

**Relational Banking, Less Active Market for
Corporate Control, and Debt Choice:
Evidence from the Liberalization in Japan**

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I Introduction

Dramatic shift on debt choice from bank borrowing to bond issuing occurred in the late 1980s in Japan. The percentage share of issued bond to whole raised debt from 1985-1989 on average was 73.1% comparing to 30 percent in the late 1970s, and 34% of early 1980s as is shown Table1. Entering into 1990s, although bank borrowing tentatively increased from 1990 to 1992, new bond issuing still continued to play an important role for firm's debt.

The task of this paper is to clarify the financial choice between bank borrowing and bond issuing, using large sample of Japanese firm in the period of financial liberalization from the late 1980s and early 1990s. We set up a simple hypothesis for the debt choice, considering on the institutional characteristics of the governance structure of Japanese firms on the one hand, and extending current theoretical literature of debt choice on the other. We empirically test our hypothesis that the debt choice is determined by the demand for rescue options and this relationship is exacerbated by the incentives of managerial entrenchment.¹

One of the contributions in this paper is that our empirical results could have the general implication for the debt choice in an economy where entrenched manager could decide her firm's capital composition instead of shareholder. According to recent representative literatures about debt choice (Diamond, 1991; Sharp, 1990; Rajan, 1992), a firm chooses the debt between public debt and private debt, considering on reducing agency cost through accepting strict monitoring by banks and possible 'hold-up'. Note these theories assume that shareholder of firms could choose their debt under active market for corporate control and arm's length bank-firm relationship.

However, consider an economy where a manager of firm is under less market for corporate control and bank-firm relationship is characterized as relational one, in which bank borrowing is de facto associated with rescue option, there would be an alternative explanation in terms of the cost and benefit of choosing bank borrowing. Here manager of firm may

¹ Although the choice between equity and debt is another important issue in this period, this paper

choose the debt between bond and bank borrowing, considering on her necessity of rescue options and bank monitoring that she had faced. Consequently, it is highly predictable that a manager of firm with high-expected return tends to choose debt without rescue option, and a manager under strict monitoring tends to prefer less monitored debt. Our main empirical results on the late 1980s and early 1990s in Japan are consistent with the hypothesis that the expected return and governance structure of a firm influences the debt choice of Japanese firms. The empirical results shown here could have some implication for debt choice in an economy, where its governance structure is different from the Anglo-Saxon governance structure.

Furthermore, this paper could contribute for understanding the causes of bad debt problems in the 1990s Japan from the corporate financial perspectives. It is often pointed out that the dramatic changes of corporate finance from borrowing to equity related bonds in the late 1980s were accompanied by a kind of moral hazard for both firms and banking sectors. While the monitoring of banks on client companies has been relaxed, managers tended to raise 'excess' investment through equity related bonds for their empire building (Horiuchi, 1995). 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.² However, in order to make it clear whether debt choice during the bubble period is strongly affected by moral hazard or not, it is necessary to test whether debt choice at that time was assumed regardless of their expected return.

By testing our hypothesis we can offer a supplemental, and partly substitutive narrative for bad debt problem in the early 1990s. Once the liberalization was implemented step by step in an economy where debt offered by bank were de fact debt with rescue options and market for corporate control was less working, a top manager of firm naturally choose their debt, considering on the expected returns and default risks of their investment project.

concentrates on debt choice.

² We do not deny the declining of monitoring by MB to client companies in the late 1980s. However, this seems to be occurred not to existing client. but new clients of bank.

In addition, this relationship between debt choice and expected return might be exacerbated by managerial entrenchment given the main bank relationship. It is because non-pecuniary benefit of managers of a firm with strong main bank ties could be larger than that of manager of a firm without main bank ties, when they chose less monitored debt instead of borrowing. Thus, the deterioration of clients among banks would systematically occurred, even if bank monitoring to client companies has never changed at all.

Finally, we extend our empirical research for the debt choice to the early 1990s, when the deregulation entered into final phase since only the rating criteria was adopted as bond issue criteria. Through this test, which could be the first systematic trial as far as we know, some characteristic of debt choice in the post bubble period would be clarified comparing to bubble period.

The most important work related to this paper is Hoshi, Kashyap, Sharfstein (1993), and subsequent Anderson and Makhija (1999), which theoretically and empirically analyzed the choice between public debt (debt based on public information) and private debt (debt based on private information) for the period of financial deregulation 1983-1989.³ Interestingly, their main result is completely reverse. Hoshi et al., (1993) insist that bank debt financing is decreasing in Tobin's q when a firm is a member of an industrial group (or *keiretsu*), while linear relationship between q and choice of public debt is not found when governance dummy is excluded. Anderson and Makhija (1999) oppositely report that choice of public debt is negatively correlated to growth opportunities (approximately Tobin's q), while *keiretsu* relationship does not have any effect on the debt choice.

We empirically extends their work in the following three points. First, we regard firm's debt choice as a choice between debt with rescue option (secured and bank-guaranteed bonds, and bank borrowing) and debt without rescue option (unsecured bonds), rather than a choice between public debt (bonds) and private debt (bank borrowing). It is because we

³ Other related works are, for example, Cambell and Hamao (1994) which investigated the relationship between bond issuing and main bank, or Yafeh and Yosha(1995) which examined the role of block shareholder.

consider that the debt choice will be determined by the demand for rescue option, once the rescue operation of main bank became a social norm through historical process.

Second, according to this definition, we strictly extract sample firms with same financial options from all listed companies in the Tokyo Stock Exchange (TSE). In this regard, an advantage of this paper over previous research is to distinguish firms eligible for issuing unsecured bonds from firms eligible for issuing secured and bank guaranteed bonds.

Third, as for the governance structure, instead of using somehow vague categorization *keiretsu*, this paper divide sample companies into four groups; firms with strong MB ties, firms under parents firms, owner-manager firms, and the independent firms. By doing so, the effect of governance structure on debt choice, especially that of MB relationship, could be accurately figured out.

The remainder of the paper is organized as follows. Next section, after briefly examining the recent theoretical literature on debt choice and unique characteristics of Japanese corporate governance mechanism, we present our hypotheses to be tested in this paper. Section III describes our data and sample selection procedure, considering the deregulation process in the 1980s. Our empirical results for two groups of firms are presented in section IV. Section V reports empirical result on the default choice in the early 1990s. Section VI contains a conclusion and discussion.

II The Debt Choice under the Relational Bank-Firm Relationship

First of all, we briefly present our hypotheses for debt choice through examining rich literatures of financial choices and the managerial entrenchment.

One approach to explain the choice between bank borrowing and bonds is to stress the comparative advantage of bank in monitoring borrowers. Emphasizing the capability of banking sector to mitigate agency costs due to the informational asymmetry, Diamond (1991) shows younger firms with less reputation tend to borrow from banks with severe monitoring, while older, successful firms with higher reputation tend to issue bonds without monitoring.

Chemmanur and Fulgieri(1994) and Thakor and Wilson(1995) discuss another benefit of bank borrowing. Because of its close relationship with borrower, banking sector (or main bank in Japan) decides efficiently whether to liquidate or rescue a firm in financial distress by devoting additional resources. On the other hand, since bondholders usually have less information about their borrowers, and also have no incentives to pay monitoring costs, they can not efficiently rescue financially distressed firms as bank does. Aoki (1994) also stresses this benefit from different perspectives. Taking into account the Japanese institutional characters, Aoki (1994) shows the lower bound of borrower's production level, above that the main bank rescues.

Given the benefits of bank borrowing, however, there are some offsetting costs that prevent firms from borrowing exclusively from banks. One approach to explain 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 information acquired by a bank may create a hold-up problem, in which it is costly for borrowers to switch from a lender to the other. Rajan(1992), for example, argues that although competition ensures that the rents extracted by banks ex-post are reflected ex-ante in lower loan rates, the expropriation of these rents distorts the firm investment decisions by limiting the entrepreneur's gains from successful projects.

While the logic of this hold-up argument is relatively straightforward, it assumes the shareholders make the decision about financial sources. However, if the manager of the firm makes the decision about financial sources by herself and disciplining that manager is restrictively costly, the agency problems between shareholders and manager must be taken into account.

An alternative approach to explain the cost of bank borrowing, therefore, is based on the discussion about capital structure: managers with discretion over their firms tend to prefer less leverage than optimal when the pressure of hostile takeover is not so strong. The reason for this manager's behavior is that they are disfavor of outside pressures imposed by lenders through their monitoring. That is the managerial entrenchment (Hart, 1993; Novaes and

Zingales, 1995; Zwiebel, 1996).

Applying this theory to the case of debt choice, an entrenched manager would have a strong incentive to issue bonds instead of borrowing from bank. In general, the bank borrowing is associated with strict monitoring, which mitigates the agency problems and gives a rescue option to the borrower in case of financial distress. This monitoring behavior, on the other hand, might reduce the manager's own non-pecuniary benefit created by having a discretion over a management. Therefore, when a manager overweighs that non-pecuniary benefit more than that of having a rescue option, she would choose the bond issuing, that is the debt without rescue option, rather than debt with rescue option.

In this article, we focus on the cost of managerial entrenchment and the benefit of efficient rescue in financial distress in determining the mix of bond issuing and bank borrowing. Main reason for taking this combination is because we consider that the governance structure of Japanese firms is different from that of Anglo-Saxon type of firm in the following two points.

First one is bank-firm relationship. According to empirical researches including ourselves, main bank system was established by the latter half of High-Growth era, and under this relation the rescue operation of main bank (hereafter MB) to a client company became a social norm, when it failed in a financial distress⁴. Aoki (1993,1994) formalizes this relationship as contingent governance mechanism, which is different from Anglo-Saxon type of governance structure under arm's length relationship. The important implication of this understanding is that once the contingent governance structure was established, and the rescue operation became a social norm, the debt supplied by main bank (either loan or company bonds, later of which were secured bonds or guaranteed by bank) was in fact debt with rescue options. A manager of a firm expected a rescue operation from its main bank when it was in financial distress, as long as she had disclosed its private information to its main bank, and accepted strict monitoring including interim monitoring and dispatched bank

⁴ Aoki and Patrick(1994), Sheard(1994), Berglof and Perotti (1994), Kaplan (1994), Kang and

members.

Another characteristic to be noted is cross-shareholding among Japanese firms, which lets a top manager of a firm relatively free to decide its debt choice when internal funds was not enough to meet its business chance. The ownership structure of Japanese listed firms became stable since the mid 1970s in the sense that the percentage of shares held by financial institution and non-financial corporation became approximately 60%, while the percentage of shares held by individuals, foreign investors, and mutual funds was less than 40%. Since then top managers of Japanese firms were relatively shielded from takeover pressure comparing to those of Anglo Saxon type of firms, although they were still subject to a certain level of constraints of shareholders.

In these regards, managers in large Japanese firms around the 1980s had a certain degree of discretion over their own firms due to cross-shareholding, whereas they were monitored if they have close relationship with MB. Borrowings from MB, thus, had rescue option in case of financial distress, but introduced managerial entrenchment problem.

From the brief examinations as we mentioned above, we can have the following operating hypotheses for the empirical test on debt choice of Japanese firms from the late 1980s to the early 1990s.

HO1: The expected return has a positive correlation with debt without rescue option.

If the firm's expected return is high enough, that implies a low probability of becoming financially distressed, the firm has no need to use bank borrowing, which costs more than bond issuing.

HO2: When both a firm with strong MB ties and a firm without such strong MB ties face the same amount of increase in expected return, the former reduces the stricter monitored debt more than the latter does.

As we discussed earlier, a manager of a firm with strong MB ties is monitored much stricter than a manager of a firm without strong MB ties. Therefore, firms with strong MB

ties have more strong incentive to avoid from MB's monitoring than those without strong MB ties, even when both firms face the same expected return.

III Sample Selection based upon the Firm's Financial Options

1) Debt with Rescue Option and Debt without Rescue Option

The hypotheses discussed in the last section require us to treat debt choice as a choice between the debt without rescue options (NRO debt) and the debt with rescue options (RO debt), rather than between the public and private debt.⁵ Here, NRO debts includes unsecured convertible bonds (CB), unsecured straight bonds (SB), and non-bank-guaranteed warrant bonds (WB), whereas RO debts are composed of bank borrowing, secured CB and SB, and bank-guaranteed warrant bonds (WB). Figure 1 summarizes our classification of various type of bonds comparing to conventional classification.

———Figure 1 about here———

There are two points to be noted here. First is that the main reason for classifying secured and bank-guaranteed bonds as RO bonds similar to bank borrowing is that defaulted corporate bonds with collateral were bought back by the trustee banks without any exception since 1955, while bank-guaranteed WB are, by definition, guaranteed by banks. As Cambell and Hamao(1994) classified, bonds trustee of secured bonds and guarantors of WB is normally a firm's main bank. It is highly plausible that MB as bonds trustee or guarantors of warrant bonds took an initiation on rescue when the firm that issued secured or guaranteed bond faced financial distress.

Second point to be worth emphasizing is that although there is no critical difference between bank borrowing and secured or bank-guaranteed bonds in terms of the rescue option, the intensity of monitoring by creditors in these bonds is qualitatively different from that of borrowing. Borrowing includes interim monitoring by bank and sometime dispatched bank

⁵ We use a bond issue criteria for unsecured convertible bond rather than that for unsecured straight bond, which is much stricter than CB. It is partly because this period is featured by vigorous usage of equity related bond, and partly because we try to keep enough sample size.

members, which reduces the manager's non-pecuniary benefit. On the other hand, the monitoring in secured bonds is less strict than borrowing, which raises non-pecuniary benefit of a top manager.

2) Sample Selection in the 1980s, when bond issuance criteria was gradually relaxed

Under strict regulations, Japanese firms have not had any financial options except borrowing until the end of 1970s. Due to collateral requirements for bond issuance, it was in fact prohibited for firms to issue unsecured bonds, while the Bond Committee (the *kisaikai*) coordinated issuing secured bonds. It was in 1979 that issuing unsecured bonds was firstly permitted by introducing bond issuance criteria that consisted of the accounting index and profitability index. In 1983 the bond issuance criteria was largely relaxed. Thereafter, deregulation was implemented step by step, which increases the number of eligible firms for issuing unsecured bonds as well as secured bonds. The relaxation of bond issuing criteria was one of the conditions, besides other favorable macro economic factors, that made it possible for Japanese firms to raise money through equity related bonds in either domestic market or foreign market (Table 1). Figure 2 depicts the number of firms according to their financial options. Focusing on the end of FY1984, just before the bubble economy, the number of firms eligible for issuing unsecured bonds was 175 (area I in Fig.2), while the number of firms eligible for issuing secured bonds was 698 (area II in Fig.2). It is worth emphasizing that although the former number increased to approximately five hundreds in the end of 1989, firms with full financial options was still limited comparing to whole listed companies.

——Figure 2 about here——

All these facts required us to select carefully the sample firms. In order to make our empirical research free from any bias caused by regulation on debt choice, 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), and 3) firms that did not have any financial options without borrowing from FY1985 to FY1989. Unfortunately there

are no systematic disclosed data concerning this kind of information. 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 criteria⁶.

Basic procedure for selecting our sample is that we at first picked up firms which satisfied the bond issue criteria at the end of FY1984 from all the listed firms (excluding financial institutions, electricity and gas companies) in TSE, using 'JDB Corporate Finance Data Bank'. Then, we checked these firms by the point whether they were qualified with the bond issuance criteria throughout from FY1985 to FY1989. As a result, we picked up the following two group firms for the debt choice in this period.

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

LFO firm(Firms with Limited Financial Options): Firms located in area II of Figure 2 are firms which were able to issue only secured or bank-guaranteed bonds. There are 365 firms that were satisfied with the bond issue criteria throughout from FY1985 to FY1989. We call this kind as firm LFO-firm.

Notice that there are some difference in size, performance, and capital composition between FFO firms and LFO firms, which are summarized in Table 2. FFO firms are composed of largest and well performed firms in this period, while LFO firms are composed of relatively small and modestly performed firms. Debt-Asset ratio of FFO firms was already low, while that of LFO firm was still high. Comparing our sample with previous researches, FFO firms almost includes sample 2 (68 firms) in Hoshi et al.,(1993), and FFO plus LFO firms completely includes sample 1(112 firms) of Hoshi et al., (1993) and roughly overlapped

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

“unconstrained”(554 firms) of Anderson and Makhija(1999)⁷.

————Table 1.2 about here————

IV. Debt Choice in Bubble Period: Self-selection of Firms and Deterioration of Bank clients

1) Building Regression Formula

First empirical task in this paper is to test our hypothesis for debt choice in the late 1980s, a time period during which equity related bonds were vigorously utilized (see Table 1). To test HO1 and HO2 in section II, treating a period from 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. Both-sided Tobit model is selected as an estimation method, since independent variables were truncated in both zero and one.

Here, the dependent variable, D_i , is defined as following;

FFO firm $D1 = \text{unsecured bonds} / (\text{Bonds} + \text{Bank Borrowing})$

LFO firm $D2 = \text{Bonds} / (\text{Bonds} + \text{Bank Borrowing})$

Thus, $D1$ indicates the ratio of NRO debt to total debt, which is the sum of bank borrowing and bonds outstanding. As the numerator of $D2$ is bond outstanding, it shows the ratio of less-monitored debt to the RO debt. The information about collateral and bank guarantee was gotten from *Yukashoken Hokokusho* (Japanese 10k), and other accounting data are obtained from *Japan Development Bank's Corporate Finance Data Bank*, and Toyo-Keizai Shinposya's *Kabuka Soran* on stock price data. We also create the dependent variables $D1'$ and $D2'$ by estimating converted parting of issued CBs, since this period is characterized by vigorous usage of CBs.

As for explanatory variables, we select Tobin's q as the proxy of expected return⁸. The q estimated here is almost same as Hoshi et al., (1993)⁹. On the other hand,

⁷ This group is diffined as a fims that satisfy the criteria in at least five years during 1984-1989 (Anderson and Makhija 1999: 317)

⁸ For constructing Tobin's q , we follow the basic procedure developed by Hayashi and Inoue (1991), and Hoshi and Kashiyap (1990)

⁹ The accuracy of our q is inferior to the one used by Hoshi et al.,(1993), in the sense that the

Anderson and Makhija (1999) adopted growth opportunities ((value of firms + debt)/book value of total asset) from the different perspectives to test which factor is significant for debt choice, monitoring on managerial moral hazard or hold-up. In order to compare our empirical result with Anderson and Makhija (1993), we also estimate a regression with growth opportunities instead of q .

If we allow an entrenched manager to get some non-pecuniary benefit from managing her firm, she might also find another non-pecuniary benefit from not being in default in case of financial distress even if she would be missed by the agent who rescue that firm. To examine this effect on debt choice, we mainly use market value of debt-asset ratio (DA) as the proxy of default risk. Additionally, we also introduce standard deviation of ROA ($ORRS$) for past ten years as another proxy of risk, assuming that a manager may evaluate the business risk as a proxy of default risk.

In order to test HO.2, that the effect of firm's relationship with MB influences its debt choice, we introduce several dummy variables which represent firm's governance structure, and an intersection term of those dummy variables to expected returns and default risk (q , or DA). For identifying the strength of the relationship between MB and client companies, we focus on the shareholding and dispatched bank member to a firm. Using *kaisya-shikiho* (Japan Company Handbook), we at first identify 'main bank' of each firm through picking up a top bank in its transaction banks list. Then we give a dummy variable equal to one, if the MB identified by a firm was its largest shareholder among banks, and also dispatched its directors to the firm ¹⁰. However, the influence of dispatched director on firms debt choice might depend on her position in the board of directors, and we cannot decide a priori which position is critical. Then, we use two different sets of dummy variables to explore the influence of MB, namely, $MB1$ and $MB2$. $MB1$ is equal to one if dispatched manager from main bank occupied in the position of plain director or higher in the firm's board, and zero for other cases.

estimation of market value of tangible asset except land and holding securities is given up.

MB2 is equal to one if she occupied in the position of the executives director or higher.

We introduce other several dummy variables. *SUB* is equal to one, if a non-financial firm is the largest shareholder of a firm, and dispatching its director to the firm. *OWN* is equal to one when the largest shareholder is a manager of a firm, or her relatives, or her property management company.

The distribution of FFO and LFO firms in terms of its governance structure is shown in Table 3. More than 50% of FFO firms are free from either strict monitoring by MB or large shareholder (parents firms) at the end of FY1984, therefore major firms are already independent. Whereas, approximately 35% of LFO firms still had strong relationship with MB, and 40 % of them was under large shareholder, consequently only about 20% of LFO firms are relatively independent.

--- Table 3 about here ---

2) Empirical Results on the debt in the late 1980s:

a) Firms with Full Financial Options

The regression results for FFO firms, which had all financial options in the late 1980s, is summarized in Table 4. There are 25 firms out of 145 FFO firms that have no debt outstanding, or have some missing data at the end of FY1984 and FY1989. Consequently, we can get 120 sample firms of FFO. The mean of *D1* at the end of FY1984 is 48%, and 63% at the end of 1989. If we consider a part of CB converted to equity, *D1'* is 68% in 1989.

——Table 4 about here——

As is shown in Table 4, the FFO-firm's choice for debt without rescue options (NRO Debt) is significantly correlated to the debt-asset ratio. On the other hand, the relation between the issue of NRO-debt and *q*, which is the proxy of the expected return, is also significantly positive. The magnitude of the effect of these two variable are almost same; one standard deviation increase from average in debt-asset ratio decreases *D1* about 10 %, so

¹⁰ We follow the method developed by Gibson (1995) for identifying MB.

is the one standard deviation decrease of q . These results are supported if we change dependent variable to $D1'$ instead $D1$ (column 7). We also change dependent variable $D2$ instead $D1$ for comparing to our result to Hoshi et al., (1993) which did not report any significant correlation(column 1,2). Noticeably, the statistically significant positive correlation of q and $D2$ is confirmed in our estimation. One possible explanation for it is that we have been able to extract pure effect of expected return on debt choice through much strict sample selection procedure and enlarging samples comparing to Hoshi et al., (1993).

Changing our concern to the effect of governance dummies on debt choice, the first point to be noted is that among these variables as the constant term, only the coefficient of the *MB2*-dummy variable is significantly negative(column 4). This means that, a few firms which had stronger relationships with MB tended to prefer the RO-debt among FFO firms that had all financial options. Secondly, it is worth noticing from column 5 and column 7 that the interaction term between *SUB* and q is significant, and in these cases the significance level of coefficient of q or *DA* (which is coefficient of independent company) improves. The result that debt choice of a firm under parents companies is less sensitive to expected returns and default risk (although not significant in this case) suggests that subsidiary firms could expect additional liquidity from parent company when they face financial distress.

In short, consistent with our hypothesis, estimation result for FFO-firms indicates that firms mainly relied on issuing unsecured bonds if their expected returns (default risk) was high (low), whereas they still maintain bank borrowing if their expected return (default risk) were low (high). It is worth noticing the fact that a kind of possible deterioration of clients among city banks occurred in the sense that firms with high-expected return run away from their clients while firms with low-expected returns still maintain their borrowing.

b) Firms with Limited Financial Options

The regression results for LFO firms that were eligible for issuing only secured bond or WB are summarized in Table 5. There are 50 firms out of whole sample 365 LFO firms,

which have no debt outstanding or have some missing data at the end of 1984 and 1989, as a result, we can get 305 sample firms of LFO. The mean of D2 at the end of 1984 is 17%, which increased up to 38% at the end of 1989. If we consider a part of CB converted to equity, D2' is 45% in 1989.

————Table 5 about here————

As same as the FFO-firms, the LFO-firm's choice for less monitored debt (secured bonds) is negatively correlated to the debt-asset ratio. The one standard deviation increase in DA (0.133) could raise the dependence on less monitored debt by 6.7 %. When we add ORRS to regressions, the result is basically same with the case of the debt-asset ratio. It seems to be reasonable that the business risk also influenced on the debt choice among relatively low performed and high leveraged LFO firms. It is safe to say that relatively high-risk firms still continued to rely on the bank borrowing.

On the other hand, the coefficient of q in LFO-firms is insignificant (Column 1). This result is nearly same as Hoshi et al., (1993), and fully different from Anderson and Makhija (1999: Table 4, esp. column 5), which reports a significant correlation between growth opportunities and choice of public debt. Then, we test our sample using same explanatory variables as Anderson and Makhija (1999). However, any significant negative relationship between growth opportunities (five years average) and choice of bond is not confirmed. The result is also supported by the estimation introducing growth opportunities at the end of FY 1984¹¹. One possible reason for this difference might be that our sample is different from that of Anderson and Makhija (1999), which includes FFO and LFO firms.

Returning to the empirical result that there exists no significant correlation between q and less monitored debts, we could attribute its reason to the fact that LFO-firms are composed of firms with various type of corporate governance structure, as noted above in section III. This point is obvious from the following observations: first, the effects of constant dummy variables, i.e. *MB* and *Sub*, are both insignificant. Second, the interaction

¹¹ In this estimation, the sign of growth opprtunites is positive with 5 % significant level. Tobin's q on

terms are statistically significant. However, the significance of interaction term between *SUB* and *q* is not high enough when we use *MB1* dummy. The positive (negative) coefficient of interaction term, *q(DA) SUB*, could be explained by the same story mentioned in FFO firms.

What is more important is the fact that the interaction term of default risk or expected return to governance dummy (*MB*) is statistically significant in case of using either *MB1* or *MB2*. Using *MB2*, the estimated magnitude of interaction term, *qMB*, by one standard deviation increase is 12.4%, and that of *DA* is almost similarly 12.5%, both of which is quite high, compared to the 20% increase of dependence on less monitored bond in this period. This relation is quite robust when we replace *D2'* instead of *D2* considering on the converted part of CBs. The correlation of high-expected return and low default risk to the choice of less monitored bond was exacerbated by strong relationship with *MB*. All these empirical results are consistent with *HO2*, which predicts managers entrench themselves along with the increase (decrease) of expected returns (default risk).

The positive correlation between expected return and bond issuing among firms with strong *MB* ties, however, could be consistent with monitoring view suggested by Diamond (1991) and followed by Hoshi et al., (1993). Then, in order to identify whether the correlation should be attributed to managerial entrenchment or not, we divide LFO firms into two groups according to *MB* ties, and newly introduce a dummy variable, which could express market for corporate control. 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. Here, stable shareholder is defined according to the percentage of share held by financial institutions (plus non-financial institutions) minus that of trust banks¹².

The hypothesis behind this procedure is: suppose that firms have same expected return, and same strong *MB* ties, the higher firms could stabilize their shareholders, the stronger the incentive for managerial entrenchment would be. According to the estimation result in

five years average is also significantly positive.

¹² When stable shareholder is defined as financial institution plus non-financial institution, the result is almost same as Table 6.

Table 6, the intersection term of stable shareholder dummy and q is positive whether we use MB1 or MB2. 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, it is safe to say that the positive correlation between expected return and bond issuing among firms with strong MB ties reflects a managerial entrenchment.

--- Table 6 about here ---

Notice that there are a lot of firms, which firstly satisfied bond issue criteria either for unsecured or secured in the late 1980s, although they are omitted from our sample (See Fig.2). Roughly to say, a number of firms which shifted from area III to area II in Fig.2 in the late 1980s would be estimated to be about 200, and from area II to area I is 375. The debt choice of these firms is supposed to be affected by MB relationship, because first type of firms initially depended fully on bank borrowing, and second type of firms initially depends bank borrowing or bond issuance service from their main banks. Therefore, it is highly reasonable that debt choice affected by managerial entrenchment occurred in large scale in the late 1980s.

Looking at these facts from banking sector side, the effect of MB on debt choice implies a kind of deterioration of their client firms ex post. Entrenched managers chose the debt considering on expected return and default risk on the one hand, and banks endorsed it in their interest rate on client companies. Both behavior is completely rational ex ante, however, it could be inevitable ex post that firms with low expected return or high default risk were accumulated among clients of city banks, while firms with high-expected return or low default risk escaped from their client pool from 1985 to 1989.

V Debt choice in the 1990: Increasing Risk and Decreasing Entrenchment

Entering into the 1990s, Japanese economy suffered from long recession due to the collapse of bubble economy. However, debt choice pattern seems to be on the same line with the late 1980s in the sense of the dependence on bond increased. It should be noticed that

straight bond became the major financial sources, although the usage of equity related bond had drastically decreased.

For understanding the debt choice in the early 1990s, we apply our hypothesis to debt choice in the 1990s. Notice that the situation in the early 1990s was different from the late 1980s. In November 1990 only the rating criteria was adopted as the bond issue criteria. The next major change was in April 1993 when the lowest bound of the rating criteria for issuing unsecured SB was lowered. It is important because the main form of bond issuance has drastically changed from equity related bonds in the late 1980s to the straight bonds in the early 1990s (see Table 1). As the result of this relaxation, 184 firms became eligible for issuing unsecured SB. Finally, it was in January 1996 that bond issue criteria and some other covenants were finally removed, freeing Japanese firms from regulation with regard to debt choice.

Considering on this deregulation process, we treat a period from FY1992 to FY1995 as one period, and regress the debt composition at the end of FY1995 on some explanatory variables at the end of FY1992. For comparing the debt choice in the 1990s with that of late 1980s, we use both FFO and LFO firm as the sample, and then check their credit rating year by year by conservative way ¹³. There were 305 firms with a BBB rating or higher out, and there were 180 firms with no rating in March 1996. There were 25 firms that were getting credit rating only for secured bonds. Since firms getting only a rating for secured bonds are quite limited, we use 485 firms as our samples for empirical research hereafter. As number of firms getting credit rating in listed firms is 805 in the end of FY 1995, our sample coverage was roughly 40%. Notice that our sample firms have a certain degree of discontinuity in scale, performance and capital composition, because only FFO and LFO was combined (see Table 2, panel b).

As a result of deregulation on bond issuance, debt choice of firms by the end of FY 1995 has a remarkable feature that firms had to make the following two different kinds of

¹³ Conservative way of rating means the lowest rating among five rating institutions (Moody's, S&P,

decisions simultaneously. One decision is to get a 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 model using the Heckman's two-step estimation model. That is: as a first step, we estimate the determinants of firms for getting a credit rating, then as a second step we regress the debt choice on appropriate explanatory variables only selecting firms getting a credit rating. As our main concern lies on the debt choice between RO debt and NRO debt, we report only result of second step that is the same regression formula in section III. The main results are summarized in Table 7.

--- Table 7 about here ---

First point to be noted is that a firm's choice to NRO debt is positively and significantly correlated to Tobin's q . This result is also held if we include the industrial dummies, or exclude the firm size (logarithm of total asset). Same result is also confirmed when we confine the sample only to LFO-firms(column 3). This fact is worth noticing, because LFO firm's choice for less monitored debt (secured bonds) was not closely correlated to q in the late 1980s. It is safe to say that entering into the 1990s, firms' debt choice has increasingly been sensitive to expected return. According to estimation result, the effect of q on debt choice is that a one standard deviation increase in q could raise the bond issuing about 3-4 % to the average. Comparing to the fact that its 'elasticity' was roughly 10% in the late 1980's, this 3-4% 'elasticity' may seem to be low. However, the impression could be different, if we consider the fact that the D1 at the end of FY1995 increased only 4% on average from that of FY1992.

Second, the effect of default risks on the debt choice is significant and its magnitude increases in the early 1990s comparing to the late 1980s. One standard deviation increase in DA could raise the bank borrowing about 9-10 %, which is three times larger than that of q . Recalling that the 'elasticity' of q to debt choice measured by a one standard deviation is the same level as that of DA in the late 1980s. Then, this result indicates that the effect of

JBRI, JCR, NIS) is applied.

default risk on debt choice in the early 1990s becomes relatively larger than that of expected return. The same results are also held when we add industrial dummies, or restrict sample firms to LFO firms. In addition, as shown in column 4, the debt choice is certainly affected by the holding securities to total asset (*SEC*). With the stock price plunging in the 1990s, *SEC* discouraged firms to issue NRO debt.

Changing our concerns to the effect of governance variables on debt choice, it is notable that all variables show less significance to debt choice except the constant dummy of *MB*. Although the constant dummy of *MB* is insignificant on 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)¹⁴. We could say that debt choice was influenced by strong *MB* ties only for a part of LFO-firms, which was not eligible for issuing unsecured bonds in the 1980s.

However, the interaction term between the governance dummies and *q* or *DA* does not have any correlation with firms' debt choice.¹⁵ This result is also seen when we replace *MB1* with *MB2*, or when we divide all samples into FFO firms and LFO firms, the latter of which used to show significant correlation of interaction term of *MB* with *q* and *DA*. Thus, the relationship with *MB*, which strengthened the effect of *q* or *DA* on debt choice in the late 1980s, seems to be weakened its unique effect in the early 1990s. Recall that exaggerating effect of *MB* relationship on debt choice implies the deterioration of client among banks, this deterioration also ceased to be working in the early 1990s.

VII. Conclusion and Discussion

This paper empirically examined the debt choice of Japanese firms in the late 1980s and the early 1990s. Let us conclude this paper by suggesting several implications of our findings and further research agenda.

First, consistent with our hypothesis, firm's choice between debt without rescue option

¹⁴ The same result is supported, when we add the Industrial dummy

¹⁵ 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 through elaborate governance variables.

and debt with rescue option in the late 1980s is basically determined by expected return. It is worth stressing that the effect of expected return on debt choice in the early 1990s became much clear than in the late 1980s in the sense that the debt choice of FFO firms in the late 1980s was now to be sensitive to expected returns. Also consistent with our second hypothesis that debt choice is influenced by managerial entrenchment, the correlation between less monitored debt and expected return is exacerbated in close main bank ties in the late 1980s. In the phase of liberalization that made it possible for firms with strong MB to have new financial options for the first time, monitoring of bank on client firm played an unintended role to reduce borrowing through encouraging managerial entrenchment, if a firm has high expected return. This role is quite contrasting to a role suggested by Diamond (1991) that made it possible for firms to raise debt by reducing agency cost.

Second, our empirical result requires to reexamine moral hazard interpretation of corporate finance for the late 1980s. According to our empirical results, debt choice of firms seems to be rational at least from the ex ante view. However, our fact finding does not deny the accumulation of bad debt among banking sectors in the early 1990s. Rather what we do suggest here is supplemental (possibly alternative) story for causes of bad debt problems in Japan. When the deregulation would be implemented step by step given institutional characteristics of Japanese firms, it is quite natural that a top manager of a firm chooses their debt, considering her expected returns of their investment project, and that the incentive of managerial entrenchment exaggerated such self-selection. The self-selection, however, implies the systematic deterioration of clients among banks in the sense that firm with high expected returns increasingly escape from client pools of city banks, while only firms with low expected returns remained there. Remember that this systematic deterioration could not be occurred in the situation that firms did not have any debt options without borrowing.

Third, the effect of default risk on firms' debt choice in the early 1990s became relatively forceful to the effect of expected return. This result is the reflection of the drastic changes of macro economic situation such as decreasing profitability and increasing uncertainty after the collapse of bubble economy in the early 1990s.

Fourth, MB relationship in the 1990s no longer exaggerates the effect of expected returns on debt choice as it did in the late 1980s. This fact implies that the incentive of managerial entrenchment for debt choice in the early 1990s has been decreasing comparing to the late 1980s. As the effect of MB relationship on debt, in the same token, means the deterioration of client companies among city banks, our paper suggest that this serious situation might cease to be working in the early 1990s.

Last, putting these fact findings on much broader perspectives in the history of MB system in Japan, the effect of managerial entrenchment may have been strongly active only during the late 1980s, as deregulation gradually affected debt choice, and most firms maintained MB relationship. Entering into the 1990s, the mutual commitment of firms and banks has been declined partly because of decreasing dependence of bank borrowing, and also because the implicit contract between banks and firms in the case of financial distress became less clear.¹⁶ This situation, in the same token, implies that banks monitored the client firms less than before, which in turn brought about declining incentive for managerial entrenchment. Concerning large firms in the 1980s, MB system not only lost its positive role that was seen in terms of corporate finance and governance by that time, but also played an unintentional role in a sense of deteriorating client companies. Then, it played less significant role in both sense in the early 1990s.

Just before closing this paper, we address some crucial problems not to be treated here. First, although we have assumed that governance structure of firms is given, it is more realistic to consider that the governance structure is determined endogenously with firm's financial decision. According to Table 3, the changes of governance structure defined by ownership and dispatching directors seems to be large between the end of FY1984 and the end of FY1989.

¹⁶ Although there are thus far no systematic research for this point, several anecdotal stories suggest that MB often began to give up implementing rescue operations. If the decision of MB for rescue operation could be determined by such factors as 1) future profitability of a firm after rescue operation, 2) negative reputation effect when a bank avoid rescue operation, and 3) the ability of a bank for rescuing, all three factors has been changing in the early 1990s.

Second, our estimation of debt choice in the early 1990s may include a kind of sample selection bias because of combining FFO and LFO firms together which are different in size performance, and capital composition. It is inevitable expense for our purpose to compare the result of the late 1980s to that of the late 1990s. However our hypothesis should be tested by enlarging samples, and also extended to the late 1990s, when bond issue criteria has completely removed and all Japanese firms freely choose their financial source.¹⁷

¹⁷ It is often pointed out that rating of bonds, which was used only as a condition for bond issuing, has been sensitive to risk difference among firms since 1996. While MB has been playing less significant role for corporate finance and governance, the role of shareholder including institutional shareholder and foreigner seem to have raised its weight on the governance structure. Considering on new situation, extending our analysis up to the late 1990s are the next urgent research agenda.

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Figure 1 : Classification of Debt

Hoshi., et.al. (1993)

Our Paper

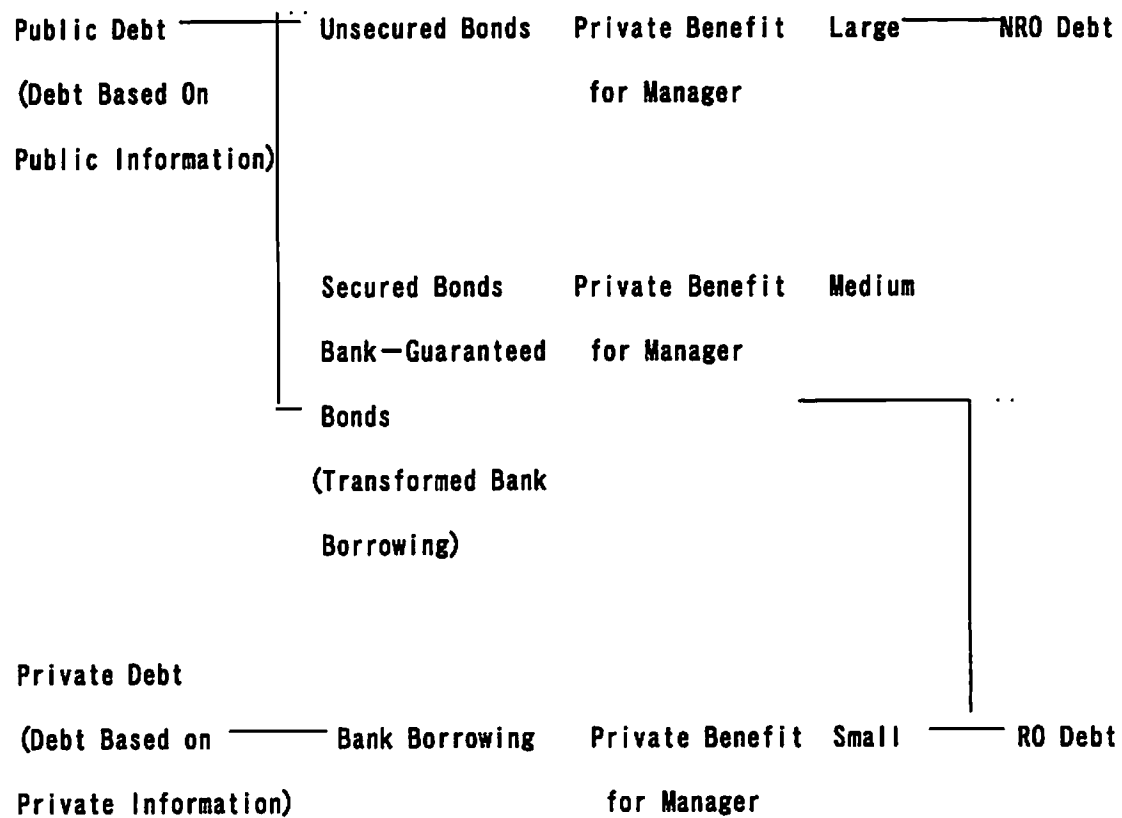


Figure 2: Bond Issuing Criteria and the Number of Firms Listed in Stock Market during the 1980s.

I : Firms eligible for issuing unsecured bonds II : Firms eligible for issuing secured bonds III : Firms which must use bank borrowing.

The number of all listed firms on TSE excluding the financial sector is in parenthesis. Issuing criteria are taken from two sources: Shin Ginko Jitsumu Koza:8 Shoken(New General Lectures on Banking Business :Vol. 8 Securities) published by Industrial Bank of Japan and Kin'yu Zaisei Jijo Kenkyu-kai,Tokyo: Shoken Tokei Nenpo(Annual Report of Statistics about Securities) published by Tokyo-Stock-Exchange.

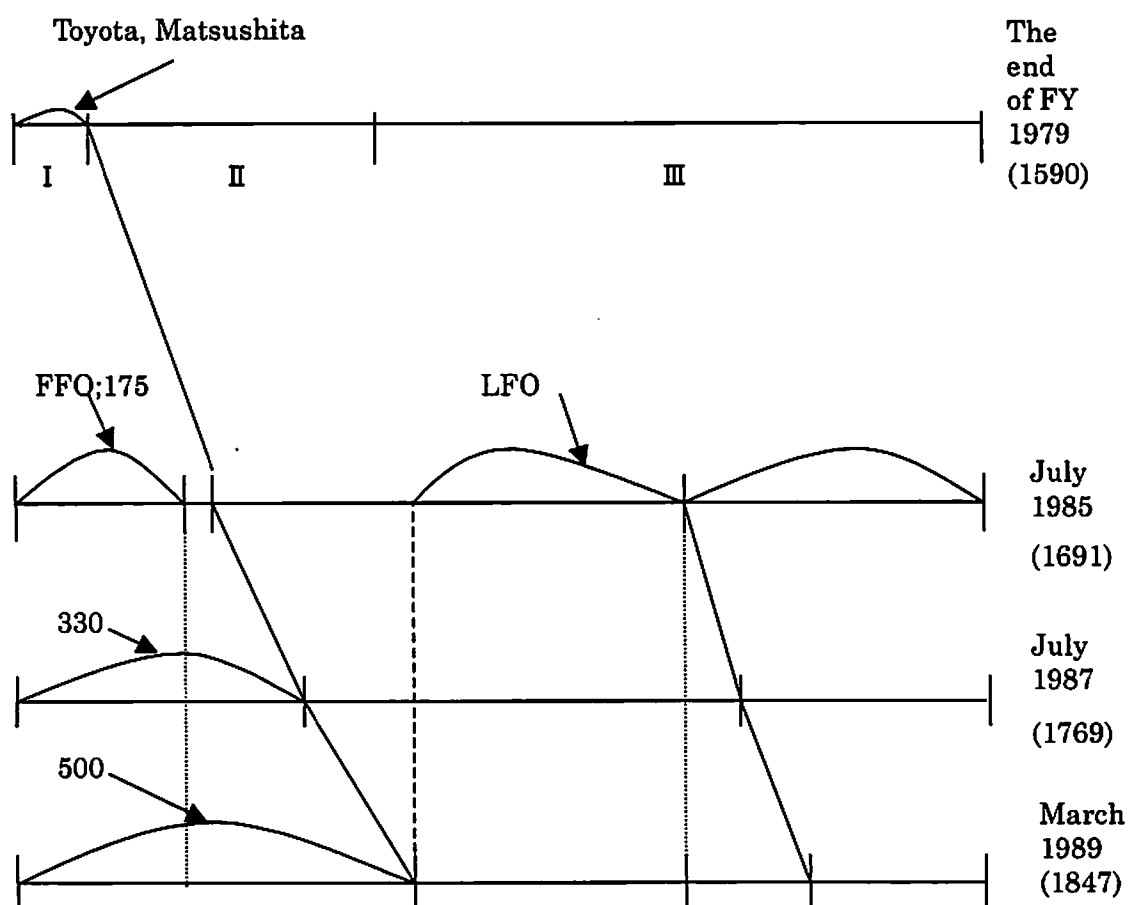


Table 1 Finance of Large Firms

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

(a) Large Firms (640 firms)				(1000 million yen)		
	Internal and 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%
1996	NA	118,184	79.8%	20.2%	61.8%	38.2%

Table 2 Descriptive Statistics for Debt Choice

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

**Panel1-a : Firms with Full Financial Options(FFO Firms) in the late N=120
1980s**

	Mean	Std Dev
D ₁ Unsecured Bond/(Bond+Bank Borrowing) at the end of 1989	0.626	0.356
D ₂ Bond/(Bond+Bank Borrowing) at the end of 1989	0.703	0.323
Debt/Total Asset(Market Value)	0.122	0.091
D ₁ at the end of 1984	0.482	0.394
D ₂ at the end of 1984	0.562	0.374
Financial Asset(Market Value)/Total Asset(Market Value)	0.170	0.088
Land Holding(Market Value)/Total Asset(Market Value)	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

Panel2-b Firms with Limited Financial Option N=305

	Mean	Std Dev
Bond/(Bond+Bank Borrowing) at the end of 1989	0.378	0.332
Debt/Total Asset(Market Value)	0.228	0.133
D ₂ at the end of 1984	0.172	0.268
Financial Asset(Market Value)/Total Asset(Market Value)	0.148	0.081
Land Holding(Market Value)/Total Asset(Market Value)	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 2 Firms getting a credit rating for unsecured bond within FFO and LFO Firm

	Total Mean	N=294 Std Dev	FFO Mean	N=107 Std Dev	LFO Mean	N=187 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(Market Value) 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

Governance structure of our sample firms. Our Method to identify a main bank relationship 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), *Jyogyo kaisyas Souran* (Yamaichi Securities), and *Kigyos Keiretsu Soran* (Toyo-Keizai-Shinposha). The number of firms in 1992 includes only the firm with rating.

	FFO			LFO		
the end of FY	1984	1989	1992	1984	1989	1992
N	145	146	143	365	365	273
MB is the largest shareholder among banks and dispatching a director	29(27)	29	27	123(96)	96	95
MB is the largest shareholder among banks and dispatching a executives director	18	24	18	87	70	58
Non-financial firm is the largest shareholder and dispatching a director	31(25)	32	22	139(123)	129	67
Manager or his (her) relatives is the largest shareholder.	20	13	7	32	20	9

Table 4 Finance and Governance of FFO Firms: 1985—89

The dependent variable, D1, is unsecured bond/(bond + bank borrowing) at the end of 1989. The estimation method is both-sided Tobit. 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, MB1, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a plain director to the firm. The main bank dummy, MB2, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched an executive director to the firm. The subsidiary firm dummy equals to one if a non-financial firm is the largest shareholder and dispatching a director to a firm. The owner-manager firm dummy equals to one if the largest shareholder of this firm is a top manager or her relatives or its property management company.

Dependent Variable Column No.	D1 (1)	D2 (2)	D1 (3)	(4)	(5)	(6)	D1' (7)
Definition of MB	--	--	MB1	MB2	MB1	MB1	MB2
Number of Observations	120	122	121	121	121	121	118
SIGMA	0.39 (12.11)	0.31 (12.84)	0.38 (12.15)	0.37 (12.16)	0.36 (12.15)	0.37 (12.16)	0.34 (11.94)
Constant	0.34* (2.04)	0.33** (2.38)	-0.64 (1.16)	-0.60 (1.11)	-0.78 (1.46)	-0.46 (0.85)	-0.83 (1.62)
D ₁ at the end of 1984	0.48*** (4.41)	0.54*** (6.15)	0.49*** (4.66)	0.48*** (4.61)	0.50*** (4.66)	0.49*** (4.61)	0.49*** (4.78)
Log of Asset	--	--	0.20** (2.05)	0.19** (2.05)	0.18** (1.97)	0.18* (1.90)	0.25*** (2.71)
Debt/Total Asset (market value)	-1.08** (2.52)	-1.048*** (3.28)	-1.59*** (3.54)	-1.62*** (3.66)	-1.60*** (3.61)	-2.24*** (4.07)	-1.44*** (3.33)
Tobin's q	0.12** (2.44)	0.09** (2.21)	0.17*** (3.18)	0.17*** (3.25)	0.32*** (3.74)	0.17*** (3.19)	0.21*** (3.36)
Main Bank Dummy	--	--	-0.56 (0.62)	-0.21** (2.03)	0.19 (0.96)	-0.21 (1.35)	-0.33 (1.45)
Main Bank Dummy times Tobin's q	--	--	--	--	-0.15 (1.38)	--	0.11 (0.90)
Debt/Asset times Main Bank Dummy	--	--	--	--	--	1.15 (1.08)	--
Subsidiary Dummy	--	--	0.00 (0.23)	0.00 (0.01)	0.48** (2.40)	-0.16 (1.00)	0.44** (2.31)
Subsidiary Dummy times Tobin's q	--	--	--	--	-0.30*** (2.81)	--	-0.24** (2.45)
Susidiary Dummy times Debt/Asset	--	--	--	--	--	1.06 (1.03)	--
Owner-Manager Dummy	--	--	-0.11 (0.85)	-0.08 (0.61)	0.08 (0.24)	-0.28 (1.14)	-0.19 (0.61)
Owner-Manager Dummy times Tobin's q	--	--	--	--	-0.13 (0.62)	--	0.03 (0.17)
Owner-Manager Dummy times Debt/Asset	--	--	--	--	--	1.31 (0.83)	--

*;10%significant, **;5%significant, ***;1%significant.

Table 5 The Impact of Governance Structure on Debt choice in LFO-Firms (1985-89)

The dependent variable, D2, is secured bond over bond plus bank borrowing at the end of 1989. The estimation method is both-sided Tobit. The absolute values of t-statistics appear below each estimation in parentheses. The standard deviation of operating income/total asset is calculated for 1975 to 1984. Accounting data are obtained from JDB Corporate Finance Database and *Yukashoken Hokokusho* (Japanese 10k) Stock data are obtained from *Kabuka-soran* and JDB Corporate Finance Database. The main bank dummy, MB1, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a plain director to the firm. The main bank dummy, MB2, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched an executive director to the firm. The subsidiary dummy equals to one if operating firm is the largest shareholder and dispatching a director to a firm. The owner-manager dummy equals to one if the largest shareholder is a manager or a relative to the manager or its property

Dependent Variable the end of 1989	D2			D2	D2'
Definition of MB Column No.	MB1 (1)	MB1 (2)	MB2 (3)	MB1 (4)	MB1 (5)
Number of Observation	305	305	305	305	305
SIGMA	0.38 19.68	0.37 19.69	0.37 19.69	0.37 19.70	0.37 19.72
Constant	0.45*** (5.36)	0.54*** (5.39)	0.58*** (5.54)	0.38*** (4.00)	0.67*** (6.68)
D ₂ at the end of 1984	0.42*** (4.48)	0.45*** (4.81)	0.46*** (4.93)	0.47*** (4.93)	0.48*** (5.10)
DA: Debt/Total Asset(market value)	-0.51*** (2.83)	-0.43** (2.40)	-0.43** (2.38)	-0.10 (0.34)	-0.58*** (3.21)
ORRS: the Standard Deviation of operating income/sales	-3.83*** (2.67)	-4.09*** (2.87)	-4.25*** (2.96)	-3.70*** (2.60)	-4.52*** (3.20)
Tobin's q	0.00 (0.10)	-0.07 (1.26)	-0.11* (1.69)	0.01 (0.21)	-0.08 (1.38)
MB: Main Bank Dummy	-0.16 (0.33)	-0.29** (2.52)	-0.41*** (2.80)	0.21** (2.21)	-0.26** (2.29)
Main Bank Dummy times Tobin's q	--	0.20*** (2.61)	0.30*** (2.94)	--	0.19** (2.41)
Debt/Asset times Main Bank Dummy	--	--	--	-0.95*** (2.70)	--
Subsidiary Dummy	0.56 (1.13)	-0.04 (0.33)	-0.13 (1.09)	0.15 1.52	-0.05 (0.45)
Subsidiary Dummy times Tobin's q	--	0.07 (0.88)	0.14 (1.72)	--	0.06 (0.80)
Subsidiary Dummy times Debt/Asset	--	--	--	-0.45 (1.19)	--
Owner-Manager Dummy	0.13 (1.64)	0.26 (1.42)	0.13 (0.68)	-0.04 (0.27)	0.20 (1.08)
Owner-Manager Dummy times Tobin's q	--	-0.10 (0.83)	0.00 (0.02)	--	-0.09 (0.72)
Owner-Manager Dummy times Debt/Asset	--	--	--	0.82 (1.21)	--

*;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 1989. The estimation method is both-sided Tobit. The Absolute values of t-statistics appear below each estimation 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, MB1, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a plain director to the firm. The main bank dummy, MB2, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched an executive 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 (1)	MB1=0 (2)	MB2=1 (3)	MB2=0 (4)
Numberb of Observations	184	125	168	141
SIGMA	0.37 (12.04)	0.40 (15.92)	0.37 (19.69)	0.41 (15.02)
Constant	-0.26 (0.47)	-0.44 (0.81)	-0.41 (0.78)	-0.26 (0.45)
D ₁ at the end of 1984	0.66*** (3.14)	0.26*** (2.47)	0.49** (2.47)	0.30*** (2.71)
Debt/Total Asset(market value)	-0.57*** (1.76)	-0.97*** (3.67)	-0.81*** (2.67)	-0.87*** (3.05)
Tobin's q	0.04 (0.43)	0.05 (0.52)	-0.02 (0.21)	0.09 (0.96)
Shareholders Dummy(STA) times Tobin's q	0.11* (1.80)	-0.55 (0.95)	0.10* (1.85)	-0.05 (1.01)
Size	0.04 (0.74)	0.09 (1.71)	0.07 (1.38)	0.06 (1.12)

*:10%significant, **: 5%significant, ***:1%significant

Table 7 The Effect of Governance Structure on Debt Choice : from 1992 to 1996

The dependent variable is unsecured bond over bond plus bank borrowing at the end of FY1995, D₉₅. The regressions are both-sided Tobit. All estimations include log of total asset at the end of 1992. 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, MB1, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a plain director to the firm. The main bank dummy, MB2, equals one if a main bank identified by a firm itself was its largest shareholder among banks and dispatched a executive director to the firm. The subsidiary dummy equals to one if operating firm is the largest shareholder and dispatching a director to a firm. The owner-manager dummy equals to one if the largest shareholder is a manager or a relative to the manager or its property management company.

Dependent Variable	D ₉₅					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of Observation	285	281	179	285	281	281
Constant	0.37** (2.40)	0.24 (1.44)	0.57** (2.25)	0.44*** (2.76)	0.21 (1.27)	0.21 (1.36)
D ₉₂ : D at the end of 1992	0.58*** (11.03)	0.62*** (9.76)	0.55*** (6.56)	0.57*** (10.80)	0.63*** (10.46)	0.63*** (10.24)
DA ₉₂ : Debt/Total Asset at the end of 1992	-0.86*** (-6.21)	-0.74*** (-4.98)	-0.75*** (-3.83)	-0.90*** (-6.38)	-0.77*** (-5.05)	-0.76*** (-3.99)
Std.deviation of operating income/total asset	1.04 (1.04)	0.34 (0.43)	1.21 (1.08)	1.05 (1.09)	0.68 (0.78)	0.65 (0.74)
Tobin's q	0.11** (2.50)	0.12** (2.46)	0.12* (1.90)	0.10** (2.14)	0.11* (1.71)	0.12*** (2.64)
Financial Asset Holdings / Total Asset at the end of 1992	—	—	—	-0.25** (-1.97)	—	—
Main Bank Dummy	-0.03 (-1.15)	-0.02 (-0.93)	-0.06** (-1.96)	-0.02 (-0.93)	-0.11 (-1.02)	-0.01 (-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 (0.34)	0.02 (0.69)	-0.02 (-0.48)	0.00 (-0.05)	0.04 (0.44)	0.01 (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 (-0.74)	-0.03 (-0.59)	-0.01 (-0.1)	-0.05 (-0.91)	0.05 (0.31)	-0.05 (-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	no
Adj. R ²	0.65	0.66	0.56	0.65	0.66	0.65

*:10%significant, **:5%significant, ***:1%significant