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COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

"Changes in Corporate Restructuring Processes in Japan, 1981-2007"

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ESRI Research Program: "Japan's Bubble, Deflation and Long-Term Stagnation"

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Abstract:
We analyze a large database collected from newspaper articles that report on major episodes of corporate restructuring in Japan between 1981 and 2007. By linking this database with financial data on public firms, we identify changes in the likelihood that a distressed undergoes restructuring, as well as in some measures adopted during restructuring. We find that the way distressed Japanese firms are restructured has changed during this period. The likelihood that a large distressed firm with high levels of debt undergoes restructuring has declined. Those firms that undergo restructuring continue to adopt more aggressive measures in terms of layoffs and cutbacks than other distressed firms, suggesting that "restructuring", when it happens, involves real adjustments. Banks continue to be important for firms with a clearly identified main bank, and the main bank is more likely to push for more drastic reductions in debt and bank loans than other entities leading a restructuring event.

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1. Introduction

It is well-known that restructuring of troubled companies in Japan used to be based on bailout processes initiated by the distressed company's main bank or major trading partners. In a typical case, the main bank, being a large shareholder and usually the largest lender, intervened in a distressed borrower by dispatching executives and restructuring debt (often with the help of other lenders) with an eye toward turnaround so that the company would recover and resume debt repayment. Most bailouts were informal in nature: rarely were courts involved, and law-based bankruptcy procedures were exceedingly rare for large public companies.

Given its large exposure in both debt and equity, the main bank had a clear economic interest in the recovery of the customer. Moreover, it also strove to maintain its reputation as a dependable monitor on behalf of other lenders. Sheard (1989) argues that this type of reciprocal delegated monitoring reduced costs by eliminating duplication of the monitoring effort. Under delegated monitoring, the main bank was responsible for rescuing a client in financial trouble. Politics may occasionally have played a role, as the government had set strong priorities toward supporting Japan's largest companies, in order to uphold employment.[1]

During the 1990s, Japan's political economy, and with it the incentives and constraints faced by banks and large companies, began to change. One important factor was gradual financial deregulation that began in the late 1970s, and the subsequent disintermediation. As large firms diversified their sources of financing, banks started to lose their largest customers. As this happened, they looked for other (smaller) clients, especially those with land to be used as collateral for loans. Many of these new clients found themselves in trouble after asset prices collapsed in the early 1990s. The non-performing loan problem escalated into a full blown crisis in the late 1990s, and continued into the early 2000s.

The banking crisis led to great changes in Japan's banking industry. The severity of the crisis invited important legal change, partially in order to help banks reduce their nonperforming loans, and partially help companies restructure and reorganize their business in new ways (as explained in detail in Section 2). A 2001 law mandated the reduction of banks' shareholding in other companies, thereby reducing the banks' equity stake in clients. The 2002 Financial Revival Program, pushed by Heizo Takenaka (Minister of Financial Affairs in the Koizumi government),

[1] There is a large literature on Japan's main bank system in general, and main bank interventions in particular. See, for example, Aoki and Patrick (1994); Hoshi, Kashyap, and Scharfstein (1990); Hoshi and Kashyap (2001); Hirota and Miyajima (2001); Kaplanand Minton (1994); Kang and Shivdasani (1995); Morck and Nakamura (1999); and Sheard (1989, 1994).

put great emphasis on non-performing loan cleanup and was associated with a new political push toward direct loan write-offs, even for companies that might previously have been considered "too big to fail". New bankruptcy legislation and court processes introduced in the early 2000s afforded companies a choice between bank-led informal workouts and formal, court-based procedures. Changes in corporate law also introduced new options for corporate reorganization.

This paper looks at whether and how these changes have affected processes of corporate restructuring in Japan. Based on a database of major corporate restructuring cases between 1981 and 2007, combined with financial data for large Japanese firms, we study the incidence and content of restructuring. We identify changes over time in what triggered the onset of corporate restructuring, who led corporate restructuring (i.e., the role of banks), and how restructuring effected employment, capital growth, bank loan growth and total debt growth of the distressed company. We find that the likelihood that a large distressed firm undergoes restructuring has decreased over time, especially in the early 2000s. Moreover, firms under restructuring show lower growth in employment, capital, and debt than other distressed firms. Finally, we find that restructuring measures are more pronounced when a bank or a private equity fund leads the effort.

The paper is organized as follows. Section 2 sets the background by highlighting a few important changes related to corporate restructuring in Japan. Section 3 introduces the database and offers overview statistics. Section 4 contains the data analysis and findings. Section 5 concludes.

2. **Changes since the late 1990s**

The period of 1998-2006 brought great changes to Japan's corporate strategy-making, so much so that Schaede (2008) has labeled this period a "strategic inflection point". It coincides with political leadership of Hashimoto and Koizumi, who brought the 1998 "Big Bang" financial deregulation and shifted Japan toward the motto "leave it to the market".

The Big Bang reforms marked a final stage of gradual financial deregulation that began in the late 1970s. As Hoshi and Kashyap (1999, 2001) point out, this long process was skewed because deregulation that expanded financing options for large companies proceeded more quickly than deregulation expanding options for banks or savers. As a result, banks started to lose corporate customers while savers continued to hold large portions of their assets in bank deposits. The banks searched for new clients among small- and medium-sized companies,

especially those in the real estate business. But whereas those new clients had looked promising during the land price boom of the 1980s, loans turned sour as land prices dropped in the 1990s. Non-performing loans were a major problem for Japanese banks throughout the decade, and triggered a severe financial crisis from late 1997 to early 1999.

Rather than a reversal in banking regulation, the crisis further pushed deregulation, especially under the Koizumi government (2001-2006). As the government allowed several large financial institutions to fail, and raised pressure on banks to reduce their non-performing loans, it became clear that it was no longer blindly supporting bailouts of large firms. Partially in response to this shift, large companies called for more options in corporate reorganization, such as through labor adjustment. A first easing of layoff rules came through revised court rulings in 2000, followed by a revision of the Labor Standard Law, effective 2004 (Schaede 2008).

For our study of corporate restructuring, the following four changes are of particular importance. First, the particular process of financial deregulation changed the client base of Japanese banks. Large companies no longer needed to rely as heavily on bank financing. Yet, the relationship between banks and new smaller customers was often not as extensive or tight. Because main banks were often leaders of corporate restructuring cases, this shift in bank-firm relationships may have affected processes of corporate restructuring.

Second, among other things, Big Bang reforms brought new accounting rules that make the financial condition of public companies more transparent. Outside investors such as foreign private equity funds can now assess a company's financial health more easily than before. This has opened the possibility that new investors play a role in corporate restructuring.

Third, in terms of corporate reorganization the Commercial Code was revised literally every year beginning in 1997/98, and eventually replaced by a new Corporation Law in 2006. The gist of these revisions was to allow for greater flexibility in corporate reorganization by facilitating spinoffs, spinouts, different types of stock, stock swaps, mergers and acquisitions.[2] One big impact of these reforms has been an increase in hostile takeover attempts, which is a new cause for concern for executives at underperforming firms. A new wave of proactive restructuring set in, whereby large firms refocused on core businesses, spun off non-core operations and restructured their finances. Importantly for our study, these legal reforms also afforded leaders of forced restructuring – the main bank, a lead company, or a consortium of both – much more flexibility in how to restructure a distressed company (Yanagawa 2006; Schaede

[2] For example, one important change was to revoke the veto right of employees in case of a spin-out. Previously, corporate unions had rejected such moves on the ground that traditionally smaller firms in Japan paid lower salaries. The revocation of this rule took labor out of the restructuring equation.

2008).

A fourth major change was the complete revision of bankruptcy laws. In their old versions, these had rarely been employed because they were too cumbersome, too expensive, and overall perceived as less efficient than an informal workout, such as an intervention by the main bank. However, in 2000 the new Civil Rehabilitation Law (*Minji-saisei-hō*) replaced the old, clumsy Composition Law (*Wagi-hō*) to design new court-based bankruptcy procedures.[3] In 2003, the Corporate Reorganization Law (*Kaisha kōsei hō*) was revised to allow for Chapter 11-type turnarounds. In 2004, the Liquidation Law (*Hasan-hō*) was revised to simplify legal procedures for a shutdown and fair distribution of assets. Moreover, the 2001 "Guideline for Out-of-Court Workouts" added to this a new structure for bank-led workouts by stipulating how debt forgiveness should be organized in cases with multiple lenders but uncertain claims. While Koibuchi (2007) shows that this Guideline was rarely used, it represented yet another alternative for companies in distress.

Given these changes as the background, we now examine whether and how these have affected incidence and processes of corporate restructuring in Japan.

3. **Database and Overview Statistics**

We have build a database of major episodes of corporate restructuring for the period 1981-2007, in two-year interval (all odd years, a set of 14 years of observation), from newspaper articles. The Japanese word for restructuring is *saiken* (再建), and we searched for this word in Nikkei Telecom 21, an electronic database that includes Japan's leading economic and financial newspapers published by Nihon Keizai Shinbun-sha (*Nihon Keizai Shinbun,* both morning and evening editions and including the economic sections of regional editions, *Nihon Kin'yū Shinbun, Nihon Sangyō Shinbun, Nihon Ryūtsū Shinbun*). We assume that the newspapers have been consistent in their reporting and word choice on *saiken* over time. Since the newspapers probably failed to report on all restructuring cases, the number of episodes in our database is the lower bound of the true frequency. However, looking at the cases we identified, we did not find any obvious omissions of major corporate restructuring cases. Thus, we are confident that our database includes all major cases of restructuring in those years.[4] Moreover, because episodes of

[3] Another legal based procedure was "Corporate Reordering" (*Kaisha-seiri*) based on the Commercial Code. This was also cumbersome, and it was discontinued with the Corporation Law of 2006.

[4] Also note that the Japanese language is much more consistent in word use than English. For example,

restructuring typically last longer than one year, we are confident that we have picked up most episodes generated in even years as well.

In the next step, we identified those articles that focused on corporate restructuring by publicly listed companies, because this allows us to combine our database with accounting and financial data. Upon this identification, we digitized the information in each newspaper account, to build a database that contains important characteristics of each restructuring episode. This included the coding of information on: timing; the role of the restructuring leader (such as the main bank or an affiliated company); any reliance on laws and courts; financial restructuring (such as debt forgiveness, interest concession); restructuring on the asset side of the balance sheet (asset sales or stock sales); managerial change (dispatch of directors, turnover of incumbent managers); corporate reorganization (spinoffs or exit from a business); labor adjustment (layoffs, early retirement, hiring freeze or employee dispatches); and salary adjustments (wage or bonus cuts, executive compensation reduction).

For the entire period, we observed a total of 1,610 episodes of corporate restructuring. Table 1 shows some summary statistics for the restructuring cases for the 26-year period, divided into four sub-periods: (1) pre-bubble (1981-1985); (2) bubble (1987-1991); (3) recession (1993-1997); and (4) strategic inflection (1999-2007). As one might expect, there were fewer cases of restructuring during the bubble (241 in total), and more during the strategic inflection turnaround beginning in 1999 (602). We can already see signs for change just by looking at this table. For example, in the fourth period, companies have become more active in reorganization (e.g., exiting lines of business or liquidating affiliates). In terms of financial restructuring, it appears that interest rate reduction has been in decline, whereas measures such as debt-equity swaps and new equity issues appear to be adopted more frequently.

Table 2 offers an overview of the data by type of restructuring leader; i.e., whether the effort was self-directed (or without leadership identified by the newspaper), led by the main bank or a group of banks, by a company or group of companies, by a consortium of banks and companies, or by a private equity fund (a new player beginning in the late 1990s). The table shows that the majority of restructuring cases was informal, as law and courts were used in only 5.7% (probably due to the fact that laws were revised only beginning in 2000). When using a court-based procedure, a distressed company needs to identify a sponsor, which probably

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whereas an English-language article may refer to “firms”, “companies” and “corporations” interchangeably and all with the same meaning – presumably to avoid tediousness in word repetition – a Japanese-language article would use the same word, even if repeatedly. This tendency toward word choice consistency is helpful for our exercise.

explains the large role played by other companies in this category (31 cases). Bank-led restructurings were almost always conducted out-of-court. All leaders appear roughly equally likely to dispatch directors and replace the management of the distressed firm. Episodes led by a group of banks tend to have a higher incidence of corporate reorganization, labor adjustments, and salary adjustments. Overall, these data afford us great opportunity to study differences in corporate restructuring over time, and by type of leader.

For our analysis of the meaning of such differences, we also look at the financial conditions of the companies undergoing restructuring. We source this information from the Nikkei Financial Database, which contains accounting and financial data for all listed firms, as well as firms that used to be listed but ceased to exist. Overview statistics for all listed firms are presented in Table 3.

4. Data Analysis and Findings

We begin our analysis with a few graphs that highlight how distressed companies that undergo restructuring differ from distressed firms that do not. In our analysis, we use two alternative approaches to classify "distress". First, we define a company to be in distress if its interest rate coverage ratio was below one for the previous two years. Alternatively, we classify a company to be in distress if it has just experienced two consecutive years of negative net profits.

Figure 1 shows the ratio of all distressed firms that are undergoing restructuring. There appears to be a downward trend in firms with negative net profits to undergo restructuring (Figure 1a). Figure 1b shows limited enthusiasm for restructuring firms with low interest rate coverage ratios during the bubble period (1987-1991). Overall, we can see variation across periods as well as long-term changes.

Figure 2 shows differences across firms under distress that undergo restructuring from those that do not, in terms of employment adjustment. It appears that distressed firms under restructuring reduce their labor force more than those not undergoing restructuring. Figure 3 shows that distressed firms under restructuring reduce their debt more than other distressed firms.

4.1. Changes in the Likelihood of Undergoing Restructuring Over Time

To understand the apparent decline in the incidence of restructuring by distressed firms, we estimate several probit regressions. The dependent variable is "*saiken*", which takes the value

1 if a firm is identified to be under restructuring, and 0 if not. We examine whether the likelihood of undergoing restructuring in determined by whether the company is in financial distress or not (using both measures discussed above), and by the company's dependence on bank borrowings (measured by the ratio of total bank debt to total assets). Moreover, we look at how relations have changed over time.

The estimation results are shown in Table 4. The first column reports the minimal specification that includes the bank debt to assets ratio; (the natural logarithm of) total assets (both measured at the beginning of the period); and a 0-1 variable that identifies a company with an interest coverage ratio below one for the two previous years. The coefficient estimates on these variables are all positive and statistically significant. Thus, not surprisingly, companies with extremely low interest coverage ratios are more likely to be restructured. Companies that depend more on bank debt are also more likely to be restructured, as are larger companies.

In the specification reported in the second column, we add a two-year lag of the *saiken* variable as an explanatory variable, to see if a company under restructuring is likely to stay under restructuring for more than two years. We can also think of this as an attempt to control for the existence of chronically depressed and restructured companies. Because the lag of *saiken* is not available for the first year of our sample (1981), the number of observation drops. The coefficient estimate on the lagged *saiken* is positive and statistically significant, suggesting that a company under restructuring is indeed more likely to continue being restructured, even after two years. The coefficient estimates on the other variables are now a bit smaller but still positive and statistically significant.

The third specification controls for industry effects, by adding industry dummies. While there is variation across industries, no industries stand out as driving the results. All the coefficient estimates that we report remain positive and statistically significant.

Finally, in the last column, we add "main bank dependence" as an independent variable. This is measured as the amount of loans from the largest lender divided by total bank loans to the company. This variable was originally calculated by one of the authors for a different research project that covered fewer industries and ended in 2002. In a future version of this paper, we plan to calculate this variable for all companies in our sample, and for all years. While limits on this variable reduce the sample size, we still have 17,800 observations. We find that "main bank dependence" has a positive association, but the finding is not significant.

We repeated estimation of all these specifications by using net profits instead of interest coverage ratio to classify "distress". The results (not reported) are essentially the same.

Next, we examine possible changes over the four periods – pre-bubble, bubble, 1990s

recession, and strategic inflection. We do this by adding period dummy variables for these sub-periods and interacting them with some key explanatory variables. Table 5 reports the results. The specification in the first column adds the interaction between the period dummy and the distress variable. The estimated coefficients on the interaction terms suggest that the impact of "distress" on the likelihood of restructuring has faded over time. Compared with the 1983-1985 period, in each subsequent period the likelihood that a distressed company will undergo restructuring has declined. While this finding is not statistically significant for the 1987-1991 period, it is significant for the subsequent two periods.

In the second column, we add an interaction term between the bank debt to total assets ratio and the period dummies. We find that the impact of dependence on bank debt by a distressed company on the likelihood of restructuring also declines over time. Even though companies with higher bank debt dependence continue to be more likely to be restructured, the difference between companies with high levels of bank debt from those with low levels of bank debt becomes much smaller in later periods. The estimated coefficients suggest that the impact of bank debt declined monotonically over time.

Finally, we examine changes in the importance of main bank dependence over time. Again, the number of observations is reduced now, due to temporary data constraints. Recall that in Table 4 we estimated the impact of main bank dependence without considering possible changes over time, and found the coefficient estimate to be positive but statistically insignificant. When we now allow the coefficient estimate to be different for the four periods, we find a positive, statistically significant impact for the first period (1983-1985). The interaction terms are all negative, and the point estimate is negative and grows over time. In fact, for the last sub-period the sum of the coefficient estimates on the interaction term and main bank dependence is negative, suggesting that higher main bank dependence reduced the likelihood of restructuring, although this result is probably not statistically significant.

Overall, the results provide some new insights into the changes in determinants for restructuring events over time. Clearly, distressed firms with more bank debt are more likely to be restructured, but over time this tendency has declined. The well-established practice whereby large firms in distress, with a high debt to assets ratio, would undergo restructuring, especially if they had a strong main bank, seems to have weakened over time.

4.2. Differences in the Processes of Restructuring

In addition to changes in the likelihood of a distressed firm undergoing restructuring over time, our second question is whether restructuring content has changed as well.

We first look at employment adjustment, measured as growth in the number of employees over the previous year. From Figure 2, we already know that on average, distressed companies undergoing restructuring reduce their labor force more than distressed companies not under restructuring. Regression analysis confirms this result. Here we use the *saiken* variable as an explanatory variable for employment growth. The regression also includes a one-year lag of employment growth, to capture persistence at the firm level. We also include year dummies and industry dummies to control for any time-specific or industry-specific fixed effects. Finally, all regression specifications also include the distress dummy as an explanatory variable.

Table 6 reports the results. To mitigate problems caused by a few extreme observations, in this and all following regressions that use growth variables as the dependent variable, we drop all observations where either the growth rate or the lagged growth rate is below -50% or above 100%. The regression is estimated by OLS, and robust standard errors suggested by White (1980) are reported in parentheses. The basic specification in the first column shows that distressed companies in general have lower employment growth, which is not surprising. When we control for the general effect of distress on employment growth, the regression result shows that companies under restructuring reduce employment even more. The point estimate suggests that employment growth in firms undergoing restructuring is 3.5% lower.

The specification in the second column adds the interaction term between the distress variable and *saiken* to examine whether being under restructuring further reduces employment growth for distressed firms. The negative and statistically significant coefficient estimate on the interaction term confirms that this is indeed the case. The point estimate suggests that restructuring by distressed firms lowers employment growth by 5.3%, while it reduces employment growth in non-distress firms by 3.0%.

In the third column, we introduce interaction terms between *saiken* and the period dummies to see whether the employment impact of restructuring changed over time. The estimated coefficients on all interaction terms are tiny and not significantly different from zero. Thus, we conclude that restructuring consistently led to lower employment growth throughout the entire period.

Table 7 reports a similar regression analysis with capital growth (growth in depreciable assets, a proxy for investment rate) as the dependent variable. Similar to employment growth, distressed firms experience reduced capital growth. Firms under restructuring reduce capital growth even more. However, in contrast to employment, the coefficient estimates on the interaction terms are large. The coefficient estimate is positive and statistically significant for the 1993-1997 period. This suggests that firms under restructuring did not reduce capital growth as

much as have in recent years, and this is especially true for the mid-1990s.

Similar regressions reported in Table 8 examine the growth of bank loans during restructuring. For the stereotypical bank rescue case, one may expect the lead bank to increase loans to help the troubled client – with debt forgiveness being the extreme example - while in some cases reducing the debt burden may be more effective for the turnaround effort. There is no empirical evidence that the average firm under bank rescue increased its loans, as pointed out by Miwa (1985) and Hoshi, Kashyap and Scharfstein (1990). Our results confirm this finding, as bank loan growth is not higher for firms undergoing restructuring.

Looking at the basic specification in column 1 of Table 8, we find that distressed companies tend to reduce bank loan growth. It is not clear whether this is demand-driven (the company refrains from borrowing more) or supply-driven (the bank refuses to lend more). The estimated coefficient on *saiken* is essentially zero, suggesting that restructuring does not affect bank loan growth. We add the interaction between *saiken* and the distress dummy in the second column, and the interaction between *saiken* and period dummies in the third column. In none of these specifications do we find *saiken* to have any significant impact on bank loan growth.

In contrast, the results for total debt reduction differ. Recall that Figure 3 suggests that distressed firms under restructuring reduce their debt more than other distressed firms. Table 9 shows regression results for the growth rate of total debt. Distressed firms tend to have lower total debt growth in all specifications. Again we cannot be sure whether this is driven by demand or supply. But unlike for bank loans, we find that firms under restructuring tend to reduce the growth rate of total debt, although this result becomes insignificant when we interact *saiken* with the period dummies in the specification shown in the last column.

Overall, we find that firms under restructuring tend to reduce their growth of employment, capital, and total debt. We do not find evidence for any change in this tendency over time, with a weak evidence for reduced impact of restructuring on capital growth during the mid-1990s.

4.3. The Role of the Restructuring Leader

We now turn to the question whether there are differences in process, depending on who leads the restructuring episode. Table 2 showed preliminary data on such differences, as well as six categories of leaders of restructuring: the main bank, a group of banks, a company or group of companies, a combination thereof, or a private equity fund.

First, we examine whether growth of employment, capital, bank loans or total debt differ depending on the identity of the leader(s). To do this, we regress the growth variable on its

lag and six dummy variables, each taking the value 1 for a particular type of leadership. Since our regression includes a constant term, the excluded category self-leadership (including cases where the restructuring leader is unidentified). Results reported in column 1 of Table 10 show no differences across restructuring leadership in terms of employment growth. Likewise, capital growth rates do not differ greatly, with one exception: when a group of companies leads the restructuring, capital growth is reduced more than with other leaders (column 2)

In contrast, in terms of bank loan growth we find some interesting differences (column 3). Loans are reduced more when either one bank or a fund are the leaders. Results for both of these leaders are strong and significant, suggesting that these two leadership forms may ask for more aggressive measures of financial restructuring. A similar finding, though slightly weaker for funds, can be seen for total debt growth.

The apparent differences between bank leadership and other types of leadership prompt us to look at the factors that make a bank-led restructuring more likely and how those changed over time. To examine this issue, we estimate a series of probit models similar to those above regarding the determinants of restructuring events and changes over time. Here, the dependent variable, "bank-led", takes the value 1 if a restructuring episodes is led by a single bank (probably the main bank), and 0 otherwise. Note that the bank-led variable is defined only for those firms under restructuring that we coded for our database, and the sample size for this analysis is at most 1,610. Industry dummies are included in all specifications, as are period dummies when we add interaction terms with periods.

The results in Table 11 suggest that large size and a high bank debt to assets ratio increase the probability of bank-led restructuring. As shown earlier, restructured firms tend to be larger and have a higher dependence on bank debt. The results here suggest that – even in this limited sample of firms under restructuring – firms under bank-led restructuring stand out for having more assets and higher bank dependence. The distress dummy does not seem to matter, suggesting that bank-led restructuring does not address the level of distress, at least as measured by our classification of interest rate coverage or negative net profits.

The specification in the second column includes main bank dependence as an additional explanatory variable. As one might expect, we find that higher dependence on a main bank increases the probability of bank-led restructuring.

The third specification includes the interaction terms between bank debt to total assets ratio and the four periods, as well as those between the distress dummy and the periods. Main bank dependence is not included in this specification. The distress dummy does not matter in any period. In contrast, we find interesting changes over time for the bank debt to total assets ratio.

For the 1981-1985 period, high bank debt is associated with a higher probability of bank-led restructuring. For the 1987-1991 period, the impact is slightly negative but perhaps not statistically significant from zero, suggesting high bank debt did not increase the likelihood of the bank-led restructuring. However, for the 1993-1997 period, the impact becomes positive again, even though the magnitude is smaller than the 1981-1985 period. For the 1999-2007 period, the impact is positive and actually larger than in the 1981-1985 period.

The last column reports a specification that includes the interaction term between main bank dependence and the four periods, in addition to the interactions between the distress dummy and the periods. Again, the distress dummy does not matter in any sub-period. The point estimates on the interaction terms with main bank dependence suggest that the importance of high main bank dependence as a determinant of bank-led restructuring declined over time, although the change is not statistically significant.

5. Conclusions

Using a unique database on major corporate restructuring cases in Japan, this paper examined what type of firms are more likely to be restructured, what restructuring implies for the company's employment, investment, and debt, and how those relations changed over time.

Our analysis offers three important findings. First, the likelihood for firms in distress to undergo restructuring has apparently decreased over time. Throughout the period 1981-2007, the larger the company in distress and the higher its dependence on bank debt, the more likely it was to undergo restructuring. However, this likelihood has declined over time. This suggests that there are some large and highly bank-dependent companies that would have been restructured in the early 1980s but are not in the 2000s. The result supports the argument put forward by Caballero, Hoshi, and Kashyap (2008) that a lack of restructuring in the 1990s and the early 2000s created many zombie firms and slowed down the economy.

Second, we find that it makes a difference who leads the restructuring efforts. When a bank or a fund takes charge, the distressed firm reduces debt and bank loans more aggressively. Main bank-led restructuring continues to be effective when it happens, although it appears to happen less frequently over time.

Third, distressed firms that undergo restructuring tend to reduce expansion in employment, capital, and debt more than other distressed firms. At the most basic level, this means that restructuring is real, and not simply an announcement exercise. Whether differences in restructuring lead to differences in performance is another issue that we leave for future research.

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Table 1: Summary Statistics for 1,610 Restructuring Cases, 1981-2007

Period	1981-1985	1987-1991	1993-1997	1999-2007
Restructuring Cases	331	241	436	602
Proportion of cases for each event				
director dispatch	1.23%	0.71%	1.12%	0.75%
managerial turnover	22.05%	22.13%	26.65%	25.74%
executive bonus cut	5.14%	2.87%	4.69%	7.11%
change of restructuring plan	3.32%	2.87%	4.20%	3.31%
asset sale	26.59%	20.33%	23.39%	17.11%
stock sale	6.04%	7.47%	8.72%	9.47%
exit from a business line	10.27%	8.20%	12.58%	21.16%
new entry	8.16%	12.30%	4.26%	4.30%
spin off	17.82%	15.98%	12.37%	11.07%
liquidation of affiliated companies	9.37%	8.20%	10.66%	19.17%
new loans	2.42%	4.56%	5.05%	3.49%
interest reduction	8.46%	1.64%	5.54%	0.83%
debt forgiveness	1.51%	3.32%	1.83%	9.80%
debt equity swap	0.30%	0.00%	0.00%	3.31%
new equity issue	8.16%	8.71%	7.57%	18.60%
equity reduction	2.42%	3.28%	0.43%	6.94%
size reduction	13.90%	9.84%	15.57%	15.87%
cost reduction	20.54%	18.44%	23.45%	15.54%
sales promotion	19.03%	20.49%	15.57%	14.88%
relocation of labor	11.18%	3.69%	6.61%	4.30%
furlough	1.21%	0.00%	0.64%	0.00%
stop new hires	8.76%	2.05%	9.81%	4.96%
early retirement	38.53%	12.31%	19.43%	41.22%
layoffs	2.11%	8.20%	5.12%	2.31%
shukko (employee dispatch)	9.37%	4.51%	7.89%	4.30%
wage reduction	3.63%	1.23%	1.07%	5.12%
bonus cut	1.51%	0.41%	0.85%	1.82%
Reorganization (exit, spinoff, size reduction)	1.75%	1.00%	2.14%	1.85%
Adjustment of employment (relocation, furlough, stop new hires, early retirement, layoffs, dispatch)	1.51%	0.63%	1.76%	0.93%
Salary or bonus adjustment (wage cut, salary cut, executive bonus reduction)	0.37%	0.12%	0.30%	0.39%

Table 2: Overview Data: Differences in Restructuring, by Restructuring Leader

	Self-Directed or NA	Main Bank	Another Company	Group of Banks	Group of Companies	Group of Banks and Companies	Fund	Total
Total	968	135	286	50	41	109	21	1,610
Number of Cases based on Bankruptcy or Liquidation Laws								
NA	932	131	256	43	36	101	19	1,518
Liquidation Law	0	1	1	1	0	2	0	5
Corporate Reorganization Law (rev. 2003)	25	1	21	4	4	1	0	56
Commercial Code-based (until 2006)	0	1	2	0	0	0	0	3
Composition Law (until 2000)	1	0	0	0	0	0	0	1
Civil Rehabilitaiton Law (2000 onward)	10	1	6	2	1	5	2	27
Total law-based	36	4	30	7	5	8	2	92
%	3.7	3.0	10.5	14.0	12.2	7.3	9.5	5.7
Number of Executives Dispatched								
0	955	66	144	32	21	41	13	1,272
1	8	51	92	7	12	23	5	198
2	4	9	28	6	1	16	3	67
3	0	4	6	1	3	5	0	19
4	0	1	6	2	1	10	0	20
5-13	1	4	10	2	3	14	0	34
Number of Cases with Executive Replacement								
0	786	88	184	33	26	69	16	1,202
1	182	47	102	17	15	40	5	408
%	18.8	34.8	35.7	34.0	36.6	36.7	23.8	25.3
Number of Revisions in Reorganization Plans								
0	947	126	281	44	39	102	21	1,560
1	20	9	3	5	2	6	0	45
2	0	0	2	1	0	0	0	3
3	1	0	0	0	0	1	0	2
Cases with Corporate Reorganization (exit, spinoff, liquidation)								
0	583	69	210	20	20	50	13	965
1	385	66	76	30	21	59	8	645
%	39.8	48.9	26.6	60.0	51.2	54.1	38.1	40.1
Cases with Labor Adjustments (furlough, no new hires, early retirement, dispatch)								
0	688	101	234	34	31	70	21	1,179
1	280	34	52	16	10	39	0	431
%	28.9	25.2	18.2	32.0	24.4	35.8	0.0	26.8
Cases with Salary Adjustments (wage reduction, bonus cuts, executive compensation cuts)								
0	903	121	277	38	38	95	20	1,492
1	65	14	9	12	3	14	1	118
%	6.7	10.4	3.1	24.0	7.3	12.8	4.8	7.3

Table 3: Summary Statistics for Financial Data for All Listed Firms, 1981-2007
(in averages for each period; in million Yen)

Period	1981-1985	1987-1991	1993-1997	1999-2007
% of firms under restructuring	0.051	0.033	0.053	0.039
% of firms with negative net profits for 2 years	0.023	0.014	0.041	0.072
% of firms with interest coverage ratio <1 for 2 years	0.095	0.152	0.177	0.153
total assets	104,676.8	153,415.9	176,638.8	162,657.7
total bank loans	35,230.5	43,034.3	44,476.8	34,309.7
total debt	42,093.5	61,626.2	69,667.0	54,999.8
bank debt to total assets ratio	0.280	0.235	0.225	0.230
total debt to total assets ratio	0.299	0.291	0.294	0.268
employment growth	0.010	0.023	0.006	0.011
sales growth	0.082	0.088	0.058	0.277
profit rate (net profit / total assets)	0.028	0.031	0.016	0.021
net profits	1,964.2	2,741.1	1,805.1	2,071.2
interest coverage ratio	1.137	0.215	9.924	0.863
main bank dependence (proportion of loans from the largest lender)	0.256	0.273	0.277	0.294
amount of loan from the largest lender (avg per firm)	2,922.1	4,106.6	5,402.0	5,627.5

Figure 1: Restructuring and Distress

Figure 1a: Ratio of firms under restructuring to number of firms with negative net profits over the previous two years

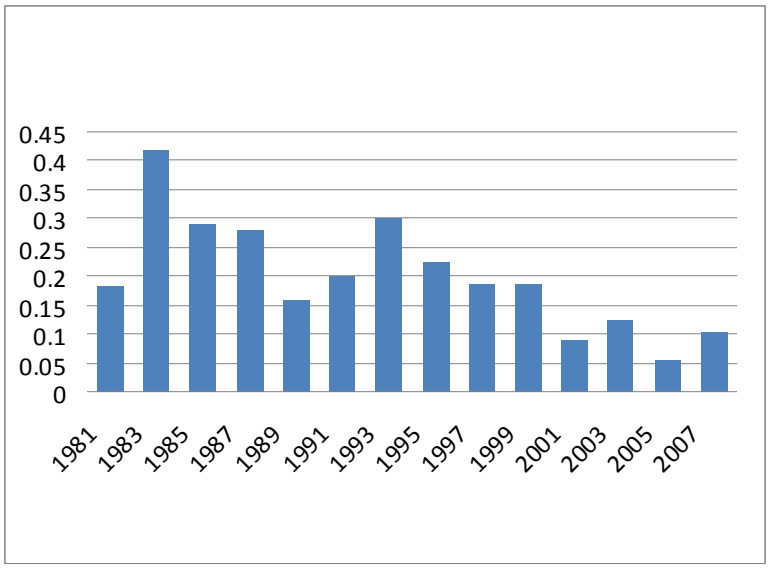

Figure 1b: Ratio of firms under restructuring to number of firms with interest coverage ratio <1 for the previous two years

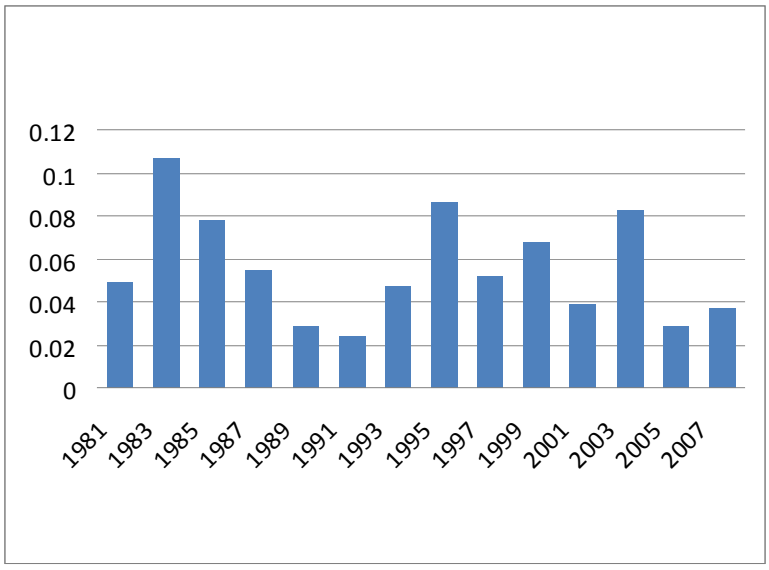

Figure 2: Employment adjustment by firms under distress, comparing firms under restructuring (solid line) with firms not under restructuring (dotted line)

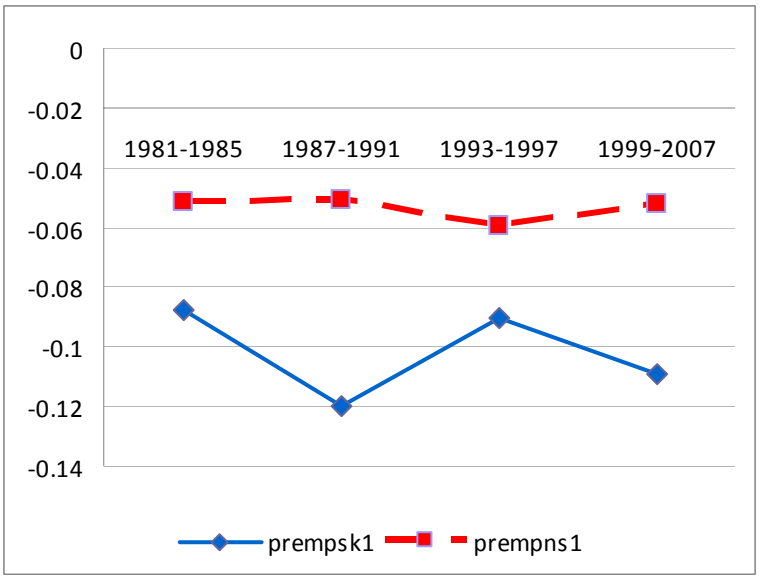

Figure 3: Debt Reduction by firms under distress, comparing firms under restructuring (solid line) with firms not under restructuring (dotted line)

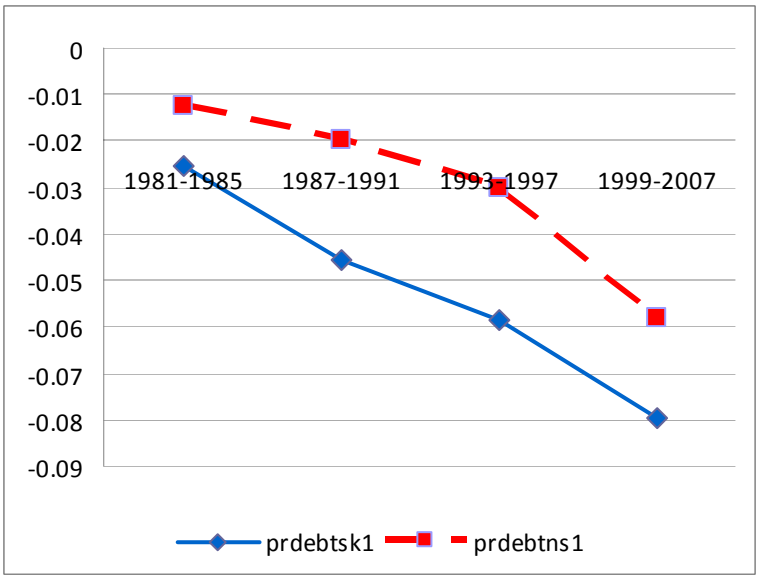

Table 4: Regression Results: Determinants of Restructuring

Variables	(1)	(2)	(3)	(4)
bank debt / total assets	1.431	1.201	1.556	1.692
	(0.056)	(0.061)	(0.072)	(0.093)
ICR < 1 for 2 years	0.324	0.255	0.220	0.254
	(0.030)	(0.032)	(0.033)	(0.041)
log(total assets)	0.169	0.147	0.185	0.176
	(0.0074)	(0.0080)	(0.0093)	(0.113)
saiken 2 years ago		1.139	1.025	0.937
		(0.040)	(0.041)	(0.049)
main bank dependence				0.174
				(0.113)
Period dummies	No	No	No	No
Industry dummies	No	No	Yes	Yes
Number of observations	36486	33637	33307	17800

Note to Table 4: The dependent variable is *saiken* that takes 1 if the firm was under restructuring during the year (and 0 otherwise). Each column reports the coefficient estimates and standard errors (in the parentheses) for a probit model. The sample period is every odd year from 1981 to 2007. The model also includes a constant term. The rows "Period dummies" and "Industry dummies" indicate inclusion of these dummies (yes/no). The coefficient estimates for the period dummies, industry dummies and the constant term are not reported.

Table 5: Determinants of Restructuring: Changes Over Time

Variables	(1)	(2)	(3)
bank debt / total assets	1.555	1.967	1.771
	(0.072)	(0.170)	(0.096)
bank debt / total assets		-0.205	
X (1987-1991 dummy)		(0.228)	
bank debt / total assets		-0.477	
X (1993-1997 dummy)		(0.205)	
bank debt / total assets		-0.599	
X (1999-2007 dummy)		(0.196)	
ICR < 1 for 2 years	0.422	0.468	0.485
	(0.083)	(0.087)	(0.103)
ICR < 1 for 2 years	-0.179	-0.188	-0.217
X (1987-1991 dummy)	(0.113)	(0.119)	(0.137)
ICR < 1 for 2 years	-0.252	-0.305	-0.340
X (1993-1997 dummy)	(0.102)	(0.105)	(0.125)
ICR < 1 for 2 years	-0.250	-0.305	-0.232
X (1999-2007 dummy)	(0.098)	(0.101)	(0.125)
log(total assets)	0.186	0.185	0.178
	(0.0094)	(0.0095)	(0.013)
saiken 2 years ago	1.024	1.026	0.926
	(0.041)	(0.041)	(0.050)
main bank dependence			0.715
			(0.257)
main bank dependence			0.121
X (1987-1991 dummy)			(0.326)
main bank dependence			-0.511
X (1993-1997 dummy)			(0.308)
main bank dependence			-1.241
X (1999-2007 dummy)			(0.316)
Period dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Number of observations	33307	33307	17800

Note to Table 5: The dependent variable is *saiken* that takes 1 if the firm was under restructuring during the year, and 0 otherwise. Each column reports the coefficient estimates and standard errors (in the parentheses) for a probit model. The sample period is every odd year from 1981 to 2007. The model also includes a constant term. The rows "Period dummies" and "Industry dummies" indicate inclusion of these dummies (yes/no). The coefficient estimates for the period dummies, industry dummies and the constant term are not reported.

Table 6: Restructuring and Employment Growth

Variables	(1)	(2)	(3)
lagged employment	0.311	0.311	0.311
growth	(0.011)	(0.011)	(0.011)
ICR < 1 for 2 years	-0.007	-0.005	-0.007
	(0.0013)	(0.0013)	(0.0013)
saiken	-0.035	-0.030	-0.038
	(0.0030)	(0.0033)	(0.0057)
(ICR<1 for 2 years)		-0.023	
X *saiken*		(0.0077)	
saiken			0.0080
X (1987-1991 dummy)			(0.0090)
saiken			0.0064
X (1993-1997 dummy)			(0.0079)
saiken			0.0001
X (1999-2007 dummy)			(0.0081)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Number of observations	26750	26750	26750
R-squared	.188	.189	.188

Table 7: Restructuring and Capital Growth

Variables	(1)	(2)	(3)
lagged capital growth	0.142	0.142	0.142
	(0.0079)	(0.079)	(0.079)
ICR < 1 for 2 years	-0.011	-0.010	-0.011
	(0.0025)	(0.0026)	(0.0026)
saiken	-0.046	-0.040	-0.064
	(0.0048)	(0.0056)	(0.0093)
(ICR<1 for 2 years)		-0.025	
X *saiken*		(0.010)	
saiken			0.010
X (1987-1991 dummy)			(0.016)
saiken			0.037
X (1993-1997 dummy)			(0.013)
saiken			0.015
X (1999-2007 dummy)			(0.012)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Number of observations	26750	26750	26750
R-squared	.162	.162	.162

Table 8: Restructuring and Bank Loan Growth

Variables	(1)	(2)	(3)
lagged bank loan growth	0.148	0.148	0.148
	(0.0079)	(0.079)	(0.079)
ICR < 1 for 2 years	-0.011	-0.0096	-0.011
	(0.0032)	(0.0033)	(0.0032)
saiken	-0.0025	0.0018	-0.013
	(0.0067)	(0.0077)	(0.014)
(ICR<1 for 2 years)		-0.019	
X *saiken*		(0.015)	
saiken			-0.0095
X (1987-1991 dummy)			(0.023)
saiken			0.035
X (1993-1997 dummy)			(0.019)
saiken			0.0056
X (1999-2007 dummy)			(0.017)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Number of observations	26750	26750	26750
R-squared	.207	.207	.207

Table 9: Restructuring and Growth of Total Debt

Variables	(1)	(2)	(3)
lagged total debt growth	0.116	0.116	0.116
	(0.0078)	(0.078)	(0.078)
ICR < 1 for 2 years	-0.021	-0.020	-0.021
	(0.0032)	(0.0033)	(0.0032)
saiken	-0.019	-0.017	-0.023
	(0.0059)	(0.0067)	(0.014)
(ICR<1 for 2 years)		-0.010	
X *saiken*		(0.014)	
saiken			-0.028
X (1987-1991 dummy)			(0.022)
saiken			0.026
X (1993-1997 dummy)			(0.017)
saiken			0.0019
X (1999-2007 dummy)			(0.016)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Number of observations	26750	26750	26750
R-squared	.201	.201	.201

Table 10: Restructuring by Identity of Leader

Dependent Variable →	Employment Growth	Capital Growth	Bank Loan Growth	Total Debt Growth
Explanatory Variables ↓	(1)	(2)	(3)	(4)
lagged dependent	0.252	0.191	0.181	0.124
variable	(0.050)	(0.041)	(0.039)	(0.037)
single bank-led	-0.011	-0.0079	-0.058	-0.052
	(0.010)	(0.020)	(0.020)	(0.019)
led by a single industrial	0.0068	-0.012	-0.0043	0.0058
firm	(0.0081)	(0.013)	(0.021)	(0.019)
led by a group of banks	-0.024	-0.0023	0.060	0.013
	(0.021)	(0.035)	(0.045)	(0.028)
led by a group of	-0.041	-0.071	-0.034	-0.072
industrial firms	(0.022)	(0.033)	(0.045)	(0.037)
led by a group of banks	0.0045	-0.028	0.0052	-0.0007
and industrial firms	(0.015)	(0.019)	(0.024)	(0.022)
private equity fund-led	-0.0060	-0.019	-0.091	-0.063
	(0.033)	(0.028)	(0.038)	(0.034)
constant	-0.027	0.046	0.078	0.040
	(0.016)	(0.026)	(0.055)	(0.042)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Number of observations	1173	1173	1173	1173
R-squared	.101	.155	.217	.191

Table 11: Determinants of Bank-led Restructuring

Variables	(1)	(2)	(3)	(4)
bank debt / total assets	1.234	1.333	1.345	1.227
	(0.249)	(0.312)	(0.493)	(0.323)
bank debt / total assets			-1.452	
X (1987-1991 dummy)			(0.816)	
bank debt / total assets			-0.286	
X (1993-1997 dummy)			(0.656)	
bank debt / total assets			0.234	
X (1999-2007 dummy)			(0.652)	
ICR < 1 for 2 years	0.0002	-0.081	-0.049	-0.312
	(0.120)	(0.144)	(0.229)	(0.301)
ICR < 1 for 2 years			0.304	0.390
X (1987-1991 dummy)			(0.376)	(0.489)
ICR < 1 for 2 years			0.076	0.241
X (1993-1997 dummy)			(0.324)	(0.400)
ICR < 1 for 2 years			0.059	0.508
X (1999-2007 dummy)			(0.311)	(0.383)
log(total assets)	0.070	0.066	0.110	0.113
	(0.034)	(0.046)	(0.037)	(0.049)
main bank dependence		0.947		1.276
		(0.385)		(0.756)
main bank dependence				-0.227
X (1987-1991 dummy)				(0.353)
main bank dependence				-0.517
X (1993-1997 dummy)				(0.314)
main bank dependence				-0.659
X (1999-2007 dummy)				(0.339)
Period dummies	No	No	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Number of observations	1301	929	1301	929

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