



RIETI Discussion Paper Series 05-E-006

The Unwinding of Cross-shareholding: Causes, Effects, and Implications

MIYAJIMA Hideaki
RIETI

KUROKI Fumiaki
NLI Research Institute



The Research Institute of Economy, Trade and Industry
<http://www.rieti.go.jp/en/>

The Unwinding of Cross-shareholding: Causes, Effects, and Implications

Miyajima Hideaki
(Waseda University, Harvard University and RIETI)
and
Kuroki Fumiaki
(NLI Research Institute)

Abstract

Considering that the ownership structure of Japanese corporations has changed dramatically in the 1990s, this paper address a series of question related to these changes. Why is cross-shareholding, which has been in place for almost three decades, now beginning to unwind (and the mechanisms of the unwinding)? What explains the increasing diversity in the patterns of cross-shareholding among Japanese firms? Lastly what are the implications of the changing ownership structure on firm performance? Using the detailed and comprehensive data on ownership structure including individual cross-shareholding relationship and other variable (Tobin's q) developed by Nissai Life Insurance Research Institute and Waseda University, we highlight the determinants of the choice between holding or selling shares for both banks and firms. We show that profitable firms with easy access to capital markets and high foreign ownership prior to the banking crisis tend to unwind cross-shareholdings, while low-profit firms with difficulty accessing capital markets and low foreign ownership in the early 1990s tend to keep the cross shareholding with banks. For the effect of changing ownership structure on performance, we show that high institutional shareholding and, somehow surprisingly, block shareholding of corporation have positive effect on firms performance, while the bank ownership had consistently have negative effect on firm performance since the middle of 1980s. Through these findings, we provide some policy implication and perspective on future ownership structure in Japanese firms.

JEL classification: G21; G32; L25; K22

Key words: Ownership structure; cross shareholding, main bank relationship, firm performance; Banks' Shareholding Restriction Law

This paper is prepared for a chapter of the book, “*Corporate Governance in Japan: Institutional Change and Organizational Diversity*,” edited by Masahiko Aoki, Gregory Jackson, and Hideaki Miyajima. Keisuke Nitta and Nao Saito helped us to construct the data on which the present paper is based. Yurie Otsu gave us excellent help. An early draft was presented at RIETI, Hitotsubashi University, and Association for Financial Studies, Tokei-kenkyu-kai. Comments from Naoto Abe, Katsuyuki Kubo, Takeo Hoshi, Yasuhiro Yanagawa, and Kazumi Asako, Hiroshi Osano were extremely helpful. Correspondent address: miyajima@fas.harvard.edu

1. Introduction

The ownership structure of Japanese firms used to be characterized by a high level of ownership dispersal, a low level of ownership by managers, a low ratio of shares held by foreigners, and substantial block shareholding by corporations and financial institutions. In particular, extensive intercorporate shareholding between banks and corporations and among corporations distinguished the ownership structure of Japanese corporations from that in other countries by the early 1990s. This unique structure evolved from the postwar reforms and was established around the late 1960s mainly because top managers considered it to be a good way to fend off potential hostile takeover threats. This structure was extremely stable, as many observers have stressed (Prowse 1990, Frath 1993, Weinstein and Yafeh 1998, Yafeh and Yosha 2003), and thus was able to persist for almost three decades.

Cross-shareholding has been considered a part of the institutional framework that has supported Japanese management and growth-oriented firm behavior (e.g. Abegglen and Stalk 1985, Porter 1992, 1994). The stable shareholding pattern that prevailed under cross-shareholding arrangements enabled corporate managers to choose growth rates that deviated from the stock price maximization path (Odagiri 1992), made it possible for firms to adopt steady dividend policies that were insensitive to profit, and may have also had important implications for governance. And the joint ownership by banks of debt and equity was perceived to help them monitor client firms and reduce asset substitution problems, and thus purportedly enhanced corporate performance. On the other hand, the high level of ownership by non-financial institutions also played a significant role in the monitoring of Japanese firms (Sheard 1994), and (Yafeh and Yosha 2003).

Over the past decade, however, the ownership structure of Japanese corporations has changed dramatically. The shareholding ratio by foreign investors began to increase in the early 1990s, especially in larger firms. And more recently, the stable shareholder (*antei kabunushi*) ratio began to decline from previous heights. **Table 1** shows the stable shareholder ratio, which has been estimated by NLI (Nippon Life Insurance) Research Institute (henceforth, NLIR) for the period from 1987 to 2002. The stable shareholder ratio is defined as the ratio of shares owned by commercial banks, insurance companies, and other non-financial firms (business partners and the parent company) to total issued shares of listed firms, calculated on a value basis (market valuation on the reference date). The stable shareholder ratio has been declining since 1995, and the rate of

decline has accelerated since 1999. The ratio was 45% in the early 1990s, but only 27.1% in 2002. While the cross-shareholding ratio between corporations decreased only slightly, the ratio of shares held by financial institutions, and banks in particular dropped significantly.

It is important to note that the ownership structure of Japanese firms has also grown more diverse since 1990. According to **Table 2**, the degree of dispersion surged, with foreigners and individuals increasing their ownership of Japanese corporations. Although the ratio held by financial institutions decreased 5% on average over these 10 years, the standard deviation increased. The dissolution of the holdings held by stable shareholders has accompanied the differentiation and diversification of the ownership structure of Japanese corporations.

Table 1 : Stable Shareholders

The end of FY	No. of Firms	Total firm value (Trillion yen)	The ratio of stable shareholders		banks		insurance firms		non-financial firms	
			(% of Total)	(change)	(% of Total)	(change)	(% of Total)	(change)	(% of Total)	(change)
1987	1,924	433	45.8		14.9		16.4		14.4	
1988	1,975	517	45.7	▲ 0.10	15.6	0.70	16.6	0.20	13.3	▲ 1.10
1989	2,031	500	44.9	▲ 0.80	15.6	0.00	15.7	▲ 0.90	13.4	0.10
1990	2,078	450	45.6	0.70	15.7	0.10	15.8	0.10	14.0	0.60
1991	2,107	326	45.6	0.00	15.6	▲ 0.10	16.2	0.40	13.7	▲ 0.30
1992	2,120	328	45.7	0.10	15.6	0.00	16.2	0.00	13.8	0.10
1993	2,161	367	45.2	▲ 0.50	15.4	▲ 0.20	15.8	▲ 0.40	14.0	0.20
1994	2,214	311	44.9	▲ 0.30	15.4	0.00	15.7	▲ 0.10	13.7	▲ 0.30
1995	2,279	393	43.4	▲ 1.50	15.0	▲ 0.40	14.7	▲ 1.00	13.5	▲ 0.20
1996	2,341	335	42.1	▲ 1.30	15.1	0.10	14.7	0.00	12.2	▲ 1.30
1997	2,389	308	40.5	▲ 1.60	14.8	▲ 0.30	14.1	▲ 0.60	11.6	▲ 0.60
1998	2,433	331	39.9	▲ 0.60	13.7	▲ 1.10	13.0	▲ 1.10	13.2	1.60
1999	2,487	463	37.9	▲ 2.00	11.3	▲ 2.40	10.6	▲ 2.40	15.9	2.70
2000	2,602	368	33.0	▲ 4.90	9.8	▲ 1.50	10.9	0.30	12.3	▲ 3.60
2001	2,668	313	30.2	▲ 2.80	8.7	▲ 1.10	10.1	▲ 0.80	11.4	▲ 0.90
2002	2,674	237	27.1	▲ 3.10	7.7	▲ 1.00	9.3	▲ 0.80	10.0	▲ 1.40

Source: NLI Research Institute

Note: The ratio is the share held by each sector/total firm value in market.

Table 2: The Ratio of Shareholding by Type of Shareholder

Sample consists of 931 non-financial firms which were listed in the First Section of the Tokyo Stock Exchange for the entire period from the end of 1990 to the end of 2000. Percentage share held by individuals excludes the share held by board members.

Year	Percentage share held by Foreigners			Percentage share held by Individuals			Percentage Share held by Corporations and Banks		
	1990	1995	2000	1990	1995	2000	1990	1995	2000
Mean	4.3	7.8	7.9	20.8	22.6	30.6	37.5	34.9	32.6
Std. Dev.	5.8	8.0	10.1	8.1	9.7	14.3	13.2	13.0	14.4
Coef. of Variance	1.37	1.02	1.27	0.39	0.43	0.47	0.35	0.37	0.44
Median	2.4	5.7	3.3	19.6	21.5	30.3	35.8	32.9	30.6
First quartile	1.1	1.8	1.2	14.9	15.2	18.9	27.7	25.0	21.7
Third quartile	5.2	11.4	11.3	25.9	28.6	40.2	46.7	43.6	41.4
3Q-1Q	4.0	9.6	10.1	11.0	13.4	21.3	18.9	18.6	19.7

Source: Based on financial statements of each firm, major shareholder data (Toyo Keizai Shinpou), etc.

The dramatic changes mentioned above naturally raise a series of questions: Why is foreign shareholding in Japanese firms on an increasing trend? Why did cross-shareholding, which had been fairly constant for more than thirty years, begin to dissolve in the mid-1990s? If cross-shareholding was a response to the increasing takeover threat, then why did it begin to decline just as the takeover threat grew much more serious than it had been in the 1980s? And given the increasing variance in the cross-shareholding ratio among firms, what attributes of firms determine the extent of cross-shareholding? Lastly, what are the welfare implications of the changing ownership structure on firm performance?

The task of this chapter is to answer these questions, using detailed and comprehensive data on ownership structure and individual cross-shareholding relationships developed by NLIR and Waseda University.

To determine why foreign shareholding in Japanese firms is on the increase, we briefly examine the behavior of foreign investors by considering the home bias hypothesis, which predicts that such investors tend to purchase large and well-established stocks (Kang and Stultz 1997, Murase 2001). By simple estimation, we present evidence that foreign investors increased investment not only in large firms with high bond dependency, but also in growing firms with low default risk.

Then, to shed light on the primary concern of this chapter -- the causes of the unwinding of cross-shareholding arrangements, we address the choice of firms to sell their bank shares, and that

of banks to sell their corporation shares. With regard to the corporation's choice to sell, we estimate a logit model in which a corporation's decision to sell off bank shares is regressed on its need to sell, the financial health of the bank, pressure from capital markets on the corporation, potential takeover threat, and the corporation's relationship to the bank. From this estimation, we found that profitable firms with easy access to capital markets and high levels of foreign ownership prior to the banking crisis tended to unwind cross-shareholdings, while low-profitability firms with difficulty accessing capital markets and low levels of foreign ownership in the early 1990s tended to maintain cross-shareholding arrangements with their banks.

With regard to the choice to sell made by banks, we estimate a logit model in which the bank's choice to sell corporate shares is regressed on the bank's portfolio factors, the bank's need to sell, market pressure on the bank, growth potential, and the risk of the corporations, and the strength of the bank's relationships with those corporations. Consequently, we found that a bank's decision to sell off a stock is determined not only by portfolio factors, but also by its long-term relationships with firms. After the banking crisis, and particularly after 1999, banks reduced shareholding mainly by selling shares with higher liquidity and higher expected rates of return (i.e. shares which were easy to sell), whereas they held onto shares of firms with which they had long-term relationships. This was especially true in cases where main-bank relationships existed. In this sense, the investment behavior of banks was based on a perverse incentive that not only undermined corporate governance but also harmed their own portfolios.

Lastly, to measure the effects of firms' cross-holding and other shareholding patterns on firm performance, we estimated a standard model of corporate performance. The conjectures tested in this estimation lend support to the view that highlights the costs of the ownership structure unique to traditional Japanese firms rather than their benefits. Cross-shareholding could reduce the pressure from stock markets but also encouraged managerial entrenchment and resulted in lower rather than enhanced performance by keeping management in place for the long term. Banks that have a dual role as debt-holders and shareholders have used their ownership stake to encourage client firms to take on projects with low profitability instead of preventing asset substitution. Lastly, parent firms that controlled a high percentage of the shares in their subsidiaries (listed subsidiaries) were prone to transfer funds from minority shareholders to controlling shareholders (parents firms) rather than encourage better performance. Or to put it differently, institutional investors played a

significant monitoring role over firms instead of inducing managerial myopia.

Indeed, this study provides evidence that high levels of institutional shareholding (either foreign or domestic) and, somewhat surprisingly, block shareholding by corporations have a positive effect on firm performance, while bank ownership has consistently had a negative effect on firm performance since the mid-1980s. These results imply the following: 1) institutional shareholders are now playing a significant monitoring role in Japanese firms by partly substituting for the (main) bank; 2) unwinding the cross-shareholding arrangements between banks and corporations clearly allowed for efficiency gains; and 3) while the former justification for bank ownership of both equity and loans is no longer operational, the economic rationale for a high share of block holding by corporations and cross-shareholding among firms still holds.

The remainder of this chapter is organized as follows. In the next section, we briefly summarize the evolution of the ownership structure of Japanese listed firms since the postwar reforms. In Section 3, we address the causes of this evolutionary change, considering the determinants of the choice between holding and selling shares by both banks and non-financial institutions. Section 4 highlights the effect of changing ownership structure on performance. Section 5 provides a conclusion and some perspectives on future trends.

2. Approaching The Stable Shareholder Problem

The puzzle

Stable shareholders can be defined as insiders friendly to share issuers, or, to put it differently, as shareholders who make implicit contracts with issuers, promising that they will not sell their shares to unfriendly third parties, especially green-mailers or those who aim to attempt a hostile takeover unless the issuers face a severe financial crisis that triggers suspension of dividend payments (Sheard 1994, Okabe 2002).

If we tentatively define “stable shareholders” as corporations and financial institutions who are long-term shareholders, the percentage share held by the stable shareholders in **Figure 1** clearly increased in two steps: the first increase occurred from 1950 to 1955, and the second from 1965 to 1974. Through the compulsory redistribution of corporate ownership centering on the dissolution of the *zaibatsu* that was part of the post-World War II reforms, block shareholders (*zaibatsu* family and holding companies) were eliminated, and individual shareholding increased. The postwar

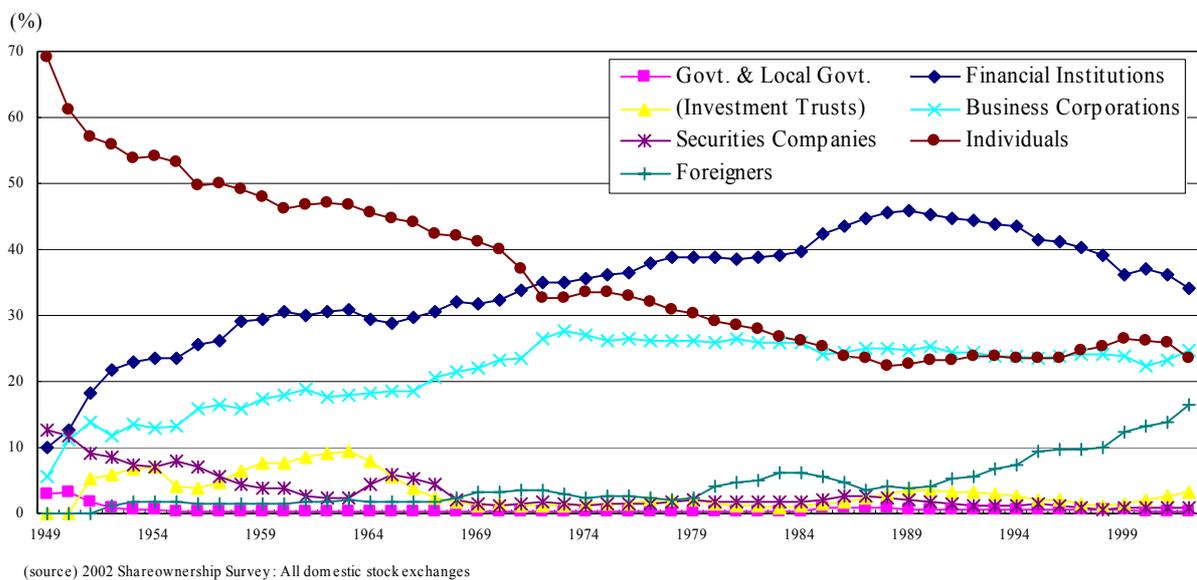
reforms produced the dispersed ownership structure with the low level of managerial ownership that has been characteristic of postwar Japanese firms. New corporate managers free from the effective control of large shareholders were exposed to the myopic pressures of the stock market, so they sought to stabilize their firms' issued stock through existing networks. This phenomenon is best captured by the saying "shareholders don't choose managers; managers choose friendly shareholders." Indeed, it did seem that the basic principles of stock corporations were being violated. *Ex-zaibatsu* firms in particular whose stocks were dispersed as a result of the unwinding of the *zaibatsu* actively urged same-line firms to purchase their stocks, and the government also promoted corporate shareholding and encouraged life insurance companies to purchase stocks. The movement toward stable shareholding accelerated following revisions to the Antitrust Law that deregulated shareholding (Miyajima 1995). Consequently, due to sharp increases in shareholding among financial institutions and corporations, the ratio of stable shareholders increased from 23.6% (1950) to 36.8% (1955).

After a period characterized by a relatively stable ownership structure (1956-64), the shareholding ratio of financial institutions and corporations increased sharply once again, with stable shareholder ratio jumping from 47.4% (1965) to 62.2% (1974). In the period of capital liberalization which followed the stock price decline of 1962, corporate managers perceived a serious hostile takeover threat from foreign competitors. Consequently, stable shareholding by business corporations and large banks increased. In addition, the cooperative stockholding institutions that were originally established to maintain stock prices promoted shareholder stabilization because they systematically sold their holdings to the issuers' affiliated firms or main banks after stock prices recovered. Miyajima, Haramura and Enami (2003) showed that the changing ratio of shares held by banks or main banks from 1964-69 was positively sensitive not only to existing relationships (measured by the (main) bank dependence at the beginning of estimation), but also to corporate performance (rate of return on assets: ROA) and growth opportunities (Tobin's q). Main banks as delegated monitors carefully reviewed the credit risks and growth opportunities of corporations offering shares¹.

¹ Miyajima et al. (2003) also reported that the increasing financial ownership of (main) banks in manufacturing firms negatively sensitive to their credit risk measured by the interest coverage ratio. But notice that the positive relation to ROA and Q is only observed for 1964-69, and not significant in the period

On the other hand, it was also rational for non-financial corporations to hold bank shares, because the market return of bank shares was stable and usually outperformed the Tokyo Stock Exchange Stock Price Index (TOPIX) ². The regulatory framework under the Commercial Code was also revised to encourage stable shareholding, making it possible for top managers (corporate insiders) to issue new shares by allotting them to friendly third parties without receiving sanction from the general shareholders' meeting. In the terminology of the law and finance literature (La Porta et al. 1998), minority shareholder protection was relaxed during this phase.

Figure 1 : Long-term trends in ownership structure of Japanese listed firms



From the early 1970s to the early 1990s, the ownership structure of Japanese firms was extraordinarily stable, as many observers have emphasized³. Even after the mid-1980s when the ceiling on shareholding by a financial institution was lowered to 5% from 10% with the revision of

from 1969-74. This positive relation between increasing bank share and high performance is consistent with Prowse (1990) and Flath (1993), which stresses the role of main bank as delegated monitors, and provides supportive results for the 1980s.

² See Miyajima et al. (2003) in detail.

³ For instance, Prowse (1990), Frath (1993), Sheard (1994), Weinstein and Yafeh(1998), and Yafeh and Yosha(2003).

Antitrust Law, the total share held by financial institution rather increased. The stylized portrait of the ownership structure of Japanese firms that we are familiar with is based on this period. However, entering into 1990s, the stable ownership structures underwent quiet changes. In fact, we can observe from **Figure 1** that the changes in the 1990s were significantly large in the context of the postwar evolution of Japanese corporate ownership, and comparable to the changes of the late 1960s.

Thus, we now turn our focus to the following question: why did foreign shareholding begin to increase and stable shareholding decrease in the 1990s? And why did the cross-shareholding that had been extremely stable begin to unwind from 1995? If the main motivation for shareholder stabilization was to mitigate the threat of takeover, why did stable shareholding decrease following a drop in stock prices and an increase in foreign shareholding, and just as the takeover threat rose? In the following section, we solve this puzzle by zooming in on the factors that characterized the 1990s.

Increase in foreign shareholding

Table 3 summarizes the value and volume of net selling and buying of shares by type of shareholder, and shows that the rise in the fraction of shares owned by foreign investors preceded changes in the Japanese corporate ownership structure. As **Table 2** shows, foreign investors in the Japanese market have increased their numbers since 1991 and become important net buyers, while securities investment trusts turned into net sellers due to the drop in stock prices. One of reasons for rise in foreign investors is the growing pension funds in the U.S. as is explained in Chapter 2. Ironically, the drop in stock prices has supported this trend since 1990. Foreign institutional investors who managed internationally diversified investment funds made it possible to buy larger volumes of shares even when investing the same amount of money. Due to high stock prices during the asset bubble period, Japanese stocks were relatively expensive for foreign investors. However, foreign institutional investors moved to incorporate Japanese stocks into their portfolios as prices fell.

Table 3: Trading Volume of Stocks by Investment Section

(Unit : One Million Shares)

Year	Total			Net Purchases							
				Securities Companies	Individuals	Investment Trusts	Foreigners	Business Companies	Insurance Companies	LTCB, City and Regional Banks	Trust Banks
	Sales	Purchases	Net Purchases								
1990	125,253	125,362	109	94	1,467	852	▲ 1,806	780	118	▲ 1,223	
1991	94,030	94,983	952	▲ 164	▲ 2,159	▲ 1,324	4,146	▲ 1,593	370	1,429	
1992	71,913	72,467	554	▲ 103	160	366	229	▲ 1,002	▲ 172	1,307	
1993	89,154	89,860	706	▲ 109	▲ 1,025	▲ 581	1,298	▲ 1,961	▲ 45	3,060	
1994	92,894	93,726	831	▲ 149	▲ 1,843	▲ 1,727	4,969	▲ 2,062	▲ 634	1,739	
1995	103,521	103,933	412	116	615	▲ 1,252	3,357	▲ 1,303	▲ 2,020	▲ 313	
1996	108,919	109,517	599	▲ 91	▲ 1,101	▲ 1,021	2,473	▲ 1,314	▲ 520	1,017	1,664
1997	112,241	112,102	▲ 139	410	4,398	▲ 1,580	▲ 1,154	▲ 152	▲ 1,498	▲ 1,382	2,451
1998	118,067	117,792	▲ 275	323	4,098	▲ 518	▲ 2,092	▲ 1,251	▲ 1,849	▲ 1,856	2,854
1999	150,259	149,877	▲ 382	374	2,626	▲ 390	7,229	▲ 2,280	▲ 2,468	▲ 2,415	▲ 1,491
2000	167,397	167,370	▲ 27	396	943	1,030	▲ 729	▲ 1,828	▲ 722	▲ 1,507	933
2001	184,767	185,179	412	198	1,338	607	▲ 976	▲ 605	▲ 1,432	▲ 1,496	2,122
2002	194,690	194,878	188	10	1,064	▲ 46	▲ 223	328	▲ 840	▲ 1,376	1,530

Source: Tokyo Stock Exchange, *Annual Report on Stock Statistics* (Based on the three markets, Tokyo, Osaka, Nagoya)

Foreign investors had a so-called home bias, i.e. they tended to purchase large and well-established stocks (Kang and Stultz 1997, Murase 2001). To confirm these points, we test the following simple model.

$$\Delta FRG_t = F(FRR_{t-1}, AVQ_t, SIZE_{t-1}, BON_{t-1}, DAR_{t-1}, DIST_t, IND) \quad (1)$$

where FRG is the percentage share held by foreign institutional investors⁴, AVQ is the period average of Tobin's q , $SIZE$ is the logarithm of total assets, BON is the degree of dependence on bonds, the ratio of bonds to the sum of borrowing and bonds. In addition, we include the leverage, DAR and a dummy variable for financial distress, $DIST$, which is 1 if net profit is negative at least one time in the estimated period, and otherwise 0. The result is presented in **Table 3**.

Even with this simple estimation, we can observe that firm size, growth opportunity (Tobin's q), and degree of dependence on bonds have significant positive effects on foreign ownership while

⁴ FRG is excluded the share held by foreign companies such as Ford-Mazda, Raunut-Nissan, and GM-Fuji Heavy Ind.Co. See Appendix in detail.

the leverage and financial distress dummy have negative effects. Foreign investors increased investment in growing firms with small default risks and with high bond dependency, and in large firms. Moreover, comparing the former and latter half-periods, we can see that *SIZE* and *BON* had a larger effect in the former half. This implies that investors targeted large and established firms. On the other hand, after 1995, the estimated effect of *AVQ* and *DIST* improved, implying that investors increasingly took into account corporate performance in the late 1990s.

Table 4: Determinants of Foreign Shareholding in Ownership Structure (Cross Section)

Sample firms are large listed firms in the First Section of Tokyo Stock Exchange, which have over 50 billion yen turnover, and excluded financial institutions and public utilities. Dependent variable Δ FOR: difference of the shareholding ratio by foreigne

Variable	1989-94		1994-99	
	Est. Coef. (t-stat.)	Est. Coef. (t-stat.)	Est. Coef. (t-stat.)	Est. Coef. (t-stat.)
<i>C</i>	-22.388 *** (-7.13)	-22.446 *** (-7.16)	-39.053 *** (-9.60)	-38.991 *** (-9.60)
<i>FOR(-5)</i>	-0.005 (-0.17)	-0.014 (-0.46)	-0.062 (-1.60)	-0.072 * (-1.85)
<i>AVQ</i>	2.181 ** (2.20)	2.369 ** (2.38)	6.082 *** (5.86)	6.202 *** (5.97)
<i>SIZE(-5)</i>	1.786 *** (9.96)	1.881 *** (10.04)	2.051 *** (8.40)	2.145 *** (8.57)
<i>DAR(-5)</i>		-0.028 * (-1.72)		-0.031 * (-1.66)
<i>BON(-5)</i>	1.971 *** (3.26)	1.618 ** (2.54)	0.729 (0.93)	0.260 (0.31)
<i>DIST</i>	-0.839 * (-1.96)	-0.664 (-1.51)	-2.178 *** (-4.10)	-1.980 *** (-3.65)
Industry Dummy	YES	YES	YES	YES
Adjusted R ²	0.23	0.23	0.30	0.31
Number of Observation	588	588	564	564

*** denotes significance at the one percent level; ** denotes significance at the five percent level;

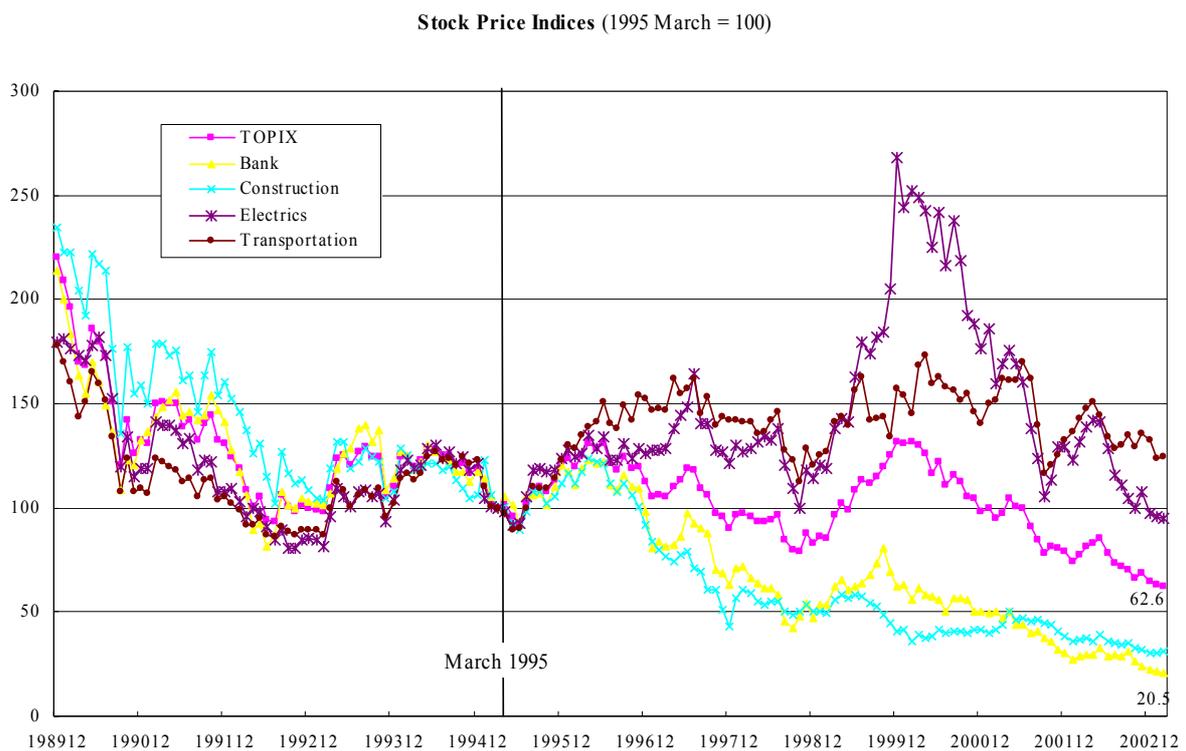
* denotes significance at the 10 percent level

The sale of financial institution shares by corporations

The increase in foreign investors required incumbent managers to act in the interests of

general shareholders and thus to reconsider cross-shareholding arrangements. At the same time, high credit ratings, which required good corporate financial health, became an important factor in encouraging managers to review their securities portfolios. Moreover, with the drop in stock prices from 1995, the rate of decline of bank shares started to exceed TOPIX's decline due to the bankruptcy of some local banks and failure of the *jusen* housing loan companies. This occurred due to the structural change in the price trend of bank shares, which had been synchronized with TOPIX because of the price correction triggered by the Daiwa Bank incident in the fall of 1995 (Ito and Harada 2000). The timing of this change corresponds to the appearance of a Japan premium in the inter-bank market (Peek and Rosengren 2001).

Figure 2 : Co-movement of Industry-specific Stock Price Indexes and Bank Stock Prices, 1995-2002

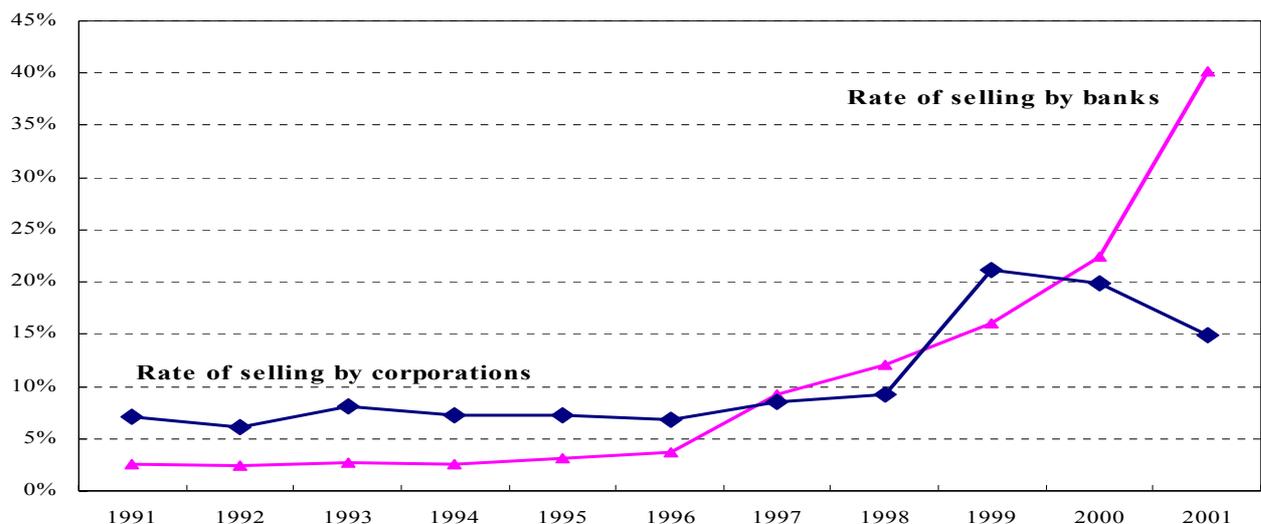


Note: Based on the Tokyo Stock Exchange industry-specific indices

According to **Figure 2**, the gap between the performance of bank shares and TOPIX widened

since 1995. Furthermore, this bank share trend was contrary to that which prevailed during the formative period of stable shareholding (1965-74) during which bank shares had a higher return on investment than TOPIX (Miyajima et al. 2003). We can infer that because of both the decline in market returns of bank shares and the increased risk associated with holding onto them, for the first time in the postwar period firms had to confront the problem of whether or not to sell bank shares. Indeed, **Table 1** shows that corporations' bank-share shareholding ratio started to decline after 1995. According to **Figure 3**, however, which summarizes the ratio of bank shares sold during the fiscal year to shares crossly held by corporation in the beginning of the period (henceforth, the rate of selling, see note for **Figure 3**)⁵, the corporate rate of selling in 1995 and 1996 did not grow significantly when compared with previous periods. Thus, the selling of bank shares was limited to certain firms.

Figure 3 : Rate of Selling and Buying



Note 1: Rate of selling by banks = $\frac{\text{number of corporate stocks sold by banks during a firm year}}{\text{number of corporate stocks held at the beginning of the firm year}}$

Note 2: Rate of selling by corporations = $\frac{\text{number of bank stocks sold during a firm year}}{\text{number of bank stocks held at the beginning of the firm year}}$

Note 3: When it was not possible to determine the number of shares held at the end of period and whether the shares were sold or the shares were not disclosed, we did not count the case as an instance of selling.

⁵ We define a reduction in the number of shares during the period as a “sell off,” and derive this figure by comparing the number of shares held by corporations after adjusting for capital transfers at the beginning and end of the firm year. Then we compute this ratio as the number of sell-offs divided by total number of relationships recognized as cross-shareholding at the beginning and end of the firm year.

However, the importance of corporations' choices in selling off bank shares increased significantly from the end of 1997 to the beginning of 1999. This period saw the bankruptcies of Hokkaido Takushoku Bank (November 1997), Yamaichi Securities Company (November 1997), Long-Term Credit Bank of Japan (October 1998), and Nippon Credit Bank (March 1999) and public funds for the big 15 banks were expanded in March 1999, and stock prices fell. Increases in Japan premiums and drops in credit ratings among major commercial banks followed, as the gap between bank share returns and TOPIX further increased. By February 1999, the index for bank shares was 53.8 (compared to 100 in March 1995) which was far below the 85.6 for TOPIX. Consequently, the low rate of return and the high risk of bank shares became increasingly apparent. Furthermore, the introduction of consolidated accounting (implemented in 1999) and current value accounting put even more pressure on corporations holding bank shares to sell. The rate of selling bank shares among corporations has increased since 1997 and exceeded 20% in 1999.

Banking crisis and its impact

As corporations sold their shares in financial institutions, bank and financial institutions themselves also sold their corporate shares. Insurance companies led this movement, and since 1995 have turned into big net sellers. Their selling was especially conspicuous after the banking crisis worsened in 1997 (**Table 2**). It is said that domestic institutional investors, including life insurance companies, changed their behavior in response to the new emphasis on fiduciary duty in the late 1990s.

Moreover, banks, which had been net buyers from 1991-96 turned into large net sellers by 1997 as the banking crisis worsened, and the rate of selling rose to over 10% (**Figure 3**). Factors influencing this trend included the need to dispose of non-performing loans and to satisfy to BIS rules as well as the introduction of current value accounting. It is also important that bankers had grown increasingly aware of public criticism of their holding of corporate shares. Under the framework of BIS rules in which unrealized capital gains and losses from shareholdings are counted as Tier 1 capital, shares held by banks, which were in fact twice Tier 1 capital in 1999, are expected to have an excessive impact on their lending behavior as stock prices decline, becoming the source of a credit crunch. The banking crisis in late 1997 marked an important turning point for Japan's corporate ownership structure, as public and policy attitudes toward cross-shareholding

clearly changed from supportive, or at least neutral, to critical or unsupportive.

Banks' Shareholding Restriction Law

Although a second injection of public funds in March 1999 was supposed to eliminate non-performing loan problem, these loans were still considered to pose a serious challenge in 2001. To cope with the lingering problem, the government enacted policies to actively dissolve cross-shareholding. In April 2001, restrictions on banks' Tier 1 capital shareholdings were implemented as part of an emergency economic package. In addition, the Banks' Shareholding Restriction Law was enacted in September, with a targeted implementation date of September 2004. In March 2001, major banks' shareholdings were 1.5 times Tier 1 capital, requiring a ten trillion yen reduction in shareholdings. The sale of shares by major banks required a bridge bank. Thus, the Banks' Shareholdings Purchase Corporation (BSPC) was established and started purchasing shares in February 2002. Also, revisions to the Commercial Code abolished restrictions on share buy-backs, allowing firms to hold their own shares continuously after acquisition (lifting the ban on treasury stock). Under these circumstances, while the sell-off of mutually held shares continued at a high pace, the sell-off of shares held by banks increased particularly sharply. Although the selling rate of corporations had been at least as high as that of banks for most of this period, the rate for banks surpassed that of corporations in 2001, and reached 40% in 2002⁶.

3. Determinants of the Unwinding of Cross-shareholding

3-1. The Data

The general decline in cross-shareholding was summarized above, but as pointed earlier, changes in the shareholding structure have not proceeded uniformly among firms. What kinds of firm characteristics encourage the decision to decrease or maintain current levels of cross-shareholding? Since corporations were relatively more likely to maintain cross-shareholding with other corporations in the 1990s than with banks, as is shown in **Table 1**, we focus our analysis below on cross-shareholding between corporations and banks. Our data set is based on the *Survey of Cross-Shareholding* accumulated by the NLIR since 1987. The data allows for rigorous analysis

⁶ Rate of sell-off rises to 35%, even though Tokyo-Mitsubishi Bank, which made an extensive contribution of held shares to ETF, was removed from the sample.

of individual cross-shareholding relationships between corporations and banks⁷.

This analysis is concerned with yearly changes in cross-shareholding from FY 1995 (March 1995) to FY 2001 (March 2002). Recall that the banking crisis of 1997 increased both banks' and corporations' tendencies to sell off mutually held shares and that the Banks' Shareholding Restriction Law that came under discussion from 1999 provided banks with further incentive to unwind cross-shareholdings. In the following analysis, in addition to making estimates for the entire period, we conduct separate analyses for three periods: period I, FY 1995-96; period II, FY 1997-98; and period III, post-FY 1999.

Our data set includes corporations that are listed in the First Section of the Tokyo Stock Exchange at the beginning and the end of each year of observation (but excludes financial institutions)⁸. On the other hand, our data includes major commercial banks and long-term credit banks that went public by the end of each year of observation. We exclude trust banks since it is not possible to completely separate shares that they hold as assets and shares held in trust as part of their trust banking services. We also exclude banks that have been de-listed from the stock exchange due to bankruptcy and nationalization, e.g. Hokkaido Takushoku Bank in 1997 and Long-Term Credit Bank of Japan in 1998, since it was not obvious who owned shares held by these institutions after such upheaval.

Our main focus is the choice by both corporations (to sell bank shares) and banks (to sell corporation shares), so we limit our analysis to matters related to a corporation's holding of bank shares at the beginning of each period, and to a bank's holding of corporate shares at the beginning of each period⁹. Thus, the sample size decreases each year.

⁷ Refer to <http://www.nli-research.co.jp/eng/resea/econo/eco031118.pdf> for more detailed information on the cross-shareholding data.

⁸ Firms that merge with the other listed firms during an observation period are excluded from the sample of the year of the merger since it is difficult to capture the change in shareholdings.

⁹ During the time period of this analysis, integration of large banks into bank groups (centered around a holding company) progressed and, as a result, it became hard to precisely trace the bank-holding company shares held by corporations at the end of the period to the bank shares owned at the beginning of period. Therefore, for bank groups which formed a bank-holding company, we analyze relationships between corporations and bank groups, and we use total amounts of loans and total shares held by banks in the bank group as proxies for the relationship between corporations and bank groups. For instance, in the case of Mizuho Holdings, established in September 2000, firms which held shares in any of the following banks – Industrial Bank of Japan, Fuji Bank, and Dai-Ichi Kangyo Bank – as of March 2000 are considered to own Mizuho Holding's shares as of March 2001, and thus are treated as having owned Mizuho Holding's shares

In the beginning (March 1995), the data consists of 14 banks and 1,087 corporations. Within this sample, there are 1,065 corporations which issued shares held by banks, while there are 1,067 corporations that hold bank shares. The data reveal that the cross-shareholding relationship was extremely common: 1,039 corporations, or 95% of the sample, had cross-shareholding relationships. Furthermore, the cross-shareholding relationship for each corporation was not limited to one bank. On average, corporations held shares in 5.4 banks at the beginning of this period, and thus there were 5,879 instances of bank share ownership by corporations. If we limit our focus to mutual shareholding cases, corporations held shares in an average of 3.2 banks in 3,545 instances. Henceforth, the unit of analysis will be the shareholder's decision to sell or hold shares.

3-2. Corporate decision on holding bank shares

To begin, we examine the non-financial corporation's decision to sell off bank shareholdings at a time when holding onto these shares is increasingly associated with higher risk and lower market returns, as described above. In general, a firm's current portfolio, liquidity constraints, and banks' creditworthiness ratings all affect the decision to sell. Additionally, there are some other factors that might also come into play. The first is capital market pressure as represented by the credit rating on a corporate bond. The importance of bond financing increased since the late 1980s and maintaining at least a BBB rating became critical for corporate financing in the 1990s. Given capital market pressures, selling bank shares signaled a rational management style that emphasized ROE and transparency. However, firms that sought to unwind a cross-shareholding relationship also faced retaliation from banks in the form of mass sell-offs of corporate shares. Thus, corporations may have decided to hold onto their bank shares and accept the higher financial risk. Additionally, managers whose firms had a high potential for takeover might have been reluctant to sell as well.

To test the above hypotheses, we estimate the logit model below that explains a corporation's decision to sell off bank shares based on the following variables: 1) the need to sell, X_1 , 2) the financial health of the bank, X_2 , 3) pressure from capital markets, X_3 , 4) potential threat of takeover,

from the beginning of period.

X_4 , and 5) the relationship to the bank, X_5 .

$$CSL_{ij} = F(X_1, X_2, X_3, X_4, X_5) \quad (1)$$

The dependent variable, CSL_{ij} represents the decision of corporation i on holding bank j 's shares. It takes the value 1 if in the current period we observe the selling of shares which were held at the beginning of period (reduction of shares held), and 0 otherwise. The definitions of explanatory variables X_1 - X_5 are in the Appendix¹⁰. **Table 5** presents the estimation results¹¹. To show the magnitude of each explanatory variable on the sell-off rate, we provide the estimated marginal effect multiplied by one standard deviation in **Table 5**. For instance, 0.030 for X_1 , D/E , means that when this variable increases by one standard deviation above mean, the probability of sell-off increases approximately 3% points, which corresponds to a little less than 30% of the probability of sell-off --11.5%.

= **Table 5 about here** =

First, we found that each corporation's choice to hold bank shares is determined by perceived necessity to sell. The coefficients on the variable D_ICR , a proxy of the degree of need to sell off bank shares for liquidity reasons, and the variable D/E , the ratio of debt to equity, are both positive and significant at the 1% level. Firms facing the risk of a liquidity crisis or excess debt are more likely to sell their bank shares. The coefficient on BSV/A , which was included to capture the skewness of an equity portfolio for specific bank shares, is also positive and significant, which shows that firms are more likely to sell off bank shares when those shares are a firm's main assets. The magnitude of the coefficient of BSV/A , 4.5%, is larger than that for other variables. When observed over our three time periods, it increases from 2.3% to 3.6% to 6.2% respectively. This implies that bank shares are increasingly being viewed as risky assets. This result is consistent with our conjecture that high risk is one factor that increases a corporation's tendency to sell off bank

¹⁰ In our following analysis, when treating outliers for all explanatory variables except dummy variables, we replace all the values deviating more than three standard deviations from sample means with sample means plus three standard deviations.

¹¹ In addition to them, we introduce a variable D_BM , a dummy variable which takes the value of 1 if several banks which are separate entities in the beginning of period are integrated by the end of period, to control for the effect of bank mergers. We also add year dummy, D_YY , which controls the year effect.

shares.

A corporation's choice to sell its bank shares is also determined by the financial health of the bank in which it holds shares. X_2 , D_FRD , has a positive and significant coefficient, which implies that less financially healthy banks tend to be targets for a sell-off. The reduction of holding risk appears to be one of the main factors in this choice. Also, the effect becomes larger as time passes within the period of observation. This implies that the banking crisis triggered a rising awareness of the risk of holding bank shares.

Now let us focus on X_3 through X_5 . The coefficient on X_3 supports the view that firm managers that issued bonds in the beginning of each period needed to sell bank shares in order to send signals to the market to maintain or raise their credit ratings. Notice that firms with at least a BBB rating, generally considered the prerequisite for issuing bonds, had a 1.4% higher probability of selling. This implies that maintaining and improving a good credit rating is a vital concern for those firms. Also D_CRB has a greater effect in period III. This supports the conjecture that it became increasingly critical for firms to keep or improve their credit rating after 1999 when the requirement for BBB ratings by foreign rating agencies became much stricter along with the rise in the probability of default among listed firms.

On the other hand, estimation results for X_4 indicate that the threat of a hostile takeover restrained the unwinding of cross-shareholding. The coefficient for the total market capitalization, $LEMV$, is positive and significant at a magnitude of 1.9%. Firms with a small current value of total shares appear to accept the increasing risk of holding bank shares to avoid retaliatory sell-offs. In addition, the coefficient for the ratio of non-stable shareholders, $NOST$, is significantly negative, which implies that firms susceptible to hostile takeovers tend to keep their cross-shareholding relationships with banks.

Last, the estimation results for variable X_5 , which captures relationships with banks, mostly support the conjecture that firms with strong relationships with banks are less likely to liquidate bank shares regardless of holding risk. Coefficients for BBR , a proxy of dependency on bank loans, is significantly negative, which suggests that firms avoid selling off shares of banks on which the firms depend for financing. Note that the magnitude of this effect grows larger after the banking crisis. Firms could not sell bank shares in spite of the higher holding risk, given the possibility that funding could be withdrawn.

The coefficient for *BHR*, a proxy of a firm's dependency on a bank (on the equity side), is also significantly negative and large at 3.4%. Thus, if the bank is a block holder, then the firm tends to avoid selling off the bank's shares. This effect is significantly negative in period II, after the banking crisis occurred. It implies that firms chose to hold shares from banks that were their important stable shareholders, fearing retaliatory sell-offs by banks in the late 1990s.

In sum, corporations considered not only equity portfolios or their liquidity needs, but also the risk of holding bank shares, the threat of takeover, and their long-term relationship with banks when choosing to sell off of bank shares. The fact that high dependency on banks on both the equity and loan sides has a negative effect on the decision to sell is especially important. Even as selling bank shares became an increasingly rational choice, some firms chose to maintain cross-shareholding if capital market pressure was weak, the potential for hostile takeovers was relatively large, or if there existed a strong pre-existing relationship with a bank. However, one variable of X_5 , *D_MB*, which represents main-bank relationships, has a positive and significant coefficient in period II. This does not support the hypothesis that firms avoided unwinding cross-shareholding with banks with whom they had strong relationships. Why then did firms choose to unwind cross-shareholding with main banks, which were considered to have the closest relationships to firms? We return to this question in a later section.

3-3. Bank decision on selling of corporate shares

As noted above, the sell-off of corporate shares by banks began after 1997. In this section, we will address why banks chose to sell.

Although identifying the determinants of the investment behavior of banks in general terms is not a simple exercise, we can assume that banks do not sell shares based merely on the fact that they may have determined that their holdings of a certain stock are excessive compared to their overall market portfolios or that the stock has low liquidity. But they also will prefer to sell risky shares, since banks rely on deposits as a source of investment funds. Furthermore, following Flath (1993) and Prowse (1990), we predict that banks tend to hold shares of firms with high growth opportunities because banks feel a need to monitor managers of firms that have considerable managerial discretion.

On the other hand, however, it is also highly plausible that a bank's decision to sell is strongly

influenced by its financing and shareholding relationship with a firm, and particularly if the bank is its main bank. Additionally, if there is an urgent need to secure funds in order to eliminate a non-performing loan, banks may skew their selling toward shares of firms with high share prices. Bank behavior based on such (perverse) incentives would lead to negative influences on corporate governance for corporations as well as the deterioration of their portfolios.

To test our conjectures, we estimate the following simple Logit model that measures a bank's choice to sell corporate shares with the following variables: 1) the bank's portfolio factor and the need for sell-off, Z_1 , 2) market pressure on the bank, Z_2 , 3) growth potential and the risk of object firms, Z_3 , and 4) the strength of the relationships with object firms, Z_4 .

$$BSL_{ij} = F (Z_1, Z_2, Z_3, Z_4) \quad (2)$$

The dependent value BSL_{ij} shows whether bank j sells or holds shares of corporation i . It is 1 if in the current period we observe the selling of shares held at the beginning of period (reduction of shares held), and 0 otherwise. The definitions of explanatory variables Z_1 - Z_4 are in Appendix 2 and **Table 6** presents the estimation results.

= **Table 6 about here** =

The variables of Z_1 explain a bank's need to sell shares. BHR/TI , a proxy of the bank's portfolio factor, and $LEMV$, a proxy for liquidity, both has positive coefficients as expected and the magnitude of $LEMV$ is large at 2.7%. Banks selected both over-invested company stocks and those that are easier to sell due to high liquidity as targets for sell-off. Also, in time-series, these trends are stronger in period III. Until the banking crisis, banks refrained from selling shares of corporations for which they were the main shareholders. This implies that the banks' level of awareness of holding risks was low. However, in period III, when public policy promoted the unwinding of cross-shareholding relationships, the need to reduce holdings became an important determinant in explaining a bank's selling behavior.

On the other hand, Z_2 , which tests the market's evaluation of banks' financial health, has a strongly positive and significant coefficient in period II¹². When we divided sample firms into two

¹² In period III, this variable has a significantly negative coefficient, which seems to represent the effect

groups by financial health and compared the probability of sell-off between them, we found that the probability of sell-off for a less healthy bank was 15.6%, whereas that of a healthy bank is much smaller at 9.3%. Thus, it appears that those banks that took market and rating agency evaluations of firms seriously considered it increasingly important to send strong signals by reducing shareholding risk.

After observing the above points, we now focus on how a firm's risk or quality was considered in choosing corporate shares to sell off. From the results for Z_3 , we find that banks' risk consideration declined following the banking crisis. The coefficient of the variable $DICR$, which represents a firm's credit risk, is positive in the estimation for both the whole period and in period I. However, in period III, when disposal became widespread, the coefficient is statistically insignificant. More importantly, the coefficient of the variable D/E , another proxy of a firm's credit risk, is positive in the period I, but becomes negative in period II and significantly negative in the last period. Thus we can infer that banks that sold high-risk shares until period I became less concerned about the risks of holding shares in periods II and III, when disposal was highly imperative¹³.

On the other hand, the coefficient of D_AVQ , a proxy of the expected return or growth opportunity for a stock, is insignificant until period II in determining target shares for banks to sell off. However, rather surprisingly, it becomes significantly positive in the period III. As explained above, according to the standard agency theory, D_AVQ should have a negative sign. However, banks sold high value shares systematically. To put it differently, as banks were required to reduce their holding shares, they sold firms with high market valuations rather than riskier firms. We can conjecture that, since 1999 when financial health became the main concern, banks started to give priority on securing funds to eliminate non-performing loans. This resulted in a systematic deterioration of banks' equity portfolios.

Last, the result for Z_4 in **Table 6** strongly supports the hypothesis that long-term relationships with firms influence a bank's decision to sell off shares. The coefficient on BBR , a

from in-kind contributions of diverse stocks to ETF in 2001 by Tokyo Mitsubishi Bank, which has a high financial rating. In fact, if we exclude it from the sample, the coefficient becomes significantly positive.

¹³ We observe that the effect of $SDRTN$, which represents stock price fluctuation risk, has strengthened after period II. This result is likely to mean that the reduction of stock holding risk is an important factor in recent decision-making on sell-offs.

proxy of the closeness of financing relationships, and the coefficient on D_CSH , which represents cross-shareholding relationships, and the coefficient on D_MB , which represents main-bank relationships, are all significantly negative at the 1% level. As far as BBR is concerned, its coefficient is significantly negative at the 1% level in all periods, although the effect is stronger in period II when the banking crisis occurred. If a firm's degree of dependence on bank loans is one standard deviation (10.9%) higher than the mean (12.5%), then the bank's probability of selling declines by 3.4% points. This is more than 30% of the 10.5% probability of selling in period II. Based on these results, we conclude that banks chose to maintain cross-shareholding with firms with which they had strong relationships.

As shown above, a bank's decision to sell off a stock is determined not only by its concern for adjusting its portfolio, but also by its long-term relationships with firms. Especially after the banking crisis, banks that received poor market valuations began to actively sell shares based more on the financing relationships than on firms' credit risks. Moreover, after 1999, while banks reduced shareholding mainly by selling shares with higher liquidity and higher expected rates of return (those which were easy to sell), they held onto shares of firms with which they had long-term relationships. This was especially true in cases where main-bank relationships existed. In this sense, banks' investment behavior was based on a perverse incentive, which not only undermined corporate governance but also harmed their own portfolios.

3-4. Cooperative and non-cooperative unwinding

As described in the preceding sections, even in recent years when shareholding risk has been clearly recognized, banks have tended to refrain from selling corporate shares of firms with which they have formed long-term relationships. In particular, when cross-shareholding relationships existed, the threat that one side's sell-off of shares would invite a retaliatory sell-off by the other was one of the factors that helped to maintain cross-shareholdings. We now shed light on the question of whether cross-shareholding was terminated under an implicit contract of both parties (cooperative unwinding) or under circumstances in which one party's actions invited a retaliatory sell-off by the other (non-cooperative unwinding).

To determine whether the unwinding of cross-shareholding happened cooperatively or not, we need to deepen our analysis and take the actual negotiation process into account. However, given

that the mutual shareholding relationship is an implicit contract in general, in cases where shares were sold simultaneously, it is likely that the termination of the relationship is determined by an implicit contract agreed to by both sides. When there was a lag in the timing of the choice, however, we can assume that one side made a choice to sell off independently, and was subjected to retaliatory action from the other side. Under these assumptions, we introduce a dummy variable X_6 to represent bank j selling corporation i 's shares in the current or previous year into the equation (1) in Section 3-2.

We also introduce the dummy variable Z_5 to represent corporation i 's selling bank j 's shares in the current or previous year into the bank's shareholding choice model ((2) in section 3-3). Of the total 2,074 instances of shares sold by corporations in the entire period, there were 718 instances in which the partner bank sold off in the same year (*BSL*), and 304 instances in which the partner bank sold off in the previous year (*PBSL*). On the other hand, of the total of 2,728 instances of shares sold by banks for the entire period, there were 718 instances in which the partner corporation sold off in the same year (*CSL*), and 304 instances in which the partner corporation sold off in the previous year (*PCSL*). The estimation results for the entire period are shown in Model 2 in **Table 5** and **Table 6**. The estimation results by period are shown in **Table 7** (only reports the results of dummy variables). Although this estimation cannot identify sell-off behavior stretching over multiple years, we can make two observations from these results¹⁴.

== **Table 7 about here** ==

First, both a bank's and a corporation's choice of stocks to sell responds to the variable which represents the choice to sell by the other party in the same year. For instance, the marginal effect on *BSL*, a bank's sell-off in the same year, is 5.1%. On the other hand, the marginal effect on *CSL*, a corporation's sell-off in the same year, is 6%. Recent instances of cross-shareholding termination proceeded cooperatively, basically under an implicit contract between both parties.

Second, however, there is evidence that cross-shareholding relationships also end non-cooperatively. The variables representing sell-offs by the other party in the previous year have significantly positive coefficients in the entire period sample. The following points are worth noting: first, this lag effect is in general much smaller than same year effects. Second, the lag effect

¹⁴ Since banks have a large shareholding ratio in each firm, they presumably sold shares in parts in multiple periods.

of a bank's sell-off (*PBSL*) on corporate choice is limited, and until period II the effect is insignificant. Third, in contrast, a bank's choice to sell in response to the disposal of corporate shares in the previous year (*PCSL*) is significantly positive only after period II. This implies that a corporation's choice to sell, considering the rise of holding risk, strongly influences a bank's choice. In summary, aside from the cooperative effect noted earlier, there is a non-cooperative effect whereby corporations sold their bank shares first and banks retaliated. This supplementary factor led to a rapid disintegration of many cross-shareholding relationships.

3-5. Influence of main-bank relationship on choice

The relationship between a corporation and bank is generally stronger when the bank is the corporation's main bank. In fact, banks tended to refrain from selling shares of firms with which they have had a main-bank relationship. However, estimation results for corporations show that they were more likely to sell shares of their main bank. This counter-intuitive result is a puzzle. How did main-bank relationships affect sell-off behaviors? Why did corporations liquidate main-banks' shares and why was that possible?

In the following, we estimate models which include the interaction term of the main bank dummy D_{MB} with the interest coverage ratio, D_{ICR} , and the bank's financial rating, D_{FRD} . Here, D_{ICR} represents the necessity to sell for corporations and the holding risk for banks respectively. In contrast, D_{FRD} represents the necessity to sell for banks and the holding risk for corporations. This estimation allows us to test the conjecture that even though the choice to sell a bank stock is financially rational, sell-off is avoided when the main bank relationship is strong. The results for corporation choices are presented in Model 3 of **Table 5**.

First, we find that the estimate for the interaction term between D_{FRD} and D_{MB} has a significantly positive coefficient. This result shows that, although the financial condition of banks in which corporations invested got worse and holding risk increased, corporation tended to avoid selling a bank's shares if they had a main-bank relationship with that bank.

Second, we should note that the coefficient of the interaction term between D_{MB} and D_{ICR} , a proxy of the financial degradation of shareholding corporations themselves, is significantly positive. Put differently, corporations facing liquidity crises tend to selectively liquidate shares of their main banks. When we divide the sample into two sets, one with cross-shareholding with

main-bank relationships and the other without, and estimate equations (1) in two sets respectively, we achieve mostly the same results as above. Therefore, under main-bank relationships, corporations liquidated shares of their main bank (in other words, in cases in which the main bank did not stop the sell-off) only when the corporations experienced a financial crisis, which produced the puzzling outcome mentioned above.

On the other hand, estimation results for banks (Model 3 in **Table 6**) also show that the main-bank relationship restrains a bank's sell-off of shares of partner corporations. The coefficient of the interaction term between the firm partner's financial condition and the D_MB dummy (D_MB*D_FRD) is significantly negative. This implies that even though a bank's unhealthy financial condition may cause increasing market pressure to reduce shareholding, it tends to selectively hold shares of corporations with which it has a main-bank relationship. Also, the coefficient of the interaction term between a corporation's credit risk and the D_MB dummy (D_MB*D_ICR) is significantly negative, and especially clear in period III (not reported). This result suggests that the bank tends to avoid selling off shares of corporations with high credit risk if the bank has a long-term relationship with them¹⁵.

Accordingly, a puzzling asymmetrical response between banks and corporations in selling their partners' shares can be explained by the bail-out efforts of the main bank. Since banks deeply value their main-bank relationship with particular corporations, they permit such corporations to liquidate their shares in a crisis. Similarly, main banks choose to hold onto their shares of a corporation in crisis since selling would send a clear signal to the market that the corporation is in bad financial shape.

Consequently, the asymmetric effect of the main-bank relationship further accelerated the degradation of a bank's equity portfolio. As discussed above, bank mainly liquidated shares of corporations with high expected rates of return, regardless of the level to which credit risk skewed their equity portfolio to firms with low rates of return. Moreover, the above results show that banks held shares of the corporations with which they were the main bank in order to maintain a long-term relationship, even when corporations presumably face financial crisis.

¹⁵ The same result can be observed from the estimation in which the sample is divided into main-bank firms (firms with main banks) and non-main-bank firms.

4. Effect of Ownership on Corporate Performance

4-1. Cost and benefit of cross-shareholding

So far, we have examined the causes of the recent rapid unwinding of cross-shareholding. What then are the welfare implications of the unwinding? In this section, we address this issue by examining the relationship between ownership structure and corporate performance.

The growth of Japanese firms up to the 1990s has been attributed in part to the existence of stable shareholders. Stable shareholding, according to this theory, freed managers from both the threat of hostile takeovers and myopic pressure from shareholders, allowing them to focus on long-run decision-making (Abegglen and Stalk 1985, Porter 1992, Odagiri 1992). Moreover, many corporate activities are supposed to run efficiently under the high level of cross-shareholding which provided incentives to employees with firm-specific human capital by protecting them against adverse shocks, and therefore reducing risk (Aoki 1988, Aoki and Patrick 1994, Sheard 1995, Okabe 2002).

Bank ownership of borrowing firms could also help to monitor the firms and reduce the asset substitution problems, and by doing so contributed to corporate performance. Prowse (1990) and Flath (1993) examine patterns of bank shareholding in Japan as a proxy of bank monitoring. Some previous studies addressing the effect of financial ownership on corporate performance showed that shareholdings by financial institutions improved management efficiency (Lichtenberg and Pushner 1994) and attributed this improved efficiency to effective monitoring.

Furthermore, the role of large shareholders (parent firms) is also supposed to play a significant monitoring role in corporate governance of Japanese firms. Sheard (1989) address the significant role of large shareholders (parents firms) along with main banks in Japanese firms. Kang and Shivdasani (1995), and more recently Morck, Nakamura and Shivdasani (2000) confirmed this understanding. Focusing on entertainment expense, Yafeh and Yosha (2003) show that concentrated shareholding is associated with lower expenditures on activities with a potential to generate private benefits for managers¹⁶.

In the mid-1990s, however, when it became evident that the Japanese economy faced prolonged stagnation, , the costs of Japan's unique ownership structure came under scrutiny. Since

¹⁶ They conclude that large shareholders are probably more important than banks for monitoring.

stable shareholders faithfully held shares over long periods, and they did not (could not) exercise voice, cross-shareholding, almost by definition, could potentially foster a moral hazard among incumbent managers (insider control) as management became entrenched, resulting in low performance due either to over-investment or low effort levels in relation to capital and labor input.¹⁷ The agency cost associated with cross-shareholding may become even more acute than in cases of high managerial ownership with managers wielding controlling interests in their companies.¹⁸

It is also plausible that bank ownership, the core of cross-shareholding, could play a negative role in corporate governance when banks use their stakes to encourage client firms to take on projects that deviate from value maximization rather taking steps to reduce asset substitution¹⁹. Weinstein and Yafeh (1998) first suggested that banks induced clients to borrow more than profit maximization warranted, and, in addition, that banks encouraged client firms to adopt low-risk and low-return investment strategies, resulting in poor performance. Subsequently, Morck, Nakamura and Shivdasani (2000) stressed that assigning the task of corporate governance to banks does not always lead to maximization of firm value because banks as creditors have different objectives from banks as shareholders. Focusing on FY 1986, one year before the year when the ceiling on a bank's ownership was reduced from 10% to 5 %, they found that equity ownership by the main bank and firm value are inversely related, and suggested that higher bank ownership is associated with relaxed financial constraints, allowing firms to undertake more marginally acceptable investment opportunities. In the same vein, Miyajima et al. (2001) report that corporate investment was sensitive to internal funds only among firms with low growth opportunities in the late 1980s,

¹⁷ For instance, the sensitivity of dividends to profit among Japanese firms has declined to almost zero since the late 1960s when stabilization progressed. It is true that adopting a dividend policy less sensitive to profit may promote firms' investment when firms have high growth opportunities. However, if firms' growth opportunities are low, then adopting such a dividend policy generates free cash flow in Jensen's (1986) sense. In the late 1980s, during the so-called bubble period, low dividends may have emerged as a source of the excessive investment problem.

¹⁸ When managers have a high degree of ownership, they suffer losses when there is empire-building or effort aversion, while in cases in which there is a high level of cross-shareholding, incumbent managers have not been held responsible for any losses associated with such morally hazardous behaviors.

¹⁹ The concern with ownership's effect on corporate efficiency is relatively new, while many previous studies have shown that firms belonging to bank-centered corporate groups performed significantly worse than independent firms (Caves and Uekusa 1976, Nakatani 1984, Weinstein and Yafeh 1998). In these analyses, the main instrument by which groups influenced corporate performance was the rent extracted by banks with strong bargaining power.

and that this relationship was stronger among the firms with high ratios of shares held by main banks.

Another possible cost among Japanese firms is the conflicts of interest between large shareholder (parents firms) and minority shareholders in firms under the vertical type of corporate group (*keiretsu*). A growing literature has blamed corporate groups for the expropriation of minority shareholders. Classens et al. (1999) and Johnson et al. (2000) argue that groups are associated with minority shareholder exploitation in Asia. If this argument were applicable to the vertical corporate groups in Japan, it is likely that parent firms with a high ownership stake in subsidiaries (listed subsidiaries) could transfer funds from minority shareholders to controlling shareholders, resulting in lower performance.²⁰

The consensus view has seemingly moved from highlighting the benefits of the ownership structure of Japanese firms to stressing its costs. However, so far there has been little empirical research on whether ownership structure affects corporate performance, and even the limited studies that have been carried out only cover the late 1980s. Furthermore, there is no research that directly addresses the effect of cross-shareholding on performance.

4-2. The Data

In order to take a step toward filling the gap, we focus on the relationship between ownership structure and performance after the bubble period, using the comprehensive database developed by NLIR and Waseda. This database has a wide range of advantages over the data sets used in previous studies, which often depended on information disclosed in financial reports (*Yukashoken-hokokusho*). For instance, previous research used “shares held by financial institutions” as a measure of the ownership stake of banks or “stabilized” shareholders. However, needless to say, “shares held by financial institutions” in financial reports includes various types of financial institutions: city banks that are characterized by their joint ownership of debt and equity, trust banks whose shareholdings were mainly comprised of pension-and investment trust funds, and the insurance companies that hold shares in both their general account (where they assume the risk) and special accounts (delegated). Additionally, “shares held by non-financial institutions” in the

²⁰ Low performance is also plausible, if the monitoring of parent firm over a listed subsidiary were too strict to keep its manager and employee’s incentive (Burkart, Gromb and Panunzi 1997).

report also includes both those shares held by business partners (group firms) and block holders such as parent companies.

By contrast, the NLIR-Waseda database, which is constructed on the basis of lists of the 20 largest shareholders for individual firms, provides the accurate shareholding ratio of each stakeholder in line with standard economic theory. Thus, it provides the ratio of stable shareholders by aggregating the shares held by banks (excluding trust banks), shares held by insurance companies and the shares held by non-financial institutions (definition are provided in **Table 1**). Consequently, we can disentangle the overall effect of the stabilization of shareholders and that of bank ownership on corporate performance.

Second, the NLIR-Waseda database will also be able to provide the accurate ratio held by institutional shareholders, both foreign and domestic. It presents the exact ratio of shareholding by foreign institutional investors by distinguishing the shares held by foreign financial and non-financial corporations²¹. It also estimates the shareholding ratio of domestic institutional investors by aggregating the pension and mutual funds entrusted to domestic financial institutions (mainly trust banks and insurance companies), which has been increasing their presence.

Last, this data could provide the shares held by main bank and large shareholders among non-financial institutions. The main bank is defined as the largest lender to client firms, while the threshold of the ownership stake of the large shareholder is set at 15%. These data made it possible for us to identify which effects, cost and benefits, dominated in cases of ownership by main banks and large corporate shareholders.

4-3. Results and Discussion

Our sample firms are the non-financial firms in the First Section of the Tokyo Stock Exchange.²² We conducted estimates for the firm years from 1985 to 2002. This period is further divided into three sub-periods: the “bubble” (1985-1990), post- “bubble” (1990-1997), and the banking crisis period (1995-2002). We use the standard model that regresses corporate performance

²¹ Previous research used the foreign ownership ratios in financial reports, which include both the shares held by foreign institutional investors as well as foreign non-financial companies (for example Renault and Ford)

²² We also conducted estimates for all 2,600 listed firms with the same sample period. The results are basically the same.

on fundamental variables as well as governance variables including ownership structure, following studies by Richtenburg and Pushner (1994), Yafeh (2000), Horiuchi and Hanazaki (2001). Since our data has panel structure, we employ a fixed effect model for controlling time-invariant unobserved individual (firms specific) effects²³. The estimated model is:

$$P_{i,t} - P_{j,t} = \alpha_i + \sum \beta Gov_{i,t-1} + \chi Size_{i,t-1} + \delta Dar_{i,t-1} + Year_t + \varepsilon_{i,t} \quad (3)$$

where $P_{i,t}$ is the performance in year t, and $P_{j,t}$ is the performance of industry j (based on the 33 industry classifications of the Tokyo Stock Exchange) which firm i belongs to in year t. Thus the dependent variable is the standardized performance²⁴. It is highly relevant to use the standardized performance, partly because the issue here is corporate efficiency which is independent of industry common factors, and partly because it could reduce the reverse causality problem: the estimation might capture a stakeholder that bought or held onto a high performer's shares rather than signifying the large shareholder's promotion of firm efficiency. Since the consolidated accounting data is available in our NLIR-Waseda database, the current value ROA on a consolidated basis and Tobin's q are used for the index of performance²⁵.

The explanatory variable $SIZE_{i,t}$ is the logarithm of total assets, $DAR_{i,t}$ is the leverage (interest-bearing debt / total assets) of firm i in year t, and $Year_t$ is a dummy variable which takes the value one in year t. These are included to control factors affecting performance other than ownership structure.

$Gov_{i,t-1}$ is the governance structure of firm i in year t-1, for which the various shareholding ratios including those for domestic and foreign institutional investors and the ratio of stable shareholders are introduced. To obtain a variable that represents foreign institutional investors more precisely, we calculate the shares of foreign institutional investors, $FRGN$, by eliminating foreign corporations and domestic pension funds via foreign countries from the shares held by foreign shareholders. $STAB$ is the ratio of stable shareholders, which decomposed into the ratio of

²³ Considering the effect of outliers on the estimation results for explanatory variables except dummy variables, all values deviating more than three standard deviations from sample means are replaced by sample means plus three standard deviations.

²⁴ We also estimated the regression using (1) each of the row figures of the performance index, (2) the yearly changes of the industry standardized performance as dependent variables. The results are unchanged.

²⁵ Tobin's q is strictly constructed in the NLIR and Waseda database by estimating current value of tangible assets, land and securities, following the standard literature. See Miyajima et al. (2001).

bank ownership *BKSH* and that of non-bank ownership, *NBKSH*. Notice that the correlation between *FRGN* and *STAB* (*BKSH*, *NBSKH*) is not very high; for instance, the correlation coefficient between *FRGN* and *BKSH* is minus 0.17. We also include the share of the main bank, *D_MBS*, which takes the value 1, if main bank shareholding is nearly 5% (we take 4.9% as its threshold). We found that 26% of the entire sample of firms took the value of 1.

Further, we added the dummy variable, *D_PAR*, which is given the value of 1 when a corporation holds more than 15% of shares. This variable enables us to test the possibility of exploitation of minority shareholders by controlling shareholders (parent companies). The ratio of such firms out of sample, namely, the ratio of the “listed subsidiaries”, is 26 %. Last, to capture the effect of managerial ownership, we introduced the dummy variable, *D_DIR*, which is 1 if managerial ownership is higher than 5%²⁶. The ratio of firms with the *D_DIR* equal one is 13.1% in our sample.

In addition to the above variables for ownership structure, following Yermack (1996), we also added variables on the size of the board of directors, *BRN* and the ratio of outsider directors, *ODR* to the model. Notice that the expected sign of *BRN* is negative, because of the problems of poor communication and decision-making associated with large boards. All the explanatory variables are lagged by one period from the dependent variable to clarify the causality with corporate performance. Detailed definitions of the variables are in Appendix 3 and the estimation results are presented in **Table 8** on the full sample period and **Table 9** on sub-periods.

== **Table 8/9 about here** ==

First, we observe that leverage has a positive effect on corporate performance. The result is consistent with the standard theoretical understanding of the disciplinary role of debt since Jensen (1986) and also coincides with recent studies by Horiuchi and Hanazaki (2001). According to **Table 9**, the effect of leverage is larger in the post bubble and banking crisis period than during the bubble period, which supports the notion that debt in general played an increasingly significant role for corporate governance in the 1990s.

Second, the ratio of outside directors, *ODR*, and the board size, *BRN*, have the expected signs, but are not necessarily stable. The sign of outside directors is positive and significant in both ROA

²⁶ We set this threshold following Moreck, Schleifer and Vishney (1988).

and Q for the whole period; however, the results for sub-periods are not sufficiently significant in either ROA or Q (results are not shown). On the other hand, the size of boards is an insignificant factor in ROA over the whole period, whereas it shows high significance in sub-periods. From these results, the relationship between small boards and high performance, which is observed by Yermack (1996) in U.S. firms, is also the case for Japanese firms, particularly in the post-bubble period.

Third, managerial ownership that exceeds a certain threshold may have negative effects on corporate performance²⁷. Although the significance level is not sufficiently high, there is a possibility that managerial entrenchment is associated with high managerial ownership. The effect is clear in the bubble period and to a lesser extent in the post-bubble period. These results are consistent with the understanding that some family-owned firms tend to be over-invested.

Changing our focus to ownership structure, we observe that the ownership level of particular categories of stakeholders has strongly influenced corporate performance. First, shareholding by both domestic and foreign institutional investors has significantly positive effects. It is generally expected that monitoring pressure for management increases if institutional investors hold shares above a certain level (Shleifer and Vishny 1986). Also, several authors have pointed out that since institutional investors have high monitoring abilities, they are effective at mitigating agency problems (McConnell and Servaes 1995, Nickell, Nicolitsas and Dryden 1997, etc). Consistent with these predictions, institutional investors likely contributed to performance enhancements by disciplining managers in the late 1990s. Also, it is important to note that this effect is observed among not only foreign institutional investors, but also domestic institutional investors.

== **Table 9 about here** ==

Second, firms that have parent companies have significantly higher performance. This result is consistent with Kang and Shivdasani (1995) and Morck et al. (2000). In spite of the perceived conflict of interest between parent companies and minority shareholders, as far as the listed firms are concerned, serious problems regarding corporate governance are less likely in vertical corporate groups (*keiretsu*). In contrast, we can infer that parent firms as block holders monitored

²⁷ Morck et al (2000) reported a monotonous positive relationship between managerial ownership and Tobin's *q*, interpreting it to be the result of the alignment effect between managers' concerns and shareholders' interests. But we did not find such a relationship.

their listed subsidiaries (related firms) effectively and improved their efficiencies.

Finally, as for stabilized shareholders, we find an inverse relationship between the shares held by stable shareholders and performance in both ROA and Tobin's Q²⁸. In sub-sample estimation, the inverse relationship is clear in the bubble and post-bubble period. The result is consistent with the understanding that high stabilized shareholding can insulate managers from external pressures. On the other hand, being different from the effect of parents firms, the sign of main bank shareholding is negative and highly significant for the whole sample, and post-bubble and banking crisis periods. The result is also consistent with the entrenchment rather than monitoring view of the role of the main bank.

As we mentioned, stable shareholders were composed of banks and non-banks. Thus, the interesting task is to identify which, bank or non-bank ownership, has a stronger effect on insulating managers from external pressures. **Table 9** of columns 3 and 4 presents the result decomposing the stabilized shareholding ratio into the shares held by banks, *BKSH*, and the shares held by non-banks, *NBKSH*, which include shares held by non-financial institutions and insurance companies. Interestingly, in both ROA and Tobin's Q estimation the coefficient of *BKSH* is highly significant, while that of the *NBKSH* is negative but less significant. It implies that the negative effect on performance came not from the shareholding among firms, but mainly from the shareholding by banks.

Furthermore, we observe in **Table 9** that the coefficient of *BKSH* is consistently negative and highly significant in all sub-sample periods. The magnitude of the effect is arrived at by multiplying the coefficient times one standard deviation of *BKSH*, -0.269 percent in the bubble period, -0.467 percent in the post-bubble period, and -0.317 percent in the banking crisis period respectively. This magnitude is almost the same as or even higher than that of foreign ownership.²⁹ The negative effect was the largest in the post bubble period. Thus, it is unlikely that mutual shareholding among non-financial institutions has promoted managerial discretion by shielding top management from market pressure, while it is highly plausible that high bank ownership or main bank shareholding played negative role in corporate governance, although we

²⁸ The result holds if the independent variable is replaced with TFP (Miyajima et al. 2004).

²⁹ The magnitude of *FRG* is 0.355 in the bubble period, 0.258 in the post-bubble period, and 0.310 in the banking crisis period respectively.

cannot disentangle whether this result came from the entrenchment effect or propping-up effects.

== Table 9 about here ==

The above estimations are not completely free from endogeneity problems. Even when applying standardized performance as a dependent variable, and introducing the appropriate lag and firm specific effect in independent variables, we cannot rule out that the estimation captured the reverse relationship, i.e., a stakeholder invested in high performers' shares rather than serving to keep firms efficient. Thus, further tests are necessary and the result is still tentative. Admitting these points, however, there are several important implications coming out from these results.

First, the fact that the institutional shareholding consistently associated with high performance implies that their increasing shares have a strong economic rationale and raise efficiency. There is no doubt that institutional shareholders played a significant monitoring role in Japanese firms in partly substituting for the (main) bank.

Second, the inverse relation between bank ownership and performance suggests that unwinding the cross-shareholding between banks and corporations clearly allowed for efficiency gains. It is often pointed out that unwinding cross-shareholding may increase unnecessary pressures on management to think myopically, i.e. in terms of short-term rises in the price of their stock. However, as far as the cross-shareholding between banks and firms are concerned, the positive effect of its unwinding on corporate governance in Japanese corporations is even larger than the possible myopia effect in the 1990s.

Third, however, since the stable shareholding or high ownership stake of banks has had a consistently negative effect on corporate efficiency since the bubble period, the inefficiency associated with bank ownership per se was not necessary to cause the unwinding of cross-shareholding. The notion that less efficient institutions could not survive is not the case by the mid-1990s. There was inertia among firms and banks in their decision to hold stocks. The only external shock – the banking crisis – may have disrupted this inertia as we explained in the previous section.

Last, contrary to the view that cross-shareholding had a management entrenchment effect, mutual shareholding among non-financial institutions may never have had a strong negative effect on corporate performance. Similarly, contrary to the conflict of interest view of corporate shareholding, the block shareholding of other non-financial institutions constantly played a

significant role in corporate governance in Japanese firms. It is also unlikely that the high shareholding of block holders enabled the transfer of funds from minority shareholders' to the controlling shareholders as part of a "tunneling" scheme. While one of the salient features of ownership structure in Japanese firms, bank ownership of equity and loans, has lost its *raison d'être*, other features such as the high share of block holding by corporations and cross-shareholding among firms still retain their economic rationale.

5. Conclusion and Perspectives

This chapter investigated the causes and implications of unwinding of cross-shareholding, which has been a major feature of the ownership structure of Japanese firms for the past few decades.

Why did the stable ownership structure begin to unwind since the late 1990s? The banking crisis was a crucial factor that directly led to the termination of many cross-shareholding arrangements between financial institutions and firms. After 1995, and especially since 1997, when the banking crisis came to the surface and grew acute, it became increasingly irrational for corporations to hold bank (financial institution) shares due to the high holding risk. On the other hand, major commercial banks held off selling corporate shares after the crisis, though motivated by the need to secure funds to dispose of non-performing loans and to respond to BIS regulations. Since cross-shareholding is a mutual relationship, once one side decides to sell its partner's share, it is natural that the unwinding is accelerated.

However, it is worth noting that crucial changes were occurring prior to the banking crisis. First, firms which were large, had high credit ratings, or maintained relatively high profit rates, already depended on bonds and equities for their external financing, which eroded the simultaneous ownership of both debt and equity claims by Japanese banks. Second, foreign investors increased their stakes in these firms in the early 1990s. Subsequently, the share held by domestic institutional investors also rose. Institutional investors encouraged top managers to consider ROE and returns on investment. Third, it became evident that bank ownership was associated with low performance, possibly because higher bank ownership is associated with relaxed financial constraints, allowing firms to undertake more marginally acceptable investment opportunities.

These facts are extremely important because they explain the unevenness of the unwinding of

cross-shareholding. As we emphasized in this chapter, the unwinding of cross-shareholding has not proceeded uniformly among Japanese firms. The growing differentiation in the post-banking crisis period between firms that rapidly unwind cross-shareholding and firms that continued cross-shareholding has been the result of rational choices both by corporations and banks.

Managers of profitable firms with easy access to capital markets and high foreign ownership prior to the banking crisis found little need to maintain financial relationships with banks. This made the unwinding of cross-shareholdings a rational way to earn a high market valuation. The governance by the capital market led to the continuation of high performance. These are the firms that actively reformed their boards of directors, as Chapter 11 will explain.

For low-profit firms with difficulty accessing capital markets and low foreign ownership in the early 1990s, however, cross-shareholding, in particular between banks and firms, was maintained since managers needed strong relationships with banks for both financing and to stabilize ownership. As a result, management discipline was sacrificed and this led to poor performance. These are the firms that still maintain main-bank relationships as we saw in Chapter 1, which are in fact identical to firms that are reluctant to reform their boards of directors. They have fallen into a vicious circle of cross-shareholding and lax governance.

What should be noted here is that the firms that maintain cross-shareholding have little incentive to dissolve it. Managers of the firms with low profitability and strong bank relationships (in terms of both financing and shareholding) prior to the banking crisis do not have incentives to sell shares of banks whose profitability declined and holding risk went up. For banks, it is rational to continue holding onto corporate shares since selling the shares of firms with which they are connected sends negative signals to the market and can expose bad debts. If this circumstance continues, then the low market evaluations of these corporations are sustained and pressure from institutional investors or credit rating agencies has no effect. This mechanism explains how conventional J-type firms locked to their traditional pattern of cross-shareholding in the late 1990s.

Against this backdrop, the simultaneous ownership of debt and equity became a systemic problem for Japanese firms in the late 1990s, and, thus likely constituted an impediment to corporate reform. Locked-in firms have emerged as the most important targets of reform in Japan.

Moreover, the continuation of the above situation implies a degradation of banks' equity portfolios. The fact that the composition of borrowers deteriorated through the process of

deregulation in the late 1980s was revealed through other studies (Miyajima and Arikawa 2001). The result of this chapter is that after 1997, when the banking crisis occurred, banks sold shares of firms with high growth opportunities (large Tobin's Q) and held shares of firms for which the banks serve as main banks even as their holding risks rose. This implies the systematic deterioration of bank portfolios.

Perspectives on the future

By examining the causes and effects of the unwinding of cross-shareholding, we can extract some perspective on the future.

We emphasized the vicious circle between bank ownership and low level of governance, and organizational lock-in of conventional J-type firms. However, this does not necessarily imply the existence of a stable equilibrium. Policymakers have gradually recognized the vicious cycle described above and taken various measures which have started to show some effect. The Banks' Shareholding Restriction Law promulgated in September 2001 required banks to reduce their holding stock up to the same amount of their equity (originally by September 2004, and with recent revisions, by September 2006), providing a substantial impetus to sell off corporate shares. The Banks' Shareholdings Purchase Corporation (BSPC) started in January 2002, and the Bank of Japan began to buy stock directly from city banks at market price with certain conditions in October 2002. However, since the law only required a reduction in the total volume of shares held, and the Bank of Japan's purchases were limited to stock with credit rating of BBB and higher, it is still likely that banks may have held onto shares of firms with low profitability and high risk, and sold only equity with high liquidity.

In this context, the bank mergers may have a substantial effect on further steps to encourage the severing of the vicious circle. Given the current Antitrust Law that sets a ceiling on the holding of stock by financial institutions of up to 5%, the merged banks were required to sell holding shares. Furthermore, the changing ownership structure among major city banks themselves may give them an incentive to sell shares of firms with low profitability. In the process of reconstructing banks, the shares held by institutional shareholders increased as cross-shareholding with corporations dissolved. This would make difficult for them to hold onto low-profit, high-risk firms. Thus, one possible (and optimistic) scenario has the locked-in relationship between major banks and firms

gradually dissolving.

What then can we expect to happen to the ownership structure in the future? Cross-shareholding between banks and firms will without a doubt decrease to a certain level, while institutional shareholders will increase their stakes. In particular, domestic institutional investors will increase their presence. However, the cross-shareholding among firms will not be dissolved on a large scale, since corporate ownership of shares has its own economic rationale. For instance, cross-shareholding arrangements help reduce moral hazard risks (opportunistic behaviors) among trading partners, thus facilitating transaction-specific investment (Flath 1993). In addition, there is no sign that it has played a negative role in corporate governance (corporate block holding has in fact played a positive role). Japanese firms now have the option of forming a holding company, which will also encourage corporate ownership of shares. Thus, the ownership structure of Japanese firms that was characterized by cross-shareholding among corporations and financial institutions will gradually change to a more market-based system but still retain the cross-shareholding arrangements, i.e. the combination of cross-ownership by corporations and shareholding by institutional investors.

In this process, a decrease in stable shareholding is likely to increase the likelihood of hostile takeovers, and in fact some takeovers have occurred in the 2000s. The amendment of the Company law in 2006 that makes it possible for foreign firms to buy Japanese firms through exchanges of stock will certainly open the door wider to mergers and acquisitions. Accordingly, the real challenge that Japanese firms will face (or have been facing) is how to manage the hostile takeover threat. The key for policymakers is to design an institutional framework that utilizes the emerging market for corporate control on the one hand while providing firms with appropriate means to fend off unwanted suitors.

Appendices: Definition of Variables:

Appendix 1. Corporation's Choice of Bank Shareholding

X_1 Variables as proxies of sell-off

D_ICR : Dummy variable is 1 if corporation i 's interest coverage ratio [(operating profit + interest and dividends income)/ interest cost] is 1.5 or less.

D/E : Corporation i 's D/E ratio (interest-bearing debt/ equity capital).

BSV/A : The ratio of bank j 's shares held by corporation i at market value in its total assets.

X_2 Financial health

D_FRD : Dummy variable is 1 if Moody's bank financial rating is D or below (all banks have received D or below since 1999, thus dummy is one if E or below), otherwise 0. Seven out of 14 banks received C or above ratings in 1995, six banks received C or above in 1997, and zero banks received C and only three received D or above in 1999.

X_3 Variables representing pressure from capital market

D_CRB : Dummy variable takes value of 1 if corporation i 's credit rating for long-term bond is BB-BBB (if corporation received ratings from multiple rating agencies, choose most conservative rating).

D_CRA : Dummy variable takes value of 1 if corporation i 's credit rating for long-term bond is A-AAA (if corporation received ratings from multiple rating agencies, choose most conservative rating).

X_4 Variable as proxies for manager's entrenchment against the threat of takeover

$LEMV$: Logarithm of corporation i 's total market capitalization.

$NOST$: Ratio of shareholding by non-stable shareholders (the sum of share held by individuals excluding board members, foreign and domestic institutional investors) if the corporation has cross-shareholding relationship with banks, and zero otherwise.

X_5 Variable representing the relationship between corporations and banks

BBR : Corporation i 's borrowing from bank j divided by total borrowing from private financial institutions.

BHR : Bank j 's shareholding of corporation i divided by total issued shares of corporation i .

D_MB : Dummy variable is 1 if bank j is a main bank of some corporation (this represents closeness to corporations in total financial transaction). The main bank is defined as a bank that is the top listed

bank in the column of the business partner banks in “the Japan Company Handbook” of Toyo Keizai Inc.

Distribution of **BBR** (mean, standard deviation) in period I is (8.7%, 9.5%), in period II is (9.4%, 10.1%), and in period III is (12.3%, 12.8%). Distribution of **BHR** in period I is (1.7%, 1.8%), in period II is (1.9%, 1.8%), in period III is (2.4%, 2.0%). The mean values of both variables are increasingly due to the effect of bank restructurings.

X_6 Dummy variable representing bank j’s sell off of corporation i’s shares

BSL: Dummy variable representing that bank j sold off corporation i’s shares in the same year.

PBSL: Dummy variable representing that bank j sold off corporation i’s shares in the previous year.

D_{BM}: Dummy variable to control for the effect of bank merger, which is 1 if shares of separate banks in the beginning of the period become shares of the same bank by the end of the period.

D_{YY}: Dummy variable for year effects.

Appendix 2. Bank’s Choice of Shareholding

Z_1 Variable to control bank j’s investment behavior

BHR/TI: bank j’s shareholding ratio of corporation i’s divided by Tier 1 capital.

LEMV: Logarithm of corporation i’s total market capitalization (This represents liquidity and ease of sell off).

Z_2 A variable representing pressure from capital market to banks

D_{FRD}: Dummy variable is 1 if Moody’s bank financial rating is D or below (all banks have received D or below since 1999, thus dummy is one if E or below).

Z_3 Variables representing corporation i’s (investment target firm) risk (credit risk and volatility), and growth opportunities

D_{ICR}: Dummy variable is 1 if corporation i’s interest coverage ratio [(operating profit + interest and dividends income)/ interest cost] is 1.5 or less.

D_{AVQ}: Dummy variable is 1 if corporation i’s Tobin’s Q is 2 or more.

D/E: Corporation i’s D/E ratio (interest-bearing debt/ equity capital).

SDRTN: Standard deviation of monthly return from corporation i’s share in the past 36 months.

Z₄ Variables representing the long-term relationship between bank and corporation

BBR: Corporation i's borrowing from bank j divided by total borrowing from private financial institutions (this represents the degree of dependency on the liabilities side).

D_CSH: Dummy variable is 1 if corporation i holds bank j's shares (cross-shareholding) in the beginning of period.

D_MB: Dummy variable is 1 if bank j is a main bank of some corporation.

Z₅ A variable representing corporation i's sell off of bank j's shares

CSL: Dummy variable indicating that corporation i sold off bank j's shares in the same year.

PCSL: Dummy variable indicating that corporation i sold off bank j's shares in the previous year.

Appendix 3. Effect of Ownership on Corporate Performance

Dependent variables:

ROA (return on assets): business profit/ total assets (average at the beginning and end of period).

Business profit = operating profit + interest and dividends income

Total assets = book value of total assets + unrealized capital gain (loss) from tangible fixed assets + unrealized capital gain (loss) from securities

AVQ: Tobin's Q: value of the firm (end of period)/ total assets (end of period).

Value of the firm = market value shareholder's equity + book value debt + minority equity

Total assets = book value of total assets + unrealized capital gain (loss) from tangible fixed assets + unrealized capital gain (loss) from securities

TFP: Total factor productivity measured through the creation of Theil-Tornqvist Index (See Miyajima et al. 2004 for detail).

Independent variables:

FRGN: Shareholding ratio of foreign institutional investors: shareholding ratio of foreigners – shareholding ratio of foreign corporate block shareholders.

DINS: Shareholding ratio of domestic institutional investors: annuity trust + investment trust + total shareholding ratio of life insurance companies' special accounting.

STAB: Ratio of stable shareholders: ratio of shareholders of cross-shareholding + total shareholding ratio of banks and life insurance companies' general accounting.

ODR: Ratio of outside board members: number of outside board members/ number of board members.

BRN: Relative number of board members: number of board members/ logarithm of the number of employees.

D_DIR: Board member shareholding dummy: Dummy variable is 1 if shareholding ratio of board members is more than 5%.

D_PAR: Domestic and foreign parent company dummy: Dummy variable is 1 if there is a related parent company (domestic or foreign non-financial corporation which has more than 15% shareholding ratio).

D_MBS: Main bank shareholding dummy. Dummy variable is 1, if main bank shareholding ratio is nearly 5% (we take 4.9% as its threshold).

References

- Abegglen, J. C. and G. Stalk Jr. (1985), *Kaisha: the Japanese Corporation* (Charles E. Tuttle).
- Aoki, M. (1988), *Information, Incentives and Bargaining in the Japanese Economy* (Cambridge University Press).
- Allen, F. and D. Gale (2000), *Comparing Financial Systems* (MIT Press).
- Aoki, M and H. Patrick, Ed. (1994), *The Japanese Main-bank System: Its Relevancy for Developing and Transforming Economies* (Oxford University Press, Oxford, U.K.).
- Burkart, M., D. Gromb and F. Panunzi (1997), "Large Shareholder, Monitoring, and the Value of the Firm," *The Quarterly Journal of Economics*, 112(3), pp.693-728.
- Classens, S., S. Djankow, J. Fan and L. Lang (1999), "The Relational for Groups: Evidence from East Asia," unpublished manuscript, The World Bank
- Flath, D. (1993), "Shareholding in the *Keiretsu*: Japan's Financial Groups," *The Review of Economics and Statistics*, 75(2), pp.249-257.
- Horiuchi, A. and M. Hanazaki (2000), "Did Main-bank Relationship Contribute to Make Corporate Management Efficient?: Empirical Analysis of Manufacturing Industry," *Keizai Keiei Kenkyu* (Research Institute of Capital Formation, Development Bank of Japan), 21-1. (in Japanese).
- Jensen, M. C. (1986), "Agency Costs of Free Cash Flow, Corporate Finance, and Takeover," *American Economic Review*, 76, pp.323-329.
- Johnson, S., P. Boone, A. Breach and E. Friedman (2000), "Corporate Governance in the Asian Financial Crisis," *Journal of Financial Economics*, 58(1), pp.141-86.
- Kang, J. and A. Shivdasani (1995), "Firm Performance, Corporate Governance, and Top Executive Turnover in Japan," *Journal of Financial Economics*, 38(1), pp.29-58.
- Kang, J. and R. Stultz, (1997), "Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan," *Journal of Financial Economics*, 46(1), pp.3-28.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny (1998), "Law and Finance," *Journal of Political Economy*, 106(6), pp.1113-1155.
- Lichtenberg, F. R. and G. M. Pushner (1994), "Ownership Structure and Corporate Performance in Japan," *Japan and World Economy*, 6, pp.239-261.
- McConnell, J. J. and H. Servaes (1995), "Equity Ownership and the Two Faces of Debt," *Journal of Financial Economics*, 39(1), pp.131-157.
- Miyajima, H. (1995), "The Privatization of Ex-zaibatsu Holding Stocks and the Emergence of Bank centered Corporate Groups," M.Aoki, ed. *Corporate Governance in Transitional Economy*, The World Bank, 1995, pp.361-403.
- Miyajima, H. and Y. Arikawa (2000), "Relational Banking and Debt Choice: Evidence from the Liberalization in Japan," IFMP Discussion Paper Series, A00-07.
- Miyajima, H. (2004), *Microanalysis of Development of Japanese Economy: Corporate Governance and Industrial Policy* (Yuhikaku). (in Japanese)
- Miyajima, H., Y. Arikawa and T. Saito (2001), "Japanese Corporate Governance and "Excess" Investment:

- Comparative Analysis of Oil Shock and Bubble Years,” *Financial Review* (Policy Research Institute of MOF) 60. (in Japanese)
- Miyajima, H., K. Nitta, T. Saito and Y. Omi (2002), “Governance Structure and Productivity of Japanese Firms in the 1990s: Did Transformation of Governance Structure Contribute to the Improvement of Managerial Efficiency?” Working Paper WFIS-02-001, Waseda University Institute of Financial Studies. (in Japanese)
- Miyajima, H. and F. Kuroki (2002), “Quantitative Analysis of the Unwinding of Cross-shareholding by Japanese Firms,” *Security Analysts Journal*, 40(12), pp.30-46. (in Japanese)
- Miyajima, H., K. Haramura and Y. Enami (2003), “Evolution of Ownership Structure in Postwar Japan: Formulation and Unwinding of Stable Shareholders,” *Financial Review* (Policy Research Institute of MOF) 68. (in Japanese)
- Morck, R. A. Shleifer and R. Vishny (1988), “Management Ownership and market valuation: An empirical analysis,” *Journal of Financial Economics*, 20.
- Morck, R., M. Nakamura and A. Shivdasani (2000), “Banks, Ownership Structure, and Firm Value in Japan,” *The Journal of Business*, 73(4), pp.539-567.
- Morck, R. and B. Yeung (2001), Japanese Economic Success and the Curious Characteristics of Japanese Stock Market, paper presented at IMF-Hitotsubashi conference, September.
- Murase, A. (2001), “Stock Investment Performance of Japanese Financial Institutions, Corporations, Individuals, and Foreign Investors,” *Review of Monetary and Financial Studies* 17. (in Japanese)
- Nakatani, I. (1984), “The economic role of financial corporate grouping,” in Masahiko Aoki ed., *The Economic Analysis of the Japanese Firm* (Amsterdam, North-Holland).
- Odagiri, H. (1992), *Growth through Competition, Competition through Growth: Strategic Management and the Economy in Japan* (Oxford University Press).
- Okabe, M. (2002), *Cross Shareholding in Japan: A New Unified Perspective of the Economic System* (Edward Elgar Publishing).
- Peek, J and E. Rosengren (2001), “Determinants of the Japan premium: actions speak louder than words,” *Journal of International Economics*, 53, pp.283-305.
- Porter, M. E. (1992), “Capital Disadvantage: America’s Failing Capital Investment System,” *Harvard Business Review*, 70, pp.65-82.
- Porter, M. E. (1994), *Capital Choices* (Harvard University Press).
- Prowse, S. (1990), “Institutional Investment Pattern and Corporate Financial Behaviors in the United States and Japan,” *Journal of Financial Economics*, 27(1), pp.43-66.
- Sheard, P. (1994), “Interlocking shareholdings and corporate governance in Japan,” in M. Aoki and R. Dore, eds., *The Japanese firm: Sources of competitive strength* (Oxford University Press, Oxford), pp.314-349.
- Shleifer, A. and R. W. Vishny (1986), “Large Shareholders and Corporate Control,” *Journal of Political Economy*, 94(3), pp.461-488.
- Weinstein, D. and Y. Yafeh (1998), “On the Costs of a Bank-centered Financial System: Evidence from the Changing Main-bank Relations in Japan,” *Journal of Finance*, 53, pp.635-672.

- Yermack, D. (1996), "Higher Market Valuation of Companies with a Small Board Directors", *Journal of Financial Economics*, 40.
- Yafeh Y. (2000), "Corporate Governance in Japan: Past Performance and Future Prospects," *Oxford Review of Economic Policy*, 16(2), pp.74-84.
- Yafeh Y. and O. Yosha (2003), "Large Shareholder and Banks: Who Monitors and How?" *Economic Journal*, 113, 484, pp.128-146.

Table 5: Corporation's Decision to Sell Bank Shares

Estimated with Logit model in which dependent variable is given a value of one when corporate shares held by bank decrease compared to the beginning of period and zero otherwise. σ_X denotes explanatory variable's standard deviation; dP/dX denotes marginal effect. Model 2 is limited to samples identifiable as instances of mutual shareholding between bank and corporation.

Variable	Definition	Model 1				Model 2		Model 3					
		Entire Period FY95-FY2001		Period I FY95-96		Period II FY97-98		Period III FY99-2001		Entire Period FY95-FY2001			
		Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX		
<i>C</i>	Constant	-3.641 (-20.20) ***		-6.314 (-14.29) ***		-4.910 (-14.26) ***		-2.925 (-12.50) ***		-4.681 (-19.38) ***		-3.637 (-20.16) ***	
<i>D_ICR</i>	One if ICR < 1.5	0.311 (6.44) ***	0.012	0.573 (5.88) ***	0.015	0.396 (4.30) ***	0.012	0.152 (2.11) **	0.008	0.428 (6.80) ***	0.013	0.260 (4.93) ***	0.010
<i>X₁</i>	<i>D/E</i> D/E ratio (interest-bearing debt/ owned capital)	0.214 (17.97) ***	0.030	0.184 (8.82) ***	0.019	0.133 (5.82) ***	0.016	0.142 (13.01) ***	0.044	0.249 (14.81) ***	0.027	0.215 (18.00) ***	0.030
	<i>BSV/A</i> Bank shares at market value divided by total assets	37.622 (21.73) ***	0.045	19.658 (9.57) ***	0.023	37.455 (11.27) ***	0.036	35.384 (14.55) ***	0.062	30.150 (18.87) ***	0.039	37.080 (21.23) ***	0.044
<i>X₂</i>	<i>D_FRD</i> Dummy variable is one if bank finance rating is less than D (dummy is one if less than E since 1999)	0.387 (9.80) ***	0.018	0.210 (2.59) ***	0.007	0.421 (5.58) ***	0.016	0.443 (7.69) ***	0.030	0.273 (5.04) ***	0.011	0.446 (10.44) ***	0.021
	<i>D_CRB</i> Dummy for rating (worst among four rating companies) is BB-BBB	0.333 (7.28) ***	0.014	0.415 (4.19) ***	0.011	0.324 (3.44) ***	0.011	0.331 (5.32) ***	0.022	0.371 (6.09) ***	0.013	0.334 (7.29) ***	0.014
<i>X₃</i>	<i>D_CRA</i> Dummy for rating (worst among four rating companies) is A-AAA	0.101 (1.76) *	0.004	0.043 (0.34)	0.001	0.184 (1.69) *	0.006	0.016 (0.20)	0.001	0.083 (1.05)	0.003	0.103 (1.79) *	0.004
<i>X₄</i>	<i>LEMV</i> Logarithm of a corporation's aggregate market value of shares	0.143 (9.39) ***	0.019	0.249 (6.55) ***	0.019	0.209 (6.88) ***	0.022	0.087 (4.38) ***	0.020	0.151 (7.33) ***	0.017	0.142 (9.33) ***	0.019
	<i>NOST</i> Ratio of shareholding by non-stabilized shareholders if the corporation has cross-shareholding relationship with banks	-0.007 (-4.22) ***	-0.010	-0.008 (-2.13) **	-0.007	0.004 (1.04)	0.004	-0.010 (-4.64) ***	-0.023			-0.007 (-4.27) ***	-0.010
	<i>BBR</i> A corporation's borrowing from the bank divided by total borrowing from private financial	-0.014 (-5.80) ***	-0.014	-0.005 (-0.95)	-0.003	-0.025 (-4.30) ***	-0.019	-0.012 (-4.16) ***	-0.022	-0.006 (-2.36) **	-0.006	-0.014 (-5.89) ***	-0.014
<i>X₅</i>	<i>BHR</i> The bank's shareholding ratio	-0.192 (-11.06) ***	-0.034	-0.057 (-1.51)	-0.006	-0.343 (-8.42) ***	-0.047	-0.167 (-7.60) ***	-0.049	-0.168 (-8.15) ***	-0.020	-0.191 (-10.96) ***	-0.034
	<i>D_MB</i> Dummy for main bank relationship	0.111 (1.81) *	0.004	0.186 (1.37)	0.004	0.347 (2.47) **	0.010	-0.008 (-0.10)	-0.001	0.158 (2.38) **	0.006	0.234 (2.82) ***	0.009
<i>X₆</i>	<i>BSL</i> Dummy for a bank's selling of corporate shares in the same year									1.277 (20.65) ***	0.034		
	<i>PBSL</i> Dummy for a bank's selling of corporate shares in the previous year									0.203 (2.48) **	0.004		
<i>MB</i>	<i>MBICR</i> Main bank interaction term (D_ICR)											0.284 (2.54) **	0.005
	<i>MBFRD</i> Main bank interaction term (D_MDD)											-0.342 (-3.57) ***	-0.009
	<i>D_BM</i> Dummy for multiple bank merger	0.398 (4.11) ***	0.006	0.621 (2.98) ***	0.006			0.322 (2.91) ***	0.011	0.246 (2.19) **	0.004	0.426 (4.38) ***	0.007
	<i>D_YY</i> Year dummy												
	Number of Observation	31,700		11,163		10,029		10,508		20,947		31,700	
	Number of Selling Cases	3,657		785		877		1,995		2,074		3,657	
	Rate of Selling	11.5%		7.0%		8.7%		19.0%		9.9%		11.5%	
	Log Likelihood	-10,269		-2,658		-2,777		-4,794		-5,886		-10,260	

*** denotes significance at the one percent level; ** denotes significance at the five percent level; * denotes significance at the 10 percent level

Table 6: Model of Banks' Decision to Sell Corporate Shares

Estimated with Logit model in which dependent variable takes value of one when corporate shares held by bank decrease compared to the beginning of period and zero otherwise. σ_X denotes explanatory variable's standard deviation; dP/dX denotes marginal effect. Model 5 is limited to samples identified as cases of mutual shareholding between bank and corporation.

Variable Definition	Model 1				Model 2	Model 3
	Entire Period FY95-2001	Period I FY95-96	Period II FY97-FY98	Period III FY99-2001	Entire Period FY95-2001	Entire Period FY95-2001
	Est. Coef. σ_X*dP/dX (t-stat)					
<i>C</i> Constant	-2.785 (-12.27) ***	-8.148 (-8.97) ***	-4.039 (-7.76) ***	-2.593 (-9.98) ***	-2.881 (-11.74) ***	-2.892 (-12.67) ***
Z₁ <i>BHRTI</i> Shareholding ratio divided by Tier 1 owned capital	0.643 0.007 (2.61) ***	1.382 0.005 (2.38) **	-1.196 -0.013 (-3.20) ***	1.981 0.027 (5.27) ***	0.472 0.005 (1.83) *	0.569 0.006 (2.28) **
<i>LEMV</i> Logarithm of a corporation's aggregate market value of shares	0.181 0.026 (11.24) ***	0.350 0.014 (5.86) ***	0.158 0.019 (4.38) ***	0.181 0.047 (9.44) ***	0.156 0.020 (8.69) ***	0.183 0.026 (11.34) ***
Z₂ <i>D_FRD</i> Dummy variable is one if bank finance rating is less than D (dummy is one if less than E since 1999)	0.075 0.004 (1.65)	-0.102 -0.002 (-0.68)	0.593 0.026 (6.89) ***	-0.136 -0.011 (-2.33) **	0.062 0.003 (1.22)	0.179 0.009 (3.42) ***
<i>D_ICR</i> One if ICR < 1.5	0.187 0.008 (3.34) ***	0.500 0.007 (3.03) ***	0.135 0.005 (1.27)	0.111 0.007 (1.53)	0.085 0.003 (1.35)	0.346 0.014 (5.57) ***
<i>D_AVQ</i> One if Tobin's q > 2	0.145 0.002 (1.34)	0.112 0.000 (0.28)	-0.284 -0.004 (-0.97)	0.219 0.008 (1.75) *	0.278 0.004 (2.29) **	0.136 0.002 (1.25)
Z₃ <i>D/E</i> D/E ratio (interest-bearing debt/ owned capital)	-0.005 -0.001 (-0.37)	0.042 0.002 (1.17)	-0.003 0.000 (-0.13)	-0.025 -0.010 (-1.93) *	-0.045 -0.006 (-2.52) **	-0.006 -0.001 (-0.38)
<i>SDRTN</i> Standard deviation of monthly return from a corporation's share in the past 36 months	0.046 0.018 (7.77) ***	0.117 0.010 (4.51) ***	0.090 0.030 (6.69) ***	0.028 0.022 (4.39) ***	0.047 0.016 (6.77) ***	0.047 0.018 (7.84) ***
<i>BBR</i> A corporation's borrowing from the bank divided by total borrowing from private financial institutions	-0.017 -0.021 (-8.38) ***	-0.034 -0.011 (-3.77) ***	-0.034 -0.034 (-6.74) ***	-0.010 -0.023 (-4.44) ***	-0.018 -0.020 (-8.01) ***	-0.017 -0.020 (-8.14) ***
Z₄ <i>D_CSH</i> Dummy for cross-shareholding relationship	-0.224 -0.007 (-3.51) ***	-0.473 -0.004 (-2.18) **	-0.466 -0.011 (-3.69) ***	-0.152 -0.009 (-1.97) **		-0.229 -0.007 (-3.57) ***
<i>D_MB</i> Dummy for main bank relationship	-0.286 -0.013 (-5.39) ***	-0.399 -0.006 (-1.99) **	-0.238 -0.009 (-2.01) **	-0.281 -0.023 (-4.44) ***	-0.317 -0.013 (-5.50) ***	0.086 0.004 (1.07)
<i>CSL</i> Dummy for a corporation's selling of bank shares in the same year					1.260 0.035 (21.20) ***	
Z₅ <i>PCSL</i> Dummy for a corporation's selling of bank shares in the previous year					0.762 0.018 (10.46) ***	
MB <i>MBICR</i> Main bank interaction term (D_ICR*D_MB)						-0.692 -0.016 (-5.48) ***
<i>MBFRD</i> Main bank interaction term (D_MDD*D_MB)						-0.416 -0.014 (-4.27) ***
<i>D_BM</i> Dummy for multiple banks merger	1.080 0.021 (12.62) ***	1.897 0.004 (4.13) ***		0.963 0.048 (10.97) ***	1.091 0.019 (11.62) ***	1.107 0.021 (12.80) ***
<i>D_YY</i> Year dummy	YES	YES	YES	YES	YES	YES
Number of Observation	22,982	7,328	6,981	8,673	20,881	22,982
Number of Selling Cases	3,186	250	732	2,204	2,728	3,186
Rate of Selling	13.9%	3.4%	10.5%	25.4%	13.1%	13.9%
Log Likelihood	-7,866	-1,031	-2,209	-4,527	-6,552	-7,840

*** denotes significance at the one percent level; ** denotes significance at the five percent level; * denotes significance at the 10 percent level

Table7: Model of Corporation's Decision to Sell Bank Shares

Estimated with Logit model in which dependent variable takes value of one when corporate shares held by bank decrease compared to the beginning of period and zero otherwise. σX denotes explanatory variable's standard deviation; dP/dX denotes marginal effect. Model 2 limited to samples identified as cases of mutual shareholding between bank and corporation. X1-X5 in panel 1 and Z1-Z4 in panel 2 is not reported.

Panel A: The impact of bank selling on firm selling

Variable	Definition	Period I (FY95-96)		Period II (FY97-FY98)		Period III (FY99-2001)	
		Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX
X_6	<i>BSL</i> Dummy for Bank Selling (Same Year)	1.676 (9.07) ***	0.017	2.011 (15.77) ***	0.032	0.976 (12.98) ***	0.051
	<i>PBSL</i> Dummy for Bank Selling (Previous Year)	0.044 (0.15)	0.000	-0.097 (-0.47)	-0.001	0.254 (2.72) ***	0.010

Panel B: The impact of firm selling on bank selling

Variable	Definition	Period I (FY95-96)		Period II (FY97-FY98)		Period III (FY99-01)	
		Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX	Est. Coef. (t-stat)	σ_X^*dP/dX
Z_5	<i>CSL</i> Dummy for Corporation Selling (Same Year)	1.580 (8.55) ***	0.012	1.874 (15.37) ***	0.037	1.028 (14.11) ***	0.060
	<i>PCSL</i> Dummy for Corporation Selling (Previous Year)	0.289 (1.29)	0.002	0.987 (6.27) ***	0.017	0.748 (8.31) ***	0.035

*** denotes significance at the one percent level; ** denotes significance at the five percent level; * denotes significance at the 10 percent level

Table 8: Estimation results of the effect of cross-shareholding on firm performance (1985-2002)

Sample firms are non-financial firms listed in the three markets (excluding firms with less than one billion yen in owned capital or firms which have been listed less than three years). Estimation period is FY 1985 to 2002. *ROA* (return on assets) is the operating profit divided by current total assets (average at the beginning and end of period), where total assets is the sum of book value total asset, unrealized capital gain (loss) from tangible fixed assets, and unrealized capital gain (loss) from securities. *Q* is Tobin's *q*: value of the firm/ total assets (end of period), where the value of the firm is the sum of market value of equity, book value debt and minority equity. For more detail on definitions and methods of calculation, see Appendix 3.

Variable	Definition	Consolidated	Tobin's Q	Consolidated	Tobin's Q
		ROA		ROA	
		Est. Coef. (t-stat.)	Est. Coef. (t-stat.)	Est. Coef. (t-stat.)	Est. Coef. (t-stat.)
<i>SIZE</i>	Logarithm of total assets (replacement value of assets)	-1.332 *** (-16.21)	-0.148 *** (-14.65)	-1.318 *** (-16.05)	-0.147 *** (-14.50)
<i>DAR</i>	The leverage (interest-bearing debt / total assets)	2.173 *** (9.21)	0.477 *** (16.38)	2.181 *** (9.24)	0.478 *** (16.41)
<i>FRGN</i>	Shareholding ratio of foreign institutional investors	0.071 *** (15.15)	0.013 *** (22.69)	0.069 *** (14.73)	0.013 *** (22.29)
<i>DINS</i>	Shareholding ratio of domestic institutional investors	0.093 *** (13.83)	0.008 *** (10.24)	0.090 *** (13.39)	0.008 *** (9.86)
<i>STAB</i>	Shareholding ratio of stable shareholders	-0.007 *** (-2.74)	-0.001 *** (-2.98)		
<i>BKSH</i>	Ratio of bank stable ownership			-0.044 *** (-4.60)	-0.005 *** (-4.15)
<i>NBKSH</i>	Ratio of non-bank stable ownership			-0.004 (-1.48)	-0.001 * (-1.84)
<i>ODR</i>	Ratio of outside board members	0.634 *** (2.80)	0.116 *** (4.15)	0.616 *** (2.72)	0.114 *** (4.08)
<i>BRN</i>	Relative number of board members	-0.033 (-0.72)	-0.025 *** (-4.35)	-0.027 (-0.59)	-0.024 *** (-4.24)
<i>D_DIR</i>	Board member shareholding dummy	-0.149 * (-1.77)	-0.023 ** (-2.25)	-0.145 * (-1.72)	-0.023 ** (-2.20)
<i>D_PAR</i>	Parent company dummy	0.859 *** (7.04)	0.080 *** (5.34)	0.792 *** (6.43)	0.073 *** (4.82)
<i>D_MBS</i>	Main bank shareholding dummy	-0.191 *** (-3.64)	-0.026 *** (-3.99)	-0.156 *** (-2.94)	-0.022 *** (-3.37)
<i>D_YY</i>	Year dummy	YES	YES	YES	YES
Number of Observation		18,196	18,196	18,196	18,196
Number of Firms		1,305	1,305	1,305	1,305
Adjusted R ²		0.55	0.50	0.55	0.50

*** denotes significance at the one percent level; ** denotes significance at the five percent level;

* denotes significance at the 10 percent level

Table 9: Performance and Corporate Governance

Sample firms are non-financial firms listed in the three markets (excluding firms with less than one billion yen in owned capital or firms which have been listed less than three years). Estimation period is FY 1985 to 2002. Dependent variable is *ROA* (return on assets) which is the operating profit divided by current total assets (average at the beginning and end of period), where total assets is the sum of book value of total assets, unrealized capital gain (loss) from tangible fixed assets, and unrealized capital gain (loss) from securities. For more details on definitions and methods of calculation, see Appendix 3.

Variable	Definition	The Bubble Period	After Bubble Period	Banking Crisis
		FY 1985-92	FY 1990-97	FY 1995-2002
		Est. Coef.	Est. Coef.	Est. Coef.
		(t-stat.)	(t-stat.)	(t-stat.)
<i>SIZE</i>	Logarithm of total assets (replacement value of assets)	-1.826 *** (-13.77)	-1.302 *** (-7.31)	-2.884 *** (-15.90)
<i>DAR</i>	The leverage (interest-bearing debt / total assets)	1.898 *** (5.18)	4.957 *** (10.92)	3.876 *** (8.29)
<i>FRGN</i>	Shareholding ratio of foreign institutional investors	0.081 *** (11.48)	0.052 *** (6.39)	0.049 *** (6.10)
<i>DINS</i>	Shareholding ratio of domestic institutional investors	0.054 *** (5.82)	0.071 *** (5.85)	0.065 *** (6.15)
<i>STAB</i>	Shareholding ratio of stable shareholders	-0.009 ** (-2.48)	-0.022 ** (-2.68)	-0.006 (-1.59)
<i>ODR</i>	Ratio of outside board members	0.473 (1.26)	0.588 (1.53)	0.265 (0.71)
<i>BRN</i>	Relative number of board members	-0.249 *** (-2.69)	-0.289 *** (-3.04)	-0.124 ** (-2.05)
<i>D_DIR</i>	Board member shareholding dummy	-0.375 *** (-3.23)	-0.270 *** (-1.79)	-0.002 (-0.01)
<i>D_PAR</i>	Parent company dummy	0.885 *** (5.24)	0.568 *** (2.50)	0.894 *** (4.41)
<i>D_MBS</i>	Main bank shareholding dummy	0.087 (1.26)	-0.167 ** (-1.98)	-0.154 * (-1.72)
<i>D_YY</i>	Year dummy	YES	YES	YES
Number of Observation		7,483	8,217	8,646
Number of Firms		1,030	1,103	1,273
Adjusted R ²		0.69	0.64	0.66

Variable	Definition	The Bubble Period	After Bubble Period	Banking Crisis
		FY 1985-92	FY 1990-97	FY 1995-2002
		Est. Coef.	Est. Coef.	Est. Coef.
		(t-stat.)	(t-stat.)	(t-stat.)
<i>SIZE</i>	Logarithm of total assets (replacement value of assets)	-1.826 *** (-13.77)	-1.314 *** (-7.39)	-2.836 *** (-15.61)
<i>DAR</i>	The leverage (interest-bearing debt / total assets)	1.940 *** (5.29)	4.994 *** (11.01)	3.914 *** (8.38)
<i>FRGN</i>	Shareholding ratio of foreign institutional investors	0.081 *** (11.45)	0.051 *** (6.19)	0.045 *** (5.60)
<i>DINS</i>	Shareholding ratio of domestic institutional investors	0.052 *** (5.58)	0.069 *** (5.69)	0.060 *** (5.62)
<i>BKSH</i>	Ratio of bank stable ownership	-0.049 *** (-3.34)	-0.089 *** (-3.73)	-0.062 *** (-4.01)
<i>NBKSH</i>	Ratio of non-bank stable ownership	-0.006 (-1.55)	-0.013 (-1.39)	-0.002 (-0.52)
<i>ODR</i>	Ratio of outside board members	0.517 (1.38)	0.525 (1.36)	0.225 (0.61)
<i>BRN</i>	Relative number of board members	-0.241 *** (-2.60)	-0.294 *** (-3.09)	-0.120 ** (-1.97)
<i>D_DIR</i>	Board member shareholding dummy	-0.378 *** (-3.26)	-0.266 * (-1.77)	-0.003 * (-0.02)
<i>D_PAR</i>	Parent company dummy	0.858 *** (5.08)	0.507 ** (2.22)	0.797 *** (3.90)
<i>D_YY</i>	Year dummy	YES	YES	YES
Number of Observation		7,483	8,217	8,646
Number of Firms		1,030	1,103	1,273
Adjusted R ²		0.69	0.64	0.66

*** denotes significance at the one percent level; ** denotes significance at the five percent level;

* denotes significance at the 10 percent level