Waseda University Institute of Finance

Working Paper Series

Relationship Banking and Debt Choice:
Evidence from the Liberalization in Japan

Hideaki Miyajima, Yasuhiro Arikawa

早稲田大学
ファイナンス総合研究所

http://www.waseda.jp/wnfs/nif/index.html

Relationship Banking and Debt Choice:
Evidence from the Liberalization in Japan[*]

Miyajima, Hideaki [a]
Arikawa, Yasuhiro [b]

[a]Waseda University, School of Commerce
[b]Yamagata University, Faculty of Literature and Social Sciences

Abstract

The purpose of this paper is to test hypotheses regarding the mix of bank borrowing and bonds under relationship banking, constructing a detailed data set on the debt structure of large Japanese firms. In this context, we show first that the firm's choice between public debt and private debt is determined by the demand for the implicit rescue-insurance. Further, in relationship banking, good firms having strong ties with banks were much more likely to issue public bonds than borrow from banks because of the manager's entrenchment incentive.

Key Words: Relationship banking; debt choice; implicit rescue-insurance; entrenchment

JEL   Classification   G21; G32   G38

1. Introduction

There are many researches about the determinants of debt choice between bonds and borrowing (e.g. Bolton and Freixas, 2000). One approach for explaining this choice is to stress the comparative advantage of a bank as a monitor. By emphasizing the ability of the banking sector to mitigate the costs of asymmetric information, Diamond (1991) shows that firms with less established reputations tend to borrow from banks, while more successful firms tend to issue bonds. Following this idea, Petersen and Rajan (1994) find that close relationship with banks have made it possible for small U.S. firms to borrow at lower costs.

Thakor and Wilson (1995) discuss another benefit of bank borrowing. Because of its concentrated ownership, the banking sector decides efficiently whether to liquidate or bail out a firm in financial distress by renegotiating the terms of the debt contract with borrowers. Since the ownership of public bonds is dispersed among bondholders, they cannot rescue financially distressed firms as banks do efficiently.

Furthermore, this advantage seems to be stronger in economies in which relationship banking dominates arm's length bank-firm relationships. Relationship banking is often characterized as an arrangement by long-term mutual commitments between banks and client firms. Given this relationship, to bail out client firms with financial distress is much more frequent as compared to the arm's length relationship, because, as Chemmanur and Fulgieri (1994) explain, banks are long-term players in debt markets and try to acquire a reputation for financial flexibility. Consequently, it is plausible that a manager may choose between bonds and bank borrowing taking into account the possibility of distress.

Bank borrowing associated with strict monitoring in relationship banking, which mitigates agency problems might reduce the manager's own non-pecuniary benefit created by having discretion over management. Then, some managers have incentives to entrench themselves by limiting the amount of borrowing from the banks with close ties as possible as they can.

The purpose of this paper is to test hypotheses regarding the mix of bank borrowing and bonds under relationship banking, constructing a large sample of Japanese firms, during the

period of financial liberalization from the late 1980s to the early 1990s. As is well known, there occurred in Japan a shift of debt choice from bank borrowing to bond issuing in the late 1980s. The percentage share of issued bonds to raised debt from 1985-1989 on average in large Japanese firms was 73.1%, compared to 28.5% in the late 1970s, and 34% in the early 1980s as Table 1 shows. In the 1990s, although raised debt has decreased since 1993, the speed of decrease in bonds outstanding has been much slower than that of the decrease in bank borrowing outstanding. Looking at companies listed on the Tokyo Stock Exchange (TSE), this shift from bank borrowing to bonds is much more remarkable. Focusing on this drastic change of debt choice, this paper investigates the hypothesis that debt choice is determined by the demand for the implicit rescue-insurance and the incentive for managerial entrenchment.[1]

The most important works related to this paper are Hoshi, Kashyap, and Sharfstein (1993), and Anderson and Makhija (1999). Both papers theoretically and empirically analyze the choice between public debt (debt based on public information) and private debt (debt based on private information) for the period of financial deregulation from 1983 to 1989 in Japan.[2] Hoshi et al. argues that bank debt financing decreases in Tobin's q when a firm is a member of an industrial group (or keiretsu), while a linear relationship between q and the choice of public debt is not found when a firm is not in keiretsu. Considering the benefit of reducing agency costs through accepting strict monitoring by banks, Anderson and Makhija (1999) report that choice of public debt is negatively correlated with growth opportunities, while the keiretsu relationship does not have any effect on debt choice.

We extend these researches in four ways. First, we regard the firm's debt choice as a choice between debt with an implicit rescue-insurance (secured and bank-guaranteed bonds, and bank borrowing) and debt without an implicit rescue-insurance (unsecured bonds), rather than a choice between public debt (bonds) and private debt (bank borrowing). Second, according

---

[1] Although the choice between equity and debt is another important issue in this period, this paper concentrates on debt choice.

[2] Other related works are, for example, Cambell and Hamao 1994 which investigates the relationship between bond issuing and the main bank, and Yafeh and Yosha (1995) which examines the role of block shareholders.

to this definition, we pick up sample firms with strictly the same financial options from among all listed companies in the TSE. In this regard, an advantage of this paper over previous research is that we distinguish firms eligible to issue unsecured bonds from firms eligible to issue secured and bank guaranteed bonds. Third, for investigating the effect of corporate governance structure, instead of using an imprecise keiretsu categorization, we divide sample companies into four groups: firms with strong main bank ties, firms under parent firms, owner-managed firms, and independent firms. By doing so, the effect of the corporate governance structure on debt choice, and especially that of the main bank relationship, can be accurately identified. Fourth, we extend our analysis to debt choice in the 1990s when the liberalization on bond issuance entered its final phase.

Our main empirical results are as follows. First, the choice between debt without the implicit rescue-insurance and debt with the implicit rescue-insurance was primarily determined by the demand for the implicit rescue-insurance. Second, debt choice in Japanese firms was affected by main bank relationships in the sense that firms with strong main bank ties were much more sensitive to expected profitability of firms than firms without main bank ties. Third, the effect of expected return on debt choice in the early 1990s became much clearer than in the late 1980s in Japan.

This paper contributes to an understanding of the causes of bad debt problems in Japan from corporate finance perspective. It is often pointed out that the drastic changes in corporate finance from bank borrowing to equity-related bonds in the late 1980s were accompanied by a moral hazard for both firms and the banking sector. Horiuchi(1995) argues that, when the monitoring of client companies by banks was relaxed, managers tended to raise 'excess' investment through equity-related bonds for their empire-building. Notice that this conclusion is based on the empirical evidence composed of debt choice and ex post performance, putting ex ante debt choice issues aside.[3]

Through our investigation, we offer another characterization of the bad debt problems in

---

[3] We do not deny the decline in the monitoring of client companies by main banks in the late 1980s.

the early 1990s. As the financial liberalization was implemented gradually in an economy where debt offered by banks was debt with implicit rescue-insurances, managers naturally gave consideration to the expected returns and default risks of their investment projects when choosing a source of financing. This rational self-selection implies that the deterioration of clients among banks systematically occurred even if bank monitoring of client companies had never changed. Given this deterioration of bank clients, once the negative macro shock occurred in the 1990s, it was an inevitable consequence that financially distressed firms would become a larger proportion of bank clients.

The remainder of the paper is organized as follows. In the next section, after briefly examining the recent theoretical literature on debt choice and the unique characteristics of Japanese corporate governance mechanisms, we present our hypotheses. Section 3 describes our data and sample selection procedure, considering the deregulation process in the 1980s and early 1990s. Then, we present our empirical results for two groups of firms, which are strictly picked up through checking firms' financial options. Section 4 contains a discussion and conclusion.

2. Debt choice under relationship banking

2.1 Hypothesis

In this section, we briefly present our hypotheses on debt choice by examining the literature on financial choices and relationship banking.

We define relationship banking as an arrangement with long-term, bilateral credit transactions between banks and borrowers to ensure lender's return , and call a bank engaging in the relationship banking as a relationship bank. A critical factor in relationship banking is its use of borrower-specific information (Besanko and Thakor, 1993), and the benefits of this relationship are many, ranging from prevention of moral hazard to the sale of promises to make credit available in the future (Boot and Thakor, 2000).

However　this seems to have occurred not among existing clients, but new bank clients.

Aoki (1994) clarifies a bailing out mechanism under relationship banking as "contingent governance". In the usual debt contract, as Aghion and Bolton (1992) explain, the control right shifts from the insider to the outsider (debt-holder) at the point where the output level does not exceed interest payments in value. However, as Aoki explains, when a relationship bank (or main bank in Japan) monitors a borrower, the output level determining to whom control rights belong can be divided into three regions: the borrower- control region, the bank-control region, and the critical bankruptcy region. Consequently, what is unique in this contingent governance is that there exists the output level where the relationship bank bails out and restructures a borrower in financial distress.

The rescue of the client firm in financial distress has been modeled formally in various ways. In Aoki (1994), the bank bails out borrowers because the rents banks can extract from borrowers exceed the total costs of rescuing. In Chemmanur and Fulghieri (1994), a bank devotes more resources to renegotiate with its client in financial distress than do bond holders because banks are concerned with their long-term reputation.

One important implication of these models is that as long as both lenders and borrowers see the value of continuing the relationship in any way, the debt supplied by a bank is de facto debt with implicit rescue-insurance. Therefore, a manager comes to expect a bailing out by a relationship bank in cases of financial distress.

Although relationship banking has benefits for borrowers, there exist offsetting costs that prevent firms from borrowing exclusively from banks in addition to the bankruptcy costs. One approach for explaining the cost of bank borrowing suggested by Sharpe (1990) and Rajan(1992) is based on the observation that while a bank can reduce agency problems, the firm-specific information acquired by a bank may create a hold-up problem. Rajan(1992), for example, argues that the informational rents extracted by banks ex post distort the firm's investment by reducing the entrepreneur's returns from successful projects. Following this idea, Houston and James (1996) find that U.S. large firms with substantial growth opportunities tend to limit the use of bank debt because of the serious hold-up problem. Weinstein and Yafeh (1998) also verify that the cost of capital of a firm with close ties to a bank is higher than that of a firm without a

bank relationship in large sample of Japanese firms.

In addition, the non-pecuniary benefit perceived by the manager affects debt choice. In general, bank borrowing is associated with intense monitoring, which mitigates agency problems. As Jensen (1986) explains, this monitoring behavior might reduce the manager's own non-pecuniary benefit created by having discretion over management. Furthermore this reduction of non-pecuniary benefit by bank borrowing is much larger in relationship banking than in the arm's length relationship. In the arm's length relationship, monitoring by a bank is normally limited to ex ante and ex post monitoring, whereas interim monitoring plays an important role in relationship banking (Aoki and Patric 1994). When a manager finds these costs of bank borrowing exceed the benefits of having an implicit rescue-insurance, she will choose to issue bonds: that is, debt without the implicit rescue-insurance.

Recent research on the Japanese bank-firm relationship has led to an understanding of the main bank relationship, the origin of which could be traced to the wartime and postwar reform period. It then evolved during the High-Growth era (1950s and 1960s) under the strict regulation of the financial sectors.[4] Recent empirical work on the 1970s and 1980s also highlights the fact that when client firms faced financial distress, their main bank systematically intervened into firms' management by dispatching directors offering a rescue package. It is safe to say that in the early 1980s, which this paper initially focuses on, the main bank system dominated the arm's length bank-firm relationship, and bailing out by main banks were an established norm in Japan.

Hence, we have the following hypothesis for an empirical test of debt choice, assuming that the interest rate of bank borrowing is higher than that of bonds because of the transaction cost.

HO: The firm does not use bank borrowing with an implicit rescue-insurance when default risk is low enough. Furthermore, this tendency is more evident under relationship banking.

---

[4] Please consult Aoki and Patrick(1994), Berglof and Perotti (1994) or Miyajima(1998a) for the

3. Empirical analysis

3.1 Measures of debt structure

The hypothesis presented above requires us to treat debt choice as one between debt without implicit rescue-insurance (NRI debt) and debt with implicit rescue-insurance (RI debt), rather than between public and private debt.[5] Here, NRI debts includes unsecured convertible bonds, unsecured straight bonds, and non-bank-guaranteed warrant bonds, whereas RI debt is composed of bank borrowing, secured convertible bond, secured straight bond, and bank-guaranteed warrant bonds. Figure 1 compares our classification of various types of bonds with the conventional classification.

There are two points to be noted here. First, the reason for classifying secured bonds as RI bonds, similar to bank borrowing, is that defaulted secured corporate bonds were bought back by the trustee banks without exception from 1955 to 1997. As Cambell and Hamao(1994) note, a firm's main bank is normally the bond trustee of secured bonds and the guarantor of warrant bond. It is highly plausible that main banks as bond trustees or guarantors of bonds took an initiative to bail out the firm in financial distress.

The second point is that, although there is no critical difference between bank borrowing and secured or bank-guaranteed bonds in terms of the implicit rescue-insurance, the intensity of monitoring by creditors for these bonds is qualitatively different from that of bank borrowing. Bank borrowing includes interim monitoring, which is enabled by the placement of bank member on borrower's board of directors, and that reduces the manager's non-pecuniary benefit. On the other hand, the monitoring of secured bonds is less strict, which raises the non-pecuniary benefit of a top manager.

3.2. Sample selection

---

historical and institutional detail of main bank system.

[5] We use the bond issuance criteria for unsecured convertible bonds rather than those for unsecured straight bonds, which are much stricter. This is partly because this period was characterized by vigorous usage of equity related bonds, and also to increase sample size.

With bond issuance strictly regulated until the end of the 1970s, Japanese firms did not have any financial options except borrowing from banks. Due to collateral requirements for bond issuance, firms were prohibited for issuing unsecured bonds, while the Bond Committee (the kisaikai) coordinated issuing secured bonds. In 1979, the issuance of unsecured bonds was permitted for the first time by introducing the Bond issue criteria. In 1983, the bond issuance criterion was largely relaxed. Thereafter, deregulation was implemented gradually, and the number of firms eligible to issue unsecured bonds increased as well as that of secured bonds. The relaxation of bond issuing criteria was one of the conditions that made it possible for Japanese firms to raise money through equity-related bonds in either domestic or foreign markets (Table 1).

Figure 2 depicts the number of firms according to their financial options. Focusing on the end of FY1984, the number of firms eligible to issue unsecured bonds was 175 (area   in Fig.2), while the number of firms eligible to issue secured bonds was 698 (area   in Fig.2). It is worth emphasizing that although the former number increased to approximately five hundred at the end of 1989, the number of firms with full financial options was still limited compared to all listed companies.

The deregulation of bond issuance reached its final stage in the early 1990s. In November 1990, only the rating criteria remained among the bond issue criteria. In April 1993, the lowest bound of the rating criteria for issuing unsecured straight bond was lowered. As a result of this relaxation, 184 listed firms became eligible to issue unsecured straight bond. In January 1996 bond issue criteria and some other covenants were finally removed, freeing Japanese firms from regulation with regard to debt choice.

All these facts required us to select sample firms carefully. To free our empirical research from any bias caused by the regulations, we identify 1) firms with full financial options (eligible for unsecured bonds), 2) firms with limited financial options (eligible for secured bonds and bank guaranteed bonds), 3) firms that did not have any financial options aside from bank borrowing. Unfortunately, there are no systematic disclosed data concerning the information about the number of firms eligible for issuing bonds in each period. Therefore, we have to identify these

three types of firms from all listed Japanese firms by checking their financial options based on the bond issue criteria.[6]

In this paper, for examining the effect of regulation on debt choice, we investigate two different periods about the degree of financial deregulation; one is from FY1984 to FY1989 and another is from FY 1992 to FY1995. Then, we first select firms that satisfy the bond issue criteria at the end of FY1984 from among all listed firms (excluding financial institutions, electricity and gas companies) in the TSE, using the 'Japan Development Bank's Corporate Finance Data Bank'. Then we check these firms to see whether they satisfied the bond issuance criteria from FY1985 to FY1989. As a result, we partition firms into the following two groups:

FFO-firms (Firms with Full Financial Options) Firms located in area of Figure 2 are those that were able to issue almost all types of bonds including unsecured convertible bonds, which were most commonly used in this period. The number of firms eligible to issue unsecured convertible bonds from FY1985 to FY1989 is 145. We call these firms FFO-firms.

LFO firm(Firms with Limited Financial Options) Firms located in area of Figure 2 are those which were able to issue only secured or bank-guaranteed bonds. There are 365 firms that satisfy the bond issue criteria from FY1985 to FY1989. We denote these firms LFO-firms.

Notice that there are some differences in size, performance, and capital composition between FFO firms and LFO firms, as summarized in Table 2. FFO firms are composed of the largest and best-performing firms in this period, while LFO firms comprise relatively small medium-performing firms. The debt-asset ratio of FFO-firms is 12.2%, while that of LFO-firms is 22.5%. Comparing our sample with previous research, FFO-firms includes most of sample 2 (68 firms) in Hoshi et al. 1993 , and FFO- plus LFO-firms completely includes sample 1 112 firms in Hoshi et al., (1993) and roughly overlaps the "unconstrained" group 554 firms of Anderson and Makhija(1999). [7]

---

[6] Bond issue criteria are summarized in the appendix of Hoshi et al.,(1993) and in Table 2 of Anderson and Makhija(1999).

[7] This group is defined as firms that satisfy the criteria for secured and bank guaranteed bond over at least five years during 1984-1989(Anderson and Makhija, 1999).

Secondly, to compare debt choice in the early 1990s with that of the late 1980s, we combine both FFO and LFO firms, and then conservatively check their credit rating yearly from FY1992 to FY1995.[8] Out of 510 sample firms, 305 had a BBB rating or higher, and there were 180 firms with no rating in March 1996. The remaining 25 firms were rated only for secured bonds. Since the number of firms rated only for secured bonds is quite limited, we use 485 firms as our final sample. As the number of firms receiving credit rating was 805 at the end of FY 1995, our sample coverage is roughly 35%. Notice that our sample firms have a certain discontinuity in scale, performance, and capital composition, because we combine both FFO and LFO firms.

3.3. Building the regression formula

The first empirical task in this paper is to test our hypothesis for the late 1980s, a time period during which equity-related bonds were vigorously utilized (see Table 1). To test our hypothesis in section 2, treating FY1985 to FY1989 as one period, we regress the debt structure at the end of FY1989 on some explanatory variables at the end of FY1984. The two-sided Tobit model is selected as the estimation method, since independent variables were truncated at both zero and one.

Secondly, we treat the deregulation period from FY1993 to FY1995 as one period, and regress the debt composition at the end of FY1995 on some explanatory variables at the end of FY1992. As a result of the deregulation, at the end of FY 1995, firms had to simultaneously make two different kinds of decisions; one choice is whether to receive credit rating, and the other is to choose the optimal ratio between bond issuing and bank borrowing.   Taking into account these facts, we estimate debt choice under relationship banking using Heckman's two-step estimation model.

Here, the dependent variable D_i (i=1,2) is defined as follows:

FFO firm D_1 = unsecured bonds / (Bonds + Bank Borrowing)

---

[8] Our conservative rating selects the lowest rating from among five institutions (Moody's, S&P,

11

LFO firm   D2 = (secured bonds and bank guaranteed bonds) / (Bonds + Bank

Borrowing)

Thus D1 indicates the ratio of NRI debt to total debt, which is the sum of bank borrowing and bonds outstanding. D2 shows the ratio of less-monitored debt to RI debt. We also create the dependent variables D1' and D2' by including converted part of issued convertible bonds, because we might underestimate the ex ante decision about the amount of bond financing without that. The information about collateral and bank guarantees is obtained from Yukashoken Hokokusho (Japanese 10k), and other accounting data are obtained from Japan Development Bank's Corporate Finance Data Bank; Toyo-Keizai Shinposya's Kabuka Soran is used for stock price data.

     As explanatory variables, we use the following variables. First, we adopt total book debt divided by market value of total asset (DA).[9] High leverage could represent a greater likelihood of financial distress and thus discourage the use of debt without the implicit rescue-insurance. On the other hand, low leverage could allow managers to use debt without the implicit rescue-insurance for avoiding the strict monitoring by banks.

     Second, we adopt Tobin's q to capture the firm's investment opportunity as same as Hoshi et al., (1993). [10][11]   Anderson and Makhija (1999) adopt growth opportunities, book assets, minus book equity, plus market value of equity, divided by total assets, to test which of monitoring managerial moral hazard or hold-up are more significant for debt choice. In order to compare our empirical results with Anderson and Makhija (1999), we also estimate regressions with growth opportunities instead of q.

     In addition, we introduce the standard deviation of ROA (ORRS) for the past ten years

JBRI, JCR, NIS).

[9] Here, we estimate the market value of land and holding securities, but other tangible assets are accounted by book value.

[10] The accuracy of our q is inferior to the one used by Hoshi et al.,(1993), because we do not estimate the market value of tangible assets except land and holding securities.

[11] To estimate the value of land holding   we basically follow the procedure developed by Hoshi and Kashiyap (1990).

as the proxy of business risk. We add the logarithm of assets (SIZE) to the explanatory variables to control for the effect of firm size on debt choice.

For investigating whether the firm's relationship with the relationship bank influences its debt choice or not, we introduce several dummy variables that represent the firm's corporate governance structure, and interaction terms of these dummy variables with DA and q. As the non-pecuniary benefit of manager is a determinant of debt choice in our hypothesis, we focus on the amount of shareholdings held by main banks and the existence of dispatched bank members to a client firm's board of directors for interim monitoring: these factors affect the strength of the relationship between main bank and client companies, and the non-pecuniary benefit of manager.

From kaisya-shikiho (the Japan Company Handbook), we identify the 'main bank' of each firm by selecting the top bank from its trading list. Then we construct a dummy variable equal to one if the main bank identified by a firm is its largest shareholder among banks, and also dispatches its directors to the firm. [12] However, the influence of the dispatched director on firms' debt choice, or in other words the non-pecuniary cost perceived by firms' managers, might depend on her position on the board of directors, and we cannot decide a priori which position is critical. We use two different sets of dummy variables to explore the influence of the main bank, namely, MB1 and MB2. MB1 is equal to one if the dispatched manager from the main bank occupied the position of plain director or higher in the firm's board, and zero for other cases. MB2 is equal to one if she occupied the position of executive director or higher.

We introduce several other dummy variables. SUB is equal to one if a non-financial firm is the largest shareholder of a firm and dispatches a director to the firm. SUB is expected to mitigate the effect of default risk and profitability on debt choice, because the firm's manager could expect additional liquidity for bailing out in the face of financial distress. OWN is equal to one when the largest shareholder is a manager of a firm, her relatives, or her property

---

[12] We follow the method developed by Gibson (1995) for identifying the main bank.

management company. It is introduced to control for some unique characteristics that entrepreneur-type managers may have.

The distribution of FFO and LFO firms in terms of corporate governance structure is shown in Table 3. More than 65% of FFO firms are free from either strict monitoring by the main bank or large shareholders (parents firms) at the end of FY1984, and therefore major firms are already independent. Approximately 35% of the LFO firms still have strong relationships with the MB, and 40 % of them are under large shareholders; consequently only about 20% of the LFO firms were relatively independent.

3.3. Empirical results

3.3.1. Firms with full financial options in the 1980s

The regression results for FFO-firms, which had all financial options available during the late 1980s, are summarized in Table 4. There are 25 firms out of 145 FFO firms that have no debt outstanding, or are missing data at the end of FY1984 and FY1989. Consequently, there are 120 sample FFO firms. The mean of D1 at the end of FY1984 is 48% and 63% at the end of 1989. D1', including the portion of CB converted to equity, is 68% in 1989.

As is shown in Table 4, FFO-firms' choices of debt without implicit rescue-insurances (NRI Debt) are significantly correlated to DA, the debt-asset ratio. The relation between the issue of NRI-debt and q is also significantly positive. The magnitudes of the effects of these two variables are similar; a one standard deviation increase from the average DA decreases D1 by about 10 %, as does a one standard deviation decrease of q. These results are also supported when we change the dependent variable to D1' instead of D1 (column 5). We use D2 instead D1 to compare our results with Hoshi et al., (1993) in which no significant correlation was found. The statistically significant positive correlation of q and D2 is confirmed in our estimation, though we do not report the results. This difference between ours and Hoshi et al.,(1993) might stem from the fact that our result is based on a more stringent sample selection procedure and a larger sample than Hoshi et al. (1993) used.

Examining the effect of corporate governance structure on debt choice, the first point to be

14

noted is that only the coefficient of the MB2 is significantly negative (column 2). This means that a few firms that had stronger relationships with the main bank tended to prefer RI-debt among the FFO firms that had all financial options available. This result is consistent with Camblel and Hamao's (1994) finding that firms with close main bank ties did not shift their debt from bank borrowing to bonds.[13]

Secondly, as is shown in column 3,4, and 5, the interaction term between SUB and q is significant, and in these cases the significance level of the coefficient of DA or q improves. The result that the debt choice of a firm under a parent company is less sensitive to the firm's investment opportunity suggests that subsidiary firms could expect additional liquidity from the parent company when they face financial distress.

In short, consistent with our hypothesis, estimation results for FFO-firms indicate that firms mainly relied on issuing unsecured bonds if their default risk (investment opportunity) were low (high), whereas they maintained bank borrowing if their default risk (investment opportunity) is high (low). Looking at this result from the banking sectors, the deterioration of clients among city banks possibly occurred, in the sense that firms with low-default risk left, while firms with high default risk continued borrowing from banks.

 3.3.2. Firms with limited financial options in the 1980s

The regression results for LFO-firms that is eligible to issue only secured bonds or secured warrant bonds are summarized in Table 5. There are 50 firms out of the 365 LFO firms that have no debt outstanding or have some missing data at the end of 1984 and 1989. As a result, we use 305 sample firms. The mean of D2 at the end of 1984 is 17%, which increase up to 38% at the end of 1989. Considering convertible bond converted to equity, D2' is 45% in 1989.

Like FFO-firms, the LFO-firm's choice of less monitored debt (secured bonds) is negatively correlated with DA(Column 1). A one standard deviation increase in DA (0.133) increases dependence on less monitored debt by 6.7 %. In addition, the coefficient of ORRS is significantly

---

[13] However, unlike our approach, Cambel and Hamao's (1994) bond calculation includes secured

negative. Business risk also influenced debt choice among relatively low-performance and highly-leveraged LFO firms. Relatively high-risk firms still continued to rely on bank borrowing.

The coefficient of q is insignificant for LFO-firms (Column 1). This result is similar to that obtained by Hoshi et al., (1993), and is quite different from Anderson and Makhija (1999: Table 4, esp. column 5), who report a significant negative correlation between growth opportunities and choice of public debt. We then test our sample using the same explanatory variables as Anderson and Makhija (1999). However, there appears to be no significant negative relationship between growth opportunities (using a five year average) and the choice of bond. This result is also supported by the introduction of growth opportunities at the end of FY 1984.[14] One possible reason for this difference might be that our sample is different from that of Anderson and Makhija (1999). They select their sample firms from areas I and II in Figure 1, whereas we separate area II from area I, and strictly partition LFO-firms.

Returning to the empirical result that there exists no significant correlation between q and less monitored debt, we could attribute it to the fact that LFO-firms are composed of firms with various types of corporate governance structures, as noted above in section   . This point is clear from the following observations that both the interaction terms of MB and SUB with q (DA) are statistically significant (Column 3,Column 4). The positive coefficient of the interaction term, q times SUB, that is less significant comparing to the interaction term, q times MB, could be explained by a similar story to that discussed for FFO firms. More important is the fact that the interaction term of q or DA with the dummy variables, MB, is statistically significant using either MB1 or MB2. Using MB2, the estimated magnitude of the q times MB interaction term is 12.4% with a one standard deviation increase, and that of DA is 12.5%, both of which are quite high compared to the 20% increase in dependence on less-monitored bonds during this period. This relation is quite robust when we replace D2 with D2'. The fact that the debt choice of firms

---

bonds.

[14] In this estimation, the sign of growth opportunities is positive at the 5 % level. The five-year average of Tobin's q is also significantly positive.

with strong main bank relationships is sensitive to the firm's investment opportunity and default risk among LFO-firms implies that, consistent with our hypothesis.

The positive correlation between the firm's investment opportunity and bond issuing among firms with strong main bank ties, however, could be consistent with monitoring view suggested by Diamond (1991) and Hoshi et al (1993). Here, monitoring view means, for overcoming the asymmetric information problem between the creditors and borrower, the degree of the monitoring by relationship bank is taken as the proof of the borrower's quality. This also implies the positive correlation between the firm's investment opportunity and bond issuing among firms with strong main bank ties. Then, to identify whether the correlation should be attributed to managerial entrenchment or not, we divide LFO firms into two groups according to the strength of main bank ties, and then newly introduce a dummy variable which represent the degree of the pressure from shareholders. This dummy variable is equal one if the percentage of shares held by stable shareholders to whole issued share is over median among that of all samples, otherwise zero. The share held by stable shareholder is defined as the one held by financial institutions minus that of trust banks. [15] The hypothesis behind this procedure is: suppose that firms have same investment opportunity and same strong main bank ties. Then, the more firms could stabilize their shareholders, the stronger the incentive for managerial entrenchment would because of the less monitoring from shareholders. According to the estimation result in Table 6, the intersection term between stable shareholder dummy and q is positive. This result is also supported even if we change another stable shareholder dummy considering on not only the shareholding held by financial institutions but that held by non-financial institution. Thus, the positive correlation between q and bond issuing among firms with strong main bank ties reflects a managerial entrenchment.

Notice that there are a lot of firms which satisfies the bond issue criteria either for unsecured or secured bonds in the late 1980s, although they are omitted from our sample (See Fig.2). Roughly speaking, the number of firms shifting from area   to area   in Fig.2 in the late

---

[15] When the share held by stable shareholder is defined as the one held by financial institution plus

1980s is estimated to be about 200, and from area   to area I there are 375. We expect the debt choice of these firms also to be affected by the main bank relationship because the first firms were initially fully dependent on bank borrowing, while the second group of firms initially depended on bank borrowing or bond issuance service from their main banks.

The effect of the main bank on debt choice implies a deterioration of client firms ex post. Managers chose debt considering firm's investment opportunity and total leverage. Although such behavior is completely rational ex ante, it was inevitable ex post that firms with low investment opportunity or high leverage remained clients of the banks, while firms with high future profitability or low default risk left their client pool between FY1985 to FY1989.

3.3.2. Empirical results in the 1990s

The mean of D, the ratio of NRO debt to total debt, is 48.6% at the end of 1992, and increases up to 52.6% at the end of 1995. Although we use the sample of the combination from FFO and LFO, the 5.4% increase in D for LFO-firms is slightly higher than that of LFO-firms, at 1.8%, when we divide the sample into former FFO and LFO firms. The main results are summarized in Table 7.

First, the effect of default risk on debt choice is significant and its magnitude increases in the early 1990s, compared to the late 1980s. A one standard deviation increase in DA raises bank borrowing by about 9-10 %. Second, a firm's choice of NRI debt is positively and significantly correlated with q. This result is held if we include the industrial dummies. The same result is also confirmed when we confine the sample only to LFO-firms (column 3). This result clearly contrasts with the fact the LFO-firm's choice for less monitored debt (secured bonds) is not closely correlated with q in the late 1980s. According to the estimation result, a one standard deviation increase in q raises the bond issuing by about 3-4 % on average. Compared to the fact that this 'elasticity' is roughly 10% in the late 1980's, this 3-4% elasticity may seem low. However, the impression could be different if we consider that the D1 at the end of FY1995

---

non-financial institution minus trust banks, the result is almost same as Table 6.

increased by only 4% on average from FY1992.

The elasticity of debt-asset ratio to debt choice measured by a one standard deviation change is three times larger than the response of q. Recall that the elasticity of q to debt choice is the same as that of DA in the late 1980s. This result then indicates that the effect of leverage on debt choice in the early 1990s becomes relatively larger than that of q. The same results hold when we add industrial dummies, or restrict the sample to LFO-firms. [16] This result probably reflects the great concern about Japanese economy by more leveraged firms.

Changing our concerns to the effect of corporate governance structure on debt choice, it is notable that all variables show less significance to debt choice except the constant dummy, MB. Although MB is insignificant in the total sample, it is statistically significant and negative when we confine the sample to LFO-firms, and the effect is about 6% (see column 3). [17] Strong main bank ties influenced debt choice only for some LFO-firms that are ineligible to issue unsecured bonds in the1980s.

However, the interaction term between the corporate governance dummies and DA or q is not correlated with firms' debt choice.[18] This result is also seen when we replace MB1 with MB2, or when we divide the sample into FFO-firms and LFO-firms, although we observed a significant correlation between debt choice and the interaction term of MB with DA and q in the 1980s. Thus, the relationship with main bank, which strengthened the effect of DA or q on debt choice in the late 1980s, decreases its effect in the early 1990s. Recalling that this effect of the main bank relationship on debt choice implied a deterioration of bank clients, this deterioration apparently ceased by the early 1990s.

5. Conclusions

The hypothesis investigated in this paper is that the firm's choice between debt without

---

[16] In addition, the debt choice is certainly affected by the ratio of securities holdings to total assets, although the result is not reported in Table 6.

[17] The same result is found when we add the industry dummies.

[18] It seems strange that even SUB does not show any significant correlation with firms' debt choice. It is our future task to test this formula again using more elaborate corporate governance variables.

rescue-insurance and debt with rescue-insurance is determined by the demand for the implicit rescue-insurance. We find evidences that support this argument, constructing the detailed information about debt structure of Japanese large firms. For the firms that can choose either the debt with rescue-insurance or the debt without rescue-insurance, the debt choice is significantly correlated with their default risk and investment opportunity. While the firms with substantial performance tends to issue the debt without rescue-insurance, the firms with poor performance still continued to keep the close relationship with banks for the implicit rescue-insurance, in spite of the associated informational monopoly and high interest rates.

We also find that the relationship banking induces further avoidances of bank borrowing by the firm with less default risk and better investment opportunities due to manager's entrenchment incentive. Since a bank engages in the intense monitoring behavior for getting borrower-specific information in the relationship banking, the non-pecuniary benefit of the manager is lower when the firm has closer ties with its bank. Then, our results suggest that the manager of the firm with less default risk and substantial investment opportunity tends to borrow the debt without rescue-insurance for acquiring larger discretion over managements.

Furthermore, our empirical results indicate how the financial deregulation affects the corporate finance of a firm and the financial structure of one country. When bond markets in Japan were deregulated gradually under relationship banking in the 1980s, both the debt with rescue insurance and the arms-length debt coexisted in one market. Therefore, a manger had an opportunity to choose her available financial resources, considering the necessity of rescue-insurance and the return of the investment project. This self-selection implies a systematic deterioration of bank clients in the sense that firms with less default risk and attractive investment opportunity increasingly escape from the pressure of relationship banking, while only those with higher default risk and less investment opportunities remain as clients.

Before concluding this paper, we address some crucial problems not treated here. Although we have assumed that the corporate governance structure is given, it is more realistic to consider that the corporate governance structure is determined endogenously, along with the firm's financial decision. According to Table 3, the change of corporate governance structure is

large. Main bank relationships weakened from FY1984 to FY1989, and strengthened from FY1989 to FY1995. However, the main bank relationship in the 1990s no longer influences on debt choice as it did in the late 1980s. This result seems to be consistent with the fact that the mutual commitment of firms and banks has declined partly because of decreasing dependence on bank borrowing, and also because the implicit contract between banks and firms under financial distress has become less clear.[19]

---

[19] Although there is no systematic research on this point, anecdotal evidence suggests that the MB began to give up the close relationship with client firms. If the decision of the MB was determined by such factors as 1) the future profitability of a firm after the rescue operation, 2) the negative reputation effect when a bank avoids a rescue operation, and 3) the bank's ability to rescue, then all three factors might have been changing since the early 1990s.

REFERENCES

Aghion,P., and Bolton,P.(1992)." An incomplete contracts approach to financial contracting," Rev. Econ. Stud. 59, 473-494.

Anderson, C. W., and Makhija, A. K., (1999). " Deregulation, disintermediation, and agency costs of debt: evidence from Japan," J. Finan. Econ. 51, 309-339.

Aoki, M., and Patrick, H., Ed. (1994)."The Japanese Main Bank System: Its Relevancy for Developing and Transforming Economies," Oxford University Press, Oxford.

Aoki, M., (1994)."The contingent governance of teams: an analysis of institutional complementarily," Int. Econ. Rev. 35, 657-676.

Berglof, E., and Perotti, E.,(1994)."The governance structure of Japanese financial keiretsu," J. Finan. Econ.36, 259 284.

Besanko, D., and Thakor, V.A., (1993)."Relationship banking, deposit insurance and bank portfolio choice," In: Mayer C., Vives, X.(Ed.), Capital Markets and Financial Intermediation, Cambridge University Press, Cambridge.

Bolton,P., and Freixas,X.,(2000). Equity, bonds, and bank debt: capital structure and financial market equilibrium under asymmetric information, J. Polit. Economy 108, 324-351.

Boot A., and Thakor,V.A.,(2000). Can relationship banking survive competition? J. Finance 679-713.

Cable, J. R., (1985). Capital market information and industrial performance: the role of West German banks, Econ. J. 95, 118-132.

Cambell, J., and Hamao,Y., (1994). Changing patterns of corporate financing and main bank system in Japan, In: Aoki, M., Patrick, H.(Ed.), The Japanese Main Bank System: Its Relevancy for Developing and Transforming Economies. Oxford University Press, Oxford.

Chemmanur, T., and Fulghieri,P.,(1994). Reputation, renegotiation, and publicly held traded debt. Rev. Finan. Stud. 7, 475-506.

Diamond, D., (1991). Monitoring and reputation: the choice between bank loans and directly placed debt. J. Politi. Economy 99,689-721.

Edwards, J., and Fisher, K.,(1993). Banks, Finance and Investment in Germany, Cambridge University Press, Cambridge.

Gibson, M. S., (1995). Can bank health affect investment? evidence from Japan. J. Bus. 68, 281 308.

Horiuchi, A., (1995). Financial structure and managerial discretion in the Japanese firm: an implication of the surge of equity-related bond, In: Okabe, M. (Ed.), The Structure of the Japanese Economy. Macmillan, London.

Hoshi, T., and Kashyap, A., (1990). Evidence on Q and investment for Japanese firms. J. Japanese Int. Econ. 4:371-400.

Hoshi,T., Kashyap,A., and Scharfstein, D.,(1993). The choice between public and private debt: an analysis of post deregulation corporate financing in Japan. NBER Working Paper 4421.

Houston,J., and James, C.,(1996). Bank information monopolies and the mix of public and private debt claims, J. Finance 51,1863-1889.

Jensen,M.C.,(1986). Agency costs of free cash flow, corporate finance, and takeovers, Amer. Econ. Rev. 76, 323-339.

Kang,J., and Shivdasani,A.,(1995). Firm performance corporate governance and top executive turnover in Japan. J. Finan. Econ. 38 29-58.

Kaplan, S., (1994). "Top executive rewards and firm performance: comparison of Japan the United States," J. Politi. Economy 102 510-546.

Miyajima, H., (1998a). The impact of deregulation on corporate governance and finance. In: Carlile, L. E., Tilton, M. C. (Ed.), Regulation and Regulatory Reform in Japan: Are Things Changing? Blookings Institution, Washington, D.C.

---, (1998b). Presidential turnover and performance in the Japanese firm: the evolution and change of the contingent governance structure under the main bank system. In :Dirks,D., Huchet,J.F., and Thierry Riebault,(Ed.), Japanese Management in the Low Growth Era Springer-Verlag, Berlin.

Petersen,M.A., and Rajan,R.G.(1994). Benefits from Lending Relationships: Evidence from Small Business Data, J. Finance 49, 3-37.

Rajan, R.,(1992). Insiders and outsiders: the choice between informed and arm's-length debt. J. Finance 47, 1367-1400.

Sharpe, S. A., (1990). Asymmetric information bank lending, and implicit contracts: a stylized model of customer relationships. J. Finance 45,1069 1087.

Sheard, P., (1994). Main banks and the governance of financial distress. In: Aoki, M., Patrick, H.(Ed.), The Japanese Main Bank System: Its Relevancy for Developing and Transforming Economies. Oxford University Press, Oxford.

Thakor,V.A., and Wilson,F.,(1995). Capital requirements, loan renegotiations and the borrower ' s choice of financing source. J. Banking Finance 19 693-711.

Weinstein, D., and Yafeh, Y., (1998). On the costs of a bank-centered financial system: evidence from the changing main bank relations in Japan, J. Finance 53 635-672.

Yafeh, Y., and Yosha, O.,(1995). Large shareholder and banks; who monitors and how. Working paper, No.299, Hebrew University of Jerusalem.

Figure 1   **Classification of Debt**

Conventional   Our Paper

Classification

Public Debt ————— Unsecured Bonds ————————— Debt without Implicit

 (Debt Based On   Rescue-Insurance

Public Information)

                    Secured Bonds ————

                    Bank Guaranteed Bonds

                                                            Debt with Implicit

                                                            Rescue-Insurance

Private Debt

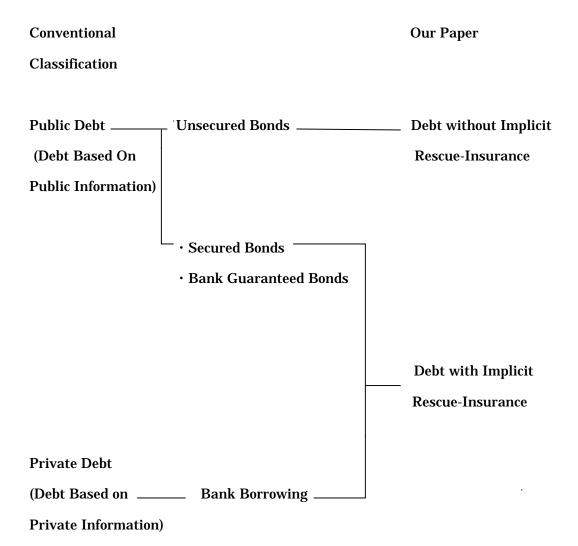(Debt Based on ——————— Bank Borrowing —————

Private Information)

Figure 2: Bond Issuing Criteria and the Number of Firms Listed in the Stock Market during the 1980s.

Firms eligible to issue unsecured bonds   Firms eligible to issue secured bonds   Firms with no financial options but borrowing.

The number of all listed firms on the TSE excluding the financial sector is in parentheses. Issuing criteria are taken from two sources: Shin Ginko Jitsumu Koza: 8 Shoken(New General Lectures on Banking Business : Vol. 8 Securities) published by the Industrial Bank of Japan, and Kin'yu Zaisei Jijo Kenkyu-kai,Tokyo: Shoken Tokei Nenpo (Annual Report of Securities Statistics), published by the Tokyo Stock Exchange. FFO indicates firms with full financial options (eligible for unsecured bonds) and LFO indicates firms with limited financial options (eligible for only secured or bank-guaranteed bonds).

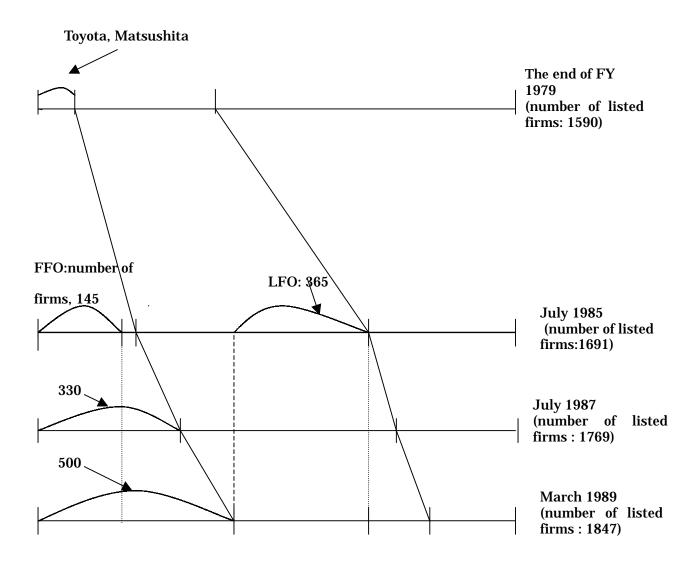Toyota, Matsushita

The end of FY 1979 (number of listed firms: 1590)

FFO:number of firms, 145

LFO: 365

July 1985 (number of listed firms:1691)

330

July 1987 (number of listed firms : 1769)

500

March 1989 (number of listed firms : 1847)

25

Table   Finance of Large Firms

This table presents the financial outlook for large Japanese firms. Data are obtained from Shuyokigyo-Keieibunseki from Bank of Japan and Shoken-Tokeiyoran from Nomura Security . Equity related bonds consist of convertible bonds and warrant bonds.

(a) Large Firms (640 firms)   (1000 million yen)

	Internal and external external finance	external finance	Equity	Debt	Bank borrowing	bond
Average from 1975 to 79	88,014	43,666	7,737	35,929	25,666	10,263
1980-84	118,810	46,233	13,631	32,602	21,454	11,148
1985-89	208,259	97,208	38,800	58,409	15,707	42,702
1990-92	219,375	82,957	8,466	74,491	36,707	37,784
1993-95	125,521	-16,221	5,151	-21,372	-16,925	-4,446

(b)all firms listed on TSE

	bank borrowing	bond issuing	Domestic market	Foreign market	Straight Bond	Equity related Bond
Average from 1976 to 79	117,840	19,730	74.3%	25.7%	72.0%	28.0%
1980-84	195,332	32,881	50.7%	49.3%	43.5%	56.5%
1985-89	328,426	123,159	50.1%	49.9%	16.5%	83.5%
1990-1992	288,445	104,947	37.9%	62.1%	59.1%	40.9%
1993-1995	51,775	84,939	71.0%	29.0%	60.9%	39.1%

Table 2   Descriptive Statistics for Debt Choice

Panel 1 and Panel 2 present statistics for FFO-firms and LFO-firms in the 1980s. Panel 3 presents statistics for FFO-firms and LFO-firms in the 1990s. Accounting Data are from the JDB Corporate Finance database and Yukashoken-Hokokusho (Japanese 10k).   Stock data are obtained from Kabuka Soran.

Panel   : Firms with Full Financial Options(FFO Firms) in the late N=120
1980s

	Mean	Std Dev
Unsecured Bond/(Bond+Bank Borrowing) at the end of 1989	0.626	0.356
Bond/(Bond+Bank Borrowing) at the end of 1989	0.703	0.323
Debt/Total Asset	0.122	0.091
Unsecured Bond/(Bond+Bank Borrowing) at the end of 1984	0.482	0.394
Bond/(Bond+Bank Borrowing) at the end of 1984	0.562	0.374
Financial Asset/Total Asset	0.170	0.088
Land Holding/Total Asset	0.129	0.097
Tobin's q at the end of 1984	1.567	0.848
Standard Deviation of operating income/sales	0.018	0.013

Panel 2 Firms with Limited Financial Option (LFO Firms)   N=305

	Mean	Std Dev
Bond/(Bond+Bank Borrowing) at the end of 1989	0.378	0.332
Debt/Total Asset	0.228	0.133
D_2 at the end of 1984	0.172	0.268
Financial Asset/Total Asset	0.148	0.081
Land Holding/Total Asset	0.136	0.101
Tobin's q at the end of 1984	1.355	0.654
Standard Deviation of operating income/sales	0.021	0.018

Panel 3 Firms getting a credit rating for unsecured bond within FFO and LFO Firm

	Total N=294		FFO N=107		LFO N=187	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Unsecured Bond /(Bond +Bank Borrowing) at the end of 1995	0.527	0.335	0.695	0.322	0.431	0.303
D at the end of 1992	0.486	0.340	0.678	0.326	0.377	0.297
Debt/Total Asset at the end of 1992	0.223	0.116	0.176	0.097	0.250	0.118
Tobin's q at the end of 1992	1.116	0.275	1.195	0.292	1.071	0.255
Standard Deviation of Net Income / Operational Return	0.019	0.017	0.019	0.015	0.018	0.017
Financial Assets/Total Assets at the end of 1992	0.123	0.088	0.112	0.078	0.129	0.093

Table 3 Governance Structure of Sample Firms

The main bank(MB) is the bank identified in the Japan Company Handbook as the primary reference for the firm. Data for constructing the governance dummy are obtained from JDB Corporate Finance, Keiretsu-no-Kenkyu (Keizai-Tyosakai), Jyojyo kaisya Souran (Yamaitchi Securities), and Kigyou Keiretsu Soran (Toyo-Keizai-Shinposha). The number of firms in 1995 includes only firms with ratings.

<div align="right"># of Firms</div>

	FFO			LFO		
the end of FY	1984	1989	1992	1984	1989	1992
Number of Firms	145	146	143	365	365	273
MB is the largest shareholder among banks and dispatches a director	29	29	27	123	96	95
MB is the largest shareholder among banks and dispatches an executive director	18	24	18	87	70	58
Non-financial firm is the largest shareholder and dispatches a director	31	32	22	139	129	67
Manager (or his/her relatives) is the largest shareholder.	20	13	7	32	20	9

Table 4 Debt Choice by FFO Firms: 1985—89

The dependent variable, D1, is unsecured bond/(bond + bank borrowing) at the end of 1989. The estimation method is two-sided Tobit. All estimations include the log of total assets at the end of FY1984.   The absolute values of t-statistics appear below each estimate in parentheses. Accounting data are obtained from JDB Corporate Finance Database and Yukashoken Hokokusho(Japanese 10k). Stock data are obtained from Kabuka-Souran and JDB Corporate Finance Database. The main bank dummy equals one if a main bank identified by a firm itself was its largest shareholder among banks, and dispatched a director to the firm. The subsidiary firm dummy equals one if a non-financial firm is the largest shareholder and dispatched a director to a firm. The owner-manager firm dummy equals one if the largest shareholder of this firm is a top manager or her relatives or its property management company.

Dependent Variable	D1	D1	D1	D1	D1'	D1	D1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Definition of Main Bank	MB1	MB2	MB1	MB2	MB2	MB1	MB2
Number of Observations	121	121	121	121	118	121	121
SIGMA	0.38	0.37	0.36	0.35	0.34	0.37	0.36
	(12.15)	(12.16)	(12.15)	(12.15)	(11.94)	(12.16)	(12.17)
Constant	-0.64	-0.60	-0.78	-0.66	-0.83	-0.46	-0.37
	(1.16)	(1.11)	(1.46)	(1.27)	(1.62)	(0.85)	(0.68)
Di at the end of FY1984	0.49***	0.48***	0.50***	0.51***	0.49***	0.49***	0.50***
	(4.66)	(4.61)	(4.66)	(4.95)	(4.78)	(4.61)	(4.76)
Debt/Total Asset	-1.59***	-1.62***	-1.60***	-1.59***	-1.44***	-2.24***	-2.14***
	(3.54)	(3.66)	(3.61)	(3.65)	(3.33)	(4.07)	(4.02)
Tobin's q	0.17***	0.17***	0.32***	0.25***	0.21***	0.17***	0.17***
	(3.18)	(3.25)	(3.74)	(4.00)	(3.36)	(3.19)	(3.25)
Main Bank Dummy	-0.56	-0.21**	0.19	-0.01	-0.33	-0.21	-0.42**
	(0.62)	(2.03)	(0.96)	(0.03)	(1.45)	(1.35)	(2.00)
Main Bank Dummy times Tobin's q	--	--	-0.15	-0.11	0.11	--	--
	--	--	(1.38)	(0.94)	(0.90)	--	--
Debt/Asset times Main Bank Dummy	--	--	--	--	--	1.15	1.95
	--	--	--	--	--	(1.08)	(1.20)
Subsidiary Dummy	0.00	0.00	0.48**	0.39**	0.44**	-0.16	-0.17
	(0.23)	(0.01)	(2.40)	(2.04)	(2.31)	(1.00)	(1.31)
Subsidiary Dummy times Tobin's q	--	--	-0.30***	-0.24**	-0.24**	--	--
	--	--	(2.81)	(2.39)	(2.45)	--	--
Subsidiary Dummy times Debt/Asset	--	--	--	--	--	1.06	1.31
	--	--	--	--	--	(1.03)	(1.46)
Owner-Manager Dummy	-0.11	-0.08	0.08	0.00	-0.19	-0.28	-0.17
	(0.85)	(0.61)	(0.24)	(0.01)	(0.61)	(1.14)	(0.67)
Owner-Manager Dummy times Tobin's q	--	--	-0.13	-0.05	0.03	--	--
	--	--	(0.62)	(0.27)	(0.17)	--	--
Owner-Manager Dummy times Debt/Asset	--	--	--	--	--	1.31	0.71
	--	--	--	--	--	(0.83)	(0.43)

*;10 significant   **;5 significant   ***;1 significant

Table 5 Debt Choice by LFO Firms in 1985-89

The dependent variable, D2, is secured bond/(bond + bank borrowing) at the end of FY1989.The estimation method is two-sided Tobit. All estimations include the log of total assets at the end of FY1984. The absolute values of t-statistics appear below each estimate in parentheses. Accounting data are obtained from JDB Corporate Finance Database and Yukashoken Hokokusho(Japanese 10k). Stock data are obtained from Kabuka-Souran and JDB Corporate Finance Database. The main bank dummy equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a director to the firm. The subsidiary firm dummy equals one if a non-financial firm is the largest shareholder and dispatched a director to the firm. The owner-manager firm dummy equals one if the largest shareholder of this firm is a top manager or her relatives or its property management company.

Dependent Variable	D	D	D	D	D	D2'
	(1)	(2)	(3)	(4)	(5)	(6)
Definition of Main Bank	MB1	MB1	MB2	MB1	MB2	MB1
Number of Observations	305	305	305	305	305	305
SIGMA	0.38	0.37	0.37	0.37	0.37	0.37
	(19.68)	(19.69)	(19.69)	(19.7)	(19.7)	(19.72)
Constant	0.45***	0.54***	0.58***	0.38***	0.36***	0.67***
	(5.36)	(5.39)	(5.54)	(4.00)	(3.64)	(6.68)
Di at the end of 1984	0.42***	0.45***	0.46***	0.47***	0.48***	0.48***
	(4.48)	(4.81)	(4.93)	(4.93)	(4.93)	(5.1)
Debt/Total Asset (market value)	-0.51***	-0.43**	-0.43**	-0.10	-0.06	-0.58***
	(2.83)	(2.40)	(2.38)	(0.34)	(0.20)	(3.21)
Std. Deviation of (Operating Income/Asset)	-3.83***	-4.09***	-4.25***	-3.70***	-3.70***	-4.52***
	(2.67)	(2.87)	(2.96)	(2.60)	(2.67)	(3.2)
Tobin's q	0.00	-0.07	-0.11*	0.01	0.01	-0.08
	(0.10)	(1.26)	(1.69)	(0.21)	(0.24)	(1.38)
Main Bank Dummy	-0.16	-0.29**	-0.41***	0.21**	0.24**	-0.26**
	(0.33)	(2.52)	(2.80)	(2.21)	(1.96)	(2.29)
Main Bank Dummy times Tobin's q	--	0.20***	0.30***	--	--	0.19**
	--	(2.61)	(2.94)	--	--	(2.41)
Debt/Asset times Main Bank Dummy	--	--	--	-0.95***	-1.00**	--
	--	--	--	(2.70)	(2.32)	--
Subsidiary Dummy	0.56	-0.04	-0.13	0.15	0.21*	-0.05
	(1.13)	(0.33)	(1.09)	(1.52)	(1.97)	(0.45)
Subsidiary Dummy times Tobin's q	--	0.07	0.14*	--	--	0.06
	--	(0.88)	(1.72)	--	--	(0.80)
Subsidiary Dummy times Debt/Asset	--	--	--	-0.45	-0.73*	--
	--	--	--	(1.19)	(1.73)	--
Owner-Manager Dummy	0.13	0.26	0.13	-0.04	-0.03	0.20
	(1.64)	(1.42)	(0.68)	(0.27)	(0.18)	(1.08)
Owner-Manager Dummy times Tobin's q	--	-0.10	0.00	--	--	-0.09
	--	(0.83)	(0.02)	--	--	(0.72)
Owner-Manager Dummy times Debt/Asset	--	--	--	0.82	0.47	--
	--	--	--	(1.21)	(0.68)	--

*;10   significant   **;5   significant   ***;1   significant

Table 6 The Impact of Shareholding Structure on Debt Choice in LFO-Firms

The dependent variable, D2, is secured bond/ over bond plus bank borrowing at the end of FY 1989. The estimation method is both-sided Tobit. All estimations include the log of total assets at the end of FY1984. The Absolute values of t-statistics appear below each estimatation in parentheses. Accounting data are obtained from JDB Corporate Finance Database and Yukashoken Hokokusho(Japanese 10k). Stock data are obtained from Kabuka-Souran and JDB Corporate Finance Database. The main bank dummy equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a director to the firm. The STA is a dummy variable that is equal to one if the percentage of shares held by the financial institutions excluding trust bank and pension fund sector of Daiwa Bank is more than the median, otherwise zero.

Dependent Variable the end of 1989	D2		D2	
Definition of MB	MB1=1	MB1=0	MB2=1	MB2=0
	(1)	(2)	(3)	(4)
Number of Observations	182	123	166	139
SIGMA	0.37	0.40	0.37	0.41
	(12.04)	(15.92)	(19.69)	(15.02)
Constant	-0.26	-0.44	-0.41	-0.26
	(0.47)	(0.81)	(0.78)	(0.45)
D at the end of 1984	0.66***	0.26**	0.49**	0.30***
	(3.14)	(2.47)	(2.47)	(2.71)
Debt/Total Asset(market value)	-0.57***	-0.97***	-0.81***	-0.87***
	(1.76)	(3.67)	(2.67)	(3.05)
Tobin's q	0.04	0.05	-0.02	0.09
	(0.43)	(0.52)	(0.21)	(0.96)
Shareholders Dummy(STA) times Tobin's q	0.11*	-0.55	0.10*	-0.05
	(1.80)	(0.95)	(1.85)	(1.01)

*;10 significant **; 5 significant ***:1 significant

Table 7 : Debt Choices in 1992-1996

The dependent variable is unsecured bond over bond plus bank borrowing at the end of FY1995, D95. The estimation method is Tobit using Heckman's Two-Step estimator. All estimations include the log of total assets at the end of FY1992. The absolute values of t-statistics appear below each estimate in parentheses. Heteroskedasticity-consistent standard errors are reported in parentheses. The standard deviation of operating income/total asset is calculated for 1983 to 1992. Accounting data are obtained from JDB Corporate Finance Database and Yukashoken Hokokusho (Japanese 10k). The main bank dummy equals one if a main bank identified by a firm was its largest shareholder among the banks and dispatched a director to the firm in the end of FY1992. The subsidiary dummy equals one if the operating firm is the largest shareholder and dispatching a director to a firm. The owner-manager dummy equals one if the largest shareholder is a manager or a relative to the manager or the property management company.

Dependent Variable	D_{95}	D_{95}	D_{95}	D_{95}	D_{95}
	(1)	(2)	(3)	(4)	(5)
Number of Observations	285	281	179	281	281
Constant	0.37**	0.24	0.57**	0.21	0.21
	(2.40)	(1.44)	(2.25)	(1.27)	(1.36)
D_{92} :D at the end of 1992	0.58***	0.62***	0.55***	0.63***	0.63***
	(11.03)	(9.76)	(6.56)	(10.46)	(10.24)
Debt/Total Asset at the end of 1992	-0.86***	-0.74***	-0.75***	-0.77***	-0.76***
	(-6.21)	(-4.98)	(-3.83)	(-5.05)	(-3.99)
Std. deviation of (Operating Income/ Asset)	1.04	0.34	1.21	0.68	0.65
	(1.04)	(0.43)	(1.08)	(0.78)	(0.74)
Tobin's q	0.11**	0.12**	0.12*	0.11*	0.12***
	(2.50)	(2.46)	(1.90)	(1.71)	(2.64)
Main Bank Dummy	-0.03	-0.02	-0.06**	-0.11	-0.01
	(-1.15)	(-0.93)	(-1.96)	(-1.02)	(-0.18)
Main Bank Dummy times Tobin's q	--	--	--	0.07	--
	--	--	--	(0.76)	--
Main Bank Dummy times Debt/Asset	--	--	--	--	-0.06
	--	--	--	--	(-0.28)
Subsidiary Dummy	0.01	0.02	-0.02	0.04	0.01
	(0.34)	(0.69)	(-0.48)	(0.44)	(0.15)
Subsidiary Dummy times Tobin's q	--	--	--	-0.03	--
	--	--	--	(-0.36)	--
Subsidiary Dummy times Debt/Asset	--	--	--	--	0.00
	--	--	--	--	(0.00)
Owner-Manager Dummy	-0.04	-0.03	-0.01	0.05	-0.05
	(-0.74)	(-0.59)	(-0.1)	(0.31)	(-0.59)
Owner-Manager Dummy times Tobin's q	--	--	--	-0.07	--
	--	--	--	(-0.61)	--
Owner-Manager Dummy times Debt/Asset	--	--	--	--	0.04
	--	--	--	--	(0.10)
Industry Dummy	No	Yes	No	no	No
Adj.R^2	0.65	0.66	0.56	0.66	0.65

*;10 significant **;5 significant ***;1 significant