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Corporate Restructuring in Japan: An Event-Study Analysis

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Abstract

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The implementation of the Commercial Rehabilitation Law (CRL) on April 1, 2000, was considered a key event in setting up the official infrastructure supporting corporate restructuring in Japan. This study evaluates the stock price impact of restructuring announcements before and after the CRL implementation using event-study analysis. Following the CRL implementation, the results suggest an improvement in market credibility of restructuring announcements based on improvements in disclosure, mergers, and to a lesser extent, labor force reductions. In contrast, the credibility of restructuring announcements aimed at reducing excess capital deteriorated.

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I. INTRODUCTION

In the post-war period, Japan was one of the fastest growing economies in the industrialized world. Consequently, Japanese corporate business practices were studied carefully. One particular feature of corporate Japan that commanded special attention was its corporate governance system based on cross-shareholdings and long-term relationships among a group of firms or *keiretsu*. In many cases, the leading role in the *keiretsu* was exercised by the main bank in the group. According to some, this corporate governance system, or main-bank system, was one of the principal factors contributing to the success of the Japanese economy from the early 1950s to the late 1970s, a claim supported by some empirical studies published in the 1980s and early 1990s.

This view has been seriously tested by the collapse of the bubble economy in the early 1990s, which has been followed by a long period of economic stagnation for most of the past ten years. The bad loan problem faced by the Japanese banking sector and the excess capacity in the corporate sector cast doubts on how effectively banks monitored the corporate sector. The increased awareness in the public and private sectors in Japan about the importance of restoring profitability in the corporate sector has led to changes in the regulatory environment and business practices aimed at restructuring the corporate sector by improving corporate governance and shedding excess assets.

This paper evaluates whether the implementation of official initiatives and changes in business practices are seen by the market as having contributed to the restructuring process by examining the average stock price impact of 1011 restructuring announcements in the periods before and after the implementation of the Commercial Rehabilitation Law (CRL) on April 1, 2000. The choice of this date as the cut-off date between the pre-implementation and post-implementation periods is justified by the consensus that, with the implementation of the CRL, the major elements of the official infrastructure supporting the restructuring process were in place. Consequently, the pre-implementation and post-implementation periods are referred to as the pre-CRL and post-CRL periods respectively.

On the one hand, the results indicate that market credibility, as measured by the average increase in stock price following restructuring announcements, has improved for announcements of mergers and plans to improve disclosure, and to a lesser extent, plans to reduce the labor force. On the other hand, announced plans to reduce excess capital were viewed skeptically by the markets, as their average stock price increase was insignificant both in the pre-CRL and post-CRL periods. These results suggest that official initiatives and changes in business practices are seen as having contributed to increased transparency and consolidation in the corporate sector, while still being considered insufficient to address the excess capacity problem.

The paper is structured as follows. Section 2 provides a brief overview of the evolution of the predominant form of corporate governance in Japan, the main bank system. Section 3 describes the challenges brought about by the decline of the main bank system and how official initiatives and changes in business practices attempt to deal with them. Section 4 describes the data and empirical methodology used to evaluate whether these initiatives and practices have had a measurable impact on restructuring. Section 5 presents the results. Section 6 concludes.

II. THE RISE AND FALL OF THE MAIN BANK SYSTEM

In Japan, the most important system of corporate control has been the main bank system.² The main bank system is centered around bank groups or bank-led *keiretsus*. These groups consists of a number of companies, of which one bank plays a central role, that are linked by stable cross-shareholdings in the sense that each firm owns equity in the other firms of the group such that among them they retain control of each firm of the group. Therefore, *keiretsus* do not sell their shares to outsiders and they support incumbent management. The main bank usually holds the largest block of equity and is the major lender to other firms in the group. Therefore, under the main bank system, corporate control is exercised by banks and the group's firms, which collectively are the largest shareholders. Empirical studies suggest that the main bank system contributed to the rapid economic growth experienced by Japan during the two decades following the post-war reconstruction period.³

The success of the main bank system came at the expense of the non-controlling shareholders. Although the legal framework provides Japanese shareholders with more rights than U.S. shareholders, these rights are difficult to exercise in practice. Therefore, corporate decisions were taken in order to benefit a number of other stakeholders including the lending bank, customers, suppliers and other firms in the bank group. Hence profit maximization was not the main objective of the firm (Morck and Nakamura, 1999a). Reflecting this, the average excess return on equity in Japan for the period 1980-1998 was 2.4 percent compared to 8.9 percent in the United States (Gibson, 1998). Moreover, there is empirical evidence that firms affiliated with main bank groups may pay higher loan rates than unaffiliated firms (Nakatani, 1984, Weinstein and Yafeh, 1998).

Cracks in the main-bank system started to appear with the liberalization and deregulation of the financial system in the mid-1970s. Large and creditworthy corporations stopped using bank loans as their main funding source, as they could get cheaper funding in

² For detailed descriptions of the Japanese corporate governance system see Hoshi (1998), Gibson (1998), Morck and Nakamura (1999b), OECD (1999) and Yafeh (2000).

³ See, among others, Aoki and Patrick (1994), Hoshi, Kashyap and Scharfstein (1990, 1991) and Kaplan (1994, 1997).

securities markets, exposing the costs associated with bank lending. Thus, for these corporations, bank debt measured as a ratio to total assets fell below that for comparable non-Japanese institutions. The concentration of bank loan portfolios shifted then towards medium-sized and smaller corporations whose low credit quality limited their access to securities markets. Banks were not the only institutions affected by this shift. Firms closely associated with main banks experienced larger stock price declines compared to more independent firms (Kang and Stulz, 1997) and became less profitable (Kang and Shivdasani, 1999).

Inadequate incentive structures may explain the failure of the main bank system to adapt to the new economic environment resulting from the liberalization of the financial sector. Monitoring by large shareholders may restrict managerial discretion and reduce manager's incentive to undertake favorable firm-specific investment because large shareholders cannot commit themselves to abstain from rent extraction. In addition, managers do not have an incentive to signal their ability to obtain higher profits as strongly as in the case of dispersed ownership (Burkart, Grom and Panunzi, 1997). Bank-centered corporate governance may be appropriate for traditional manufacturing industries but may be inadequate to finance innovation (Allen, 1993; and Carlin and Mayer, 1999). These arguments suggest that the excesses incurred by Japanese financial institutions were partly the result of a main-bank system that was badly positioned to exercise effective monitoring during a period of rapid change.

Ineffective governance has had a cost which can be measured by the amount of excess capital and labor in the corporate sector. Increased awareness of the problem has prompted the government to pass and implement a number of policy measures addressing the urgent and immediate need to cut back excess assets and labor in the corporate sector, many of which are embodied in the Industrial Rehabilitation Law. These measures include, among others, facilitating debt-equity swaps, introducing tax incentives aimed at reducing excess capital and labor, and implementing a new bankruptcy law —the Civil Rehabilitation Law— modeled after the Chapter 11 proceedings in the United States. Important as these measures are, the main challenge facing corporate Japan is the establishment of an effective corporate governance system. This challenge is examined in the next section.

III. CHALLENGES TO CORPORATE JAPAN

The failure of the main-bank system suggests that effective corporate governance in Japan will require strengthening alternative control mechanisms, including the board of directors, executive compensation, and the market for corporate control. Recent changes in business practices and the regulatory framework conducive to the establishment of these alternative corporate governance mechanisms are described below.

Until recently, the board of directors was more aligned with creditors, managers and workers than with shareholders (Kanda, 1998). Hence, boards were more concerned about propping up weak firms than maximizing profits (Morck and Nakamura, 1999a). This situation has started to change. Firms have started to streamline their boards of directors by reducing the number of directors, appointing external directors, and introducing executive officer systems that clearly separate directors' and executive officers' responsibilities. The unwinding of cross-shareholdings may also help outside shareholders to gain a seat in the board of directors and exercise their voice.

Executive compensation in Japan is still predominantly based on seniority rather than performance so it plays only a small part as a control mechanism and disciplining device. The most common way to ensure that managers would pursue profit maximization is to tie their compensation to stock market prices, either through stock options, bonuses contingent on stock prices, or direct stock ownership. Regulatory changes passed by mid-1999 were aimed at facilitating the implementation of performance-based compensation by easing and extending the use of stock options to include also subsidiary firms and non-regular employees. Partly reflecting this change, the number of companies using stock options plans increased from 49 in 1997 to 182 in 1999. By 1999 eight percent of all listed companies in the Tokyo Stock Exchange used or planned to use stock options to compensate managers.

The market for corporate control operates through friendly mergers, proxy contests and hostile takeovers. Friendly mergers, given their non-adversarial nature, have been used quite often for firms in the same *keiretsu*. However, proxy contests and hostile takeovers have seldom been used because cross-shareholdings prevented shareholders from taking actions against incumbent management or directors. For example, there were no hostile takeovers among large firms in the 1945-1990 period (Kester, 1991). Moreover, Japanese corporate law made it difficult to initiate legal action against managers or directors (Shishido, 1999).

This situation is starting to change, albeit slowly. A number of official initiatives would make it increasingly difficult for firms in a *keiretsu* to maintain their cross-shareholdings. Among these measures, significant accounting changes are forcing firms to mark-to-market their tradable financial assets and to report more realistic estimates of their pension funding gaps. In consequence, firms are being pressured to sell poorly performing stocks. Indeed, cross-shareholdings have declined slowly during the past three years as a result of increased profitability pressures on banks and corporates, making *keiretsu* firms more vulnerable to hostile takeovers.

The market for corporate control is also aided by new mechanisms for effecting mergers and acquisitions through share swaps and stock transfer schemes, as well as for the creation of holding companies. Restrictions on asset sales have also been eased and the Commercial Code has been amended to modernize standards of corporate governance. Finally, the Tokyo Stock Exchange has deregulated the listing process to make it easier for merging companies to access equity financing.

It remains an open question whether the policy measures and business practices described above have had a positive impact on corporate restructuring in Japan. One way to answer the question is to assess quantitatively the average impact of restructuring announcements on the stock prices of firms prior to and after the implementation of the official initiatives and changes in business practices.⁴ To our knowledge, the only other empirical study of corporate restructuring in Japan is described in the appendix of Levy (2000). Levy used the event-study methodology to study the price impact of about 60 restructuring announcements during the first quarter of 1999, as well as a Probit analysis to study the qualitative impact of the announcements. His findings suggest that the plans were viewed cautiously by the market. As in Levy (2000), this study uses event-study analysis but employs a much larger dataset. The data and methodology are described next.

IV. DATA AND EMPIRICAL METHODOLOGY

This study examines the stock price impact of 1011 restructuring announcements by different firms during the period July 1999-December 2000 and evaluates whether the dynamics of price movements induced by the announcements experienced a structural change after the implementation of the Commercial Rehabilitation Law on April 1, 2000. Therefore, restructuring announcements are grouped in two subsamples, those corresponding to the period July 1999-March 2000, and those corresponding to the period April 2000-December 2000. The plans are grouped also by the type of restructuring announcement, including fixed asset sales, labor force reductions, mergers, improvements in disclosure, goodwill transfers, and capital reductions. Stock price data were obtained from Primark Datastream, LLC.⁵

Table 1. Number of Restructuring Announcements by Type and Date.

| Type of Announcements | Pre-CRL | Post-CRL |
|----------------------------|----------------------|--------------------------|
| | July 1999-March 2000 | April 2000-December 2000 |
| Sales of fixed assets | 198 | 147 |
| Improvements in disclosure | 100 | 166 |
| Mergers | 81 | 129 |
| Labor force reductions | 57 | 40 |
| Goodwill transfers | 31 | 49 |
| Capital reductions | 5 | 8 |
| Total | 472 | 539 |

⁴ This assessment assumes that markets are efficient, and that the positive stock price impact of a restructuring announcement reflects the market view of increased future profitability.

⁵ Kathy Matsui kindly provided the list and type of restructuring announcements. For firms with multiple announcements, only the first announcement was considered.

The evaluation is performed using event-study analysis methodology. This methodology rests on two assumptions. The first assumption is that markets are efficient in the sense that current stock prices reveal all publicly-available information, or in terms of Fama's classification, there is semi-strong market efficiency (Fama, 1970). Hence, only unanticipated events, such as changes in economic policy, corporate legislation, or restructuring announcements would convey new information about the future profitability of a firm and cause the stock price to change in order to reflect the new information. The second assumption is that there exists a "correct" pricing model such that it is possible to evaluate whether a particular event has had a non-negligible impact on the stock price of a particular firm after controlling for factors other than the event. The validity of conclusions derived from an event-study analysis depends on how reasonable these assumptions are. Semi-strong market efficiency is validated by a vast body of empirical studies, and results from studies using daily stock price returns appear to be robust to the choice of pricing model.⁶

This study uses the constant-mean-return model because of its simplicity and robustness. Implementing the model requires defining the *event* of interest and the *event window*, which is the period over which the prices will be examined. Here, the event is defined as the date when the firm first announces its restructuring plan. The semi-strong market efficiency hypothesis implies that the firm's stock price will be affected upon the announcement. Hence, the logical choice for the event window is the day of the announcement. However, following standard practice, a 2-day event window covering the announcement date and the day after is chosen. To evaluate whether information about the restructuring plans might have been leaked to the markets prior to their announcements, a 2-day event window covering the day preceding the announcement and the announcement date, and a 5-day event window centered on the announcement date, are also analyzed.

The abnormal nominal return for the stock of firm i in period t , ϵ_{it} , is defined as:

$$\epsilon_{it} = R_{it} - \mu_i \quad (1)$$

where R_{it} is the daily stock return of firm i in period t and μ_i is the mean daily stock return of firm i for the 250 days preceding the first day of the event window.⁷ It is assumed that abnormal returns are normally distributed with mean zero and variance σ_ϵ^2 . Cumulative abnormal returns during the event period are given by:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} \epsilon_{it}, \quad (2)$$

⁶ Brown and Warner (1980, 1985) found that the constant mean-return model performs as well as more sophisticated approaches. Levy (2000) also indicates that the choice of model does not significantly affect the results.

⁷ The results were insensitive to the choice of pre-event windows of 80, 150 and 250 business days. Hence, only the results corresponding to the pre-event window of 250 days are reported.

where t_1 and t_2 are the initial and final dates of the event window. The average cumulative abnormal return is obtained by averaging across all firms:

$$\overline{CAR}(t_1, t_2) = 1/N \sum_{i=1}^N CAR_i(t_1, t_2). \quad (3)$$

The variance of the cumulative abnormal returns for firm i can be computed as:

$$\sigma_i^2(t_1, t_2) = \gamma' \epsilon_i \epsilon_i' \gamma, \quad (4)$$

where γ is a vector with ones in the positions from t_1 to t_2 and zeros elsewhere. The variance of the average cumulative abnormal return is then computed as:

$$\text{Var}[\overline{CAR}(t_1, t_2)] = \overline{\sigma}^2(t_1, t_2) = 1/N^2 \sum_{i=1}^N \sigma_i^2(t_1, t_2). \quad (5)$$

Inferences about the average cumulative abnormal returns can be drawn since $\overline{CAR}(t_1, t_2)$ is normally distributed with mean zero and variance $\overline{\sigma}^2(t_1, t_2)$. Therefore, the J_1 statistic defined as:

$$J_1 = \frac{\overline{CAR}(t_1, t_2)}{\overline{\sigma}^2(t_1, t_2)}, \quad (6)$$

is normally distributed with mean zero and variance 1 (See Campbell, Lo and McKinlay (1997) for the derivation of these results).

V. RESULTS

Table 1 indicates that the number of restructuring announcements increased by almost 15 percent in the nine-month period following the implementation of the Commercial Rehabilitation Law compared to the nine-month period preceding it. The increase in the number of announcements can be interpreted as a signal that corporate restructuring in Japan has accelerated as a consequence of the new regulatory environment and a change in corporate culture. The event-study analysis performed in this paper shows a more complex picture of the restructuring process in Japan. Following the CRL implementation, the results suggest an improvement in market credibility of restructuring announcements based on improvements in disclosure, mergers, and to a lesser extent, labor force reductions. In contrast, the credibility of restructuring announcements aiming at reducing excess capital deteriorated. The results, summarized in Table 2, are described in detail next.

Panel A shows the results corresponding to the 2-day event window including the announcement date and the day after. This event window assumes that information about the restructuring plans has not leaked to the market prior to the announcement, and that the new

information was not immediately incorporated into the stock price on the announcement date. This set of results indicate that the market credibility of goodwill transfers and mergers announcements improved in the post-CRL period. The credibility of plans to improve disclosure was negatively affected — their average stock price impact, as measured by \overline{CAR} , declined from 0.64 percent in the pre-CRL period to 0.28 percent in the post-CRL period. Plans addressing excess capital and labor were not received well by the market. Fixed asset sales plans had an insignificant average stock price impact in both periods, and the stock price effects of labor force reduction plans improved only marginally, from having a negative stock price impact in the pre-CRL period to being insignificant in the post-CRL period.

Panel B shows the results corresponding to the 2-day event window including the announcement date and the day before. This event window assumes that information may have been leaked to the market in advance of the announcement date. A salient characteristic of all the results in the pre-CRL period is that average cumulative abnormal returns are negative and significant for all restructuring announcements categories, with the exception of capital reduction announcements which are insignificant. In the post-CRL period, only cumulative abnormal returns become significant and positive for sales-of-fixed-assets and improvements-in-disclosure announcements. The \overline{CAR} for these announcements were 0.35 and 0.28 percent respectively.

Finally, Panel C shows the results corresponding to the 5-day event window centered around the announcement date. This event window assumes that information may have been leaked to the market in advance of the announcement and that new information was not immediately incorporated into the stock price on the announcement date. This set of results indicate that the market credibility of improvements-in-disclosure and mergers announcements improved significantly in the post-CRL period, and to a lesser extent, announcements of labor force reductions.

VI. CONCLUSIONS

Increased awareness of problems in the main-bank system of corporate governance has led to a number of significant changes in the regulatory environment and business practices in the Japanese corporate sector during the last three years that were aimed at improving corporate profitability. Assessing the impact of these changes is important since it provides an indication of the strengths and weaknesses of the reforms implemented so far.

This study has attempted to quantitatively measure the perceived progress made on corporate restructuring by conducting an event-study analysis of the price impact of more than 1000 restructuring announcements during the period July 1999-December 2000. The period was divided into two subperiods: the pre-CRL period (before April 1, 2000) and the post-CRL period. The announcements were grouped into six categories including sales of fixed assets,

improvements in disclosure, mergers, labor force reductions, goodwill transfers and capital reductions. Different event windows corresponding to different hypotheses about the transmission of information and its incorporation into stock prices were considered.

The results indicate that restructuring plans based on improvements in disclosure and mergers had a more positive stock price impact during the post-CRL period compared to the pre-CRL period. Also, the negative impact of labor force reductions announcements on the announcing firm's stock price during the pre-CRL period disappeared in the post-CRL period. The other types of announcements have not had a major impact on stock prices either in the pre-CRL and post-CRL period. In the case of sales of fixed assets and capital reductions, the results suggest that measures aimed at reducing excess capital in the corporate sector are being viewed skeptically by the markets.

Table 2. Cumulative Abnormal Returns and Statistical Significance.

Cumulative abnormal returns, \overline{CAR} , were computed as $1/N \sum_{i=1}^N CAR_i(t_1, t_2)$, where N is the number of restructuring announcements analyzed in each category, t_1 and t_2 are the initial date and the final date of the event window, and $CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} \epsilon_{it}$ is the cumulative abnormal return of the firm during the event window. The J_1 statistics is $\mathcal{N}(0, 1)$ and the corresponding p-value is the probability of rejecting the null hypothesis that the restructuring plan had no price impact.

Panel A: 2-day event window including the announcement date and the day after.

| | Pre-CRL | | | Post-CRL | | |
|----------------------------|------------------|--------|---------|------------------|--------|---------|
| | \overline{CAR} | J_1 | P-value | \overline{CAR} | J_1 | P-value |
| Sales of fixed assets | 0.165 | 0.805 | 0.210 | -0.073 | -0.570 | 0.285 |
| Improvements in disclosure | 0.639 | 2.446 | 0.007 | 0.208 | 1.288 | 0.099 |
| Mergers | 0.278 | 0.554 | 0.290 | 0.740 | 2.151 | 0.016 |
| Labor force reductions | -1.351 | -3.531 | 0.000 | 0.185 | 0.596 | 0.276 |
| Goodwill transfers | 0.454 | 0.652 | 0.257 | 0.586 | 1.916 | 0.027 |
| Capital reductions | 8.745 | 0.359 | 0.360 | -6.741 | -0.270 | 0.394 |

Panel B: 2-day event window including the announcement date and the day before.

| | Pre-CRL | | | Post-CRL | | |
|----------------------------|------------------|--------|---------|------------------|--------|---------|
| | \overline{CAR} | J_1 | P-value | \overline{CAR} | J_1 | P-value |
| Sales of fixed assets | -0.547 | -2.962 | 0.002 | 0.349 | 2.333 | 0.010 |
| Improvements in disclosure | -0.988 | -3.055 | 0.001 | 0.280 | 2.370 | 0.009 |
| Mergers | -1.524 | -6.003 | 0.000 | 0.051 | 0.288 | 0.387 |
| Labor force reductions | -1.070 | -2.616 | 0.004 | 0.250 | 0.6201 | 0.268 |
| Goodwill transfers | -1.176 | -1.949 | 0.025 | -0.072 | -0.299 | 0.383 |
| Capital reductions | -0.895 | -0.591 | 0.277 | 0.921 | 0.394 | 0.347 |

Panel C: 5-day event window centered around the announcement date.

| | Pre-CRL | | | Post-CRL | | |
|----------------------------|------------------|--------|---------|------------------|--------|---------|
| | \overline{CAR} | J_1 | P-value | \overline{CAR} | J_1 | P-value |
| Sales of fixed assets | -0.386 | -1.073 | 0.142 | 0.279 | 1.127 | 0.130 |
| Improvements in disclosure | -0.356 | -0.597 | 0.275 | 0.491 | 1.797 | 0.036 |
| Mergers | -1.257 | -1.772 | 0.038 | 0.792 | 1.328 | 0.092 |
| Labor force reductions | -2.429 | -2.642 | 0.004 | 0.437 | 0.579 | 0.281 |
| Goodwill transfers | -0.732 | -0.661 | 0.254 | 0.513 | 0.907 | 0.182 |
| Capital reductions | 7.844 | 0.319 | 0.375 | -5.82 | -0.212 | 0.416 |

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