purpose of this paper is to examine the determinants of firms switching the lead underwriter they use to underwrite their first and second public issues of corporate bonds in Japan between 1994 and 2002. A probit model which has as its dependent variable a 0-1 dummy variable taking the value one if the issuer switches lead underwriters, and zero otherwise, is used to analyze this problem. It is found that the probability of switch of underwriters between the first and second issues is significantly increased if the securities company subsidiary of a bank was the initial underwriter or the reputation of the underwriter of the initial underwriter worsens between the initial and the second issue. Evidence is also presented that suggests underwriters who can increase the degree of overpricing of the initial issue are more likely to be chosen to act as the underwriter of the second issue. Despite the theoretical suggestions that underwriting involves investment in durable firm-specific assets which might lead to initial issuers having an inside edge in being chosen to underwriter the second evidence, there is some weak evidence to suggest that switching of underwriters occurs when second issues are made relatively quickly after the first issue.

1. INTRODUCTION

In the course of underwriting an issue of a public security like a bond or share, an underwriter potentially provides several different services to the issuing firm. These services include providing advice about the price and conditions the issue should be made at; providing marketing services in order to sell the issue; guaranteeing the value of the proceeds of the issue by underwriting it; and preparing the relevant documents for the issue. There are several reasons to believe that there may be a connection between the choices of underwriters of successive security issues. In the process of preparing for the initial security issue, the underwriter may acquire some firm-specific information that will provide it with an inside track to underwriting subsequent issues. Alternatively, the price performance on the initial issue may affect the probability that the underwriter is chosen as the underwriter for the subsequent issue.

At least as far as existing analyses of the underwriting of public issues of corporate bonds go, these potential dependencies appear to have been ignored. To date, the standard approach to analyzing the problem of choosing an underwriter for a bond issue has been to consider the choice of whether the underwriter is a bank or a securities company (see, for example, Hamao and Hoshi (2000) and Takaoka and McKenzie (2005)). For the United States, Yasuda (2005) considers the problem of choosing an underwriter from among all the potential underwriters. One problem with this line of analysis is that it completely ignores any dependencies that might exist in the choice of underwriters for successive issues. The literature on the degree of switching of underwriters following an initial public offer of shares suggest that some systematic dependencies exist between the choice of initial underwriter and the choice of underwriter for subsequent security issues (see, for example, Carter (1992), James (1992), Nanda and Warther (1998), Cliff and Denis (2004), and Barch et al. (2005)).

The purpose of this paper is to examine the factors that influence the probability of switching underwriters between the first initial public issue of a corporate bond and the second public issue of a corporate bond in Japan between 1994 and 2002. In contrast to the suggestions in the literature that the acquisition of firm-specific information on the initial issue may give the underwriter of that issue a higher chance of underwriting a subsequent issues at least in the short-run, it is found that subsequent issues made soon after an initial issue tend to be underwritten by a different underwriter. Some rather weak evidence is also presented that suggests that the pricing performance on the initial issue and changes in the reputation of the underwriter of the initial underwriter affect the probability of switching underwriters.

The rest of the paper is organized as follows. Section 2 discusses the hypotheses to be tested, while section 3 describes the model to be estimated Details of the data used in the analysis are contained in section 4. Descriptive statistics and the results of estimating a probit model to explain the switching of underwriters are reported in section 5. Section 6 contains a brief conclusion.

2. HYPOTHESES

James (1992) suggests there are important setup costs in underwriting relationships that involve the underwriter investing in relationship-specific (or firm-specific) assets which depreciate over time (see also Carter (1992)). As a result, as the time between the initial bond issue and the subsequent bond issue increases, these assets depreciate, and the likelihood of switching underwriters increases. Building on this argument, Carter (1992) suggests that underwriters will compete for the initial issue (which involves the possibility of further issues) by reducing commissions for the initial issue by an amount reflecting the expected net present value of the subsequent transactions. If these relationship-specific assets are important and durable, issuing firms will be aware of the possibility of locking themselves into a particular underwriter and leaving themselves open exploitation by switching underwriters where the cost of doing so is sufficiently low.

In the literature on switching underwriters associated with initial public offerings of stock and seasoned stock issues, it is suggested that the degree of underpricing of the initial issue may influence the choice of underwriter for the subsequent issue (see Krigman et al. (2001) and Cliff and Dennis (2004)). Although underpricing is generally observed for stocks, overpricing appears to be the norm for bonds especially in Japan (see Matsui (2000), and McKenzie and Takaoka (2005). Overpricing is consistent with issuing firms receiving more for their bond than it is actually worth. For an issuing firm, the greater the degree of overpricing, the better. If an underwriter is able to successfully market the initial issue with a high degree of overpricing, it is expected that the

probability of switching underwriters will be lowered.

On the basis of the evidence presented by Hayes et al. (1983), Carter (1992) argues that the probability of firms switching underwriters for subsequent issues is a negative function of underwriter reputation. Carter (1992) suggests that issuing firms are more likely to switch from a low quality underwriter to a high quality underwriter than vice versa.

3. MODEL

The following model is assumed to explain the switching of underwriters between the initial and second public bond issue:

$$SWITCH_j^* = a + b'X_j + e_j , \quad (1)$$

where $SWITCH_j^*$ is an unobserved variable which could be interpreted as being the difference in the net issuing costs of the bond when a different underwriter is chosen for the second issue compared to when the same underwriter is chosen, X_j is a vector of explanatory variables, b is a vector of unknown parameters, and is e_j a random variable which is distributed according to a standard normal variable. It is assumed that

$$SWITCH_j = \begin{cases} 1 & SWITCH_j^* > 0, \\ 0 & SWITCH_j^* < 0, \end{cases} \quad (2)$$

where SWITCH is an observable variable taking the value one if different lead underwriters are chosen for the first and second bond issues, and zero if the same lead underwriter is chosen. The combination of (1) and (2) means that a probit model can be used to explain variations in $SWITCH_j$.

The explanatory variables in X_j are defined as follows. TIMEDIFF is the number of months between the date of the initial issue and the date of the second issue. James (1992) suggests that this variable should have a positive coefficient. Given that the value of information about issuing firms obtained in the course of underwriting the initial bond issue is likely to be relatively short-lived, an alternative variable DTIMEH, a 0-1 dummy variable taking the value unity if the second issue is within six months of the first issue, and zero otherwise, is also defined. James' (1992) argument suggests this variable should have a negative coefficient. PREVCOMM is the underwriting commission paid on the initial issue measured as the number of yen paid per 10,000 yen issued. If underwriting firms lower their commissions on the initial issue in anticipation of a 'lock-in' effect, and this lock-in effect does exist, then it is expected that the coefficient on PREVCOM will be positive (Carter (1992)). MISPRICE is a measure of the degree of mispricing of the initial issue. MISPRICE essentially measures the change in the price of the initial bond between the time it is issued and the time the bond is first transacted in the secondary market, after adjusting for changes in the government bond price over the same period, and for the normal changes in bond prices (see McKenzie and Takaoka (2005) for details). A positive value of MISPRICE implies underpricing, and a negative value implies overpricing. It is expected that this variable will have a positive coefficient. In Japan, there is no equivalent to the Carter and Manaster (1990) measure of underwriter reputation calculated from Tombstone advertisements. Instead, as a proxy for underwriter reputation, we use the underwriter's market share in the underwriting of corporate bonds in the year prior to each issue. To measure changes in reputation, the difference in the underwriting market share of the firm that handled the initial bond issue in the calendar years before the second issue and the first issue, CMKTSHARE, is used. If the initial underwriter's market share improves between the first and second issues, it is expected to have a greater probability of being the underwriter for the second issue. PRBANK is a 0-1 dummy variable taking the value of unity if the underwriter for the initial issue was the securities company subsidiary of a bank, and zero otherwise.

Finally, the age of the company at the time of the initial issue, AGEIPO is used. James (1992) suggests that older firms have less of a need for the certification services provided by underwriters, and are more likely to switch underwriters. As a result, AGEIPO should have a positive coefficient.

4. DATA

Data on straight bonds issued by individual firms that includes ratings information, issue rates, issue amounts, the names of the lead underwriters, the maturity of the issue, the year the issuing firm was established, the number of the issue, the date of the issue, and the commissions paid to the underwriter (the number of yen paid per 10,000 yen issued) are taken from the IN Information System's (INIS) IN Firm Finance Data Base. It should be noted that the names of the underwriters reported in this INIS data base are not the names of the underwriters at the time an issue is made, but rather the name of the financial institution that has succeeded to its

business because of mergers, takeovers and bankruptcies between 1994 and 2002. The names of the original underwriters were recovered by checking details of individual straight bond issues in various issues of the Bond Underwriters Association of Japan's Bond Review (*Koshasai Geppo*), and the Industrial Bank of Japan's Securities Handbook (*Shoken Binran*). The original underwriter names for the first and second issue are used to determine whether a firm has switched underwriter.

To compute the degree of mispricing of an initial bond issue, data on over the counter reference prices (*tento baibai sankochi*) for straight bonds were taken from the Nikkei NEEDS Over the Counter (OTC) data base, and data on the prices of government bonds were taken from the Nikkei NEEDS Government Bond Data Base. In computing the excess returns on corporate bonds, we follow Handjinicolaou and Kalay's (1994) procedure. McKenzie and Takaoka (2005, Appendix 1) contains details of how the mispricing measure was computed.

Initial public issues of straight corporate bonds were defined in the following way. First, public issues of straight corporate bonds between 25 February 1994 and 31 March 2002 in the INIS Data Base with an issue number of one were chosen. Second, any issues with an issue number two, three or four that were issued on the same day as the issue with an issue number of one were also treated as initial issues. Third, this group of initial issues included several dual currency and subordinated bonds. Since the characteristics of these bonds are likely to differ from the characteristics of straight bonds, they were dropped. Fourth, for the group of initial bonds remaining, a check was made of the INIS data base to determine if there is any record of the issuer having made an earlier issue. Where there is evidence of an earlier issue and the company has not been involved in a merger, the issue was excluded from the analysis. Second public issues were identified as the first straight bonds issued publicly after the initial issue.

5. RESULTS

The analysis in this paper is restricted to straight corporate bonds issued in Japan between 25 February 1994 and 31 March 2002. The starting point of 25 February 1994 is set to coincide with the first straight corporate bond issue underwritten by a securities company subsidiary of a bank (see Hamao and Hoshi (2000)). This choice ensures that all the first and subsequent issues occur in a period when both traditional securities companies and the securities company subsidiaries of banks could underwrite the issues of corporate bonds. All results in this paper were obtained using LIMDEP Version 8 (see Greene (2002a, b)).

Unlike initial and subsequent stock issues, one of the features of corporate bond issues in Japan is that for both the initial issue and subsequent issues more than one type of bond (bonds with different maturities) may be issued simultaneously. Table 1 provides a cross-tabulation by the number of bond types issued in the initial issue and the number of bonds issued in the second issue.

Table 1: Distribution of First and Second Issues

		Second Issue					
		none	1	2	3	4	Total
First Issue	1	66	94	11	2	0	173
	2	32	26	24	3	0	85
	3	2	2	3	1	0	8
	4	0	0	0	1	2	3
	Total	100	122	38	7	2	269

In the remaining part of this paper, we focus on the ninety four cases in Table 1 where there was one type of bond issued initially and one type of bond issued subsequently. Of these cases, there are two firms that issue their initial and second issues so close together that information about the degree of mispricing for the first issue would not have been available at the time the conditions for the second issue (and, consequently, at the time the underwriter for the second issue was determined). There are also two cases where by the time the second issue was made, the underwriter of the first issuer had gone bankrupt and so a switch of underwriter was required. One foreign securities company was involved in underwriting an issue, and it was not possible to determine whether it was a bank or a securities company. These five cases are omitted from the subsequent analysis.

In the analysis that follows, issuers that changed their underwriters between the first and second issues are called 'switchers', while those issuers that did not change their underwriters are called 'stayers'. With the exception of the number of issues, Table 2 indicates the average value of each explanatory variable for the total sample, the switchers group and the stayers (non-switchers) group. Table 2 indicates that of the 89 bonds in the

sample, about 60% of issuers switch their underwriter on the second issue. As is predicted in section 2, the degree of overpricing tends to be higher for those firms who do not switch underwriters. However, in contrast to the discussion in section 2, the average time lag between the first and second issues tends to be longer for non-switchers, and commissions on the first issue tend to be higher for non-switchers. It is surprising that issuing firms switch their underwriters far more when the initial underwriter was a securities company that was a subsidiary of a bank. However, none of the differences between the averages for the switchers and stayers are statistically significant, so there is no apparent statistical difference in the degree of overpricing, the average time lag between the first and second issues, and the commission on the first issue between the switchers and the stayers.

Table 2: Descriptive Statistics

	All	Switchers	Stayers
Number of Issues	89	53	36
TIMEDIFF (mths)	9.32	11.65	7.07
DTIMEH	0.596	0.698	0.444
AGEIPO (years)	54.26	54.11	54.41
PREVCOMM (yen)	42.26	44.23	40.37
CMKTSHARE (%)	-0.26	-0.56	0.193
PRBANK	0.461	0.623	0.222
MISPRICE	-19.6	-1.57	-37.59

Note: For MISPRICE, there are only 52 observations, evenly split between switchers and stayers. For PREVCOMM, there are only 52 observations for switchers.

Table 3 provides some estimates of the model specified in equations (1) and (2). In columns 3.1 to 3.7, each variable is entered separately, while in columns 3.8 and 3.9, the variables are entered together. The results in column 3.2 and 3.6 suggest that there is a significantly higher probability of switching when second issues made in the first six months after an initial issue, and when a securities subsidiary of a bank was the underwriter of the issue, respectively. The result when the securities company subsidiary of a bank was the initial underwriter is strongly reinforced by the results in columns 3.8 and 3.9. Moreover, an increase in the market share of the underwriter of the initial issue between the years before the initial and second issue leads to a significant fall in the probability that switching will occur. In column 3.7 but not for the smaller sample used in 3.8, the finding in column 3.2 that there is a significantly higher probability of switching when second issues made in the first six months after an initial issue is again observed. The results in column 3.9 suggest that the initial underwriter is penalized for increases in degree of underpricing (reductions in the degree of overpricing).

6. CONCLUSION

This paper has examined the determinants of issuers of corporate bonds switching their choice of underwriters between the first and second public issues of corporate bonds. Improvements in the initial underwriter's reputation proxied by increases in its market share in the underwriting market lead to an increase in the probability that the initial underwriter will be chosen to underwrite the second issue. Despite the theoretical suggestions that underwriting involves investment in durable firm-specific assets which might lead to initial issuers having an inside edge in being chosen to underwriter the second evidence, there is some weak evidence to suggest that switching of underwriters occurs when second issues are made relatively quickly after the first issue.

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Table 3: Probit Estimates of Switching Model

	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
Constant	0.431	-0.14	-0.128	-0.376	0.232	-0.21	0.080	-0.6	0.306
	(2.51)**	(0.66)	(0.37)	(0.62)	(1.73)*	(1.15)	(0.45)	(0.69)	(0.29)
TIMEDIFF	-0.016								
	(1.79)*								
DTIMEH		0.659						0.582	-0.161
		(2.38)**						(1.90)*	(0.77)
AGEIPO			0.0068					0.001	-0.006
			(1.16)					(0.16)	(0.74)
PREVCOMM				-0.0035				-0.00005	-0.0057
				(0.25)				(0.00)	(0.33)
CMKTSHARE					-4.303			-8.38	-26.37
					(1.02)			(1.72)*	(2.04)**
PRBANK						1.069		1.009	1.589
						(3.70)***		(3.27)***	(3.37)***
MISPRICE							0.0068		0.014
							(1.24)		(2.15)**
N	89	89	89	88	89	89	52	88	51
Log-L	-58.42	-57.19	-59.38	-59.5	-59.51	-52.84	-34.15	-49.68	-24.11
R^2	0.062	0.105	0.026	0.001	0.021	0.243	0.117	0.318	0.526
Percentage Correct	60.7%	64.0%	61.8%	59.1%	62.9%	68.5%	51.9%	70.5%	72.5%

Notes:

(1) N is the number of observations, and Log-L is the value of the maximized log- likelihood.

(2) R^2 is Veall and Zimmerman's (1996) pseudo R^2. Percentage Correct is the percentage of actual outcomes correctly predicted by the model.

(3) Figures in parentheses are the absolute values of asymptotic t-statistics.

(4) *, ** and *** indicate the coefficient is statistically significant at the 10%, 5% and 1% significance level, respectively.