The Impact of Competition in the Japanese Underwriting Market

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Abstract: The 1993 Japanese financial system reform allowed banks to provide underwriting services in the domestic market for corporate bonds through bank-owned security subsidiaries. This paper explores how competition resulting from bank entry affected underwriting commissions for corporate bonds. It also examines empirically whether underwriting commissions for corporate bonds fell as a direct result of this bank entry. The empirical results show that bank entry lowers underwriting commissions and, moreover, commissions fall as the banks' share in the underwriting market increases. Underwriting commissions charged by banks are found to be significantly lower than those charged by securities companies.

Keywords: *Competition; Financial system reform; Bank entry; Commission.*

1. INTRODUCTION

Reform of the Japanese bond corporate market has been the subject of discussion for a long time because the market was highly regulated and the costs of raising funds through bond issues were believed to be rather high. The Financial System Reform Act, which became effective on 1 April 1993, allowed banks to engage in securities business through bank-owned subsidiaries.

When a bank engages in both loan and securities business, there is a possibility that conflicts of interest will occur (for discussions of this conflict of interest, see Puri (1996, 1999), Hamao and Hoshi (2000), Konishi (2002) and Takaoka and McKenzie (2002)). Hence, not only was the direct participation of banks in securities business prohibited, but firewall regulations were imposed by the Ministry of Finance. For example, these regulations prohibited the exchange of undisclosed information without the customer's permission. Banks were not permitted to directly enter the securities business, but rather had to enter through a subsidiary. Even though banks entered the underwriting market through subsidiaries, throughout this paper this entry is referred to as 'bank entry'.

Much of the literature to date that examines the impact of bank entry into the underwriting business has focused on whether this has led to the existence of conflicts of interest. In contrast, this paper examines the impact of the competition brought about by bank entry that the Financial System Reform Act allowed in the corporate bond underwriting market on underwriting commissions. The explicit purpose of this financial reform was to promote competition in the Japanese bond corporate market and to provide better service. The implicit purpose was to lower the costs of bond raisings for issuing firms. The purpose of this paper is to explore the relationship between competition in the underwriting market and underwriting commissions.

This paper investigates the factors influencing the costs of raising funds by bond issues. In particular, underwriting commissions in the domestic corporate bond market are examined over the period from February 1987 to December 2000. The starting point of February 1987 is chosen to correspond with the deregulation of qualification standards for bond issuing (*Tekisai kijun*). A sample of approximately three thousand bond issues is used.

This paper differs from the existing literature in the following points; first, the direct competition effect of bank entry is considered by using a sample period that includes data for both before and after the Financial System Reform Act in Japan; and, second, this paper is the first econometric analysis of underwriting commissions in the Japanese corporate bond market. In the United States, some empirical analyses (see Gande et al. (1997) and (1999), and Puri (1996)) examine the relationship between bank entry and the costs of raising funds by bond issues using the underwriter's spread rather than the underwriting commission. Use of commission data is expected to lead to a clearer picture of this relationship.

The plan of this paper is as follows. Section 2 briefly describes the Japanese underwriting market by focusing on the competition brought about by the Financial System Reform Act. The hypotheses to be tested empirically are discussed in Section 3, and the models to be estimated are detailed in section 4. The data used are explained in Section 5, and section 6 presents the empirical results. Section 7 concludes the paper.

2. COMPETITION IN THE JAPANESE SECURITIES MARKET

The domestic straight bond market in Japan was a highly regulated market for a long time. For example, bond issuing criterion that determined whether a firm was eligible to issue bonds were based on various financial indices, rather than the firm's competitiveness. As a result, the number of the firms which could issue corporate bond was rather limited. There was also a restriction on the total amount of bonds that a firm could issue (see Tachi (1994)). These regulations are said to have prevented the expansion of the bond market as firms' fund raising opportunities were limited. As a result, a hollowing out of the Japanese domestic corporate bond market was observed. Some Japanese firms raised funds by issuing bonds in foreign markets such as the Euro market in order to avoid the high costs of issuing bonds in the domestic market.

The deregulation of the domestic bond market took place gradually. Deregulation of the qualification standards for corporate bond issues (*Tekisai kijun*) occurred in 1987. Long discussions led to the Financial System Reform Act in 1993 which allowed banks to enter the underwriting market through a security firm subsidiary. The explicit purpose of this financial reform was to promote competition in the Japanese bond corporate market and to provide better service.

Table 1 presents some evidence on trends in the market concentration of the Japanese securities market over the period from 1985 to 2000 using data constructed by the Japanese Fair Trade Commission. Three measures of market concentration are presented: the Herfindahl index, the market share held by the top three companies (denoted Top Three Share), and the market share held by the top ten companies (denoted Top Ten Share).

As can be seen from Table 1, all the three market concentration indices indicate that market concentration has been gradually declining. Compared to 1985, the security market appears to have become more competitive. It should be noted that these measures are for the securities market as a whole, not just the underwriting market.

Table 1. Market Concentration of the Japanese Securities Market

Year	Herfindahl Index	Top Three Share (%)	Top Ten Share (%)
1985	1,195	49.6	92.6
1986	1,075	48.4	84.7
1987	1,220	51.0	84.7
1988	1,074	50.3	78.1
1989	1,170	53.0	81.6
1990	1,085	50.6	79.6
1991	1,146	51.0	84.2
1992	1,053	47.1	85.8
1993	1,151	49.8	87.6
1994	1,124	50.1	85.7
1995	984	48.3	78.9
1996	935	46.5	78.7
1997	433	33.2	54.1
1998	442	32.6	56.3
1999	501	33.6	54.3
2000	481	30.2	56.8

Source: Japanese Fair Trade Commission

3. HYPOTHESES

This section presents the hypotheses to be examined empirically in section 6.

The commission is the fee that an underwriter receives from the issuing firm to cover the cost of the underwriting services provided when a bond is issued. The expected relationship between underwriting commissions and bank entry is that bank entry has a direct effect on commissions causing them to fall. As a result of the Financial System Reform Act in 1993, many new entrants into the corporate bond underwriting market were approved increasing greatly the number of players in the market. Competition brought about by bank entry can be expected to cause underwriters to offer lower commissions compared to their rivals in order to win customers. For the new entrants with little or no experience in the underwriting market, lowering commission charges in order to gain market share is a natural strategy. Even for existing underwriters, here the securities companies, commissions should probably be lowered in order to maintain their existing market share.

This paper considers it a natural outcome for bank entry to cause underwriters to lower their commissions. The reason is that the domestic bond market was a highly regulated market until the Financial System Reform Act of 1993. Although gradual deregulation had taken place before this Act, this was the first time for the domestic underwriting market to see so many simultaneous entrants. If commissions before 1993 reflected economic rents induced by the regulated market, fiercer competition caused by bank entry should lead to a fall in commissions. In the short run, the main objective of bank subsidiaries, the new entrants, was not likely to have been the maximization of short-run profits, but rather to achieve gains in market share. In this case, the hypothesis that commissions will fall after bank entry is likely to be supported. Competition in the market is expected to lower the underwriting commission in order to gain the clients.

4. MODEL

The following model for underwriting commission was assumed:

$$COMMISSION_i = \alpha_0 + \alpha_1 \log(AMOUNT_i) + \alpha_2 DAA_i + \alpha_3 DA_i + \alpha_4 DBBB_i + \alpha_5 NEW_i + \alpha_6 SMAT_i + \alpha_7 LMAT_i + \alpha_8 BANKENTRY_i + \alpha_9 MARKET_i + \alpha_{10} BANK_i + \alpha_{11} TOP3_i + \Sigma_k \beta_k INDUSTRY_{ik} + u_i \quad (1)$$

where *COMMISSION* is the underwriting commission paid for issue i; *AMOUNT* is the size of the bond issue; *DAA* is a 0-1 dummy variable taking the value unity if the issuing firm's rating is AA+, AA or AA-, and zero otherwise; *DA* is a 0-1 dummy variable taking the value unity if the issuing firm's rating is A+, A or A-, and zero otherwise; *DBBB* is a 0-1 dummy variable taking the value unity if the issuing firm's rating is BBB+, BBB or BBB-, and zero otherwise; *NEW* is a 0-1 dummy variable taking the value unity if this is the first domestic bond issue by the firm, and zero otherwise; *SMAT* is a 0-1 dummy variable taking the value unity if the issue is a short-term issue (less than five years in maturity), and zero otherwise; *LMAT* is a 0-1 dummy variable taking the value unity if the issue is a long-term issue (greater than 15 years in maturity), and zero otherwise; *BANKENTRY* is a 0-1 dummy variable taking the value unity if the bond is issued on or after February 1994, and zero otherwise; *MARKET* is the market share of corporate bond underwritings held by bank-owned subsidiaries in the fiscal year the bond was issued; *BANK* is a 0-1 dummy variable taking the value unity if the lead underwriter is a bank-owned subsidiary, and zero otherwise; *TOP3* is the top three companies' share (%) in the securities market; and *INDUSTRY* are a set of industry dummies.

Although some of the bank owned subsidiaries were established before February 1994, the first bank subsidiary underwriting of a bond issue occurred in February 1994 (Hamao and Hoshi (2000)). *BANKENTRY* is defined to correspond with this first issue.

The definitions of the ratings variables (*DAA, DA, DBBB*) indicate that the base ratings group is AAA. As it is hypothesised that underwriting commissions rise with the riskiness of the bond issue, it is expected that $\alpha_4 > \alpha_3 > \alpha_2 > 0$. The definitions of SMAT and LMAT indicate that the base maturity group is bonds with maturities between 5 and 15 years. The maturity split created by SMAT and LMAT follows Gande et al.'s (1999) analysis. Matsuo's (1999) tables of underwriting commissions at selected points in time indicate that commissions are larger for longer maturity bonds. Thus, it is expected that $\alpha_6 < 0$, and $\alpha_7 > 0$. The discussion in section 3 suggests that $\alpha_8 < 0$, $\alpha_9 < 0$, $\alpha_{10} < 0$ and $\alpha_{11} > 0$.

5. DATA

The sample period analysed in this paper runs from February 1987 to December 2000. The starting point is chosen to correspond with the deregulation of qualification standards for corporate bond issues (*Tekisai kijun*). Before 1987, firms that did not achieve certain financial standards could not raise funds through bond issues due to the qualification standards for bond issuing. The existence of these strong qualification standards for bond issues greatly restricted the role that underwriters could play.

Data on bond issues by individual firms that includes ratings information, issue rates, issue amounts, underwriter names, the year the issuing firm was established, details of any mortgages associated with the issue, and issue amounts are taken from the IN Information System's (INIS) IN Firm Finance Data Base. This database also contains annual data on the market shares of individual underwriters in the corporate bond market between 1991 and 2001. The market share data are used to compute the annual market share held by bank-owned security subsidiaries. Prior to fiscal year 1994, the annual market share held by bank-owned security subsidiaries was zero. In order to maximize the sample size, the maximum

of the available ratings provided by four ratings institutions, Rating and Investment Information, Inc., Japan Credit Rating Agency, Japan Bond Rating Institute, and Standard and Poors, was used.

The share of the top three companies in the securities market is used as a proxy variable to measure market concentration and is constructed by the Japanese Fair Trade Commission. The data are available over the period 1985 to 2000, and are reported in the Accumulated Production Concentration and Herfindahl Index (*Ruiseki Seisan Shuchudo oyobi Herfindahl Index*).

6. EMPIRICAL RESULTS

First, equation (1) for underwriting commissions is estimated using data from February 1987 to December 2000. Table 2 presents three sets of estimates of equation (1). Equation (2.1) uses all the available issues, whereas equations (2.2) and (2.3) use issues for low rated bonds and high rated bonds, respectively.

In (2.1), the control variables generally have the expected signs: riskier issues and longer maturity issues all have higher commissions. The variables relating to competition and bank entry are *BANKENTRY, MARKET, BANK,* and *TOP3*. The estimated coefficient on BANKENTRY is negative (-41.96) and statistically significant, that is, bank entry into the underwriting market greatly lowered underwriting commissions. In contrast, there is not a significant impact of the banks' market share (*MARKET*), but there is a tendency that the larger the market share that the banks gain, the lower the commission is set. The coefficient of the dummy variable *BANK* suggests that banks set significantly lower underwriting commissions than securities companies. The estimated coefficient of *TOP3* shows that increased competition as measured by this variable leads to a significant decline in commissions. These results are consistent with the expectations discussed in section 3.

Firms are divided into two groups: those with low ratings (A+ or less), and those with high ratings (AA- or more). For these two groups, the estimated models for commissions (equation (1) excluding the ratings variables) are presented as equations (2.2) and (2.3) in Table 2. The estimated results of (2.2) and (2.3) suggest that bank entry causes a significant decrease in underwriting commissions only for firms with high ratings. Increases in the banks' market share decrease commissions. Banks offer significantly low commission only for firms with low ratings, while bank entry per se does not lead to a reduction in commissions paid by low rated firms. A possible interpretation of this result is that securities companies receive relatively higher commissions, and the lower commissions received by banks reflect their strategy of trying to gain the market share. The effect of competition is statistically significant only for firms with high ratings.

Table 2. Effect of competition on commission

Explanatory variables	All issues (2.1)	Low rated firms (2.2)	High rated firms (2.3)
LN(AMOUNT)	-0.60(0.35)	2.18(3.69)*	-4.30(4.79)*
DAA	-0.38(0.20)		
DA	-0.53(0.27)		
DBBB	9.51(3.65)*		
NEW	-1.98(1.97)*	1.52(1.45)	-5.73(3.00)*
SMAT	-7.21(8.74)*	-2.05(2.59)*	-13.82(8.58)*
LMAT	4.77(4.53)*	13.18(5.55)*	6.60(6.50)*
BANKENTRY	-41.91(12.66)*	0.24(0.05)	-53.53(14.81)*
MARKET	-0.36(0.83)	-2.81(3.44)*	0.77(1.69)
BANK	-2.03(4.11)*	-3.03(3.87)*	-1.11(1.68)
TOP3	0.12(2.61)*	0.69(0.10)	0.38(6.39)*
R^2	0.42	0.11	0.53
Sample size	2,909	1,371	1,538

Notes: (1) Absolute values of t-statistics are in parentheses, and these are computed using estimates of standard errors adjusted by White's (1980) method.
(2) A '*' indicates the coefficient is statistically significantly different from zero at the five per cent significance level.
(3) All equations include a constant and industry dummies.

The analysis of commissions in Table 3 is undertaken by the size of the issue. Issues were divided into small issues (less than 13 billion yen) and large issues (13 billion yen or more). Significantly negative coefficients for *BANKENTRY* are observed both in the small and large issues group. However, the size of the coefficient of this variable for large issues is much larger than the coefficient for small issues. The estimated coefficient for *BANK* suggests that banks offer significantly lower commissions for small issues. Competition significantly decreases commissions only for large issues.

In order to examine the extent to which the group of low (high) rated firms overlaps with the group of firms making small (large) issues, a cross tabulation of the two groups was computed

There are 617 issues in the small issues and high ratings segment; 1,209 issues in the small issues and low ratings segment; 1,206 issues in the large issues and high ratings segment; and 379 issues in the large issues and low ratings segment. That is, there does not seem exist a significant degree of overlap in the groupings.

Table 3. Effect of competition with issue size

Explanatory variables	Small issues (3.1)	Large issues (3.2)
LN(AMOUNT)	2.67(3.13)*	-3.46(2.04)*
DAA	2.40(1.41)	0.92(0.35)
DA	1.43(0.84)	2.15(0.73)
DBBB	9.18(3.84)*	25.63(4.32)*
NEW	-0.55(0.57)	-2.10(1.00)
SMAT	-3.55(4.63)*	-10.83(6.60)*
LMAT	9.62(10.04)*	5.37(4.41)*
BANKENTRY	-13.76(2.63)*	-41.82(10.51)*
MARKET	-0.14(0.79)	-0.99(1.59)
BANK	-2.82(4.32)*	-0.95(1.28)
TOP3	-0.13(2.63)*	0.42(5.91)*
R^2	0.11	0.49
Sample size	1,581	1,328

Notes: As for Table 2.

In Table 4, in order to investigate how investment houses responded to bank competition, the sample is limited to those bonds issued after bank entry into the underwriting market. First, equation (1) is estimated for all the bond issues after bank entry, and the results are presented as (4.1). Increases in the banks' market shares have a negative, but insignificant impact. Banks are again found to offer significantly lower underwriting commission compared to the securities companies.

In equations (4.2) and (4.3), bonds issues are limited to those underwritten by securities companies. The effect of increases in banks' market shares on commission is significantly negative only for the lowly rated firms. There is a tendency that the more competitive the market becomes, the lower commissions become for both issues of low rated and high rated firms, but these effects are not statistically significant.

Finally, in Table 5, the response of investment houses to bank competition is examined for small and large issues again using only bond issues after bank entry. There is a tendency that security companies offer lower commissions as banks gain a larger market share for both small issues and large issues, but neither of these effects is statistically significant.

Table 4. Effect of competition and securities companies' behavior after bank entry

Explanatory variables	All issues (4.1)	Low rated firms (4.2)	High rated firms (4.3)
LN(AMOUNT)	1.24(3.46)*	3.67(3.73)*	-1.11(2.00)*
DAA	4.29(6.16)*		
DA	4.14(5.22)*		
DBBB	11.96(7.07)*		
NEW	-0.29(0.34)	1.82(1.10)	-0.94(1.03)
SMAT	-2.08(3.46)*	1.20(0.93)	0.74(0.50)
LMAT	13.38(31.49)*	13.36(3.60)*	13.38(20.89)*
MARKET	-0.26(0.64)	-4.45(3.14)*	1.01(2.10)*
BANK	-2.73(6.31)*		
TOP3	-0.05(1.28)	0.05(0.47)	0.06(0.35)
R^2	0.13	0.13	0.21
Sample size	2,608	662	727

Notes: (1) As for Table2.
(2) All issues samples contain the data on bonds underwritten by both bank and securities' company and the samples of lowly rated firms and highly rated firms contain the data on bonds underwritten by only securities' company.

Table 5. Securities companies' behavior with issue size after bank entry

Explanatory variables	Small issues	Large issues
LN(AMOUNT)	4.10(2.36)*	1.15(1.74)
DAA	5.20(1.80)	2.97(2.41)*
DA	4.18(1.17)	3.85(2.45)*
DBBB	16.12(3.71)*	22.11(4.08)*
NEW	-1.59(1.09)	0.73(0.35)
SMAT	-0.47(0.30)	1.39(1.09)
LMAT	9.62(8.22)*	14.72(25.18)*
MARKET	-0.58(0.54)	-0.57(0.81)
TOP3	-0.15(1.74)	0.07(0.93)
R^2	0.11	0.31
Sample size	705	684

Notes: As for Table 2.

7. CONCLUSION

The results shown in this paper suggest that the entry of bank owned subsidiaries into the

underwriting market for straight corporate bonds in Japan and competition in the market have significantly decreased underwriting commissions. For the full sample, bank entry greatly decreased commissions, and banks are found to offer significantly lower commission compared to securities companies. It appears that banks offer lower commission not only at the time when they first entered the underwriting market, but also even after they entered.

Another implication of this paper is that the fall in underwriting commissions is much greater for firms with high ratings and firms making large bond issues. The effect of increases in the banks' market shares on commissions is significant for firms with low ratings for both the whole sample, and for the period after bank entry.

It has been said in the past that the Japanese bond corporate market was highly regulated. One interpretation of this paper's analysis is that the financial system reform in 1993 was successful in significantly reducing bond raising costs, and reforming the market.

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