Staff Paper Series '09-05 December 2009

Out-of-court debt restructuring is ineffective when a distressed firm is a large borrower from its main bank: Evidence from Japan during its "lost decade"

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Out-of-court debt restructuring is ineffective when a distressed firm is a large borrower from its main bank: Evidence from Japan during its "lost decade"

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December 7, 2009

Abstract

This study provides evidence that out-of-court debt restructuring lacks efficiency when a distressed firm is a borrower with borrowings from its main bank that are sufficiently large to affect the soundness of the bank if defaulted on. We focus on out-of-court debt restructurings that occurred from January 1993 to January 2004 in Japan. During this period, Japanese banks were hard-pressed to clear mountains of nonperforming loans from their books. Our analysis of sample firms shows that, after the launch of an initial out-of-court debt restructuring, distressed large borrowers again experienced financial distress relatively more frequently than the other distressed borrowers. In addition, main banks of the distressed borrowers suffer significantly negative impacts on their stock prices when their large borrowers request debt forgiveness, while they experience significantly positive ones when the other borrowers do. Thus, there is peculiar positive relationship between the probability of failure of a debt restructuring and the loss in the market value of a main bank. On the other hand, the probability of subsequent failure is lower when the ratio of nonperforming loans of a main bank is higher. Moreover, main banks with a high ratio of nonperforming loans have significantly positive impacts on their stock prices when they and their distressed borrowers reach agreements on restructuring plans, while main banks with a relatively low ratio do not experience any significant impact. This could suggest that policies for promoting the disposal of nonperforming loans would be helpful to avoid inefficiencies in out-of-court debt restructuring.

JEL *Classification Code*: G21, G28, G33,

Keyword: Bankruptcy, debt forgiveness, nonperforming loan, main bank, Risk-shifting incentives, Event study

1. Introduction

The large number of bankruptcies during the "lost decade" in Japan has stimulated debate over the economic efficiency of Japan's reorganization practices. This period witnessed large numbers of out-of-court debt restructurings, and what appear to have been inefficient practices.

For example, Daiei (a representative retailer in Japan) and Haseko Corporation (a major Japanese construction company) repeatedly fell into financial distress within one or two years after implementing initial debt restructuring. In other cases, Aoki Corporation and Sato Kogyo Co. Ltd., both major Japanese construction companies, ended up filing for protection under the bankruptcy laws a few years after undertaking out-of-court debt restructuring.

Gilson (1997) shows that transaction costs to reduce the debt burden of distressed firms are much higher when debt is restructured out of court than when firms restructure under Chapter 11 conditions. We assume that a bank's risk exposure to its distressed borrowers could affect transaction costs, and empirically examine this assumption.

Dahiya, Saunders, and Srinivasan (2003) used US data and focused explicitly on the banks' level of risk exposure and examine the wealth effects on lead lending banks when their borrowers suffer financial distress. They found that the news of a default or a bankruptcy has a materially adverse impact on the share price of the lead lending bank[1]. They also show that when banks are ranked according to their exposure to the distressed firms, the price decline for low exposure banks is insignificant, while that for high exposure banks is significant.

The fear of damaging the soundness of a bank could provoke risk-taking behaviors, known as the

[1]. In defining a financial distress announcement as a target event, they employ two types of announcements: (1) default on a firm's public debt, and (2) filing by a firm for bankruptcy protection under Chapter 11. Different from their analysis, our study focuses only on out-of-court debt restructuring cases.

problem of “gambling for resurrection”. Indeed, moral hazard plays an important role in such risk-taking behaviors of banks. Bank managers are reluctant to force financially distressed large borrowers into legal bankruptcy proceedings (filing for protection under bankruptcy laws). The bankruptcy of such a large borrower, a company with borrowings that if defaulted have the potential to damage the soundness of the bank itself, would entail serious losses to the bank’s balance sheet. To avoid such a heavy loss, bank managers are often willing to extend additional credit to these troubled borrowers. This objectionable lending practice is commonly known as forbearance lending.

Bank managers’ motivation behind such a practice becomes stronger when the financial soundness of the bank itself falls into serious difficulties. During the so-called “lost decade”, Japanese banks had to address such difficult situations. Peek and Rosengren (2005) is a representative empirical study confirming the practice of forbearance lending by major Japanese banks during the 1990s. They show that troubled Japanese banks allocated credit to severely impaired borrowers primarily to avoid the realization of losses on their own balance sheets. Hosono and Sakuragawa (2003) also points out that a bank manager has an incentive to disguise true losses by extending bad loans to poorly performing borrowers. Iwatsubo (2007) indicates that the risk-shifting incentives of banks were the main cause of forbearance lending that prevailed during the 1990s in Japan.

In some cases, the extent of a borrowers’ financial distress can be so acute that mere forbearance lending is not enough to avoid bankruptcy. In such cases, banks have to reduce the debt burdens through debt restructuring. This is termed debt forgiveness.

If debt forgiveness is an extension of forbearance lending with risk-shifting incentives, the scale of debt reduction may be only enough to help keep it afloat temporarily but insufficient for the successful reorganization of the distressed debtor. When a loan is restructured out of court and the

borrower's financial condition is hard to verify, the lenders have a wide discretion with respect to the amount of any write-down.

These practices of delaying formal bankruptcy are harmful to distressed debtor firms; Povel (1999) points out that "Early rescues of a firm are typically cheaper than late rescues, and are more likely to be successful. Delays cause opportunity costs because the assets of the firm cannot be brought to their most efficient use."

Hoshi and Kashyap (2004) describes how Japanese banks often undertook sham loan restructurings that kept credit flowing to otherwise insolvent borrowers. They call such borrowers zombies. This dysfunctional Japanese banking practice misallocated funds by keeping many insolvent firms in business. They emphasize that this phenomenon badly affected the macro economy, i.e., inefficient zombie firms crowded out potentially profitable ones and worsened the macroeconomic stagnation. Caballero, Hoshi, and Kashyap (2008) empirically confirmed that zombie dominated industries exhibited depressed job creation and job losses, and low productivity.

Here, we empirically examine the possibility that out-of-court debt restructuring becomes inefficient when a distressed firm is a large borrower from its main bank.

Outline of our analysis

In what follows, we outline our analysis. Our empirical study consists of two steps. First, we conduct a probit analysis to examine the ex post probability of the recurrence of subsequent financial distress. After out-of-court restructurings of their debt, some distressed firms have to file for bankruptcy or restructure their debt a second time. If the first restructuring plan is optimally formulated, some characteristics of the lending bank should not make any difference in the ex post

probability of the recurrence of subsequent financial distress. In other words, when we find that a certain characteristic of lending banks relates to the probability, we could interpret this fact as evidence that the characteristic would push a restructuring plan away from the optimal one. Our analysis shows that the probability of the recurrence of subsequent financial distress becomes higher when distressed firms are large borrowers from their main banks. In this study, we define a bank as a main bank of a distressed borrower if it appears first in the newspaper report reporting a firm's restructuring. This is because a main bank has a major role in debt restructuring negotiations; hence, it is usually introduced first in the newspaper report relating to the lending firm's financial distress.

Of course, such a higher probability does not immediately indicate the inefficiency of the restructuring plans. Next, we examine wealth effects both on distressed borrowers and on their main banks at the time their large borrower requested debt forgiveness by employing the event study methodology.

A lower probability of recurrence of subsequent financial distress might come at the expense of benefits to creditors', that is to say; creditors might have to write down their claims on an extraordinarily large scale. In that case, we would confirm a negative effect on the creditor's stock price. According to the result of our probit study, the ex post probability of recurrence of subsequent financial distress is low when a distressed firm is not a large borrower from its main bank. Therefore, a creditor should experience such a negative effect on its stock price when a distressed firm is not a large borrower.

However, the results of our stock price event study are different. The main banks of the distressed borrowers have significantly negative abnormal returns when their large borrowers request debt

forgiveness, while they experience significantly positive ones when other borrowers do[2].

So, there is peculiar positive relationship between the probability of failure of a debt restructuring and the expected loss suffered by a main bank. When a distressed firm is a large borrower, its main bank not only experiences a negative effect on the stock price, but also is exposed to higher risk of subsequent financial distress. Those results indicate that the first restructuring plan is not an optimal one to get a bankruptcy firm out of its financially distressed condition, when a distressed firm is a large borrower.

Meanwhile, we focus on other characteristics of main banks that could affect decisions relating to debt restructuring. That is the NPL ratio to the total capital of the bank. We find another interesting aspect through our probit analysis. The higher the nonperforming loan (NPL) ratio of a main bank, the lower the possibility that its distressed borrower falls into financial distress again after the first debt restructuring.

Main banks with high ratios of nonperforming loans experience significantly positive abnormal returns when they work out an agreement for a restructuring plan with distressed borrowers, while main banks with relatively low ratios of nonperforming loans do not experience any significant abnormal returns.

Policies for promoting the disposal of nonperforming loans are helpful to avoid inefficiencies in out-of-court debt restructuring. Banks heavily burdened by nonperforming loans are encouraged by such policies to properly handle their nonperforming loans[3][4].

[2]. Isagawa and Yamashita (2003) show similar results. Unlike our analysis, they do not explicitly define a bank's risk exposure to its distressed borrowers. Alternatively, they restrict their attention to debt restructuring plans with a debt reduction of more than 100 billion yen (about 935 million US dollars at 2003 rates of exchange). They found that the lending banks in those cases experienced a significant negative announcement effect.

[3]. For example, in October 2001, the Japanese government announced the formulation of a "Front-Loaded Reform Program" for the implementation of structural reform. To intensify the

We also examine changes in the operating performances of distressed firms just after launching debt restructuring using methodologies developed by Barber and Lyon (1996). Our analysis finds that the sample firms experience significantly negative abnormal performance when the NPL ratios of their main banks are low.

The purpose of this analysis is to indirectly measure the size of debt reduction. Debt reduction brings a distressed borrower temporary profits. Therefore, the borrower might experience positive abnormal performance just after reducing their debt.

Of course, debt reduction can create a significant tax liability for the borrower, with gains from forgiveness of debt being taxed. Thus, many reorganizations are structured to minimize the amount of taxable income by using devises such as net operating loss carry forwards, capital loss carryovers and so on.

However, we should at least not observe relatively negative abnormal performance of the sample firms compared with the control firms. Conversely, if the distressed firms experienced significantly negative abnormal performance just after launching debt restructuring, we can conjecture that their main banks do not reduce the debt by an amount sufficient to alleviate the distressed conditions.

The rest of the paper proceeds as follows. Section 2 describes the sample selection. In section 3, we provide empirical results. Section 4 concludes the paper.

disposal of NPLs, the government upgraded inspections of major banks by increasing the frequency of comprehensive inspection from once every two years to once every year, and requested major banks to reveal financial statements and other information.

4. Of course, our analysis does not directly verify the effects brought about by these policies. To clarify the effects of the policies, we need to examine them in more detail. That will be the subject of future work.

2. Sample description

Sample events are identified by extracting newspaper reports that contain the keywords *saiken hoki* (debt forgiveness) and *saimu menjo* (debt reduction). We search four Japanese financial newspapers; Nihon Keizai Shimbun (The Nikkei), Nikkei Sangyo Shimbun (The Nikkei Business Daily), Nikkei Ryutsu Shimbun (The Nikkei Marketing Journal), and Nikkei Kinyu Shimbun (The Nikkei Financial Daily), published from January 1993 to January 2004.

As mentioned before, we try to examine whether efficiency in out-of-court debt restructuring depends on the level of the main bank's risk exposure to the distressed firm. For differentiating banks with high exposure from those with low, we calculate the following exposure ratio for each main bank j to a given borrowing firm k:

$$Exposure\ ratio_{jk} = \frac{the\ main\ bank\ \ j's\ amount\ of\ \ lending\ to\ the\ borrowing\ \ firm\ k}{the\ lead\ bank\ \ j's\ amount\ of\ \ capital\ held}$$

The main bank's amount of lending means the total amount of lending reported for the fiscal year immediately prior to the event. The main bank's amount of capital held is the amount of capital that the Basel Capital Accord allows to be considered as included and reported for the fiscal year immediately prior to the event.

We define another index to capture another characteristic of main banks. That is the NPL ratio to the total capital. The ratio of main bank j is defined:

$$NPLs\ ratio_{j} = \frac{the\ amount\ of\ \ NPLs\ \ held\ by\ main\ bank\ \ j}{the\ main\ bank\ \ j's\ amount\ of\ \ capital\ held}$$

The amount of NPLs means 'risk management loans', and includes loans to borrowers in legal bankruptcy, past due loans in arrears by 6 months or more, loans in arrears by more than 3 months

and less than 6, and restructured loans. A main bank's amount of capital held is the same as above. Sources of data on bank and borrower characteristics, including a main bank's amount of lending to a distressed borrower, are taken from NRI Dataline Service, Nikkei financial quest and eol DB tower service.

3. The results of the empirical analysis

Our empirical study is in three parts. First, we undertake a probit analysis to examine the ex post probability of the recurrence of subsequent financial distress. Second, we examine wealth effects on distressed borrowers and on their main banks by employing event study methodology. Finally, we examine changes in the operating performances of distressed firms just after launching debt restructuring using methodologies developed by Barber and Lyon (1996). The purpose of this analysis is to indirectly measure the size of debt reduction.

3.1. Probit analysis

Our probit analysis is to examine the ex post probability of the recurrence of subsequent financial distress. Therefore, among the sample events identified by extracting newspaper reports, we pay attention only to cases where a debt restructuring agreement was reached. We extract 56 sample firms for which necessary data are available.

The dependent variable is a dummy variable that takes on a value zero if we confirm a subsequent distressed event after reaching the initial debt restructuring agreement, and is one otherwise[5]. As

[5]. We confirm subsequent distressed events only from newspaper reports.

independent variables, the regression includes the main bank's risk exposure ratio, the main bank's NPL ratio, and some variables of the distressed firm's characteristics.

In addition, the independent variables include the percentage share of the main bank of the total amount of a distressed firm's borrowings. It is expected that the higher the share, the more efficiently is the negotiation brought to a conclusion[6].

(Insert Table 1 'Results of probit analysis to confirm the ex post probability of the recurrence of subsequent financial distress')

Table 1 summarizes the estimated results of the analysis. The estimated coefficient on the main bank's risk exposure ratio is negative and statistically significant at the 1 percent level. (Here and elsewhere in the article, statistical significance is evaluated using two-tailed tests.) Therefore, firms that are not large borrowers from their main banks are more successful at getting out of financial difficulties.

The estimated coefficient on a main bank's NPL ratio is positive and marginally significant. Thus, the consequences of debt restructuring depends on the characteristics of the main bank; the main bank's risk exposure to its distressed borrower and the main bank's NPL ratio.

The estimated coefficient of the percentage share that the main bank has of the total amount of a distressed firm's borrowings is positive and significant at the 5 percent level. The result is consistent with our prediction.

[6]. A detailed discussion of the creditor holdout problem can be found in Gilson (1997) and Gilson et al (1990).

3.2. Stock price event study

We use standard event study methodology using daily stock price data to examine the stock market reaction to an announcement. We employ a market model to determine an expected return, which is necessary to calculate an abnormal return[7]. The parameters of the market model are estimated for the estimation window from 128 trading days before the event day, to 10 trading days before that event. As a market index, we employ the Tokyo Stock Exchange Stock Price Index (TOPIX) [8].

We examine two types of announcements relating to out-of-court restructuring: (1) at the time of the initiation of negotiation[9], and (2) at the time when the main banks and their distressed borrowers have reached agreement on restructuring plans.

At the time of the initiation of negotiation, the announcement effects on the stock prices should reflect what consequences of the negotiations the market participants anticipate. At the time of reaching agreement, the announce effects should show the market's evaluation of the agreed restructuring plans.

As mentioned above, sample events are identified from newspaper reports. Accordingly, we define the day when the report appears as the event day. We need to pay attention to the definition of the event window. For capturing the impact of the event, it is usual to employ the traditional narrow event window of two or three days. However, before an announcement relating to debt restructuring is made, much formal or informal information as to the financial health of a distressed firm becomes

7. A market model linearly correlates a return of an individual stock with that of a market index. For details, refer to MacKinlay (1997).
8. TOPIX is a capitalization weighted index of the stock prices of Japanese firms listed on the first section of the Tokyo Stock Exchange.
9. We identify the time when a distressed borrower requests debt forgiveness as the time of the initiation of negotiation.

known among the market participants. Therefore, market participants might foresee the occurrence of the event in the near future and react well before the announcement. Dahiya, Saunders, and Srinivasan (2003) refer to this issue.

Hence, in addition to a standard two-day window from the day before the event day to the event day, we examine several wider event windows: a three-day window from two days before the event day to the event day, a five-day window from four days before to the event day, a seven-day window from six days before to the event day, and a nine-day window from eight days before to the event day.

As for the timing of the initiation of negotiations, we identify 59 events for which the stock price data of the distressed firm and 38 events for which stock price data for the main bank of the distressed firm are available. In the case of reaching a debt restructuring agreement, we extract 58 events in terms of the distressed firm and 39 events related to the main bank.

In our analysis, we use two ways to divide the sample into two subsamples. One is based on the main bank's risk exposure ratio: higher risk exposure cases in which the ratio is higher than the median of the sample, and lower risk exposure cases in which the ratio is lower than the median. The other is based on the main bank's NPL ratio to the total capital. We divide the sample firms into two subsamples at the median of the ratio.

3.2.1. The Results for the time of the initiation of negotiations

Main banks

(Insert Table 2 'Cumulative Abnormal Returns for Main Banks on Announcements of Requests for Debt Forgiveness by Distressed Borrowers')

Table 2 reports the average stock price responses of main banks to the announcements of their borrowers' requests for debt forgiveness. Panel A shows the results of tests for the aggregate samples of the main banks. We find no significant average abnormal return for the aggregate sample.

However, when this sample is divided based on the level of the main bank's exposure, we find significant negative abnormal returns for cases with higher exposure and significant positive abnormal returns for cases with lower exposure. Panel B reports the results for these two subsamples. For higher exposure cases, the average abnormal return for the two-day event window is −2.312%, which is statistically significant at the 1% level (θ-statistic = −2.511)[10].

For lower exposure cases, we observe significant positive abnormal returns for the three-day, five-day, seven-day and nine-day event windows.

Panel C presents the results of analyses when the sample firms are divided based on the main bank's NPL ratio to the total capital. We find no significant abnormal returns for either of the sub-samples.

Distressed borrowers

(Insert Table 3 'Cumulative Abnormal Returns for Distressed Borrowers on Announcements of their Requests for Debt Forgiveness')

[10].θ statistic is calculated from standardized abnormal returns of sample firms, and is an asymptotically standard normal. We can test the null hypothesis using θ. If the event has no impact on the behavior of security prices, we would expect that θ is not significantly different from zero. For further details, see MacKinlay (1997).

In Table 3, Panel A presents the average stock price response of the aggregate sample of distressed firms to announcements of their requests for debt forgiveness. Focusing on the event day, the average abnormal return is −0.090%, which is significant at the 1% level (θ-statistic = −2.712). However, for all the other event windows, we do not find any statistically significant abnormal returns. Thus, the effect on stock prices is unclear.

Next, we find the announcement has different impacts when we divide this sample into two subsamples based on the level of the main bank's risk exposure to the distressed firm. In Table 3, Panel B, we report the results of the event study for the two subsamples.

For firms with higher main bank exposures, we find statistically significant positive abnormal returns for all the event windows, while, for firms with lower exposure, we find significant negative abnormal returns across all the event windows. The results show that the impact on borrowers with higher main bank exposures is in the opposite direction to the impact on those with lower exposures.

Panel C also shows the results when the sample is divided based on main banks' NPL ratios. For main banks with higher NPL ratios, we find statistically significant positive abnormal returns for all the event windows, while, for main banks with lower ratios, we find significant negative abnormal returns across all the event windows except for the nine-day window.

3.2.2. Stock price responses at the time of reaching an agreement

Main banks

(Insert Table 4 'Cumulative Abnormal Returns for Main Banks on the Announcement of Reaching a Debt Restructuring Agreement')

In Table 4, Panel A presents the average stock price response of the aggregate sample of main banks at the time when the main banks and their distressed borrowers reached agreement on restructuring plans. For all the event windows, we find no statistically significant abnormal returns. The results are the same when we divide this sample based on the level of the main bank's risk exposure. These are shown in Panel B.

On the other hand, the market's evaluations of the outcome of the negotiations differ depending on level of the main bank's NPL ratio. Panel C shows the results when the sample is divided based on the main bank's NPL ratio.

For main bank's with higher NPL ratios, we find statistically significant positive abnormal returns for the seven-day and nine-day event windows, while, for main banks with lower ratios, we do not find any statistically significant abnormal returns.

The distressed borrowers

(Insert Table 5 'Cumulative Abnormal Returns for Distressed Borrowers on the Announcement of Reaching a Debt Restructuring Agreement')

In Table 5, Panel A, we show the average stock price response of the aggregate sample of distressed firms at the time when the main banks and their distressed borrowers reached agreement on restructuring plans. For all the event windows, we confirm statistically significant positive abnormal returns.

These positive effects on the stock price of distressed borrowers occur independently of the level either of the main bank's risk exposure or of the main bank's NPL ratio. Panel B reports the results when we divide the sample based on the level of the main bank's risk exposure. Panel C presents the results when the sample is divided based on the level of the main bank's NPL ratio.

3.3. Examining the changes in the operating performances of distressed firms

Finally, we analyze the changes in the operating performances of distressed firms just after their debt burden is reduced. The analysis employs the methodologies developed by Barber and Lyon (1996).

The purpose of this analysis is to indirectly measure the size of the debt reduction. At least, we shouldn't observe relatively negative abnormal performances of the sample firms compared with their controls, because debt reduction brings a distressed borrower temporary profits.

Among the sample firms identified by extracting newspaper reports, we extract 52 sample firms for which necessary data are available. To assess the statistical significance of abnormal performances, we use the Wilcoxon Signed-Rank Test that Barber and Lyon (1996) show to be appropriate.

(Insert Table 6 'Results of analyses on the abnormal performances of sample firms just after launching debt restructuring')

The results are shown in Table 6. For all 52 cases, we confirm negative abnormal performances that are statistically significant at the 10% level.

Next, we divide the 52 cases into two sub-samples based either on the level of the main bank's risk exposure or on the level of the main bank's NPL ratio. For main banks with lower NPL ratios, we confirm negative abnormal performances that are statistically significant at the 5% level. For the other three cases, we find no statistically significant abnormal performances. The results indicate that, at least, debt burden is inadequately reduced when the main bank's NPL ratio is low.

4. Conclusion

We find two interesting aspects of out-of-court debt restructuring. First, when a distressed borrower is a large borrower from its main bank, after the launch of debt restructuring, it again falls into financially distressed condition more frequently than other types of borrowers. The market anticipates that the outcome of debt restructuring negotiations will be bad for the main banks at the time of the initiation of negotiations. Such evidence suggests that a financially distressed firm restructures its debt out of court in an inefficient manner when it is a large borrower from its main bank.

Second, when a distressed borrower's main bank has a high NPL ratio, the firm less frequently falls into a financially distressed condition again after launching debt restructuring than do other types of borrowers. When a distressed borrower's main bank has a high NPL ratio, the market evaluates the outcome of negotiations as being unexpectedly good for main banks at the time of reaching agreement. Moreover, when their main bank's NPL ratio is low, distressed borrowers experience statistically significant negative abnormal performances just after launching debt restructuring. These results indicate that policies for promoting the disposal of nonperforming loans

improve efficiency in out-of-court debt restructuring. Needless to say, we do not explicitly examine the possible relationships between efficiency in the disposal of NPLs and the effects of policies. A subject for us to clarify in future research will be the effects of a variety of policies implemented during the "lost decade".

Our empirical results suggest that some characteristics of lending banks can move a restructuring plan away from the optimal one. We can interpret that bank's characteristics are part of the transaction costs to reduce the debt burdens of distressed firms, as Gilson (1997) points out.

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Table 1 Results of probit analysis to confirm the ex post probability of the recurrence of subsequent financial distress

	coefficient figures in parentheses mean standard error.	t−value figures in parentheses mean p−value	coefficient figures in parentheses mean standard error.	t−value figures in parentheses mean p−value	coefficient figures in parentheses mean standard error.	t−value figures in parentheses mean p−value
constant term	0.761 (2.334)	0.326 (0.745)	−1.095 (1.900)	−0.576 (0.564)	0.193 (2.282)	0.084 (0.933)
operating profits	1.88E−05 (0.00004)	0.441 (0.659)	−1.81E−06 (0.00004)	−0.047 (0.963)	1.40E−05 (0.00004)	0.340 (0.734)
total sales(log−transformed value)	0.541 (0.416)	1.300 (0.194)	0.001 (0.164)	0.005 (0.996)		
total book value of assets (log−transforme	−0.694 (0.493)	−1.408 (0.159)			−0.114 (0.196)	−0.582 (0.561)
share of the main bank	2.801 (1.181)	2.372 ** (0.018)	2.779 (−1.119)	2.484 ** (0.013)	2.679 (1.112)	2.408 ** (0.016)
the exposure ratio for each main bank to a distressed borrower	−27.581 (9.616)	−2.868 *** (0.004)	−28.659 (9.517)	−3.011 *** (0.003)	−28.413 (9.480)	−2.997 *** (0.003)
the main bank's ratio of NPLs to the total c	1.359 (0.724)	1.879 * (0.060)	1.314 (0.719)	1.829 * (0.067)	1.378 (0.726)	1.899 * (0.058)
number of sample firms	56		56		56	
R−squared	0.356		0.326		0.324	
Log likelihood	−27.255		−28.299		−28.126	

*, ** and *** denote sginificant difference from zero at 10 percent, 5 percent and 1 percent levels, respectively.

the exposure ratio for each main bank j to a given borrowing firm k: $Exposure\ ratio_{jk} = \frac{the\ main\ bank\ \ j's\ amount\ of\ \ lending\ to\ the\ borrowing\ \ firm\ k}{the\ lead\ bank\ \ j's\ amount\ of\ \ capital\ held}$

the main bank j's ratio ofNPLs to the total capital is defined: $NPLs\ ratio_{j} = \frac{the\ amount\ of\ \ NPLs\ \ held\ by\ main\ bank\ \ j}{the\ main\ bank\ \ j's\ amount\ of\ \ capital\ held}$

the share of the main bank means the percentage share of the main bank in the whole amount borrowed by the distressed firm.

Table 2 Cumulative Abnormal Returns for Main Banks on Announcements of Requests for Debt Forgiveness by Distressed Borrowers

Panel A: The aggregate sample (N = 38)
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

Event Window			CAR (%)	θ statistic
the event day	(0)	1-day window	0.133	-0.020
from the day before the event day to the event day	(-1, 0)	2-day window	-0.407	-1.012
from two days before the event day to the event day	(-2, 0)	3-day window	0.557	0.475
from four days before the event day to the event day	(-4, 0)	5-day window	0.859	0.472
from six days before the event day to the event day	(-6, 0)	7-day window	0.860	0.562
from eight days before the event day to the event day	(-8, 0)	9-day window	1.393	0.835

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 2 (continued)

Panel B: Two subsamples of the main banks divided based on the level of their risk exposure
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher exposure case N=17		lower exposure case N=17	
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	−0.370	−0.399	0.593	0.246
from the day before the event day to the event day	(−1, 0)	2-day window	−2.312	−2.511 **	1.158	0.597
from two days before the event day to the event day	(−2, 0)	3-day window	−1.729	−1.475	2.942	2.045 **
from four days before the event day to the event day	(−4, 0)	5-day window	−2.031	−1.433	4.183	2.315 **
from six days before the event day to the event day	(−6, 0)	7-day window	−2.317	−1.237	4.856	2.438 **
from eight days before the event day to the event day	(−8, 0)	9-day window	−1.539	−0.792	5.332	2.360 **

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 2 (continued)

Panel C: Two subsamples of the main banks divided based on the ratio of NPLs of each main bank
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data. The Nomura Research Institute

			higher npl ratio case	N=19	lower npl ratio case	N=18
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	−0.091	0.126	0.391	−0.139
from the day before the event day to the event day	(−1, 0)	2-day window	−1.466	−1.399	0.774	0.055
from two days before the event day to the event day	(−2, 0)	3-day window	−0.799	−0.444	2.239	1.332
from four days before the event day to the event day	(−4, 0)	5-day window	−0.553	−0.126	2.806	1.084
from six days before the event day to the event day	(−6, 0)	7-day window	−0.822	−0.257	3.474	1.519
from eight days before the event day to the event day	(−8, 0)	9-day window	−0.313	−0.057	4.205	1.730 *

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 3 Cumulative Abnormal Returns for Distressed Borrowers on Announcements of their Requests for Debt Forgiveness

Panel A: Aggregate sample (N = 55)
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

Event Window			CAR (%)	θ statistic
the event day	(0)	1-day window	−0.090	−2.712 ***
from the day before the event day to the event day	(−1, 0)	2-day window	2.519	0.709
from two days before the event day to the event day	(−2, 0)	3-day window	2.922	0.963
from four days before the event day to the event day	(−4, 0)	5-day window	3.333	0.633
from six days before the event day to the event day	(−6, 0)	7-day window	4.015	0.826
from eight days before the event day to the event day	(−8, 0)	9-day window	4.891	1.147

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 3 (continued)

Panel B: Two subsamples of distressed borrowers divided based on the level of their main banks' risk exposure
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher exposure case	N=25	lower exposure case	N=25
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	6.639	3.267 ***	-6.385	-7.540 ***
from the day before the event day to the event day	(-1, 0)	2-day window	9.262	4.405 ***	-3.352	-3.665 ***
from two days before the event day to the event day	(-2, 0)	3-day window	10.350	4.143 ***	-4.167	-3.228 ***
from four days before the event day to the event day	(-4, 0)	5-day window	11.636	3.730 ***	-4.955	-3.425 ***
from six days before the event day to the event day	(-6, 0)	7-day window	12.512	3.510 ***	-4.512	-2.906 ***
from eight days before the event day to the event day	(-8, 0)	9-day window	12.939	3.263 ***	-4.400	-2.669 ***

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 3 (continued)

Panel C: Two subsamples of distressed borrowers divided based on the ratio of NPLs of their main banks
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher npl ratio case	N=27	lower npl ratio case	N=27
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	5.471	5.025 ***	-4.609	-7.832 ***
from the day before the event day to the event day	(-1, 0)	2-day window	7.270	5.093 ***	-1.220	-3.419 ***
from two days before the event day to the event day	(-2, 0)	3-day window	8.803	5.071 ***	-1.792	-3.073 ***
from four days before the event day to the event day	(-4, 0)	5-day window	10.476	4.298 ***	-2.638	-2.917 ***
from six days before the event day to the event day	(-6, 0)	7-day window	10.902	3.740 ***	-1.860	-2.230 **
from eight days before the event day to the event day	(-8, 0)	9-day window	10.863	3.421 ***	-0.088	-1.509

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 4 Cumulative Abnormal Returns for Main Banks on the Announcement of Reaching a Debt Restructuring Agreement

Panel A: Aggregate sample (N = 39)
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

Event Window			CAR (%)	θ statistic
the event day	(0)	1-day window	0.425	1.299
from the day before the event day to the event day	(-1, 0)	2-day window	0.564	1.221
from two days before the event day to the event day	(-2, 0)	3-day window	0.242	0.420
from four days before the event day to the event day	(-4, 0)	5-day window	1.565	1.177
from six days before the event day to the event day	(-6, 0)	7-day window	1.969	1.429
from eight days before the event day to the event day	(-8, 0)	9-day window	2.161	1.516

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent, respectively.

Table 4 (continued)

Panel B: Two subsamples of main banks divided based on the level of their risk exposure
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher exposure case	N=16	lower exposure case	N=15
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	0.752	1.475	0.463	0.768
from the day before the event day to the event day	(-1, 0)	2-day window	1.188	1.571	0.132	0.363
from two days before the event day to the event day	(-2, 0)	3-day window	0.886	0.849	-0.148	0.009
from four days before the event day to the event day	(-4, 0)	5-day window	2.955	1.525	1.015	0.512
from six days before the event day to the event day	(-6, 0)	7-day window	3.808	1.776 *	1.402	0.738
from eight days before the event day to the event day	(-8, 0)	9-day window	3.791	1.747 *	1.702	0.707

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 4 (continued)

Panel C: Two subsamples of main banks divided based on the ratio of NPLs of each main bank
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher npl ratio case	N=18	lower npl ratio case	N=18
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	0.669	1.219	0.190	0.670
from the day before the event day to the event day	(−1, 0)	2-day window	1.418	1.566	−0.269	0.322
from two days before the event day to the event day	(−2, 0)	3-day window	1.615	1.474	−1.431	−1.168
from four days before the event day to the event day	(−4, 0)	5-day window	3.135	1.937 *	0.001	−0.243
from six days before the event day to the event day	(−6, 0)	7-day window	4.350	2.443 **	0.134	−0.118
from eight days before the event day to the event day	(−8, 0)	9-day window	4.291	2.155 **	0.745	0.396

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent, respectively.

Table 5 Cumulative Abnormal Returns for Distressed Borrowers on the Announcement of Reaching a Debt Restructuring Agreement

Panel A: Aggregate sample (N = 51)
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

Event Window			CAR (%)	θ statistic
the event day	(0)	1-day window	3.781	3.904 ***
from the day before the event day to the event day	(-1, 0)	2-day window	7.908	7.009 ***
from two days before the event day to the event day	(-2, 0)	3-day window	7.839	5.808 ***
from four days before the event day to the event day	(-4, 0)	5-day window	7.665	4.595 ***
from six days before the event day to the event day	(-6, 0)	7-day window	9.999	4.290 ***
from eight days before the event day to the event day	(-8, 0)	9-day window	9.971	4.069 ***

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 5 (continued)

Panel B: Two subsamples of distressed borrowers divided based on the level of their main banks' risk exposure
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher exposure case	N=25	lower exposure case	N=24
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	2.617	2.866 ***	5.717	3.317 ***
from the day before the event day to the event day	(-1, 0)	2-day window	7.285	5.421 ***	10.025	5.540 ***
from two days before the event day to the event day	(-2, 0)	3-day window	7.012	4.403 ***	9.800	4.427 ***
from four days before the event day to the event day	(-4, 0)	5-day window	7.088	3.603 ***	9.810	3.459 ***
from six days before the event day to the event day	(-6, 0)	7-day window	10.185	3.567 ***	10.665	2.916 ***
from eight days before the event day to the event day	(-8, 0)	9-day window	12.401	4.055 ***	8.141	1.899 *

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 5 (continued)

Panel C: Two subsamples of distressed borrowers divided based on the ratio of NPLs of their main banks
Distribution of test statistic θ is asymptotically standard normal
Source of stock price data: The Nomura Research Institute

			higher npl ratio case	N=26	lower npl ratio case	N=26
Event Window			CAR (%)	θ statistic	CAR (%)	θ statistic
the event day	(0)	1-day window	4.941	3.287 ***	2.477	2.181 **
from the day before the event day to the event day	(-1, 0)	2-day window	6.860	3.352 ***	8.653	6.465 ***
from two days before the event day to the event day	(-2, 0)	3-day window	6.174	2.304 **	9.203	5.830 ***
from four days before the event day to the event day	(-4, 0)	5-day window	5.062	1.576	9.972	4.860 ***
from six days before the event day to the event day	(-6, 0)	7-day window	9.056	2.383 **	10.557	3.625 ***
from eight days before the event day to the event day	(-8, 0)	9-day window	7.101	1.742 *	12.457	3.957 ***

*, ** and *** denote significant difference from zero at the 10 percent, 5 percent and 1 percent levels, respectively.

Table 6 Results of analyses on the abnormal performances of sample firms just after launching debt restructuring

The abnormal performance is measured at the end of each sample firm's fiscal year during which the distressed borrowers and their main banks have reached agreement on debt restructuring plans.

The abnormal performance is defined as APi,t =(Pi,t − Pi,t−1)−(Pjc,t − Pjc,t−1)
where Pi,t (or (Pjc,t))= (EBITDA)/(Book value of total assets), and EDITDA=Earnings Before Interest, Taxes, Depreciation and Amortization.
Pjc,t means the performance of a contorol firm that is compared to the sample firm *i* at date *t*
The Book value of total assets is the average of beginning and ending values of the fiscal period

	whole sample	higher main bank's risk exposure case	lower main bank's risk exposure case	higher ratio of NPLs of the main banks	lower ratio of NPLs of the main banks
mean	0.0184	0.0081	0.0301	0.1089	−0.0655
the number of samples	52	25	25	24	24
standard deviation	0.3164	0.3403	0.3108	0.4008	0.2106
t value	0.4185	0.1189	0.4844	1.3310	−1.5249
p value	0.6773	0.9063	0.6325	0.1962	0.1409
signrank test	−1.685	−1.197	−1.090	0.057	−2.429
p value	0.092	0.231	0.276	0.954	0.015

The abnormal performance deviates from zero at the 1% significance level
The abnormal performance deviates from zero at the 5% significance level
The abnormal performance deviates from zero at the 10% significance level