Debt Forgiveness during the "Lost Decade": Impacts of the Industrial Revitalization Corporation of Japan*

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Abstract

For the resolution of debt-overhang problem, it is needed to coordinate the allocation of burdens of debt forgiveness among many lenders. The Industrial Revitalization Corporation of Japan (IRCJ) succeeded to introduce new rule on burdens of debt forgiveness proportional to share of lending. The emergence of the IRCJ improved the performance of Japanese banking sector by greatly mitigating disproportional excess burdens on a main-bank. Results in this paper strongly suggest that malfunctioning of the traditional main-bank-led corporate restructuring was a main contributor to prolonged non-performing loan problem in Japan.

Keywords: Debt forgiveness, Debt overhang, Main bank, Event study
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1. Introduction

Japanese economy experienced a prolonged slump after the collapse of the asset price bubble of the late 1980s. Although there were a large number of factors that had caused "the lost-decade", it is widely recognized that problem of non-performing loans was one of major sources for the prolonged slump. However, such a decade-long problem had been suddenly resolved after a turning point around 2003.

Figure 1 depicts the outstanding of risk management loans for major banks and regional banks, respectively. Non-performing loan problem for the major banks peaked at March 2002, but amount of risk management loans and its share to total lending steeply declined up until March 2005. What has happened in the Japanese banking sector during the period from the late 2002 to 2003?

Impetus comes from the announcement of "The Anti-Deflation Package" and "The Financial Revitalization Program" in October 2002. "The Financial Revitalization Program" declared that bad loan outstanding share to the total lending for the major banks is forced to declines from 8.4% at that time to around 4.0% for two and half years. Actually, in May 2003, Risona Bank, one of the most ailing major banks, was nationalized, and in November, Ashikaga Bank, a large regional bank, was liquidated under the Financial Reconstruction Law[2].

The Industrial Corporate Revitalization of Japan (the IRCJ) was established to respond "The Financial Revitalization Program" to resolve the debt-overhang problem in the corporate sector in Japan. From the beginning of its operation in May 2003, it supported the restructuring of 41 debt-ridden companies including the symbolic bad large companies like Daiei and Misawa Homes, and was resolved in March 2007, one year before its planned termination.

Figure 2 shows that cumulative abnormal return of Japanese banking sector, measured by the stock price of Topix banks ETF, from July 2002 to March 2005. Apparently, the stock price of Japanese banking sector greatly recovered from 2003 to 2004, which was almost same period that several policies including the establishment of the IRCJ were implemented under "The Financial Revitalization Program".

In this paper, I focus on the role of the IRCJ and examine its impacts on the performance of Japanese banking sector. I will compare the IRCJ-support cases with the ordinary cases without the support by the case study and event study using the stock price of main-banks.

[2] Watanabe (2007) provides event study on the impacts of resolution of Risona and Ashikaga bank on the banking sector as a whole.

2. A Role of the Industrial Corporate Revitalization of Japan

Description of the IRCJ

In this paper, I would consider the impact of Industrial Corporate Revitalization of Japan (IRCJ) on the Japanese financial system. The movement to establish the IRCJ began with the promulgation of “The Anti-Deflation Package” and “The Financial Revitalization Program” in October 2002. The IRCJ was expected to resolve excess obligation problem in the corporate sector behind the non-performing problem in the banking sector in response to “The Financial Revitalization Program” (so-called Takenaka plan) that was considered as a hard-landing policy. After that, the government introduced a bill on the Law of Industrial Corporate Revitalization of Japan, which was enforced in April 2003. The IRCJ was established as a joint-stock company with only two shareholders including Deposit Insurance Corporation of Japan (DIC, 98.5%) and Nochu bank (1.5%). City and regional banks also funded the IRCJ by indirect equity participation through the DIC. The IRCJ began its operation in May and announced first 3 companies with support from it on August 28.

The brief description of the process that the IRCJ announce the support to a company is as follows. First of all, the company or its main-bank informally asks the IRCJ’s support and due diligence (DD) prior to formal decision on the support. Second, the IRCJ briefly examines the possibility of the support and then steps into full-scale DD to make the corporate rehabilitation plan. After negotiation with various stakeholders, the company formally ask the assistance from the IRCJ when the corporate revitalization plan is completed. Immediately after the Industrial Revitalization Committee decided the formal support on the company, the decision would be formally announced and the corporate revitalization plan released. The corporate revitalization plan usually includes total amounts of financial assistance (debt forgiveness, debt-equity swaps and equity participation) and its share of burdens among lenders. Together with the formal announcement of its support, the IRCJ announces to cease collection of money by lenders, and the IRCJ itself begins to coordinate the negotiations among lenders. After all lenders accept the share of burdens of debt forgiveness, the IRCJ purchases the debts held by non-main lenders. The IRCJ is supposed to sell all of claims and shares, which is referred to “exit”, within three years from purchasing debts from non-main lenders.

After the IRCJ supported 3 companies including Kyushu Industrial Transportation, Dia Kensetsu and Usui Department Store, for the first time, and totally 41 firms had been supported until February 2005. In March 2006, the IRCJ sold all stakes in Skynet Asia Airways and completed supports for all 41 companies.

Total debt outstanding for the 41 supported companies amounts to 3.3 trillion yen (almost

10% of outstanding of NPLs in the Japanese banking sector of March 2002). Total amount of financial assistance (including equity participation and new loans) reached at 1.7 trillion yen while amount of debt purchased by the IRCJ was 1.0 trillion yen in total.

In the following analysis, I focus on major 9 cases, which includes Kyushu Industrial Transportation, Dia Kensetsu, Mitsui Mining, Kimmon Manufacturing, Kanebo, Taiho Industries, Daikyo, The Daiei, and Misawa Homes Holdings. Total debt outstanding for these 9 companies amounts to 87% of all 41 cases, 88% for all debt purchase, and 84% for all financial assistance. As reported in Table 2, all of main-banks of the major 9 companies are mega banks including Mizuho and Mizuho Corporate Bank, SMBC, UFJ Bank, and Resona Bank.

Traditional main-bank-led corporate restructuring

To consider the role of the IRCJ, first I explain why the debt forgiveness is needed to resolve the debt-overhang problem. X is the net present value of cash flow from a project and the outstanding of existing debts for a company is D, and liquidation value of the project is L. If I think of the situation with $D > X > L$, this inequality means that the company expects positive profits from continuation of the project but X is not large enough to repay all of existing debts. In this situation, the project is socially beneficial but someone need to incur the cost of $D-X$ to continues the project. In the joint-stock company, the first stakeholders to take this cost are existing shareholders. However, if equity is below the $D-X$ under the limited liability of shareholders, the company would go bankrupt without acceptance of debt forgiveness from existing lenders. However, continuation of the project with debt forgiveness ordinarily does not become the Nash equilibrium of a non-corporative game (Gertner and Schrfstein (1991)). This is the situation called as “a debt-overhang problem”.

The most important thing is how burdens of debt forgiveness are shared among multiple lenders. The simplest solution of this problem would be a proportional allocation of burdens (*pro rata*) on lenders according to their share in the total borrowing of the firm. However, as Fukuda and Koibuchi (2006a) points out, actual burdens of debt forgiveness diverge from the proportional allocation in the case that each lender incurs disproportional cost when the company went bankrupt (or project was liquidated). And, as I describe in the following, it is natural to suppose that there is large difference of the cost between large and small lender in the Japanese financial system.

First, in the discussion on traditional Japanese bank-firm relationship, a main-bank enduring the long-term relationship with client firms has strong incentive to lead the negotiation among lenders and mitigate the cost of financial distress for protecting his reputation as a “sound main-bank” (Hoshi, Kashyap and Scharfstein (1990) and Sheard(1994)). Therefore, the main-bank suffers from disproportional loss of reputation that is irrelevant to small lenders.

Second, under the situation that the prompt corrective action exists together with the regulatory capital requirement and capitals of banks are already impaired during the late 1990s and early 2000s, the additional cost from the bankruptcy of large client firms might have a crucial influence on the continuation of its main-bank (Sakuragawa (2003)). Because the main-bank usually has larger exposure to a client with close relationship, the main-bank suffered from disproportionally large negative shock to impair its capital comparing with smaller lenders.

Fukuda and Koibuchi (2006a) try to seek the burdens of lenders as a solution of the Sharpley value using the framework of a corporative game. If I suppose that only the main-bank has disproportionally large cost of *Z* when the company is liquidated, the main-bank burden of debt forgiveness derived from the Sharpley value is extremely large. In contrast, small lenders do not bear the enough burdens proportional to their share of lending. (See Fukuda and Koibuchi for detail of the model.) It is inevitable for the main-bank to incur the cost of *Z* when its client was liquidated. If every small lender precisely understands this situation, bargaining power of the main-bank is extremely weak in the negotiation on allocation of burden of debt forgiveness.

In the traditional Japanese main-bank system, the main-bank with larger *Z*, which is accompanied with close bank-firm relationship, has strong incentive to bear the disproportionally large burdens of debt forgiveness, and therefore swiftly solve the debt-overhang problem by leading the negotiation among lenders. However, under the situation that bank capitals are heavily impaired and so many debt-ridden companies are prevailing in the Japanese economy, effectiveness of the main-bank-led debt forgiveness is considered to be eroded substantially.

Delegation to the IRCJ

The most important role of the IRCJ for the main-bank is that the IRCJ takes over the role of negotiator to coordinate the allocation of burdens of debt forgiveness from the main-bank. This is significant difference comparing with the cases under the “Guideline for Private Liquidation”. In the Guideline, the main-bank has to pursue the role to lead the coordination among lenders. According to my discussion using the corporative game, the main-bank with large inherent cost of *Z* has to bear the extremely large burdens because its bargaining power is extremely low.

However, if the IRCJ, which is free from the main-bank’s cost of Z, leads the coordination among lenders, the IRCJ has a power to force new rule of proportional burdens of debt forgiveness to small lenders according to share of lending. So I argue that the support from the IRCJ greatly mitigates the excess burdens of the main-bank to resolve the debt-overhang problem. In the following section, I will compare the IRCJ-support cases with the ordinary cases without the support by the case study and event study using the stock price of main-banks.

3. Impacts on burdens of main banks

Excess burdens on main banks

In the Japanese economy during the late 1990s and the early 2000s, many large companies underwent debt forgiveness to resolve their debt-overhang problem. In this section, first I consider major cases of debt forgiveness, called as “the ordinary cases”, that were announced by the large companies from 1998 to 2005. These are 39 cases related to 35 firms that I could identify the actual share of their main-banks’ burdens of debt forgiveness by financial statements, disclosure information, and news reports.

Financial assistance from a bank to its client firm mainly includes three types; waiver of an obligation, debt-equity swaps, and acceptance of preferred shares. First, in the waiver of an obligation (debt forgiveness for lenders), creditors forgive some part of claims, and the debtor’s obligations are completely waived. Profits from the waiver are generally included in the income statement of the firm in the fiscal year end immediately after the debtor and its lenders agree on debt forgiveness. Second, debt-equity swaps (DES) are financial instruments to issue shares to the bank on an exchange with some part of claims held by the bank. Therefore, the debt-equity swaps are accompanied by direct reduction of outstanding of firm’s debt although there is no waiver profit in the income statement. Third, in the acceptance of preferred shares by the bank, capital will increase but no direct reduction of outstanding of firm’s debts. I include only debt forgiveness and debt-equity swaps to calculate the total amount of debt forgiveness for each case because these two instruments are accompanied by direct reduction of outstanding of firm’s debt.

While I identify a main-bank as a largest lender for the company, “Main-bank share of burdens” is defined as the main-bank’s burdens of debt forgiveness divided by the total amount of debt forgiveness and “Main-bank share of borrowing” is calculated as the borrowing from the main-bank divided by the total borrowing prior to debt forgiveness announcement. In the case of the proportional allocation of debt forgiveness, “Main-bank share of burdens” is equal to “Main-bank share of borrowing”. If “Main-bank share of burdens” exceeds “Main-bank share of borrowing”, the excess burdens of debt forgiveness on the main-bank is positive.

Figure 3 depicts that the relationship between “Main-bank share of burdens” and “Main-bank share of borrowing” for the ordinary cases. Surprisingly, “Main-bank share of burdens” exceeds “Main-bank share of borrowing” for all cases. This means that the main-bank disproportionally bears most of burdens of debt forgiveness while small lenders bear little burdens during the lost decade in Japan.

Figure 4 depicts that same relationship for the 9 IRCJ-support cases. As it is easily recognized, all cases are scattered around 45 degree line, which means that proportional allocation of burdens of debt forgiveness is applied to the lenders under the support from the IRCJ. So the main-bank only bears the burdens proportional to its share of borrowing in the IRCJ-support cases.

I now consider regressing “Main-bank share of burdens” on “Main-bank share of borrowing” with a constant term. Table 1 reports the result using alternative samples. In the estimation using all sample for the ordinary cases, reported in the first row, the estimated coefficient of “Main-bank share of borrowing” is 0.53 and the estimated constant term is 0.50, and both are statistically significant at 1% level. Therefore, we can interpret the average excess burden on the main-bank, which is not explained by the “Main-bank share of borrowing”, amounts to about 50% for the ordinary cases.

Second row of Table 1 reports the regression result using the sample of 5 cases (Iwataya Department Store, Toyo Shutter, Nippon Yakin Kogyo, Seibu Department Store and Sata Construction) whose debt forgiveness was conducted following the “Guide Line for Private Liquidation”. In this case, the estimated constant term is 0.42 and statistically significant at 1% level. This result shows that the “Guide Line for Private Liquidation”, which was introduced by the major players in the financial sector September 2001, failed to mitigate the large excess burdens of debt forgiveness on the main-bank.

In contrast, the result of estimation using the sample of IRCJ-support cases shows that the estimated constant term takes very small value, 0.03, that is not different from zero at any significance level. This means that excess burden of main-bank suddenly disappeared in the cases with support from the IRCJ.

In the traditional main-bank relationship in Japan, the main-bank was supposed to lead the corporate restructuring by bearing disproportional burdens comparing to its share of borrowing. The results from Figure 1, Figure 2 and Table 1 suggest that such a special role of the main-bank at the time of corporate distress had been observed up until the mid-2000s, but such a role was dramatically changed by the intervention of the IRCJ.

Burdens on the IRCJ

Excess burden on the main-bank disappears in the IRCJ-support cases while large excess burdens are observed for the ordinary cases. Who bears the burdens of debt forgiveness in the IRCJ-support cases? One possibility is that the IRCJ subsidies the company by fixing the price of debts for non-main lenders extremely high.

To assess this possibility, Table 2 reports burdens of the IRCJ and non-main lenders calculated from data published by the IRCJ. According to these data, the purchasing prices of

debts from non-main lenders, denoted by (B), are from 30% to 70% against their book value. Substantial burdens of non-main lenders exceed the total amount of financial assistance (sum of debt forgiveness and debt-equity swap) in 6 cases excluding Kanebo, Taiho Industries, and The Daiei. This means that small lenders bear the all of burdens of debt forgiveness and the IRCJ bears nothing at all. And, in other 3 cases, substantial burdens of non-main lenders exceed at least the total amount of debt forgiveness, the IRCJ's burden depends on the ex post profit from sales of shares that the IRCJ acquired through debt-equity swaps.

Table 3 reports the IRCJ's profit from the sales of shares in the case for the equity participation by the IRCJ. Surprisingly, the IRCJ earned the substantial amount of profits in all cases while its rate of returns varies from 11% for the sales of Kanebo Cosmetics to 356% for those of Kyushu Industry Transportation.

According to these data, the IRCJ did not suffered from any losses through purchasing and selling debts held by non-main lenders in all cases.

Existing shareholders also shared the burdens to resolve the debt-overhang problem. The corporate revitalization plan published by the company includes the section on the "Shareholder's responsibility". Table 4 shows that the plans were accompanied with the substantial degree of equity reduction exceeding 90% in all cases. Together with substantial amount of capital increase, reduction of equity is thought to dilute the value attributable to incumbent shareholders.

Overall, the results in this section strongly suggest that non-main lenders bear the proportional burdens of debt forgiveness through the appropriate purchasing price by the IRCJ. The IRCJ successfully sold the supported firms at adequately high value and did not suffer from any ex post losses through supporting the debt-ridden companies.

4. Hypothesis and Methodology

In the traditional Japanese financial system, main-banks were always leading the negotiation among lenders to resolve the debt-overhang problem for their client firms by disproportionally bearing larger share of burdens of debt forgiveness comparing to small lenders. As I discussed in the previous section, extremely large excess burdens on the main-bank were commonly observed even for the ordinary cases of major Japanese listed companies until the mid-2000s. Moreover, bank capitals for most of major Japanese banks were heavily impaired by huge amount of disposal of non-performing loans until the late 1990s. Therefore, given the excess burdens on the main-bank in the resolution of debt-overhang problem, market participants may perceive a request of debt forgiveness by a debt-ridden client as negative news on the valuation

of its main-bank. In this case, we would observe significant negative impacts on equity price of the main-bank when the client announced the request of debt-forgiveness for its lenders. However, it is quite natural that market participants perceive the deterioration of financial condition of the debt-ridden company and expect the coming request of debt forgiveness prior to the formal announcement by the company. To the extent that investors expected the possibility of debt forgiveness ex ante, negative impacts on the valuation of the main-bank might be less significant when the request was formally announced.

In contrast, if the IRCJ announced that the company would take the debt forgiveness under its support, the IRCJ would apply the proportional allocation of burdens of debt forgiveness to all lenders. This means that excess burdens of main-banks would be substantially mitigated. If market participants precisely predict the consequences under the IRCJ scheme, they might perceive the announcement of debt forgiveness with support from the IRCJ as positive news on valuation of the main-bank. In this case, we would observe significant positive impacts on equity price of the main-bank when the IRCJ announced the support to its client firms.

In the following section, I will test this hypothesis by examining how the abnormal returns of main-banks responded to the events that their troubled clients requested the debt forgiveness.

Identifying the event day

To examine the hypothesis, I construct the abnormal returns of the main-banks whose client firms requested debt forgiveness for lenders over two kinds of event windows.

A first event window is around an event day when a news report on possibility of request of debt forgiveness (or financial assistances including debt-equity swap) was released to the market participants for the first time. In the IRCJ-support cases, the company (and/or its main-bank) has to informally ask whether the company is eligible to take the support from the IRCJ, and has to take two-step due-diligence (DD) prior to the formal decision by the Industrial Revitalization Committee. Though the IRCJ have a strict rule on the informal offer by the company to be confidential, news papers actually reported the evidence on “ex ante informal offer” of the companies in the most of cases before the decisions on the IRCJ-support were formally announced.

I define this event day as a “first news report” on request for debt forgiveness with or without the IRCJ-support. This event day is a first point of time that investors perceive the possibility of the debt forgiveness of the company and whether its scheme would be with or without support from the IRCJ, so impacts on equity price of its main-bank are expected to be large. I specified the date of “first news report” for each case by searching for all articles including the company name in major newspapers (Nikkei 4 papers, Asahi, Yomiuri, Mainichi and Sankei) from 2002 to 2004.

A second event window is around an event day when the company formally announce its corporate revitalization plan including the request of debt forgiveness for their lenders. Especially for the IRCJ-support cases, this event day is precisely specified as the day when the IRCJ formally announces the name of the company to be supported and releases its corporate revitalization plan including request of debt forgiveness for their lenders. I define this event day as a "formal announcement of the (corporate revitalization) plan", which is expected to have more concrete information on the debt forgiveness of the company than the "first news report" event. The corporate revitalization plan usually includes information on the total amount of debt forgiveness and main-bank's consent to the debt forgiveness. More importantly, in this point of time, the market participants know whether the company formally takes the support from the IRCJ, which has substantial impacts on the main-bank's burdens of debt forgiveness as I discussed in section 2. I specified the date of this event window for each case by article search using Nikkei Telecom 21 for the ordinary cases, and by news releases on the IRCJ's website for the IRCJ-support cases, respectively.

Table 5-1 shows the list of event days of "first news report" and "formal announcement of the plan" under the IRCJ-support for each of the IRCJ-support cases. The "ex ante informal offers" by the companies were reported by the major news papers for the 7 IRCJ-support cases excluding the Kimmon Manufacturing and Taiho Industries, which were relatively smaller and less influential in the industry than others. Actually, investors actively traded the stocks of related companies and its-main banks based on the news.

Table 5-2 shows the list of event days of "first news report" and "formal announcement of the plan" for each of the ordinary cases. Only 14 cases among all of 39 cases have the news reports on request of debt forgiveness prior to the formal announcement of the plan by the company.

If the case has both of the event days of the "first news report" and the "formal announcement of the plan", I define two different event day as the first event (e = 1) and second event (e = 2), respectively. If the case does not have the event day of the "first news report", I define the "formal announcement" as the first event (e = 1), and nothing in the second event. Summing these first and second events for all cases, totally there are 68 event windows associated with 15 event days for the IRCJ-support cases and 53 event days for the ordinary cases.

Event study methodology

To obtain estimates of abnormal returns for main-banks, I run standard market model regressions of realized daily stock return for main-bank i of client firm j, R_{ijt}, on a measure of the realized daily return of market index, R_{mt}, and 3 daily dummies for each event e, $D_{ijk,e}$,

$k \in [-1, 1]$, which take the value of one for days inside the event window and zero outside the window,

$$R_{ijt} = \alpha_{ij} + \beta_{ij} R_{mt} + \sum_{e} \sum_{k=-1}^{1} \gamma_{ijk,e} D_{ijk,e} + \varepsilon_{ijt} \ . \qquad (2)$$

The coefficients $\gamma_{ijk,e}$ for bank *i* measure the daily abnormal returns inside the event window. ε_{ijt} is a random error. Estimation period includes 150 trading days before the first event day (*e* = 1) and 40 trading days after the second event day (or the first event day if nothing in *e* = 2). The length of these sample periods conforms closely to those used in previous studies (e.g. Ongena, Smith, and Michalsen (2003), Brewer III, Genay, Hunter, and Kaufman (2003)). Sums of the daily abnormal return estimates $\hat{\gamma}_{ijk,e}$ over the event windows yield cumulative abnormal return (CAR) estimates. In the following section, I consider three event windows, single day abnormal returns, AR[0], cumulative abnormal returns, CAR[-1,0], including one day before the event day, and CAR[0,1], including one day after the event day, CAR[0,1].

5. Estimation Results

Figure 5 reports single day abnormal returns of main-bank, AR[0], over the events of "First news reports" and "Formal announcement of the plan" for each of the ordinary cases (39 cases, chronological order from the left) and the IRCJ-support cases (last 9 cases). The figure show that announcement of client firm's request on debt forgiveness have generally negative impacts on the stock price of its main-bank in many events for the ordinary cases excluding several events like "Formal announcement of the plan" of Toyo Shutter and Nissan Diesel. Even these cases, their abnormal returns at event of "First news reports", which is first event day when market participants perceive the possibility of debt forgiveness for the first time, are marginal and much smaller than those of formal announcement of the plan.

In contrast, most of abnormal returns of main-bank for the IRCJ-support case show positive signs regardless of the choice of event days, which means that the announcement of client firm's request on debt forgiveness brought about positive impacts on the stock price on main-bank under the scheme with support from the IRCJ. Interestingly, in the first event day for the Kyushu Industrial Transportation, one of three first cases supported by the IRCJ, abnormal

return of its main-bank, Mizuho Bank (Mizuho HD), have 9.5%, which is highest among all cases.

Event study results

For analyzing the statistical importance of difference between the ordinary cases and the IRCJ-support cases, I take a simple average of ARs (and CARs) within each sample under the assumption that the estimates are independent across events, and then use *t*-test to judge its significance. Table 6(A) reports the sample average and p-value for AR[0], CAR[-1,0] and CAR[0,1] by using all events including "first news reports" and "formal announcement of the plan".

From a main-bank's perspective, the events have a differential impact on stock price depending on whether the case takes support from the IRCJ. For the IRCJ-support cases, sample average of (cumulative) abnormal returns are around 3% (0.03) and statistically significant positive sign at 1% level for the AR[0] and CAR[-1,0], and at 5% for the CAR[0,1]. In contrast, for the ordinary cases without the IRCJ-support, sample average of AR[0] of a main-bank is -0.009 and statistically significant at 5% level. In this case, average cumulative abnormal returns of other event windows, CAR[-1,0] and CAR[0,1], are around zero and not statistically important at any significance level. Even if I extract the 12 cases in 2003-2004 from the ordinary cases that is those in a same period as the IRCJ-support cases were announced debt forgiveness, the sample average never show statistically significant positive value in all event windows.

Table 6(B) reports the sample means and its p-values using the sample picked up only first event, either "first news report" or "formal announcement if the plan", for each case. The result is expected to show more precisely the first impact of debt forgiveness announcement on the main-banks' valuation because it is the timing when market participants perceived the possibility of debt forgiveness for the first time. However, results are similar with those in Table 7(A). The stock price of main-bank whose clients take debt forgiveness under the IRCJ-scheme increases nearly 3% (0.028) in all event windows and statistically significant at 5% in the AR[0] and CAR[-1,0]. On the other hand, all of sample means for the ordinary cases shows negative values, especially AR[0] is below -1% (-0.014) and statistically significant difference from zero at 1% level.

The different impact of debt forgiveness announcement on a main-bank between the IRCJ-support and the ordinary cases is consistent with my hypothesis that the investors precisely predict the importance of the IRCJ's involvement on negotiation among lenders. If a debt-ridden company simply requests debt forgiveness for its lenders, the main-bank's burdens of debt forgiveness are expected to be disproportionally large because of the rule of traditional

main-bank system. However, when the company requests debt forgiveness under the support from the IRCJ, the allocation of burdens will be proportional to lenders' share of borrowing and the burdens of the main-bank could be greatly lightened by the IRCJ-led negotiation among lenders. Therefore, the results in Table 6 shows that the announcement of debt forgiveness had statistically significant positive impacts on stock prices of the main-banks in the IRCJ-support cases while it tended to have negative impacts on those in the ordinary cases. This difference was observed even if I restricted the sample in most recent years from 2003 to 2004.

Cross-sectional regressions

To gain a better understanding of the patterns underlying the abnormal returns documented in Table 6, I consider regressing the (cumulative) abnormal returns of the main-banks on a set of variables related to size of debt forgiveness, firm's stock price, and main-bank relationship characteristics. I provide a description of variables and summary statistics in Table 7.

The first variable is "Proportional Burdens of Debt Forgiveness divided by Main-bank's capitalization", which measures the impact of minimum burdens of debt forgiveness on the main-bank valuation under the assumption that the main-bank's burden is proportional to its share of borrowing. Main-bank's capitalization is calculated by using the bank's stock price of one day before the event day (window). Sample summary in Table 7(A) shows the impact is very large for the main-bank valuation. Sample means of this variable are 0.047 for the IRCJ-support cases and 0.039 for the ordinary cases, respectively. I expect negative sign of coefficient of this variable, which means the case with larger amount of debt forgiveness has potentially lager negative impact on the main-bank stock price on the event of debt-forgive announcement.

The second variable is "Firm's (cumulative) abnormal returns times Market value of equity holding divided by Main-bank's capitalization" to control the direct impact of the change of firm's stock price at the event day (window) on the main-bank valuation. Firm's stock price underwent great change on the event of the debt forgiveness announcement. In the Japanese main-bank system, the main-bank usually holds substantial amount of client's stock, so the change of the client firm's stock price can have substantial impact on the main-bank's valuation in the ordinary situation. Therefore, expected sign of coefficient of this variable is positive. However, as sample summary in Table 7(B) shows, these direct impacts on banks' valuation through equity holdings are nearly zero in all cases. This reflects the evidence that stock price of the debt-ridden company had been very low and the change of the value of stock holding relative to main-bank capitalization had been negligibly small until one day before the debt forgiveness announcement.

The third variables are dummies for the closeness of bank-firm relationship in terms of equity ownership and bank representation on board, which are considered as proxy variables for excess burden of debt forgiveness borne by the main-bank. Table 7(C) shows average percentage of equity held by the main-bank is 3.31% for the IRCJ-support cases and 4.38 cases for the ordinary cases. I use two kinds of dummies indicating the closeness of bank-firm relationship thorough the equity holding. The first is “Main-bank top equity holder among outsiders”, which is a dummy variable that takes 1 if the main-bank is the largest shareholder excluding the insiders (owner and owner’s family, employee stock holders) at the fiscal year end prior to the debt forgive announcement and 0 otherwise. The second is “Main-bank equity holding at legal limit” that takes 1 if the main-bank’s equity holding is at legal limit (5.0%) at the fiscal year end immediately before the debt forgive announcement and 0 otherwise. In terms of the bank representation on board, almost all companies in sample have at least one official from its main-bank on their board prior to the debt forgiveness. So I choose stronger definition, “Main-bank representation on President”, as a dummy indicating the close relationship with the main-bank, which takes 1 if the bank representation is a president (or a chairman) of the company and 0 otherwise. Expected sign of coefficients of these dummies are negative because market participants anticipate larger excess burdens of debt forgiveness on the main-bank if the main-bank relationship is stronger.

Finally, the most important variable is a dummy for the IRCJ-support cases. If the market participants predict the excess burden of the main-bank will be greatly mitigated and new rule of proportional burden of debt forgiveness will be introduced, the debt forgive announcement with the IRCJ-support have positive impact on stock price of the main-bank. If the sign of coefficient of IRCJ dummy is statistically significant and positive even after controlling other variables related to various characteristics of the case, I can conclude that the support from the IRCJ have positive impacts on the main-bank’s resolution of debt overhang problem.

Table 8-1 reports the results from regressing AR[0], CAR[-1,0], and CAR[0,1] on various combinations of the explanatory variables. Most of coefficient estimates have the same signs as I expected. First, “Proportional Burdens of Debt Forgiveness divided by Main-bank’s capitalization” has a negative and statistically significant coefficient estimate that remains robust across all specifications. The estimates suggest that 10 % increase of minimum burden of debt forgiveness on the main-bank brings about -1.5% decrease in AR[0] and a decrease between -2.1 and -2.7 in CAR[-1,0] and CAR[0,-1]. Second, “Firm’s (cumulative) abnormal returns times Market value of equity holding divided by Main-bank’s capitalization” has a positive but statistically insignificant estimate in all specification. This result reflects the evidence that this variable is very small in all samples. Third, dummies for the main-bank relationship prior to debt forgiveness announcement have negative and statistically significant

coefficient estimates especially for “MB top equity holder among outsiders” and “MB representation on the President”. If the main-bank is a largest shareholder, (cumulative) abnormal returns decrease by -1% to -2%. If a president (or a chairman) of company is a person from its main-bank, (cumulative) abnormal returns decrease by -1% to 3%.

In terms of a dummy for the IRCJ-support cases, the coefficient estimates are positive and statistically significant at 1% level across all specifications. The estimates suggest that stock price of the main-bank increased around 4% when the debt forgiveness would be announced with the support from the IRCJ.

Similar results are reported in Table 8-2, which are results for the alternative samples using the cases from 2003 to 2004 and the all cases with the first event (first news report or formal announcement of the plan). The dummy for the IRCJ-support cases stably takes more than 4% across all specifications, which are statistically significant at 1% level.

These results are consistent with my hypothesis that the support from the IRCJ greatly mitigates the excess burdens of debt forgiveness and has positive impact on the main-bank valuation. Market participants precisely predicted the consequences under the IRCJ scheme, and the debt forgiveness announcement to resolve the debt-overhang problem for client firms had positive impacts on its main-bank valuation.

6. Conclusion

The IRCJ greatly mitigated the excess burdens of debt forgiveness on the main-bank by introducing new rule on burdens of debt forgiveness proportional to lender’s share in borrowing. This is contrast with the ordinary cases in which the main-bank born disproportionally large burdens of debt forgiveness. Moreover, market participants precisely incorporated the new rule of burdens of debt forgiveness in the valuation of the main-bank, and performance of the Japanese banking sector improved under the support from the IRCJ. I could observe the positive impacts of debt forgive announcement on the stock price of the main-bank in the IRCJ-support cases while the negative impacts were prevailing among the ordinary cases following to the traditional rule of the main-bank-led resolution of the debt-overhang problem.

Although there were a large number of factors that had caused “the lost-decade”, it is widely recognized that the prolonged problem of non-performing loans was one of the major sources for the slump of the Japanese economy. Results in this paper strongly suggest that too large excess burden on the main-bank under the traditional Japanese main-bank system was one of major impediments to resolve non-performing loan problem in Japan.

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Table 1: Determinants of main-bank burdens of debt forgiveness

Sample: Ordinary cases (35 firms and 39 cases) and IRCJ-support cases (9 firms and 9 cases)

Dependent variable: Share of main-bank burdens of debt forgiveness to the total

	Ordinary cases		IRCJ-support cases
	All cases	Cases under the Guidelines on Private Liquidation	All cases
Constant	0.508*** (8.068)	0.422*** (4.896)	0.039 (0.413)
Share of main-bank borrowing to total borrowing	0.536*** (3.767)	0.617*** (3.830)	1.026*** (5.235)
Adj-R sq.	0.257	0.773	0.767
Observations	39	5	9

1). The t-values are reported in the parentheses. ***, **, and * indicates statistical significance at the 1%, 5%, and 10% levels, respectivelt.

Table 2: Burdens on non-main bank and IRCJ in the major 9 IRCJ-support cases

(unit: million yen)

Company name supported by the IRCJ	Main-bank(s) offered the IRCJ support joint with a supported company	Total borrowing of company	(A) Amount of debt the IRCJ purchased	(B) Purchasing price ((B)/(A))	(D) Burdens of non-main banks (A)-(B)	(E) Amount of financial assistance from the IRCJ	(F) Debt forgiveness	(G) Debt-equity swap
Kyushu Industrial Transportation	Misuho Bank	52,598	36,182	18,733 (52%)	17,449**	16,187	15,590	597
Dia Kensetsu	Risona Bank	193,998	18,397	9,476 (52%)	8,921**	8,507	8,507	0
Mitsui Mining Company	SMBC	242,400	179,543	58,843 (33%)	120,700**	87,148[3)]	67,148	20,000
Kimmon Manufacturing	Risona Bank	30,010	15,878	11,990 (76%)	3,888**	3,517	3,517	0
Kanebo	SMBC	555,654	103,971	47,235 (45%)	56,736*	66,543	56,543	10,000
Taiho Industries	UFJ Bank	8,903	4,271	4,057 (95%)	214*	850	0	850
Daikyo	UFJ Bank	484,300	84,771	56,588 (67%)	28,183**	27,075	27,075	0
The Daiei	UFJ Bank, Mizuho Corporate Bank, SMBC	1,020,562	366,646	247,022 (67%)	119,624*	152,583	(112,583)	40,000
Misawa Homes Holdings	UFJ Bank	294,152	43,411	14,274 (33%)	29,137**	28,452	28,452	0

1) Sample firms are 8 large companies listed in the stock exchanges and Kyushu Industrial Transportation whose financial statements are available in 2002-2004.

2) "(D) Burdens of non-main bank" are defined as "(A) amount of debt the IRCJ purchased" minus "(B) purchasing price". ** attached to the number in (D) depicts that (D) exceeds (E) while * depicts that (D) exceeds at least (F).

3) In the case of Mitsui Mining Company, the IRCJ made new loan of 19,578 million yen to the company other than the direct financial assistance. The loan was fully pepaid by the company until March 17, 2007.

Source:This table is based on IRCJ's news releases available at the Cabinet Office's web site [http://www8.cao.go.jp/sangyo/ircj/ja/index.html].

Table 3: Profit on sales in the cases of equity participation by the IRCJ

Unit: million yen

Company name	Equity participation by IRCJ Total amout (DES)	Name of sponsor the IRCJ sold the share to. Proceeds from the sale of shares	IRCJ's profit on sale (rate of returns)
Kyushu Industrial Transportation	Kyushu Industrial Transportation 700 (DES 350)	H.I.S. 3,194	2,494 (356%)
	Kyushu Sanko 1,250 (DES 250)	Footwork Express N.A.[1)]	N.A.[1)]
Mitsui Mining Company	20,000 (DES 20,000)	Daiwa SMBCPI, Nippon Steel Corporation, Sumitomo Corporation 18,200	7,437 (37%)
		Nomura Securities 9,237	
Kimmon Manufacturing	3,000 (DES 0)	Yamatake Corporation 4,650[2)]	1,650[2)] (55%)
Kanebo	Kanebo Cosmetics 236,000 (DES 150,000)	Kao Corporation 263,401	27,401 (11%)
	Kanebo 20,000 (DES 10,000)	Trinity Investment N.A.[3)]	N.A.[3)]
Taiho Industries	850 (DES 850)	Ichinen Co,.Ltd. 1,631[4)]	781[4)] (92%)
The Daiei	50,000 (DES 40,000)	Marubeni Corporation 69,800	19,800 (40%)

1) It is obvious that the IRCJ did not suffer any losses as a whole because the profit on sale of Kyushu Industrial Transportation (2,494 million yen) exceeds the total amount of equity participation to Kyushu Sanko by the IRCJ (1,250 million yen).

2) This value is an author's estimation using the evidence that proceed from the sale of prefered shares held by the IRCJ, Risona Bank and Mizuho Corporate Bank was totally 9,300 million yen.

3) It is obvious that the IRCJ did not suffer any losses as a whole because the profit on sale of Kanebo Cosmetics (27,401 million yen) exceeds the total amount of equity participation to Kanebo by the IRCJ (20,000 million yen). According to the Nikkei Newspaper (Nikkei Kinyu December 21, 2005), the IRCJ is expected to earn the profit of 20,000 million yen in total by the sale of the shares of Kanebo and Kanebo Cosmetics.

4) This value is an author's estimation using the calculation based on a TOB price (225 yen per share) by Ichinen Co,.Ltd.

Source: News releases of the related companies and press reports

Table 4: Reduction of equity, stock consolidation and capital increase in the corpotate revitalization plan

(unit: million yen)

Company name	"Shareholder responsibility" in the corpotate revitalization plan		
	Reduction of equity	Stock consolidation	Capital increase
Kyushu Industrial Transportation	Kyushu Industrial Transportation: "massive reduction" Kyushu Sanko: 100.0%	-	DES and the third-party allocation of newly issued shares to IRCJ
Dia Kensetsu	99.0%	-	-
Mitsui Mining Company	91.1%	2 shares to 1	Capital increase
Kimmon Manufacturing	90.0%	-	The third-party allocation of newly issued share
Kanebo	99.7%	10 shares to 1	The third-party allocation of newly issued share
Taiho Industries	95.0%	-	The third-party allocation of newly issued share and issue of prefered stock
Daikyo	99.2% for common stock 50% for prefered stock	-	The third-party allocation of newly issued share
The Daiei	99.6%	10 shares to 1	Massive capital increase
Misawa Homes Holdings	99.0%	10 shares to 1	Capital increase by the sponsor

1) Sample firms are 9 major companies with support from the IRCJ (8 listed companies and Kyushu Industrial Transportation).

Source:This table is based on IRCJ's news releases available at the Cabinet Office's web site [http://www8.cao.go.jp/sangyo/ircj/ja/index.html].

Table5-1. List of Debt Forgiveness Cases with support from the IRCJ during 2003-2004.

IRCJ support cases (9 firms, 9 cases)

Code	Company	Industry	Main Bank	Event Date	
				First news report on request for debt forgivenes under IRCJ support	Formal anouncement of corporate revitalization plan under IRCJ support
unlist	Kyushu Industrial Transportation	Transportation	Mizuho Bank	20030724	20030828
8858	Dia Kensetsu	Real Estate	Resona Bank	20030724	20030828
1501	Mitsui Mining Company	Mining	SMBC	20030725	20030828
7724	Kimmon Manufacturing	Manufacturer	Resona Bank	---	20040128
3102	Kanebo	Manufacturer	SMBC	20040216	20040310
4953	Taiho Industries	Manufacturer	UFJ Bank	---	20040520
8840	Daikyo (2)	Real Estate	UFJ Bank	20040921	20040928
8263	The Daiei (2)	Retailer	UFJ Bank	20041014	20041228
1722	Misawa Homes Holdings (2)	Construction	UFJ Bank	20041129	20041228

Table 5-2: List of Debt Forgiveness Cases (Ordinary Cases) during 1998-2004.

Ordinary cases (35 firms, 39 cases)

Code	Company	Industry	Main Bank	Event Date	
				First news report on request for debt forgivenes	Formal anouncement of corporate revitalization plan
1886	Aoki Corporation	Construction	Asahi Bank	---	19981119
1808	Haseko Corporation (1)	Construction	Daiwa Bank	19981118	19981218
1806	Fujita Corporation	Construction	Sakura Bank	19981114	19981224
1920	Shokusan Jutaku Sogo	Construction	Sanwa Bank	---	19990122
8834	Towa Real Estate Development (1)	Real Estate	Tokai Bank	19981114	19990205
1804	Sato Kogyo	Construction	Daiichi-Kangyo Bank	---	19990223
9232	Pasco Corporation	Transportation	Bank of Tokyo-Mitsubishi	---	19990301
3887	Chuo Paperboard	Manufacturer	Juroku Bank	19981124	19990430
8020	Kanematsu Corporation	Wholesaler	Bank of Tokyo-Mitsubishi	---	19990518
8003	Tomen Corporation (1)	Wholesaler	Tokai Bank	---	20000209
1837	Hazama Corporation	Construction	Daiichi-Kangyo Bank	---	20000525
1861	Kumagai Gumi (1)	Construction	Sumitomo Bank	20000810	20000901
1814	Daisue Construction	Construction	Sanwa Bank	---	20000926
1821	Mitsui Construction	Construction	Sakura Bank	20001124	20001228
8263	The Daiei (1)	Retailer	UFJ Bank	20020109	20020118
1808	Haseko Corporation (2)	Construction	Chuo Mitsui Trust Bank	---	20020221
8246	Iwataya Department Store	Retailer	Mizuho Bank	---	20020226
1923	Misawa Homes (1)	Construction	UFJ Bank	---	20020301
5936	Toyo Shutter	Manufacturer	Mizuho Bank	20011122	20020308
1823	Sumitomo Construction	Construction	SMBC	---	20020426
8840	Daikyo (1)	Real Estate	UFJ Bank	---	20020514
7202	Isuzu Moters	Manufacturer	Mizuho Corporate Bank	---	20020814
1854	Arai-Gumi	Construction	SMBC	---	20020823
5480	Nippon Yakin Kogyo	Manufacturer	Mizuho Corporate Bank	---	20020918
6765	Kenwood Corporation	Manufacturer	Asahi Bank	---	20020927
8834	Towa Real Estate Development (2)	Real Estate	UFJ Bank	---	20021105
8003	Tomen Corporation (2)	Wholesaler	UFJ Bank	---	20021226
unlist	Seibu Department Store	Retailer	Mizuho Corporate Bank	20021218	20030114
8014	Chori	Wholesaler	Mizuho Corporate Bank	20030222	20030328
1861	Kumagai Gumi (2)	Construction	SMBC	---	20030403
1805	Tobishima Corporation	Construction	Mizuho Corporate Bank	20030403	20030416
1890	Toyo Construction	Construction	UFJ Bank	---	20030610
7210	Nissan Diesel Motor	Manufacturer	Mizuho Corporate Bank	20030917	20030930
8193	Suzutan	Retailer	UFJ Bank	---	20031027
1827	Nakano Corporation	Construction	Bank of Tokyo-Mitsubishi	---	20031121
1908	Sampei Construction	Construction	Resona Bank	---	20031126
1826	Sata Construction	Construction	Gunma Bank	---	20040127
7211	Mitsubishi Motors Corporation	Manufacturer	Bank of Tokyo-Mitsubishi	20040517	20040521
2768	Sojitz Holdings Corporation	Wholesaler	UFJ Bank	20040720	20040726

Table 6: Average (cumulative) abnormal returns of main banks across evenrs

(A) Average (C)ARs of main-banks across events (both of first news report and formal announcement of the plan)

	Number of Events	AR[0]	CAR[-1,0]	CAR[0,1]
IRCJ-support cases (9 cases)	15	0.027 (0.000)	0.036 (0.000)	0.033 (0.019)
Ordinary cases (39 cases)	53	-0.009 (0.022)	-0.001 (0.864)	0.001 (0.805)
2003-2004 ordinary cases [1)] (12 cases)	18	-0.011 (0.218)	0.001 (0.946)	0.0190 (0.201)

(B) Average (C)ARs of main-banks across events (either first news report or fomal announcement of the plan)

	Number of Events	AR[0]	CAR[-1,0]	CAR[0,1]
IRCJ-support cases (9 cases)	9	0.028 (0.026)	0.028 (0.022)	0.028 (0.179)
Ordinary cases (39 cases)	39	-0.014 (0.000)	-0.007 (0.422)	-0.007 (0.247)

1) "2003-2004 ordinary cases" includes 12 cases that fomally announced the request for debt forgiveness in 2003-2004.

2) The sample in table (A) includes main-banks' ARs (or CARs) at the event days of both first news report and formal announcement of the corporate revitalization while the sample in table (B) includes those of first news report if the case has news report prior to formal announcement, or thoese of formal announcement of the corporate revitalization.

3) We take a simple average of ARs (or CARs) with in each sample under the assumption that the estimates are independet across events, and use a t-test to judge significance. The average and P-value are reported in the first row and the second row, (in parentheses), in each cell, respectively.

Table 7: Sample summary

	IRCJ-support cases (9 cases)			Ordinary cases (39 cases)			2003-2004 ordinary cases (12 cases)		
(A) Debt forgiveness									
	Mean (Median)	Maximum (Minimum)	Std.Dev.	Mean (Median)	Maximum (Minimum)	Std.Dev.	Mean (Median)	Maximum (Minimum)	Std.Dev.
Proportional Burdens of Debt Forgiveness / MB capitalization	0.0468 (0.0223)	0.2216 (0.0001)	0.0696	0.0393 (0.0154)	0.1758 (0.0012)	0.0523	0.0327 (0.0139)	0.1758 (0.0012)	0.0493
(B) Firm's abnormal returns									
Firm AR[0] * Market value of firm equity holdings / MB capitalization	-0.0000 ('0.0000)	0.0000 (-0.0001)	0.0000	0.0000 (0.0000)	0.0010 (-0.0017)	0.0003	-0.0000 (-0.0000)	0.0001 (-0.0001)	0.0000
Firm CAR[-1,0] * Market value of firm equity holdings / MB capitalization	-0.0000 (0.0000)	0.0000 (-0.0001)	0.0000	-0.0003 (0.0000)	0.0014 (-0.0133)	0.0021	-0.0011 (0.0000)	0.0001 (-0.0133)	0.0038
Firm CAR[0,1] * Market value of firm equity holdings / MB capitalization	-0.0000 (0.0000)	0.0001 (-0.0002)	0.0000	-0.0007 (0.000)	0.0007 (-0.0288)	0.0046	-0.0024 (0.0000)	0.0000 (-0.0288)	0.0083
(C) Main bank relationship									
	Mean (Median)	Number of relevant cases	Percent to total	Mean (Median)	Number of relevant cases	Percent to total	Mean (Median)	Number of relevant cases	Percent to total
Percentage of equity held by MB	3.31 (4.19)	-	-	4.38 (4.79)	-	-	4.05 (4.51)	-	-
MB top equity holder among outsiders	-	5	56%	-	20	51%	-	5	42%
MB equity holding at legal limit	-	2	22%	-	13	33%	-	2	17%
MB representation on board	-	8	89%	-	36	92%	-	9	75%
MB representation on President (or Chairman)	-	2	22%	-	11	28%	-	2	17%

Table 8-1: Cross-sectional examination of main bank (C)ARs: All Events

Sample	All Events									
Dependet variable	AR[0]				CAR[-1,0]			CAR[0,1]		
Constant term	0.001	-0.003	-0.000	0.000	0.021	0.016	0.017	0.021	0.013	0.018
	(0.830)	(0.568)	(0.903)	(0.997)	(0.067)	(0.087)	(0.115)	(0.054)	(0.147)	(0.087)
Proportional Share of debt forgiveness / MB capitalization	-0.169	-0.151	-0.146	-0.149	-0.272	-0.211	-0.213	-0.270	-0.223	-0.240
	(0.014)	(0.027)	(0.027)	(0.027)	(0.033)	(0.080)	(0.082)	(0.025)	(0.055)	(0.042)
Firm (C)AR * MB equity holdings / MB capitalization	2.917	5.875	4.312	4.307	3.623	3.435	3.480	1.064	0.876	0.997
	(0.798)	(0.516)	(0.700)	(0.702)	(0.364)	(0.382)	(0.381)	(0.551)	(0.627)	(0.582)
MB top equity holder among outsiders	-0.010				-0.026			-0.019		
	(0.156)				(0.061)			(0.142)		
MB equity holding at legal limit		-0.003		-0.001			-0.001			-0.013
		(-0.463)		(0.803)			(0.893)			(0.345)
MB representative on the President			-0.014	-0.014		-0.034	-0.034		-0.010	-0.008
			(0.076)	(0.085)		(0.022)	(0.025)		(0.489)	(0.567)
IRCJ support	0.041	0.040	0.039	0.039	0.043	0.037	0.037	0.036	0.033	0.033
	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.018)	(0.019)	(0.018)	(0.030)	(0.033)
Adjsted-R-squared	0.257	0.236	0.271	0.315	0.113	0.137	0.124	0.090	0.065	0.064
Observations	68	68	68	68	68	68	68	68	68	68

1) Coefficients and p-values based on t-test are reported in the first row and in parentheses, respectively.

Table 8-2: Cross-sectional examination of main bank ARs: Selected events

Sample	2003-2004 cases				First news report or formal announcement			
Dependet variable	AR[0]				AR[0]			
Constant term	0.003	-0.000	-0.000	0.002	-0.008	-0.007	-0.006	-0.005
	(0.719)	(0.969)	(0.955)	(0.787)	(0.224)	(0.217)	(0.211)	(0.366)
Proportional share of debt forgiveness / MB capitalization	-0.230	-0.212	-0.193	-0.222	-0.148	-0.151	-0.144	-0.148
	(0.036)	(0.041)	(0.054)	(0.030)	(0.050)	(0.043)	(0.049)	(0.046)
Firm AR * MB equity holdings / MB capitalization	22.748	37.245	37.724	19.255	13.903	13.975	14.079	13.882
	(0.770)	(0.613)	(0.605)	(0.792)	(0.261)	(0.253)	(0.245)	(0.256)
MB top equity holder among outsiders	-0.020				-0.001			
	(0.121)				(0.813)			
MB equity holding at legal limit		-0.025		-0.019		-0.005		-0.004
		(0.082)		(0.181)		(0.485)		(0.619)
MB representative on President			-0.027	-0.022			-0.009	-0.008
			(0.064)	(0.141)			(0.277)	(0.336)
IRCJ support	0.047	0.046	0.044	0.047	0.044	0.044	0.044	0.043
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Adjsted-R-squared	0.324	0.339	0.348	0.368	0.301	0.309	0.320	0.308
Observations	33	33	33	33	48	48	48	48

1) Coefficients and p-values based on t-test are reported in the first row and in parentheses, respectively.

Figure 1: Amount of Risk Management Loans in Japan

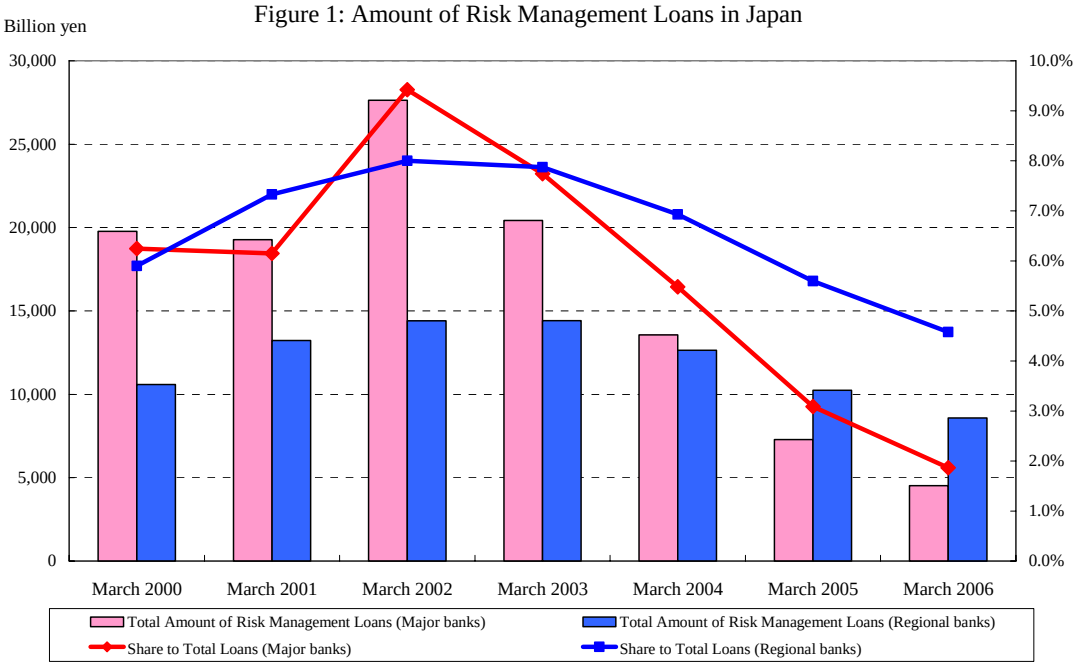

Figure 2: Cumulative Abnormal Returns of Japanese Banking Sector (From July 1, 2002 to March 31, 2005)

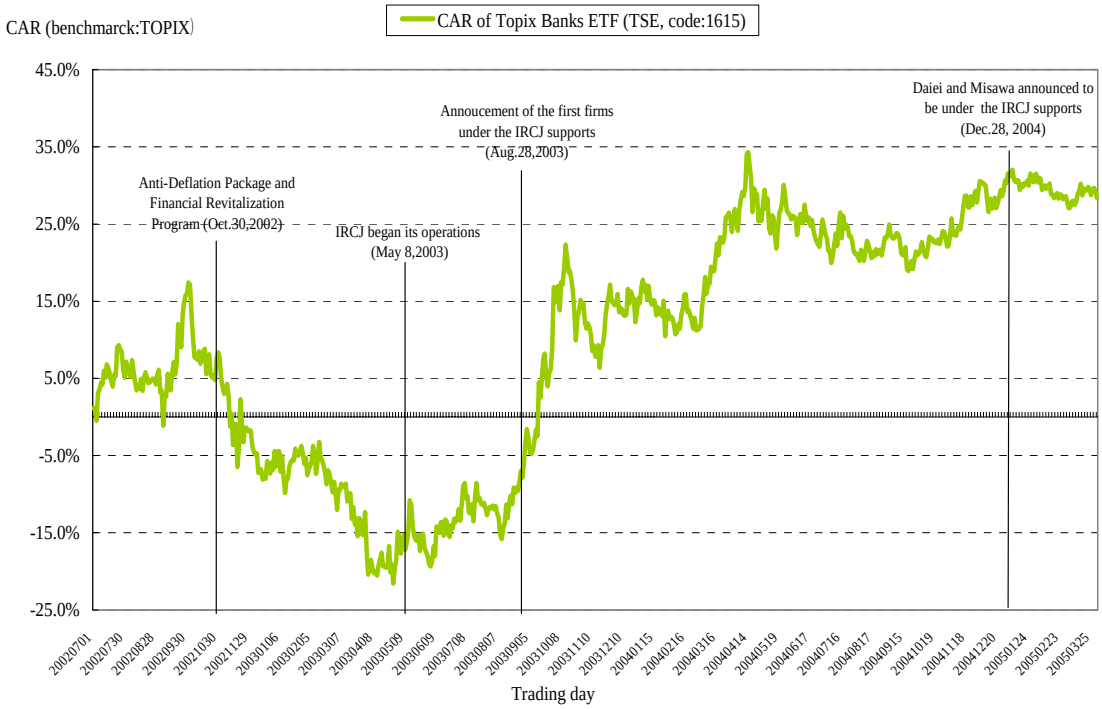

Figure 3: Main bank burdens in the ordinary cases

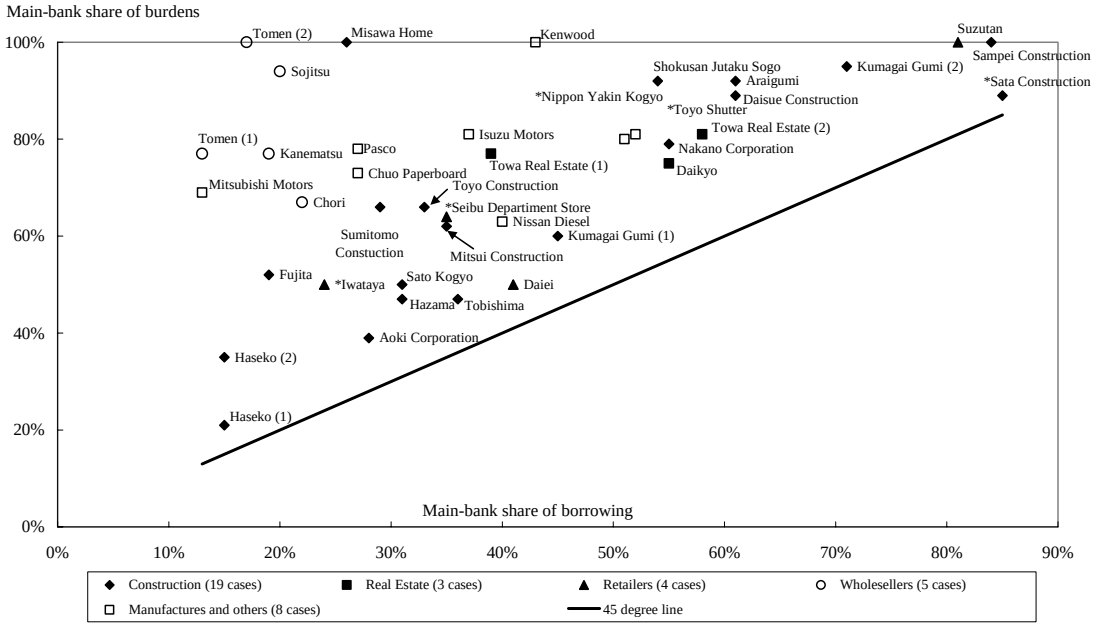

Figure 4: Main bank burdens in the IRCJ-support cases

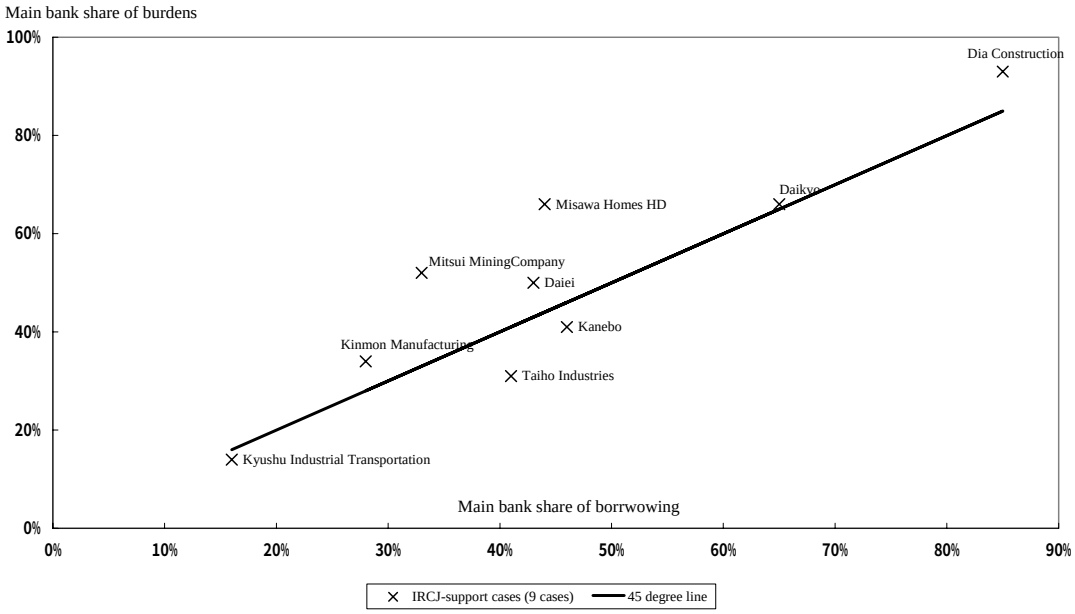

Figure 5: Main bank's Abnormal returns at the event day of announcement of debt forgiveness