

The Performance of Merger Acquirers: Evidence from Japan's Banking Crisis in the 1990s

Huong N. Higgins
Worcester Polytechnic Institute
Department of Management
100 Institute Road
Worcester, MA 01609
Tel: (508) 831-5626
Fax: (508) 831-5720
Email: hhiggins@wpi.edu

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Abstract:

This paper investigates the characteristics and performance of merger acquirers during Japan's banking crisis in the 1990s. The paper reports the following findings. First, there was a prevalent connection between acquirers and targets via their banks, which were dismally unhealthy. Second, based on various measures of wealth gain, acquiring firms did not gain from their acquisitions. Third, acquirers with stronger bank ties experienced more negative wealth effect than those with weaker bank ties. The overall results shed light on the role of banks in mergers during Japan's banking crisis.

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Introduction

Examining the wealth effect of mergers is a popular area of economics and finance research, and banking crisis is an important research setting given its frequency around the world. Particularly in Japan, the severity of banking crisis in the 1990s offers valuable lessons in banking and governance to other countries. This paper examines mergers of large public Japanese companies in that period. To my knowledge, this is the first comprehensive examination of Japanese merger acquirers during the 1990s' banking crisis.

Mergers in Japan are mostly motivated by strategic reasons (Kester 1991). The most important class of mergers is for taking over firms in trouble, which implies a program to rescue them (Horiuchi and Okazaki 1994). The announced reasons for selling by the acquired firms are typically connected with the need to improve unsatisfactory performance (Kester 1997). Most mergers occur with the sponsorship of the government and major share-owning banks (Kester 1997, and Hoshino 1982). Mergers are a strong manifestation of Japanese banks' governance role, when the banking sector functions like a substitute for the capital market to discipline managers of firms in financial distress (Sheard 2002). However, prior literature is scarce in investigations of mergers during banking crisis, which is an opportune time to examine the effect of troubled banks on merger firms.

This paper finds that Japanese banks play their traditional role of facilitating mergers during the 1990s' crisis. However, this paper offers contrasts to prior research, which has more overlap with Japanese banks' heyday preceding the crisis. Prior research shows that mergers are profitable to investors of acquiring firms (Kang, Shivdasani and Yamada 2000,

and Pettway and Yamada 1986). Prior research also documents a positive association between acquirer bank ties and returns, consistent with banks' effective monitoring (Kang, Shivdasani and Yamada 2000). On the contrary, by focusing on banking crisis, this paper finds that acquiring firms do not gain from mergers, and acquirers with stronger bank ties suffer more severe wealth loss.

The paper's discussion and results are consistent with the incentive for troubled banks to use mergers for risk reduction at the expense of acquirer shareholders. A bank has incentive to steer a client into merging with another client to improve the bank's own risk standing. This is because the merger of two firms allows excess in one to cover concurrent deficiency in the other, so that the overall risk of the surviving merged firm is reduced even if the values of the merging firms' assets and the loan amounts backed by the merging firms' assets are unchanged (Levy and Sarnat 1970, Lewellen 1971, Higgins and Schall 1975, and Leland 2007). This protection for banks via reduced risk exposure following merger of clients is often termed the coinsurance effect. In the 1990s, following exposure to speculative markets and constrained by the Basel Accord and Japan's own legislation, risk reduction is a survival matter to many Japanese banks.¹ This paper contributes to the literature by shedding additional light on the role of Japanese banks on corporate restructurings and performance via coinsurance.

¹ Under the Basel Accord, capital adequacy is based on the ratio of a bank's capital and its risk-weighted assets, so that a risky loan asset has reduced contribution to capital adequacy than risk-free assets, and banks without capital adequacy cannot borrow from their central banks. Under Japan's own legislation, there is a very deep government safety net and regulation regarding banks' capital adequacy, requiring prompt corrective action from undercapitalized banks to stay in business (Diamond 2001, Nakaso 1999, and Ito and Sasaki 1998).

This paper is close to Fukao et al. (2006), who study M&As in Japan. Using the period from 1994-2002, Fukao et al. (2006) investigate whether a firm is chosen as an acquisition target based on its productivity and profitability, and whether the performance of Japanese targets improves after the acquisition. Despite the closeness in topic, Fukao et al. (2006) do not overlap with my study, as the authors examine acquired firms, whereas I focus on acquirers. Fukao et al. (2006) show that TARGETS of Japanese domestic M&As do not perform well, suggesting that Japanese acquirers may be trying to quickly restructure targets at the cost of deteriorating profitability. I show that Japanese merger ACQUIRERS do not gain from their acquisitions, and further show that acquirers with stronger bank ties experience more negative wealth effect than those with weaker bank ties. Both Fukao et al. (2006) and my paper imply that Japanese parents (or surviving firms) conduct restructurings to clean up the balance sheets at the expense of performance, consistent with a strong creditor perspective in Japan. Overall, I believe that both papers reinforce each other, without an overlap.

While Fukao et al. (2006) examine various M&A transactions, I focus only on mergers, defined as combinations of two corporations in which only one corporation (the acquirer) survives, and the other corporation (target) goes out of existence. In a merger, the acquirer assumes all the assets and liabilities of the target. The focus on mergers enables inferences on banks' role, as banks benefit from reduced risk exposure following merger (the coinsurance effect). The possibility of applying one firm's excess to cover the other's deficiency is essential for coinsurance. Without a merger, even if banks control the separate firms, banks cannot easily take advantage of their control to reduce their loan risk, due to the legal character of corporations, which allows separate firms to have separate limited liabilities, and

requires each firm to cover its disaster with its own asset.² As a result, my study provides insight into banks' incentive for coinsurance, an insight that is not possible from Fukao et al. (2006).

In investigating the effects of banks, I examine four different bank ties to capture the influence of banks on firms in a more comprehensive way than many other studies. The first bank tie is through bank staff involvement, as bank personnel are often placed on the boards of directors. The second bank tie is through group (keiretsu) inter-lockings, a prominent feature in Japan's corporate governance that serves to cement the central influence of banks. The third bank tie is through bank borrowings, which is a primary proxy for bank monitoring in prior literature. And the fourth bank tie is through bank ownership. Although the different ties represent theoretically different relationships, I find that they tend to converge to reflect Japanese banks' role as creditors. This finding is consistent with prior research, which argues that although Japanese banks cumulate many roles and are also large shareholders, they are debt-holders first and foremost, and act primarily in their own interest as creditors (Morck and Nakamura 2000, and Weinstein and Yafeh 1998).

The remainder of the paper proceeds as follows. Section 1 reviews the related literatures. Section 2 describes the regulatory and institutional context of Japan. Section 3 examines the merger characteristics. Section 4 assesses acquirers' wealth gain. Section 5 formulates hypothesis and tests the link between acquirers' bank ties and their wealth gain. Section 6 provides additional discussions. Section 7 concludes.

1. Related Literatures

² The cost to debt-holders from the limited liability status of a corporation is discussed further by Leland (2007).

Add citations This paper contributes to the discussion on the role of bank financing during banking crisis. This discussion is relevant as the current financial crisis in the U.S. spreads through the world. This discussion is important because it sheds light on tools to mitigate crisis spillover from the financial to other economic sectors. A consideration among many financial economists is that, when the bank sector is hounded by financial shocks, banks' limited lending affects client firms adversely (Bernanke 1983, Kang and Stulz 2000, Bae, Kang, and Lim 2002, and Kroszner, Laeven and Klingebiel 2007). Particularly, when the link between bank ties and firm performance is negative, even if causality can be determined from banks to firms, prior research interprets this negative association as due to diminished loan supply (Kang, Shivdasani and Yamada 2000, and Kang and Stulz 2000). However, a second set of economists are skeptical that limited lending can affect the real sector (Bernanke and Lown 1991), contending that bank financing is either substitutable or enhanced by capital markets (Ongena, Smith and Michalsen 2003, Greenspan 1999, Fama 1980, and Black 1975). This paper points to banks' actions (steering acquirers into mergers) as the reason for declining shareholder wealth, emphasizing the governance over the loan supply problem.

This paper is related to studies on the role of banks in the market for corporate control. Servaes and Zenner (1996) show that firms that use investment banks as merger advisors are those facing large transaction, contracting, and asymmetric information costs. Their findings suggest a certification effect by banks. Allen et al. (2004) show that when banks act as merger advisors, their advice may be distorted by considerations related to banks' past and future lending activity. Their results are consistent with conflict of interest. In showing that the

presence of a mutual bank increases the probability of merger, Ivashina et al. (2009) discuss banks' role through information production and the transmission of target information to potential acquirers. Their findings suggest that banks facilitate mergers to transfer debt from weak to strong clients, consistent with banks' objective to improve the credit quality of their overall portfolios.

This paper adds to the evidence of banks' conflict of interest. Theoretically, banking relationships enable banks to exert influence over and thereby extract rents from borrowing firms (Rajan 1992, and Besanko and Kanatas 1993). The large body of the U.S. empirical literature shows mixed evidence (Mehran and Stulz 2007, and Drucker and Puri 2006). Kang and Liu (2007) show that Japanese banks create conflict in underwriting corporate bonds. Klein and Zoeller (2003) find conflict of interest in German IPOs underwritten by universal banks. Ber, Yafeh, and Yosha (2001) find conflict of interest in the combination of bank lending, underwriting, and fund management in Israel. This paper contributes to the growth of evidence in this area, which is important to draw full implications for investor protection.

This paper contributes to the literature on Japanese mergers. Following the rise of Japan's economy to its position as the second largest economy, many authors have discussed Japanese mergers and governance system, often to contrast with the United States. One stark contrast is a strong concern for strategic alliance, or a relative lack of market-oriented transactions for financial implications in Japan (Kester 1991). Unlike the U.S. evidence which shows negative or insignificant bidder returns (Jensen and Ruback 1983), much evidence in Japan indicates that mergers are profitable to investors of acquiring firms (Kang, Shivdasani and Yamada 2000, and Pettway and Yamada 1986). Kang, Shivdasani and Yamada (2000) who investigate Japanese mergers in 1977-1993, show a positive association between bank relation

and acquirer abnormal return, consistent with banks' effective monitoring. However, these authors hint that these benefits are diminished when the banks themselves perform poorly. Using banking crisis, this paper contributes to this literature by systematically demonstrating a negative association between bank ties and acquirer wealth.

This paper also extends the concept of risk-sharing in the literature on Japanese mergers. In prior research, mergers can be viewed as risk-sharing practice among Japanese firms belonging to the same keiretsus (Nakatani 1984, Aoki 1988, and Aoki and Patrick 1994). However, this paper's results highlight the role of banks in risk-sharing, a more comprehensive issue. This is because the bank-firm relationship is more universal than the keiretsu membership (Horiuchi and Okazaki 1994). Almost every firm has a bank, but not all belong to keiretsus. Particularly, in this paper's sample, only a fraction of mergers are between firms of the same keiretsu. This paper extends the empirical evidence by showing risk reduction strategies under bank coordination beyond keiretsu boundaries.

2. Regulatory and Institutional Context of Japan

2.1. Governance role of banks in Japan

The governance role of banks in Japan should be viewed in light of the country's post-WWII economic development, which is tightly shaped by government regulators who instituted industrial policies for economic growth (Morck and Nakamura 2007, Hanazaki and Horiuchi 2000, Aoki 1988, and Komiya et al. 1988). The government chooses the industries that the private sector should pursue and sets up incentives for the private sector to follow through. The Ministry of International Trade and Industry (MITI) formulate visions for the economy, and choose the industries to realize such visions. The Ministry of Postal Savings in

turn allocates the appropriate funds to finance the chosen industries. The Ministry of Finance issues directives to banks to supplement the financing of the chosen industries. Without downplaying market forces and private interests, many believe that a large share of credit for the economic development of Japan goes to the government (Aoki 1988).

Protection of the banking industry is an important vehicle for delivering industrial policies (Ueda 2002). The government achieves this essentially by restricting competition in banking using rate restrictions and entry regulations; by lending to banks at low rates and rescuing failing banks, therefore assuming risks that would have fallen on banks; and by controlling the flow of funds through capital markets, especially the bond market.

In Japan's bureaucracy framework, banks control firms by providing credit for recommended courses of action to enforce industrial policies. Banks also control firms via "amakudari" (descent from heaven), a practice whereby officials retiring from the Ministry of Finance and the Bank of Japan take management positions in the private sector (Morck and Nakamura 2007, Horiuchi and Shimizu 2001, and Aoki 1988). Administrative guidance occurs as a natural consequence of daily contact between bank regulators and company management to align firm operations with bank directives and government policies (Sherman and Babcock 1997, and Aoki 1988). In essence, bank control in Japan is strong to an extent unseen in the West, as it is beyond the arms-length bank-firm relationship, but is exerted via several intertwined ties set in an environment of regulatory capture.

Japanese banks often cumulate the roles of major shareholders and creditors (Prowse 1990). While banks monitor firms via these two roles, banks also maintain relationships with firms through direct involvement of bank staff in the firms' operations (Kaplan 1994). Bank relationships are cemented by an elaborate network of cross-holdings and interlocking

directorships, maintained for steady relationships among industrial (keiretsu) group members and for protecting firms from hostile takeovers (Nakatani 1984). Keiretsu, a conspicuous feature of Japanese bank-centered system, is a broad alliance of firms across diverse industrial sectors, each with a bank as a core member, and member firms are related through borrowing from that bank, mutual shareholdings, personnel exchange, and trade in intermediate products. Keiretsu cross-holding hampers capital mobilization, making the role of banks central and crucial (Anderson and Makhija 1999).

Some authors argue that by holding debt and equity of the same firm, Japanese banks may effectively discipline corporate management to mitigate agency problems associated with external fund raising (Prowse 1990, and Jensen 1989). In reality however, the cross-holdings network involving banks may be a form of conspiracy to give wide latitude to incumbent managers by reducing the possibility of hostile takeovers from outsiders (Horiuchi and Okazaki 1994). Financial crisis in the 1990s suggests wasteful activities as the “free cash flow” hypothesis argued by Jensen (1986). Theoretical and empirical studies show that Japanese banks do not reduce agency costs (Horiuchi and Okazaki 1994), behave more like debt-holders than shareholders (Morck and Nakamura 2000), and act primarily in creditor interest (Weinstein and Yafeh 1998). Although Japanese banks are also large shareholders, they are debt-holders first and foremost.

In Japan, an individual firm often borrows from many banks at the same time (Horiuchi and Okazaki 1994). This reflects a scheme of risk-sharing between banks that the main bank informally mediates. The main bank is often the largest debt-holder and shareholder of the borrowing company. The governance of firms stems largely from the main banks (Aoki and Patrick 1994, and Gilson and Roe 1993). Firms’ listed shares are controlled by the main

banks, or remain in cross-holdings with related firms in the same industrial (keiretsu) groups to maintain trading relationships (Berglof and Perrotti 1994). Although the overlap can be great, the main-bank relationship is more universal than the keiretsu in the sense that most Japanese firms have their own main bank, regardless of whether or not they belong to any keiretsu (Horiuchi and Okazaki 1994). Except in financial distress, governance by banks focuses on a long-term view and creates less scope for managerial discipline (Nakatani 1984).

The governance role of banks is felt most strongly in financial distress (Sheard 2002, and Hoshi, Kashyap, and Scharfstein 2000). Then, group governance shifts to hierarchical enforcement under bank leadership (Berglof and Perrotti 1994), and new managers are appointed (Kaplan 1994, and Roe 1993). In distress cases over a 30-year period, the overall picture is of main banks' active intervention, punishing and displacing managers, and engineering mergers for organizational and asset restructurings (Sheard 2002).

Merger activity in Japan is mostly motivated by strategic reasons (Kester 1991). Most mergers occur for a rescue mission (Horiuchi and Okazaki 1994). Most are friendly, and occur with the sponsorship of MITI and major share-owning banks. There is generally an ongoing business relationship between the merger firms, often participation in the same industrial group, cross-ownership between the merger parties, and partial ownership by common banks. The tendency has been to combine weaker firms with stronger ones. For an overall evaluation of Japanese banks' governance role in mergers, the banking sector acts as a substitute for the capital market in disciplining corporate managers, but this can be mitigated by banks' tendency to renegotiate financial commitments with firms and to rescue failing firms (Sheard 2002).

Japan's bank-centered financial system helps transform it from a war torn country after WWII into an economic giant within one generation. The country's banking sector plays an important role in postwar Japan as a medium both for risk-sharing and for disciplining corporate management. However, during financial crisis in the 1990s, weaknesses in this governance system surfaced, most of which can be traced to the heavy regulation that supported it. In November 1996, Japan's Prime Minister Hashimoto announced bold plans, termed Big Bang, to institute deregulation in the legal system to promote financial reform. Big Bang attained an important stepping-stone by 1999 when financial deregulation and most other reform initiatives were instituted (Royama 2000, Gibson 2000, and Hoshi and Kashyap 2001).

2.2. Japan's Banking Crisis

Japan's GNP growth slowed to an average rate of 5 percent between 1975 and 1990. In the 1990s, Japan's economy was often described as "hollowing out", a term loosely referring to low profitability. While banks' health slid with the economy, their weakness arguably started with structural change in corporate finance in the late 1970s, when industrial firms turned to the country's emerging capital markets for financing and reduced their bank loans (Anderson and Makhija 1999). Japanese consumers, however, continued to invest most of their wealth in bank deposits, creating a high stream of deposits and a low stream of loans for banks. Seeking new borrowers, banks turned to small risky companies and real estate financing in the mid-to-late 1980s, becoming vulnerable to market bubbles and speculative mania. When the stock and real estate markets collapsed in the early 1990s, banks fell into a bad-loan crisis that drastically reduced their asset values (Peek and Rosengren 2000). Figure 1, tracking Japan's Bank Index from 1973-2004, depicts a dramatic rise in the mid-1980s, a

peak in 1990, and a continuous slide until 2004.

<Figure 1 about here>

2.3. Japanese Banks' Incentives during Banking Crisis

Coinciding with the rise and fall of Japan's stock and real estate markets was the implementation of the Basel Accord, an international agreement among bank regulators to subject banks to higher standards of capital adequacy (Watanabe 2005, and Peek and Rosengren 1997 and 2000). This was intended to make banks more cautious in expanding markets and to force banks to constrain risky operations when capital levels fell short. The Accord framework classifies elements of capital into two tiers: core capital called tier I, and the elements supplementing it called tier II. Because Japanese banks held substantial amount of equity in firms, accrued gains on these holdings could be included in bank capital as tier II. Therefore, initially, Japanese banks were unaffected by the Accord thanks to rising stock prices. However, when the Nikkei index lost half its value between 1989 and 1992, banks' accrued capital gains shrank smaller. Similarly, because real estates served as collaterals for most bank loans, the decline in real estate prices increased problem loans, which put more pressure on banks' capital ratios. In 1990, the total risk-based capital ratios of major Japanese banks fell temporarily below the minimum requirement of 8%. Under Japan's own legislation, there is a very deep government safety net and substantial regulation regarding bank capital adequacy (Ito and Sasaki 1998). By 2001, undercapitalized banks are required to take prompt corrective actions to stay in business (Nakaso 1999). To meet the capital adequacy rules, Japanese banks had tremendous pressure to reduce their risky loans (Diamond 2001, Peek and Rosengren 2000 and 1997, and Ito and Sasaki 1998).

One way for Japanese banks to reduce their risky loans was to arrange mergers between clients they controlled (Higgins 2009).³ Risk reduction via mergers is first elaborated in the seminal papers by Levy and Sarnat (1970) and Lewellen (1971), and discussed further by Leland (2007). Banks are concerned with the likelihood of disaster at the borrowing firm, and any given loan is more attractive the lower the probability of borrower disaster. Banks lending to two separate firms encounter difficulties if either firm approaches disaster. However, should the two firms merge, the likelihood of disaster at the same aggregate scale of lending must inevitably decline, because excess in one firm may cover deficiency in the other, reducing the default risk of the total merged firm. Although mergers may not change the loan amounts, banks benefit from the decreased default risk of the borrowers.

During the 1990s, Japanese banks had huge difficulties with capital adequacy requirements set forth by the Basel Accord. One difficulty was the impending loss resulting from client default per se. Another and sometimes more serious difficulty concerned capital adequacy, because client default risk heightens bank risk, reduces risk-based capital ratio, and hurts compliance with capital adequacy rules. Non-compliant banks could not borrow from their central banks, so risk reduction was a survival matter to troubled banks. Under Japan's own legislation, capital adequacy rules are strictly enforced, causing banks to do "whatever it takes" to comply (Diamond 2001). Due to pressure to manage risk and comply with capital adequacy, troubled banks had incentive to facilitate mergers between clients to reduce their risky loans via a coinsurance effect (Higgins 2009).

³ Higgins (2009) argues that banks' risk is reduced when their clients merge, and financial trouble creates strong incentive for banks to facilitate these mergers to reduce their risk. She shows that during Japan's banking crisis in the 1990s, merger activity was correlated with banks' financial trouble, and on average banks gained positive abnormal returns upon announcements of mergers between their clients.

3. Characteristics of Mergers

This Section describes the sampling process and salient characteristics of Japanese mergers during the 1990s' banking crisis.

3.1. Sampling Process

Mergers are identified by searching all Tokyo Stock Exchange (TSE) firms de-listed due to mergers during 1990-2004. The method for sampling mergers is as in Loughran and Vjih (1997), and the period delimits the banking crisis in Japan judging by the Japan's Bank Index (Figure 1). Japan Company Handbooks and Lexis-Nexis news are referenced to gain insight for selecting mergers where the targets become totally absorbed in the acquirers without forming new entities. Mergers that result in new entities are excluded because it cannot be clear which of the parties are acquirers or targets. Mergers involving financial companies are excluded as commonly done in prior research because they are subject to special regulations. Mergers involving foreign firms are also excluded because of different motivations for cross-border deals. A sample of 133 mergers are identified from this search process.⁴ For each merger, Lexis-Nexis is searched to identify the very first announcement of the acquisition that results in target delisting. The merger effective date is collected from Japan Company Handbooks.

3.2. Distribution by Year

⁴ It could be argued that mergers are more common within Japan, however, the majority involves small transactions involving small family enterprises (Sibbitt 1998). Small transactions often do not have available data, and sometimes are not of sufficient economic significance. As a result, the sample sizes in studies of Japanese mergers are typically small. For example, Kang et al. (Journal of Finance 2000) obtained a sample of 154 bidders for the period between 3/31/1977 and 12/31/1993, and Higgins et al. (Pacific-Basin Finance Journal 2006) obtained a sample of 85 bidders between 1990 and 2000. Studies that include purchases of minority interests or purchases of additional shares have more observations.

Table 1 describes the sample over the years. A time trend can be discerned as 96 or 72.18% of the sample occurs since 1999. This trend coincides with and may be explained by the country's deregulation in the legal system governing mergers and acquisitions (Higgins and Beckman 2006). Prior to 1999, mergers in Japan were tightly regulated by the Foreign Exchange and Foreign Trade Control Law (Sibbitt 1998, and Saywell 1994). The rationale for tight regulation was the widespread feeling that Japanese companies might not be able to protect themselves from foreign takeovers. In November 1996, Japan's Prime Minister Hashimoto announced bold plans, termed Big Bang, to institute deregulation in the legal system to promote financial reform. Big Bang attained an important stepping-stone by 1999 when merger deregulation and most other reform initiatives were instituted.

<Table 1 about here>

3.3. Distribution by Industry

This examination focuses on the single principal industries of merger firms, using General Industry Classification System developed by Standard & Poor. Acquirers seem clustered in the Electronics, Chemicals and Construction industries. Acquirers in these sectors collectively acquire 38.84% of the sample in merger value, which is approximated by target market value just prior to the merger announcement. Targets also seem clustered in those same industries. Based on the principal industry classification of each merged firm, about 51% of mergers occur between firms in the same industry.

3.4. Other Characteristics

Some other sample characteristics are described in the following. 127 acquirers (95.49%) and 85 targets (63.91%) are from Section 1, while the rest are from Section 2 of the TSE. From merger announcements, there is widespread pre-merger relationship between

acquirer and target. Virtually all are friendly mergers of previous affiliates, with affiliation most often being via trade relationship or share ownership. The method of payment is by stock swap in 93.99% of the mergers, with the remaining transacted in a combination of mostly stock swap and very little cash. The majority (84 of 133, or 63.16%) of acquirers own shares of targets prior to the mergers, and the average portion of target owned by acquirer is 26.92%. Interestingly, a small number of targets (3 of 133, or 2.26%) own shares of acquirers, and the average ownership of target by acquirer is 0.07%. In 33 mergers (25.56% of the sample), both acquirer and target belong to one same keiretsu. The percentage of mergers announced as rescue of targets is 14.29%, however the Japanese tradition and financial data (reported in a subsequent section) of targets suggest that rescue is a prevalent motive of sample mergers. Overall, the sample may be characterized as strategic alliance, or “friendly transactions”, a term by Healy, Palepu and Ruback (1997) denoting mergers involving stocks of firms in overlapping businesses.⁵

3.5. Mutual Banks

As banking is a prominent aspect of corporate finance in Japan, acquirers’ and targets’ bank data are collected from Japan Company Handbooks. Acquirers reference 4.8 banks and targets 4.7 banks on average. These data are consistent with prior description of Japan’s institutional context (see Section 2), where one firm typically has many banks (Horiuchi and Okazaki 1994). In 126 or 94.74% of the sample, both acquirer and target reference at least one

⁵ According to Kester (1991), although large-scale mergers in Japan are relatively uncommon, those that do occur are friendly deals, usually among companies with established relationships of some sort. They are motivated primarily by strategic considerations, and prominent objectives are the achievement of greater market share and growth within the existing business. With the sponsorship of government regulators and the major share-owning banks, Japan’s largest mergers have been deliberate attempts to alter the structure and performance of the industries in which the mergers occur. The tendency has been to combine weaker firms with stronger ones.

same bank (henceforth mutual bank, defined as a bank lending simultaneously to both acquirer and target), showing a prevalent connection between acquirer and target via their bank ties. This finding is consistent with Kester (1997), who describes that Japanese merger firms typically have mutual banks. All mutual banks identified in this paper are associated with keiretsus, 21.05% are main banks of acquirers, 15.79% are main banks of targets, and 10.53% are main banks of both acquirers and targets (where a main bank is one that provides the largest lending to be borrowed by a firm, and is the first bank referenced in Japan Company Handbooks).

Mutual banks have significant economic stakes in both merger firms. In light of the minimum capital requirement (8% for banks, of which 4% should come from each of the two tiers), the average bank loans to target are 48 Billions Yens, equivalent to roughly 3% of an average sample bank's market capitalization. This stake is especially significant when the borrowing firms are non-performing and banks are on the verge of non-compliance. The average bank loans to acquirer are 489 Billions Yens, or about 26% of bank market capitalization.

I select one mutual bank per merger for examination. Not selecting more than one helps mitigate dependency problems and calibrate the data, and is necessary due to data availability. The selected bank is the first reference in Japan Company Handbooks by acquirer and target that has data. Thus, it is supposed to be the most important mutual bank for both firms. Table 2 shows variables that reflect the health of mutual banks and their adjusted measures, which are the differences between the mutual bank and the median of Japan's banking sector (excluding the merger bank) in the concurrent year. The sector data are of 84 to 118 banks over the period. Mutual banks' average market capitalization is 3.47 Trillion Yen compared to

0.11 Billion Yen of the sector. Mutual banks' long term debt to market capitalization ratio averages 593.78% compared to 49.29% of the sector⁶, their interest expense to interest revenue ratio averages 58.88%, compared to 31.37% of the sector, and their credit rating averages 7.01 (corresponding to Moody's ratings between Baa1 and A3).⁷ As shown, all adjusted variables are statistically significantly positive, indicating that mutual banks are unhealthier than the banking sector in concurrent years. The large size of mutual banks is consistent with prior research documenting dismal problems among the largest Japanese banks during Japan's banking crisis in the 1990s (Skinner 2008). Overall, examination of banking data reveals a prevalent connection between acquirer and target via their mutual banks, which are dismally unhealthy.

<Table 2 about here>

4. Acquirer Wealth Gain

Multiple measures are employed to assess acquirer wealth gain, namely long run buy-and-hold abnormal returns (BHAR), Tobin's Q change, operating gain, and merger announcement abnormal returns. This Section describes their computations and reports the results in Tables 3-6, which show little wealth gain to acquirers.

4.1 BHARs

BHAR is measured over a 3-year period starting at the end of Fiscal Year -1 and ending at the end of Fiscal Year 2 relative to the merger announcement. A period of three years is

⁶ The same measure of debt ratio averages 300% - 700% in corporate Japan between 1997 and 1999 (Levy 2000).

⁷ I do not consider the ratings for the bank sector, because Moody publishes ratings for only 23 Japanese banks between 1990 and 2004.

chosen to span enough time for capturing value derived from corporate monitoring, such as appointing new managers, combining operations of merged firms, and pursuing additional investment opportunities. The fact that price adjustment takes such a long time does not seem surprising in light of the lengthy intervals necessary for much more tangible information to be incorporated into prices (Gompers, Ishii and Metrick 2003).⁸ Although it is difficult to predict how long it should take for possible under- or overvaluation effects to disappear, Healy and Palepu (1995) suggest that excess returns should be measured over at least 16 months, and possibly more. Loughran and Vijh (1997) use a 5-year window to examine shareholders' benefits from corporate acquisitions. I use three years to balance the need for a long window and a decent sample size. Using a 3-year window also avoids abrupt changes in accounting data in the acquisition year, and reversals of accounting data in the following year. The abrupt changes are due to one-time large restructurings charges in the acquisition year, and reversals of accounting accruals in the immediately following year. These changes and reversals artificially distort the accounting measurements and their market effects.

I compute acquirer's BHARs based on alternative compounding methods and benchmarks to ensure the results are robust to different computation methods. The alternative compounding methods are simple, annual, and monthly. The alternative benchmarks are a single firm - defined as a Japanese firm matching the acquirer by principal industry, market capitalization, and book-to-market ratio; a portfolio of firms in the same principal industry; and firms in the TOPIX (Tokyo Stock Exchange index). All benchmarks are identified

⁸ For example, as Gompers, Ishii, and Metrick (2003) note, there is evidence that earnings surprises, dividend omissions, and stock repurchases have long-term drift following the event, and all seem to have much more tangible information compared with M&A events. While test mis-specification may partially drive the long-term drift, studies that use better test specifications still document long-horizon abnormal performance, making it more difficult to dismiss long-horizon results as a consequence of test mis-specification (Kothari and Warner 1997).

concurrent to the merger year. BHAR1, BHAR2, and BHAR3 are simple returns adjusted for the control firm, the industry control portfolio, and the TOPIX index, respectively. BHAR4, BHAR5, and BHAR6 are annually compounded returns, and BHAR7, BHAR8, and BHAR9 are monthly compounded returns adjusted for the above respective benchmarks. Because the benchmarks contain different types of biases, control returns are expected to be quite different from each other, however using multiple controls is useful to assess the results' robustness. I select BHAR1 as the main result, in light of methodological issues surrounding the measurement of long-horizon returns (for in-depth discussions, see Barber and Lyon 1996 and 1997, Kothari and Warner 1997, and Barber, Lyon and Tsai 1999). As the simple return, BHAR1 is free of repeated compounding, resulting in small skewness (BHAR1 skewness = -0.37), and making it the best for testing long-horizon abnormal returns (Barber and Lyon 1996, and 1997). BHAR2-BHAR9 are considered for robustness.

Table 3 summarizes the BHAR measures. Acquirers' simple returns average 7.61% (insignificant at p-value = 0.2413). This average for the single control firm is 0.87% (p-value = 0.8709), resulting in BHAR1 of 6.74% (p-value = 0.3668). BHAR2-BHAR9 are also tabulated. In sum, Table 3 shows low and insignificant wealth gain to acquirers.⁹

<Table 3 about here>

4.2. Tobin's Q Gain

The second wealth gain measure is Tobin's Q gain, where Tobin's Q is the book value of debt plus the market value of equity over the book value of assets, similar to Baek, Kang and Park (2004). Unadjusted Tobin's Q gain is the difference in Tobin's Q of the acquirer in Fiscal Year 2 and the total Tobin's Q values of both acquirer and target in Fiscal Year -1

⁹ The large evidence in the U.S. indicates that acquisitions are value destroyers to acquiring firms' shareholders. However, Kang (1993), Kang et al. (2000), and Higgins and Beckman (2006) document small abnormal announcement returns to Japanese acquirers.

excluding the target's portion prorated to ownership by the acquirer. The portion owned by acquirer is excluded because this value is assumed already reflected in acquirer's own value. Tobin's Q Gain is adjusted for a single control firm and a control portfolio which are defined as for BHARs.

Table 4 shows Tobin's Q Gain measures. Tobin's Q Gain adjusted for a single control firm (TG1) is -46.50% (p-value <0.0001), while Tobin's Q Gain adjusted for a control portfolio (TG2) is -57.51% (p-value <0.0001). From these results, acquirers lose value significantly over the three years surrounding their acquisitions compared to their benchmarks.

<Table 4 about here>

4.3. Operating Gain

The third wealth gain measure is based on operating performance (computed based on accounting data), to provide fundamental economic perspectives in assessing acquirer wealth gain. Operating performance is computed as cash flow return, or the ratio of cash flow over book value of equity. The use of cash flow is as in Healy, Palepu and Ruback (1992) and Nohel and Tarhan (1998), with cash flow defined as operating cash flow (sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses). This cash flow measure is equivalent to operating income defined by Barber and Lyon (1996) in the fact that it is unaffected by depreciation, interest expense, special items, income taxes, and minority interest, and therefore is free from abrupt changes due to accounting discretion, and from changes in capital structure due to merger. Operating cash flow is better than earnings for measuring performance because it is less dependent on accounting discretion. Operating cash flow is also better because it is unaffected by changes

in accounting standards instituted during financial reform towards the late 1990s in Japan. While the revised accounting standards aim at improving disclosure transparency and earnings quality, they tend to alter reported earnings, making comparisons based on bottom-line numbers less reliable.

Three different deflators are considered: 1) market value of equity, to capture the true gain to shareholders, 2) market value of assets, to match operating gain to the operating assets in place, and 3) book value of equity, to capture a performance measure of interest to shareholders that is unaffected by market anticipation of operating performance itself.

Deflating by market values has the following drawback: if investors anticipate operating gain, any other merger synergies, and any macro factors that contribute to stock price, stock price will increase, reducing the cash flow ratio although there is operating gain, and vice versa.

Therefore, to examine operating profitability to shareholders without the effect of market expectation, I deflate cash flow by book value of equity.¹⁰ This ratio is similar to the book return on equity (ROE), which is a key statistic in financial analysis (Beaver and Ryan 2000), is a predictor of book-to-market ratio (Fama and French 1995) and plays a central valuation role (Feltham and Ohlson 1995). Unadjusted operating gain is the difference between the acquirer's cash flow return in Fiscal Year 2 and the sum, in Fiscal Year -1, of the acquirer's cash flow return and the portion of the target's prorated by the acquirer's ownership in the target. The target portion owned by acquirer is added to capture all of acquirer operating strengths in Fiscal Year -1.¹¹ When targets have negative shareholders equity (7 cases), their

¹⁰ Using market values of equity and market value of assets as deflators yield consistent but weaker results than using book value of equity.

¹¹ In a separate replication, I do not incorporate targets' cash flows at all, and the results are still consistent, presumably because targets' operating contributions to acquirers are small.

cash flows are not incorporated. Operating gain is adjusted for that of a single control firm and a control portfolio in the concurrent year. The control firm and portfolio are defined as for BHARs and Tobin's Q gain.

Table 5 shows the computation of Operating Gain measures adjusted for a single control firm (OG1) and adjusted for a control portfolio (OG2). OG1 is 1.84% (p-value = 0.9449), and OG2 is -1.15% (p-value = 0.9649). From these results, acquirers do not gain in operating performance over the three years surrounding their acquisitions.

<Table 5 about here>

4.4. Merger Announcement CAR

The fourth measure of acquirer wealth gain is computed as abnormal stock returns upon merger announcements (Day -1 through Day +1) using the traditional market model, a base period from Day -220 to Day -20, and the TOPIX as market benchmark. For this computation, all daily returns assume dividend reinvestment and are adjusted for capital changes such as stock splits and stock dividends. The Fama-French asset pricing model is not used, following remarks that it is not appropriate for the context of Japan (Daniel, Titman and Wei 2001).

Table 6 shows that acquirers' abnormal returns on Day -1, Day 0, and Day 1 are 0.07% (p-value= 0.7766), 0.34% (p-value=0.2620), and -0.41% (p-value= 0.2270), for a cumulative value (CAR) of -0.004% over the three days (p-value = 0.9934). This result indicates that acquirers attain little wealth gain.

<Table 6 about here>

For additional insight, Table 6 also shows target and mutual bank CARs computed in the same manner. Target CAR is statistically significant, averaging 2.31% (p-value = 0.02). This result is consistent with the U.S. merger literature, which shows gains accruing mostly to

targets. It is interesting to note that mutual bank CAR is significantly positive, averaging 0.92% (p-value = 0.09). The magnitude of mutual bank CAR has economic significance, as it is equivalent to roughly 24 Billion Yens in economic impact to an average bank in the sample.¹² This result is consistent with Higgins (2009), who argues that Japanese banks have incentive to merge client firms to improve their credit standing, and gain significantly from these mergers during the 1990s' banking crisis.

5. Association between Acquirer Wealth Gain and Bank Ties

This Section develops the hypothesis and performs regression analyses to test this association.

5.1. Hypothesis Development

Conflict of interest may arise when banks that exercise powerful control over firms engage in merger advisory. A bank has incentive to steer a stronger client into merging with a troubled client to improve the bank's own risk standing. This is because the merger of two firms allows excess in one to cover concurrent deficiency in the other, so that the overall risk of the merged firm is reduced even if the loan amounts are unchanged (Levy and Sarnat 1970, Lewellen 1971, Higgins and Schall 1975, and Leland 2007).

According to Lewellen (1971), the risk reduction to the merged firm does not depend on there being a single or main lender. The risk exposure of any and all lenders to the merging firms is reduced by merger, since the probability of disaster that the creditor group collectively would have to adjudicate has been diminished. Thus Lewellen (1971) argues that all banks of acquirer and target benefit from their merger. Benefit to banks may be eliminated

¹² This estimate is computed based on bank CAR and the average bank market capitalization (0.92% * 2,604 Billions Yens).

or reduced if the bank loan is callable or short-term, since subsequent loan rollovers carry an interest rate that reflects post-merger risk, and overpayment of interest on extant loans occur only for a short time (Leland 2007). The only creditor whose position would be worsened would be one whose claim was senior before but was made junior to other lenders in the process of merger (Lewellen 1971). Of course, the standard covenants of loan contracts would preclude such a manipulation of claims.

The incentive for banks to reduce risk is strong during Japan's banking crisis in the 1990s. As elaborated in Section 2, Japan's banking crisis coincides with the implementation of the Basel Accord. This means a significantly higher capital requirement for almost all Japanese banks (Wagster 1996). The concept of capital adequacy is implemented based on the ratio of a bank's capital and its risk-weighted assets, whereby a risky loan asset has reduced contribution to capital adequacy than risk-free assets. Following the Basel Accord, risk reduction is a survival matter to Japanese banks in the 1990s. Because mergers between clients reduce risk for banks, and because banks are pressured to reduce risk, Higgins (2009) argues that Japanese banks have incentive to help merge clients during the 1990s' banking crisis.

In addition, Japanese banks have the control power to steer clients into mergers, even though acquiring bad targets does not serve acquirers. As elaborated in Section 2, Japan's bureaucracy framework allows banks to exert powerful control over their clients to an extent unseen in the West. Banks are able to align company management with bank directives and government policies via several intertwined ties. Conflict of interest likely arises because, despite their incentive to facilitate mergers for their own purposes, banks have the control power to steer acquirers.

Certification effect to acquirer shareholders may stem from informational economies of scope, when banks use private information about firms accessed during bank-firm relationships to mitigate information asymmetry in firms' investment activities (Bharadwaj and Shivdasani 2003, Gilson and Roe 1993, and Diamond 1991). However, under conflict of interest, powerful banks exercise control over and thereby expropriate rents from borrowing firms (Kroszner and Strahan 2000, Besanko and Kanatas 1993, and Rajan 1992). If banks systematically steer clients into acquiring bad targets, the effect of conflict of interest exceeds certification value. Consequently, acquiring firms controlled by banks should perform more poorly through their mergers than do acquirers un-controlled by banks, all else being equal. In Japan, the control power of banks over firms are exerted via several intertwined bank ties. Thus, the association between acquirers' wealth gain surrounding the merger and their bank ties is hypothesized to be negative.

5.2. Acquirer Bank Ties

This Section develops a measure of the control power by banks over acquirers. The measure is built on four bank ties, reflecting the institutional context of Japan. Although banks have debt-holder interest first and foremost, examining only one (debt-holding) tie would miss information, because banks may exert control via other ties. For example, banks may steer firms via their personnel on the firm's board of directors, even though bank debt-holding may be small.

Four acquirer bank ties are captured. The first bank tie is through bank staff involvement as bank personnel are often placed on the boards of directors (Hoshi, Kashyap and Scharfstein 1990). Monitoring through bank staff involvement is obvious in under-performing firms (Kaplan 1994, Kaplan and Minton 1994, and Kang and Shivdasani 1995). I

collect the number of bank directors on acquirers' boards from Industrial Groupings of Japan to capture this bank tie.

The second bank tie is through group (keiretsu) inter-lockings, a prominent feature in Japan's corporate governance that serves to cement the central influence of banks. Most groups are organized around banks (Berglof and Perotti 1994), monitoring of group firms is widely viewed as stemming from banks at group cores (Gilson and Roe 1993), and group inter-lockings increase banks' voting rights above their equity stakes. In financial distress, group governance shifts to hierarchical enforcement under main bank leadership (Berglof and Perotti 1994). I collect group holdings relative to the top shareholders from Industrial Groupings of Japan for the second bank tie.

The third bank tie is through bank borrowings, which is a primary proxy for bank monitoring in prior literature. Historically, Japanese firms rely more on borrowings from commercial banks than public markets (Anderson and Makhija 1999). Through debt, banks monitor firms by extending credit for approved courses of action (Aoki and Patrick 1994). I measure this bank tie as total bank borrowings scaled by total assets, which I collect from Japan Company Handbooks.

The fourth bank tie is through bank ownership. Banks are the largest shareholders in Japan (Prowse 1990 and 1992). Equity ownership allows banks to exert influence over firms for broader industrial purposes or relation-specific investment (Gilson and Roe 1993). Together with bank borrowings, bank ownership determines the strength of bank ties (Kang 1993, and Kang and Shivdasani 1995). I incorporate bank ownership using data from Japan Company Handbooks.

The above four ties are aggregated through principal factor analysis, a method using a priori communality estimates to find the factor that accounts for the most variation in the set of four bank ties. This bank tie measure is more complete than in many prior studies which only incorporate bank borrowings and ownership. Table 7 summarizes acquirer bank ties and their principal factor (Bank Factor). Panel A shows an average of 0.44 bank directors, 27.36% group holdings, 31.29% bank borrowings, and 17.09% bank ownership. Panel B shows the correlations among all bank ties. Group is highly correlated with bank directors and bank borrowings, while bank ownership is uncorrelated with the other ties. Every bank tie has its highest correlation with Bank Factor, validating the factor as the underlying captor of multiple aspects of bank influence. Panel C shows the loadings from principal factor analysis. Group has the highest loadings on Bank Factor (86.57%), followed by bank directors (78.28%), bank borrowings (51.18%), and bank ownership (25.15%). The lower loading of bank ownership is consistent with the view that banks do not monitor firms actively via ownership (Gilson and Roe 1993).

<Table 7 about here>

Two additional tests using maximum likelihood factor analysis further validate Bank Factor. The first tests the null that there are no common factors. This first test is rejected at Chi-square = 61.4831 (p-value < 0.0001), denoting that a common factor is appropriate. The second tests the null that there is no more than one common factor underlying the four bank ties. This second test cannot be rejected at Chi-square = 2.9902 (p-value = 0.2242), denoting that one factor is sufficient. Overall, these tests validate Bank Factor as an appropriate and adequate index for bank ties.

5.3. Control Variables

Many control variables are used. They are summarized here and detailed in the Data Appendix. Foreign ownership and foreign debt of acquirers are used to consider the impact of unaffiliated ties, or the governance of other institutional monitors. The number of industries in which an acquirer operates and whether acquirer and target belong to different industries are considered to capture the agency costs due to diversification. Size, profitability, growth, leverage, beta, and liquidity of both acquirers and targets are considered as these variables likely affect acquirer wealth gain. With regards to targets, the controls also include whether the merger announcement mentions rescue, cross-holdings between acquirer and target, and target stock returns. Finally, the controls include two macro-economic variables, GDP growth and a dummy denoting post 1999 to proxy for merger deregulation. Table 8 summarizes all control variables. Overall, compared with acquirers, targets are smaller in size, are less profitable, suffer larger negative returns, experience lower growth, and have lower beta.

<Table 8 about here>

5.4. Excluded Variables

Managerial ownership, concentration of institutional, family and individual ownerships, and outside directors are often examined in many U.S. papers as barometers of agency costs in conflict of interest. However in Japan, managerial holdings in Japan are small (Prowse 1992, and Kaplan 1994), large shareholders are banks themselves (Prowse 1992, and 1990), family and individual ownership is rare (Claessens, Djankov and Lang 2000), and outside directors are also rare (Ahmadjian 2000). Therefore, these variables are excluded because their monitoring roles compared to banks' remain small in large Japanese firms.

5.5. Empirical Results of BHAR

Table 9 presents regressions of BHAR1 on Bank Factor and different combinations of control variables, with industry and year fixed effects. Three models are presented to show robustness of the results. In Model 1, BHAR1 is regressed on Bank Factor, acquirer size and debt ratio, and GDP growth. In Model 2, the controls are significant enough to be retained by a stepwise procedure. Model 3 includes all controls.

<Table 9 about here>

As shown, Models 1-3 are significant at p-values equal 0.0550, 0.0342, and 0.0255, respectively. All three do not suffer from harmful multicollinearity based on the low VIF statistic, and do not suffer from hetero-scedasticity based on insignificant White's chi-square. The explanatory powers of the Models are 7.86%, 17.06% and 13.23%, respectively. From all models, the coefficients of Bank Factor are significantly negative, with p-values equal 0.0149, 0.0095, and 0.0435, respectively, consistent with the paper's hypothesis. The results of BHAR2-BHAR9 are also consistent and not tabulated.

5.6. Empirical Results of Tobin's Q Gain

Table 10 presents three regressions of adjusted Tobin's Q gain (TG1) on Bank Factor and different control variables. The three models are constructed and subjected to diagnostics as for BHAR1. As shown, the coefficients of Bank Factor are significantly negative with p-value equal 0.0272, 0.0052, and 0.0175, respectively. From the negative coefficients, acquirers with stronger bank ties suffer larger value loss from their acquisitions than acquirers with weaker bank ties, consistent with the paper's hypothesis. The results based on TG2 are consistent and not tabulated.

<Table 10 about here>

5.7. Empirical Results of Operating Gain

Table 11 presents three regressions of adjusted operating gain (OG1) on Bank Factor. The three models are constructed and subject to diagnostics as for BHAR1. As shown, the Bank Factor coefficient is significantly negative (p-value = 0.0055, 0.0338, and 0.0333, in the respective Models). From the negative coefficient, acquirers with stronger bank ties suffered greater operating losses from their acquisitions than acquirers with weaker bank ties, consistent with the paper's hypothesis. This complements and supports Tables 9-10 by providing a fundamental economic basis (not driven by stock price) for larger wealth loss among strong-bank acquirers. The results based on OG2 are consistent and not tabulated.

<Table 11 about here>

5.8. Empirical Results of Acquirer CAR

Table 12 shows three regressions of CAR on Bank Factor. The three models are constructed and subject to diagnostics as for BHAR1. As shown, the coefficient of Bank Factor is significantly negative (p-value = 0.0049) in Model 1. Bank Factor is also negative in Models 2 and 3, but not significant due to the dominant effect of ROE. The small measurement of CAR weakens the power of tests based on CAR regressions, but the overall evidence is consistent with the paper's hypothesis.

<Table 12 about here>

6. Additional Discussions

6.1. Reverse Causality

I assess a couple of reasons for possible cause-effect confusion in the association between acquirer wealth gain and bank ties. One, in reverse causality, a negative association is found because banks systematically invest in weak acquiring firms, particularly because these firms do not have alternative financing, or they are fundamentally more fragile from the

start. However, foreign equity is comparable between strong-bank and weak-bank acquirers (11.08% versus 12.69%, insignificantly different at $p\text{-value} = 0.4299$), and foreign debt financing is actually higher for strong-bank acquirers (0.45% versus 0.09%, significantly different at $p\text{-value} = 0.0153$). Further, pre-acquisition fundamentals denoted by ROE and growth are insignificantly different between strong- and weak-bank acquirers. These results do not suggest that banks systematically invest in weak acquiring firms.

Two, it is possible that strong-bank acquirers are more susceptible to the recessionary economy due to the nature of their industries. However, my sample contains about the same numbers of strong-bank and weak-bank acquirers in each industry, except in the chemical industry where there are more strong-bank acquirers (13 to 1), and in the electronics industry where there are more weak-bank acquirers (15 to 5). Replications of the presented results after excluding these 2 industries yield consistent results. In sum, the above two assessments do not suggest reverse causality.¹³

6.2. Relative Variables

I replicate the regressions in Tables 9-12, but instead of including acquirer and target variables separately, I use variables that are ratios between target and acquirer. The results also yield negative coefficients for Bank Factor, consistent with the main report.

6.3. Macro-Economy

I use the year 2000, and then 2001 instead of 1999 for defining Period, to assume more time for merger deregulation effects, however, Period is not significant and does not qualitatively impact the reported results in Tables 9-12.

¹³ I also assess endogeneity between bank ties and firm performance using an augmented test termed Durbin-Wu-Hausman (DWH) by Davidson and MacKinnon (1993). The DWH results do not suggest that endogeneity is a concern.

6.4. Sub-samples

I replicate Tables 9-12 on four independent sub-samples created in the following ways. First, I exclude a third of the sample by random, retaining only a sub-sample of 90 random acquirers. Second, I exclude 28 acquirers that engage in M&A more than one time during 1990-2004, retaining only 105 acquisitions by unique acquirers. Third, I exclude a third of the sample sorted by sales, retaining only smaller acquirers. Fourth, I exclude a third of the sample sorted by year, retaining only acquirers in earlier years. All four replications yield consistent results with the main reports.

6.5 Post-Merger Balance-Sheet Restructurings

The debt of the merged firm in Year 2 is compared with the combined debt of the predecessors in Year -1 relative to the merger announcement. Smaller debt in Year 2 than Year -1 would suggest that the merged firms reduce their debt financing. Indeed, the long-term-debt-to-asset ratio in Year 2 is 37.83%, compared to 41.21% in Year -1 of the combined predecessors, a significant difference at p -value <0.01 . The results are robust when the debt measures are adjusted for the industry medians. Evidence of decreased debt suggests that the merged firms undergo balance-sheet restructurings to achieve a more conservative capital structure.

6.6. Bank Dependency

One possible interpretation of the negative association between acquirer performance and bank ties is that firms suffer from limited lending from banks during crisis. In other words, firms' declining performance is simply due to their dependence on banks. The notion of bank dependence implies no motive and action from banks with regards to mergers and

merger acquirers. However, that notion seems untrue in light of persuasive theory and evidence that establish banks' motive, opportunity, and benefit to steer acquirers into mergers.

Banks' motive is explained by the coinsurance theory, in other words, troubled banks have incentive to use mergers to restructure their loans and reduce their loan risk. This is because banks must meet standards for risk-based capital adequacy set forth both by the Basel Accord and Japan's own legislation to stay in business. For opportunity, Japanese banks are able to use mergers to restructure their loans via mergers, because acquirers and targets typically share the same banks, whereas banks in the middle can access, process and transmit private information to facilitate mergers. Japanese banks are also enabled by Japan's deep government safety net to ensure banks' viability, enjoy strong power over firms via multiple ties to firms, and traditionally are merger facilitators in Japan. For benefit, Higgins (2009) finds that banks on average have significant positive cumulative abnormal returns surrounding the merger announcements, consistent with banks' gain from mergers via a coinsurance effect. Further, the above evidence of debt-reduction is consistent with post-merger balance-sheet restructurings to achieve a more conservative capital structure in the merged firms. These restructurings also achieve a less risky loan portfolio for banks.

The combination of motive, opportunity, and benefit strongly suggest banks' active role in structuring mergers to improve their risk positions at acquirers' expense. Rather than a traditional bank dependency story, this paper points to the role of governance by banks on merger acquirers.

6.7. Robustness

The premise of this paper is that a bank has incentive to steer a client into merging with another client to improve the bank's own risk standing. Applying this premise to the

case of Japan where mergers are typically for the rescue of targets, it is the exposure of the bank to the troubled target that drives the incentive to merge. Further, the paper's main results show that acquirer performance is negatively associated with bank ties. In light of the above premise, the results are interpreted as banks' facilitating mergers for their own risk-reduction at the expense of acquirers.

To jointly validate the above premise and result interpretation, I analyze the relationship between the bank exposure and acquirer performance. If the premise is true and the interpretation is correct, then bank exposure should be negatively associated with acquirer performance. I capture exposure of the bank to target via the riskiness of the bank loan to target multiplied by the significance of target to bank. The riskiness of bank loan to target is estimated as the ratio of target bank loan and asset. The significance of target to bank is estimated as the ratio of target and bank market capitalization. Acquirer performance is estimated using all the metrics for acquirer performance used in the paper. I find that the association between this bank exposure and acquirer performance is significantly negative as expected. The validation results are reported in Table 15.

6.8. Facilitators of Mergers

From prior literature (Ivashina et al. 2009), banks with influence on clients and a large clientele can facilitate mergers of clients by accessing their private information and transmit it to potential merger partners. However, the question "Which specific banks facilitate mergers?" does not have a clear answer in my paper. I regret not to have conclusive evidence in this regard. I find that a fraction (15%) of merger banks are the main banks of both acquirer and target, with the main bank defined as the one supplying the largest fraction of lending to be borrowed by the firm. I also often observe that multiple city banks lend various loan

amounts to a same firm involved in acquisition. The observations indicate a pattern of sharing credit risk and granting loan credits by a group of large banks to a single borrower.¹⁴ Due to this pattern, it seems fair to say that mergers are facilitated by a group of banks, administrators of these banks, or public institutions governing these banks. This assessment is reasonable in light of Japan's tight administrative system governing banks and firms' corporate governance, and consistent with the shift of bank control from individual main banks to groups of banks to manage shared risks during banking crisis (Horiuchi 2002). Future research is necessary to further investigate this question.

Conclusion

This paper has provided an in-depth examination of Japanese merger acquirers during Japan's banking crisis in the 1990s. Most acquirers had strong connection with their targets via banks that lent to both, and that were dismally unhealthy. Four measures of wealth gain indicate that acquirers did not gain from their mergers. More importantly, acquirers' wealth gain was negatively associated with their bank ties, consistent with conflict of interest between acquirers and their banks.

This paper offers implications for the governance role of banks. During banking crisis, banks are hard-pressed to comply with capital requirements. Risk reduction is a way for troubled banks to comply, and mergers between clients help banks reduce risk effectively. In light of banks' incentive during banking crisis, conflict of interest may arise when banks have strong control over borrowing firms and also act as merger advisors to these firms.

¹⁴ This pattern is consistent with syndicated lending. As is well-known, Japanese banks provide a sort of (de facto) syndicated loans to specific companies to avoid concentration of their loans on a small number of big borrowers (Horiuchi 2002, and Horiuchi and Okazaki 1994).

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Table 1 –Sample

This Table describes the sample mergers, which are identified from a search for firms delisted from the Tokyo Stock Exchange (TSE) during 1990-2004. This search method is similar to Loughran and Vijh (1997) who identify merger targets among firms delisted from major U.S. exchanges. The TSE publishes the names of delisted firms and the reason for delisting. Japan Company Handbooks and Lexis-Nexis news are referenced to gain additional insight for selecting only mergers where the targets become totally absorbed in the acquirers without forming new entities. Mergers that result in new entities are excluded because they do not have price and operating history prior to the merger, nor can it be clear which of the parties are acquirers or targets. Mergers involving financial companies are excluded as commonly done in prior research because they are subject to special regulations. Mergers involving foreign firms are also excluded because of different motivations for cross-border deals. The search process results in 133 mergers.

<i>Year of Merger</i>	<i>No of Acquirers</i>	<i>No of Payments based only on stock swap</i>	<i>No of Acquirers in TSE Section 1</i>	<i>No of Targets in TSE Section 1</i>	<i>Cumulative Frequency of Acquirers</i>	<i>Cumulative Percent of Acquirers (%)</i>
1990	2	2	2	2	2	1.5
1991	1	1	1	0	3	2.26
1992	5	5	5	4	8	6.02
1993	5	5	5	3	13	9.77
1994	5	5	5	5	18	13.53
1995	5	5	4	3	23	17.29
1996	2	2	2	1	25	18.8
1997	3	2	1	1	28	21.05
1998	9	8	8	7	37	27.82
1999	8	8	8	6	45	33.83
2000	17	16	17	9	62	46.62
2001	16	14	15	14	78	58.65
2002	23	20	23	11	101	75.94
2003	27	27	26	16	128	96.24
2004	5	5	5	3	133	100
Total	133	125	127	85		

Table 2 – Mutual Banks

This Table provides the mean [median] of health variables of banks mutual to acquirers and targets. The health measures are market capitalization (market value of equity), debt ratio (total debt over total market capitalization), inefficiency ratio (total interest expense over total interest income), and Moody’s bond credit ratings immediately before the merger announcement converted to numerical scales ranging from 1 for lowest to 9.99 for highest ratings. Adjusted measures are the difference between the acquirer bank and the bank sector’s median in the concurrent year. Market capitalization, debt ratio, and inefficiency ratio are collected from the fiscal year before merger announcement.

Mean [Median] N	Unadjusted	Adjusted	P-value of Adjusted
Bank market capitalization In Million Yen	3,474,988 [2,465,405] N=120	3,365,192 [2,367,546] N=120	<.0001 [<.0001]
Bank debt ratio (Total Long-term Debt / Market Cap)	593.78% [336.68%] N=120	546.56% [284.13%] N=120	<.0001 [<.0001]
Bank inefficiency Ratio (Interest expense / Interest income)	58.88% [60.88%] N=123	28.47% [29.93%] N=123	<.0001 [<.0001]
Bank bond credit ratings by Moody’s	7.01 [6.99] N=93		

Data Sources: Worldscope and Moody’s Investors Service.

Table 3: Acquirer Buy-and-Hold-Abnormal-Return (BHAR1-BHAR9)

Acquirer's BHARs are computed from the end of Fiscal Year -1 to the end of Fiscal Year 2 based on alternative compounding periods and benchmarks. BHAR1, BHAR2, and BHAR3 are simple returns adjusted for the benchmark, which is a single control firm, a control portfolio, and the Topix index, respectively. BHAR4, BHAR5, and BHAR6 are annually compounded returns, and BHAR7, BHAR8, and BHAR9 are monthly compounded returns adjusted for the above respective benchmarks. Data source: Datastream.

<i>N=133</i>	<i>Compounding</i>	<i>Acquirer Return (P-value)</i>	<i>Benchmark</i>	<i>Benchmark Return (P-value)</i>	<i>BHAR (P-value)</i>
<i>BHAR1</i>	Simple	7.61% (0.2413)	Single firm	0.87% (0.8709)	6.74% (0.3668)
<i>BHAR2</i>			Portfolio	-0.72% (0.8382)	8.33% (0.1133)
<i>BHAR3</i>			Topix	-10.10%*** (<0.0001)	17.70%*** (0.0049)
<i>BHAR4</i>	Annual	7.61%*** (<0.0001)	Single firm	0.09%*** (<0.0001)	7.52% (0.2458)
<i>BHAR5</i>			Portfolio	0.07%*** (<0.0001)	7.53% (0.2444)
<i>BHAR6</i>			Topix	0.06%*** (<0.0001)	7.67% (0.2372)
<i>BHAR7</i>	Monthly	6.63%*** (<0.0001)	Single firm	0.09%*** (<0.0001)	6.54% (0.2741)
<i>BHAR8</i>			Portfolio	0.16%*** (<0.0001)	6.48% (0.2784)
<i>BHAR9</i>			Topix	0.08%*** (<0.0001)	6.71% (0.2623)

Table 4: Acquirer Tobin's Q Gain

Acquirer Tobin's Q is its book value of debt plus the market value of its equity over its book value of assets. Tobin's Q gain is the difference in Tobin's Q of the acquirer in Fiscal Year 2 and the total Tobin's Q values of both acquirer and target in fiscal Year -1 excluding the target's portion prorated to ownership by the acquirer. Tobin's Q Gain is adjusted for the benchmark, which is a single control firm (TG1), and alternatively a control portfolio (TG2). Data source: Worldscope.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

<i>N=117</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	
	<i>Acquirer Tobin's Q in Y2 (p-value)</i>	<i>Acquirer Tobin's Q in Y-1 (p-value)</i>	<i>Target Tobin's Q in Y-1 - exc. portion owned by acquirer (p-value)</i>	<i>Benchmark</i>	<i>Benchmark Tobin's Q Gain (p-value)</i>	<i>Adjusted Tobin's Q Gain to Acquirer (a-b-c-e) (p-value)</i>	
	84.85%	87.66%	62.42%	Single firm	-18.74%*** (0.0001)	-46.50%*** (<0.0001)	TG1
	(<0.0001)	(<0.0001)	(<0.0001)	Portfolio	-7.72%*** (<0.0001)	-57.51%*** (<0.0001)	TG2

Table 5: Acquirer Operating Gain

This Table summarizes acquirers' long-term operating gain. Acquirer's operating performance is its cash flow return, or operating cash flow (sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses) deflated by shareholders equity. Operating gain is the difference in cash flow return of the surviving acquirer in Fiscal Year 2 and the sum of cash flow return of the acquirer and the portion of the target's cash flow return prorated to ownership by the acquirer in Fiscal Year -1. Operating gain is adjusted for a single control firm (OG1), and for a control portfolio (OG2). Data source: Worldscope.

<i>N=129</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	
	<i>Acquirer Cash Flow Return in Y2 (p-value) N</i>	<i>Acquirer Cash Flow Return in Y-1 (p-value)</i>	<i>Target Cash Flow Return in Y-1 Portion owned by acquirer (p-value)</i>	<i>Benchmark</i>	<i>Benchmark Operating Gain (p-value)</i>	<i>Adjusted Operating Gain to Acquirer (a-b-c-e) (p-value)</i>	
	33.35% (0.0243)	27.11% (0.1041)	8.14% (0.0015)	Single firm	-3.74% (0.0105)	1.84% (0.9449)	OG1
				Portfolio	-0.75% (0.0024)	-1.15% (0.9649)	OG2

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Table 6 –Cumulative Abnormal Returns

This Table shows the mean (and p-value) of abnormal returns over the 3 days (-1 +1) window surrounding the merger announcement. Abnormal returns are measured using the market model and standard event methodology, using the Japan Bank Index as benchmark for bank normal returns, the TOPIX index as benchmark for acquirer and target normal returns, and a 200-day base period beginning 220 days and ending 20 days before the announcement to estimate the parameters of the market model. All daily returns assume dividend reinvestment and are adjusted for capital structure changes including stock splits and stock dividends. Data source: Datastream.

<i>Mean Abnormal Returns (P-value)</i>	<i>Acquirer N=133</i>	<i>Mutual Bank N=96</i>	<i>Target N=129</i>
Day-1	0.07% (0.77)	0.31% (0.34)	0.38% (0.18)
Day 0	0.34% (0.26)	0.36% (0.25)	1.37% (<0.01)***
Day 1	-0.41% (0.22)	0.24% (0.39)	0.56% (0.55)
3-day Cumulative Abnormal Return	-0.004% (0.99)	0.92% (0.09)*	2.31% (0.02)**

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Table 7 – Acquirer Bank Ties

This Table describes four acquirers’ bank ties in Fiscal Year -1 relative to the merger announcement, namely Bank Directors, Group Holdings, Bank Borrowings, and Bank Ownership. Bank Directors is the number of bank directors on the corporate board (Data source: Industrial Groupings in Japan). Group Holdings is holdings by group firms relative to the top 10 shareholders (Data source: Industrial Groupings in Japan). Bank Borrowings is total bank borrowings scaled by total asset (Data source: Japan Company Handbooks). Bank Ownership is percentage of shares owned by banks (Japan Company Handbooks). Bank Factor is the factor score of all four bank ties from principal factor analysis. The null that there are no common factors is rejected at Chi-square = 61.4831, p-value < 0.0001. The null that there is no more than one common factor cannot be rejected at Chi-square = 2.9902 and p-value=0.2242.

Panel A: Summary Statistics

<i>N=133</i>	<i>Mean</i>	<i>Median</i>	<i>Std</i>	<i>Min</i>	<i>Max</i>
Bank Directors	0.44	0.00	0.83	0.00	4
Group (%)	27.36	21.60	28.97	0.00	97.0
Bank Borrowings (%)	31.29	31.28	19.65	0.00	71.32
Bank Ownership (%)	17.09	17	6.77	1.2	38.3

Panel B: Correlation (P-Value)

<i>N=133</i>	<i>Bank Directors</i>	<i>Group</i>	<i>Bank Borrowings</i>	<i>Bank Ownership</i>	<i>Bank Factor</i>
<i>Bank Directors</i>	1.00	0.55*** (<0.0001)	0.08	0.09	0.78*** (<0.0001)
<i>Group</i>	0.61*** (<0.0001)	1.00	0.30*** (0.0005)	0.06	0.87*** (<0.0001)
<i>Bank Borrowings</i>	0.15* (0.0909)	0.31*** (0.0005)	1.00	0.10	0.51*** (<0.0001)
<i>Bank Ownership</i>	0.01	0.05	0.10	1.00	0.25* (<0.0035)
<i>Bank Factor</i>	0.73*** (<0.0001)	0.87*** (<0.0001)	0.59*** (<0.0001)	0.24*** (0.0054)	1.00

Pearson correlations are above the diagonal. Spearman correlations are below the diagonal.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Panel C: Bank Factor Loadings

<i>N=133</i>	<i>Bank Directors</i>	<i>Group</i>	<i>Bank Borrowings</i>	<i>Bank Ownership</i>
Bank Factor	78.28%	86.57%	51.18%	25.15%

Table 8 – Summary of Control Variables

This Table summarizes the control variables used in the regressions linking acquirer wealth gain and bank ties. The information of control variables is also tabulated in the Data Appendix.

As proxies for the monitoring of other institutions, Foreign Ownership is the percentage of acquirer's shares owned by foreigners; and Foreign Debt is the percentage of acquirer's borrowings from foreign banks over its total borrowings.

As proxies for agency costs due to diversification, Number of Industries is the number of industries in which the acquirer operates; and Different Industry from Target is a dummy variable equaling 1 if acquirer and target belong to different principal industries, or 0 otherwise.

Other acquirer controls are as follows. Size is acquirer sales. Market Share is acquirer's market share, the ratio of acquirer sale over total industry sale. ROE is acquirer's return on equity, defined as net income over equity. Growth is acquirer's 3-year annualized growth rate in sales. Capital Spending is acquirer's capital spending and facility investment over its total asset. Debt Ratio is acquirer's total debt over its total asset. Beta is acquirer's market beta, estimated as the correlation between the acquirer's daily stock returns and those of the Topix Index using all trading days in the year ending on the merger news date. Accounting Liquidity is acquirer's cash and short-term investments over its assets. Market Liquidity is acquirer's daily trading volume, or the number of shares traded daily averaged over the year ending on the merger news date.

As controls for macro-economic variables, GDP Growth is growth rate in Japan's real seasonally adjusted GDP in the acquisition year; and Period is a dummy equal 1 if the announcement year is 1999 or later.

Target controls are as follows. Rescue is a dummy variable equal 1 if the merger news mentions rescue as the merger purpose, or 0 otherwise. Ownership of Target by Acquirer is the portion of target's shares owned by acquirer. Ownership of Acquirer by Target is the portion of acquirer's shares owned by target. Target Stock Return is target's percentage change in stock price in the year ending on the merger news date. Target size is target's sales. Target ROE is target's ratio of net income over its shareholders' equity. Target Growth is Target's 3-year annualized growth rate in sales. Target Capital Spending is target's capital spending and facility investment over its total asset. Target Debt Ratio is Target's total debt over its total asset. Target Beta is target's market beta, estimated as the correlation between the target's daily stock returns and those of the Topix Index using all trading days in the year ending on the merger news date.

The variables are measured in Fiscal Year -1 unless noted otherwise. ***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Variables		N	P10	Total Mean	Median	P90
Unaffiliated Ties	Foreign Ownership	133	1.10%	11.89%	8.60%	25.00%
	Foreign Debt	133	0.00%	0.27%	0.00%	0.60%
Diversification	Number of Industries	133	4.00	6.23	6.00	8.00
	Different Industry from Target	133	0.00	0.41	1.00	1.00
Other Acquirer Variables	Sale (Million Yen)	133	75443	1354611	595432	2626156
	Market Share	133	0.33%	11.79%	3.94%	40.78%
	ROE	133	-13.61%	-0.35%	2.93%	9.25%
	Growth	133	-434%	226%	106%	960%
	Capital Spending	133	0.57%	3.61%	3.41%	6.83%
	Debt Ratio	133	8.55%	38.99%	40.86%	66.13%
	Beta	133	0.19	0.46	0.49	0.66
	Accounting Liquidity	133	4.12%	12.73%	10.13%	24.74%
Market Liquidity	133	0.02	1.55	0.82	3.66	
Macro	GDP Growth	133	-1.57%	0.00%	-1.09%	2.62%
	Period	133	0	0.55	1	1
Target Variables	Rescue	133	0.00	0.14	0.00	1.00
	Ownership of Target by Acquirer	133	0.00%	26.92%	28.00%	61.3%
	Ownership of Acquirer by Target	133	0.00%	0.07%	0.00%	0.00%
	Target Stock Return	133	-4205%	-597%	-1031%	2403%
	Target Sale (Million Yen)	133	10796	135356	60050	364854
	Target ROE	133	-22.18%	-11.24%	1.26%	12.29%
	Target Growth	133	-946%	3%	-6%	1110%
	Target Capital Spending	133	0.00%	3.07%	2.39%	6.63%
	Target Debt Ratio	133	2.12%	36.72%	36.29%	75.28%
	Target Beta	129	-0.01	0.27	0.26	0.52

Table 9 – Regression of Acquirers’ Buy-And-Hold-Abnormal>Returns

This Table shows the results of the regressions linking acquirer wealth gain and bank ties.

BHAR1 is acquirer’s buy-and-hold simple return computed from Fiscal Year -1 to Fiscal Year 2 adjusted for a single firm, which is matched to acquirer by principal industry, size, and book-to-market ratio in the concurrent year.

Bank Factor, the independent variable of interest, is the factor score of four acquirer bank ties from principal factor analysis. The four bank ties are Bank Directors, Bank Borrowings, Group Holdings, and Bank Ownership. Bank Directors is the number of bank directors on the corporate board. Bank Borrowings is total bank borrowings scaled by total asset. Group Holdings is holdings by group firms relative to the top 10 shareholders. Bank Ownership is percentage of shares owned by banks.

The control variables are as in Table 8 and the Data Appendix.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Coefficient (p-value)	Variables	Acquirer BHARI		
	Intercept	-0.2261 (0.6701)	0.2237 (0.3962)	0.2842 (0.8063)
Acquirer Bank Ties	Bank Factor	-0.2595 (0.0149)**	-0.2270 (0.0095)***	-0.2004 (0.0435)**
Acquirer Unaffiliated Ties	Foreign Ownership			-0.0010 (0.2124)
	Foreign Debt			0.0101 (0.9156)
Acquirer Diversification	No of Industries		-0.1219 (0.0313)**	-0.1057 (0.0708)*
	Different Industry from Target		-0.2259 (0.1073)	-0.3125 (0.0774)*
Other Acquirer Variables	Log of Sale (Size)	-0.0004 (0.9909)		0.0606 (0.5451)
	Market Share			-0.3801 (0.5110)
	ROE		0.8135 (0.2617)	0.8503 (0.0363)**
	Growth		-0.0075 (0.4968)	-0.0111 (0.3899)
	Capital Spending			0.3469 (0.9304)
	Debt Ratio	0.7687 (0.1222)	1.2601 (0.0276)**	0.6473 (0.2737)
	Beta			-0.2176 (0.7034)
	Accounting Liquidity			-0.6578 (0.4887)
	Market Liquidity		0.0603 (0.0222)**	0.0731 (0.1600)
Macro	GDP Growth	-5.0594 (0.0623)*		-1.4850 (0.7603)
	Period		0.2366 (0.0696)*	0.1276 (0.5149)
Target Variables	Rescue			0.0871 (0.7407)
	Ownership of Target by Acquirer			0.0025 (0.5156)
	Ownership of Acquirer by Target			-0.5331 (0.0032)***
	Target Stock Return			0.0030 (0.1796)
	Log of Target Sale (Target Size)			-0.0449 (0.5692)
	Target ROE			0.0504 (0.5624)
	Target Growth			-0.0087 (0.4172)
	Target Capital Spending			2.8261 (0.2788)
	Target Debt Ratio			0.0919 (0.8204)
	Target Beta			0.1409 (0.7855)
	Industry, Year fixed effects	Yes	Yes	Yes
N	133	133	129	
Model F Value	2.41	2.21	1.75	
Prob > Model F	0.0550	0.0342	0.0255	
Model Adjusted R-square	0.0786	0.1706	0.1323	
VIF	1.50	1.69	2.23	
Prob > White's Chi-square	0.1757	0.7636	0.6729	

Table 10 – Regression of Acquirers' Tobin's Q Gain

This Table shows the results of the regressions linking acquirer Tobin's Q Gain and bank ties.

The dependent variable is Adjusted Tobin's Q Gain. Tobin's Q is book value of debt plus market value of equity over the book value of assets. Tobin's Q gain is the difference in Tobin's Q of the surviving acquirer in Fiscal Year 2 and the total Tobin's Q values of both acquirer and target in fiscal Year -1 excluding the target's portion prorated to ownership by the acquirer. Tobin's Q Gain is adjusted for a match firm, defined as a Japanese firm matching the acquirer by principal industry, market capitalization, and book-to-market ratio.

The independent variable of interest, Bank Factor, is the factor score of four acquirer bank ties from principal factor analysis. The four bank ties are Bank Directors, Bank Borrowings, Group Holdings, and Bank Ownership. Bank Directors is the number of bank directors on the corporate board. Bank Borrowings is total bank borrowings scaled by total asset. Group Holdings is holdings by group firms relative to the top 10 shareholders. Bank Ownership is percentage of shares owned by banks.

The control variables are as in Table 8 and the Data Appendix.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Coefficient (p-value)	Variables	Adjusted Tobin's Q Gain to Acquirer			
	Intercept	-1.3754 (0.0291)	-0.4718 (0.0049)	-1.0821 (0.2964)	
Acquirer Bank Ties	Bank Factor	-0.2101 (0.0272)**	-0.2621 (0.0052)***	-0.2019 (0.0175)**	
Acquirer Unaffiliated Ties	Foreign Ownership			-0.0015 (0.8261)	
	Foreign Debt			0.0116 (0.8849)	
Acquirer Diversification	No of Industries			-0.0295 (0.5518)	
	Different Industry from Target			-0.1913 (0.1918)	
Other Acquirer Variables	Log of Sale (Size)	0.0595 (0.1959)		0.1165 (0.1996)	
	Market Share		-2.3983 (0.0016)***	-0.1310 (0.7843)	
	ROE			-0.0452 (0.8880)	
	Growth			-0.0038 (0.7328)	
	Capital Spending			-0.1106 (0.9732)	
	Debt Ratio	0.3642 (0.3641)		0.0503 (0.9196)	
	Beta			-0.4046 (0.3978)	
	Accounting Liquidity			-1.7650 (0.0388)**	
	Market Liquidity			0.0029 (0.9471)	
	Macro	GDP Growth	-14.3246 ($<.0001$)***	-7.6275 (0.0183)**	-5.7456 (0.1468)
Period			0.2367 (0.0796)*	0.2369 (0.5029)	
Target Variables	Rescue			0.0114 (0.9582)	
	Ownership of Target by Acquirer		0.0054 (0.0338)**	0.0055 (0.1004)	
	Ownership of Acquirer by Target			-0.1100 (0.4331)	
	Target Stock Return		0.0029 (0.0060)***	0.0031 (0.1147)	
	Log of Target Sale (Target Size)			-0.0473 (0.5029)	
	Target ROE			0.0108 (0.8793)	
	Target Growth		-0.0208 (0.0011)***	-0.0178 (0.0618)*	
	Target Capital Spending		2.5049 (0.0509)*	2.2652 (0.2913)	
	Target Debt Ratio			-0.3661 (0.3893)	
	Target Beta			0.3581 (0.3011)	
	Industry, Year fixed effects		Yes	Yes	Yes
		N	117	117	113
	Model F Value	7.65	8.82	2.70	
	Prob > Model F	<.0001	<.0001	0.0003	
	Model Adjusted R-square	0.2335	0.4191	0.2832	
	VIF	1.47	1.33	2.19	
	Prob > White's Chi-square	0.514	0.9813	0.9559	

Table 11 – Regression of Acquirers' Operating Gain

This Table shows the results of the regressions linking acquirer operating gain and bank ties.

The dependent variable is acquirer's Adjusted Operating Gain. Acquirer's operating gain is the difference in cash flow return of the surviving acquirer in Fiscal Year 2 and the sum of cash flow return of the acquirer and the portion of the target's cash flow return prorated to ownership by the acquirer in fiscal Fiscal Year -1. Cash flow return is the ratio of operating cash flow (sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses), deflated by shareholders equity. Acquirer's operating gain is adjusted for a match firm, defined as a Japanese firm matching the acquirer by principal industry, market capitalization, and book-to-market ratio.

The independent variable of interest, Bank Factor, is the factor score of four acquirer bank ties from principal factor analysis. The four bank ties are Bank Directors, Bank Borrowings, Group Holdings, and Bank Ownership. Bank Directors is the number of bank directors on the corporate board. Bank Borrowings is total bank borrowings scaled by total asset. Group Holdings is holdings by group firms relative to the top 10 shareholders. Bank Ownership is percentage of shares owned by banks.

The control variables are as in Table 8 and the Data Appendix.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Coefficient (p-value)	Variables	Adjusted Operating Gain to Acquirer		
	Intercept	0.0235 (0.9925)	0.3196 (0.6796)	-0.5247 (0.8635)
Acquirer Bank Ties	Bank Factor	-0.8288 (0.0055)***	-0.6174 (0.0338)**	-0.5254 (0.0333)**
Acquirer Unaffiliated Ties	Foreign Ownership			-0.0136 (0.4757)
	Foreign Debt			0.0714 (0.7599)
Acquirer Diversification	No of Industries			-0.2014 (0.1633)
	Different Industry from Target			-0.6363 (0.1454)
Other Acquirer Variables	Log of Sale (Size)	-0.0440 (0.8197)		0.4148 (0.1175)
	Market Share		-1.5935 (0.0083)***	-2.7704 (0.0588)*
	ROE		9.9022 (<.0001)***	9.8872 (<.0001)***
	Growth			-0.0086 (0.7952)
	Capital Spending			-18.7585 (0.0585)*
	Debt Ratio	1.4325 (0.3443)	3.2320 (0.0093)***	2.9194 (0.0536)*
	Beta		-2.2574 (0.1169)	-2.1948 (0.1246)
	Accounting Liquidity		-2.6188 (0.2497)	-4.0130 (0.1025)
	Market Liquidity			0.0076 (0.9539)
Macro	GDP Growth	21.2929 (0.0893)*		6.8064 (0.5734)
	Period			0.6006 (0.2207)
Target Variables	Rescue			-0.6895 (0.2982)
	Ownership of Target by Acquirer			0.0017 (0.8646)
	Ownership of Acquirer by Target			0.1507 (0.7296)
	Target Stock Return			0.0031 (0.5735)
	Log of Target Sale (Target Size)			-0.2278 (0.2747)
	Target ROE			-0.2567 (0.2417)
	Target Growth			-0.0124 (0.6548)
	Target Capital Spending			0.5138 (0.9363)
	Target Debt Ratio			-0.5797 (0.5707)
	Target Beta			1.8977 (0.1460)
	Industry, Year fixed effects	Yes	Yes	Yes
N	129	129	125	
Model F Value	3.05	5.23	5.23	
Prob > Model F	0.0194	0.0001	<.0001	
Model Adjusted R-square	0.0602	0.5946	0.4702	
VIF	1.50	1.56	2.23	
Prob > White's Chi-square	0.1757	0.6629	0.6729	

Table 12: Regression of Acquirers' Cumulative Abnormal Return

This Table shows the results of the regression linking acquirer CAR and bank ties.

The dependent variable is acquirer's cumulative abnormal return (CAR) over the 3 days (-1 +1) window surrounding the merger announcement using the market model and standard event methodology, with the TOPIX index as benchmarks for normal returns, and a 200-day base period beginning 220 days and ending 20 days before the announcement to estimate the parameters of the market model. All daily returns assume dividend reinvestment and are adjusted for capital structure changes including stock splits and stock dividends.

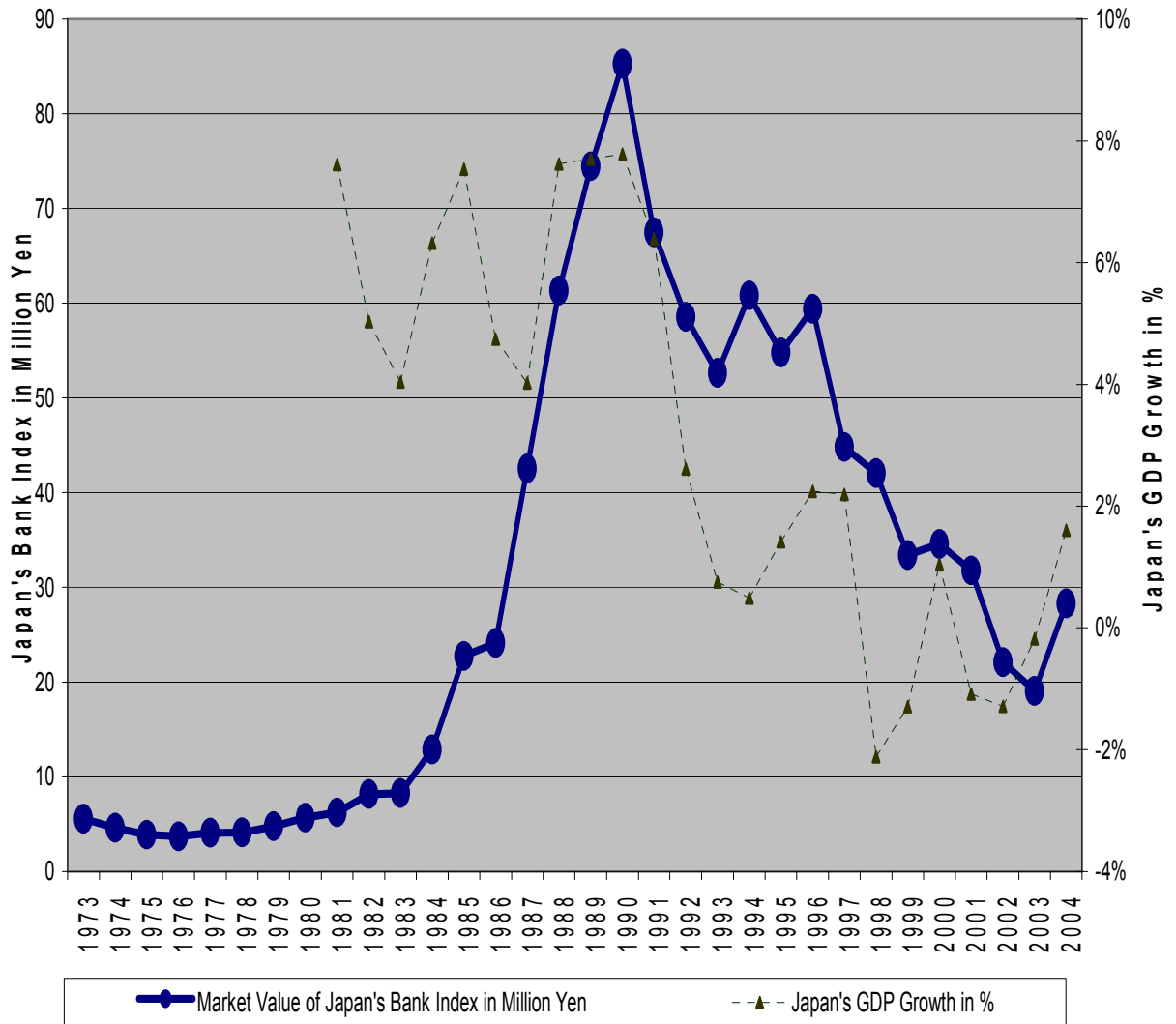
The independent variable of interest, Bank Factor, is the factor score of four acquirer bank ties from principal factor analysis. The four bank ties are Bank Directors, Bank Borrowings, Group Holdings, and Bank Ownership. Bank Directors is the number of bank directors on the corporate board. Bank Borrowings is total bank borrowings scaled by total asset. Group Holdings is holdings by group firms relative to the top 10 shareholders. Bank Ownership is percentage of shares owned by banks.

The control variables are as in Table 8 and the Data Appendix.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

Coefficient (p-value)	Variables	Acquirer CAR		
	Intercept	-1.4734 (0.8118)	-1.2873 (0.3092)	-15.8602 (0.0711)
Acquirer Bank Ties	Bank Factor	-1.2769 (0.0049)***	-0.6550 (0.1239)	-0.6141 (0.3220)
Acquirer Unaffiliated Ties	Foreign Ownership			-0.0448 (0.4811)
	Foreign Debt			-0.0324 (0.9375)
Acquirer Diversification	No of Industries			-0.5755 (0.1098)
	Different Industry from Target			0.0636 (0.9398)
Other Acquirer Variables	Log of Sale (Size)	0.1154 (0.7939)		1.2617 (0.0447)**
	Market Share			-5.1774 (0.1953)
	ROE		6.1607 (<.0001)***	8.4619 (<.0001)***
	Growth			0.0386 (0.5565)
	Capital Spending		-32.3794 (0.1166)	-41.3549 (0.1387)
	Debt Ratio	-0.1449 (0.9522)		4.6379 (0.1960)
	Beta			-5.6214 (0.1387)
	Accounting Liquidity		11.6825 (0.1120)	13.2900 (0.1146)
	Market Liquidity			-0.0016 (0.9959)
Macro	GDP Growth	-43.8605 (0.0116)**	-42.4991 (0.0605)*	-34.1938 (0.2815)
	Period		1.7774 (0.1031)	2.5671 (0.0790)*
Target Variables	Rescue			-0.8649 (0.5656)
	Ownership of Target by Acquirer			-0.0140 (0.5611)
	Ownership of Acquirer by Target			-0.3474 (0.8462)
	Target Stock Return			-0.0173 (0.1661)
	Log of Target Sale (Target Size)			0.2567 (0.6638)
	Target ROE			-0.3538 (0.3834)
	Target Growth			0.0223 (0.7275)
	Target Capital Spending			5.6897 (0.6557)
	Target Debt Ratio			-2.2194 (0.4138)
	Target Beta			4.6019 (0.2005)
	Industry, Year fixed effects	Yes	Yes	Yes
N	133	133	129	
Model F Value	6.15	11.72	6.19	
Prob > Model F	0.0002	<.0001	<.0001	
Model Adjusted R-square	0.0830	0.5946	0.4702	
VIF	1.49	1.56	2.23	
Prob > White's Chi-square	0.5338	0.6629	0.6729	

Figure 1: Japan's Bank Index
Source: Datastream



Data Appendix
Variable Definition and Measurement

This Appendix describes all variables used in this study. Unless otherwise noted, acquirer and target variables are from Fiscal Year -1, and bank variables are from Year 0 relative to the merger announcement.

Variable	Definition and Measurement
Wealth Gain	<p>Buy-and-Hold-Abnormal Return (BHAR1-BHAR9) Acquirer's BHAR measures are computed from the end of Fiscal Year -1 to the end of Fiscal Year 2 based on alternative compounding periods and benchmarks. BHAR1, BHAR2, and BHAR3 are simple returns adjusted for a match firm, a match portfolio, and the Topix index, respectively. BHAR4, BHAR5, and BHAR6 are annually compounded returns, and BHAR7, BHAR8, and BHAR9 are monthly compounded returns adjusted for the above respective benchmarks. (Source: Datastream)</p> <p>Tobin's Q Gain Acquirer's Tobin's Q is book value of debt plus market value of equity over the book value of assets. Unadjusted Tobin's Q gain is the difference in Tobin's Q of the surviving acquirer in Fiscal Year 2 and the total Tobin's Q values of both acquirer and target in Fiscal Year -1 excluding the target's portion prorated to ownership by the acquirer. Tobin's Q gain is adjusted for a match firm, and alternatively for a match portfolio. (Source: Worldscope)</p> <p>Cumulative Abnormal Return (CAR) Acquirer's CAR is cumulative abnormal return over the 3 days (-1 +1) window surrounding the merger announcement. CAR is measured using the market model and standard event methodology, with the TOPIX as benchmark for normal returns, and a 200-day base period beginning 220 days and ending 20 days before the announcement to estimate the parameters of the market model for each acquirer. Daily returns assume dividend reinvestment and are adjusted for capital structure changes such as stock splits and stock dividends. (Source: Datastream)</p> <p>Operating Gain Acquirer's operating performance is cash flow return, the ratio of operating cash flow (sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses), deflated by shareholders equity. Unadjusted Operating gain is the difference in cash flow return of the surviving acquirer in Fiscal Year 2 and the sum of cash flow return of the acquirer and the portion of the target's cash flow return prorated to ownership by the acquirer in Fiscal Year -1. Operating gain is adjusted for a match firm, and alternatively for a match portfolio. (Source: Worldscope)</p>
Bank Tie	<p>Bank ties/Bank Factor Four acquirer's bank ties are examined in aggregation. Bank Directors is the number of bank directors on the corporate board (Source: Industrial Groupings in Japan). Bank Borrowings is total bank borrowings scaled by total asset (Source: Japan Company Handbooks). Group holdings is holdings by group firms relative to the top 10 shareholders (Source: Industrial Groupings in Japan). Bank ownership is percentage of shares owned by banks (Source: Japan Company Handbooks). Bank Factor is the factor score of all bank ties from principal factor analysis.</p>

Unaffiliated Tie	Foreign Ownership	The percentage of acquirer's shares owned by foreigners. (Source: Japan Company Handbooks)
	Foreign Debt	The percentage of acquirer's borrowings from foreign banks over its total borrowings. (Source: Industrial Groupings of Japan)
Diversification	Number of Industries	The number of industries in which the acquirer operates. (Source: Worldscope)
	Different Industry from Target	A dummy variable equaling 1 if acquirer and target belong to different principal industries. (Source: Worldscope)
Other Acquirer Variables	Size	Acquirer's Sales. (Source: Worldscope)
	Market Share	Acquirer's market share, the ratio of acquirer sale over total industry sale. (Source: Worldscope)
	ROE	Acquirer's return on equity, defined as net income over equity. (Source: Worldscope)
	Growth	Acquirer's 3-year annualized growth rate in sales. (Source: Worldscope)
	Capital Spending	Acquirer's capital spending and facility investment over its total asset. (Source: Japan Company Handbooks)
	Debt Ratio	Acquirer's total debt over its total asset. (Source: Worldscope)
	Beta	Acquirer's market beta, estimated as the correlation between the acquirer's daily stock returns and those of the Topix Index using all trading days in the year ending on the merger news date. (Source: Datastream)
	Accounting Liquidity	Acquirer's cash and short-term investments over its total asset. (Source: Worldscope)
Macro	Market Liquidity	Acquirer's market liquidity is proxied by its daily trading volume, or the number of shares traded daily averaged over the year ending on the merger news date. (Source: Datastream)
	GDP Growth	Growth rate in Japan's real seasonally adjusted GDP in the acquisition year. (Source: Datastream)
Target Variables	Period	A dummy equal 1 if the announcement year is 1999 or later.
	Rescue	A dummy variable equal 1 if the merger news mentions rescue as the merger purpose. (Source: Merger news, Lexis-Nexis)
	Ownership of Target by Acquirer	The portion of target's shares owned by acquirer.
	Ownership of Acquirer by Target	The portion of acquirer's shares owned by target.

Target Stock Return	Target's percentage change in stock price in the year ending on the merger news date. (Source: Datastream)
Target Size	Target's Sales. (Source: Worldscope)
Target ROE	Target's ratio of net income over its shareholders' equity. (Source: Worldscope)
Target Growth	Target's 3-year annualized growth rate in sales. (Source: Worldscope)
Target Capital Spending	Target's capital spending and facility investment over its total asset. (Source: Japan Company Handbooks)
Target Debt Ratio	Target's total debt over its total asset. (Source: Worldscope)
Target Beta	Target's market beta, estimated as the correlation between the target's daily stock returns and those of the Topix Index using all trading days in the year ending on the merger news date. (Source: Datastream)
<hr/>	
Bank Size	Bank's market capitalization. (Source: Worldscope)
Bank Debt to Cap Ratio	Bank's total long-term debt over its market capitalization. (Source: Worldscope)
Bank Credit Rating	Bank's Moody's credit ratings immediately before the merger announcement. I convert the ratings to numbers ranging from 1 for lowest to 9.99 for highest ratings. To retain the gradation in the ratings, each Moody's letter category corresponds to 1 point, and Moody's three sub-categories correspond to a third of a point. Specifically, Aaa1 is converted to 9.99, Aaa2 to 9.66, Aaa3 to 9.33, Aa1 to 8.99, Aa2 to 8.66, and Aa3 to 8.33, A1 to 7.99, A2 to 7.66, and A3 to 7.33, Baa1 to 6.99, Baa2 to 6.66, Baa3 to 6.33, Ba1 to 5.99, Ba2 to 5.66, Ba3 to 5.33, B1 to 4.99, B2 to 4.66, B3 to 4.33, Caa1 to 3.99, Caa2 to 3.66, Caa3 to 3.33, Ca1 to 2.99, Ca2 to 2.66, Ca3 to 2.33, C1 to 1.99, C2 to 1.66, and C3 to 1.33. (Source: Moody's Investors Service)
Bank Inefficiency Ratio	Bank's ratio of interest expense and interest income. (Source: Worldscope)
Bank CAR	Bank's CAR is cumulative abnormal return over the 3 days (-1 +1) window surrounding the merger announcement. CAR is measured using the market model and standard event methodology, with the TOPIX and alternatively the Japanese Bank Index as benchmarks for normal returns, and a 200-day base period beginning 220 days and ending 20 days before the announcement to estimate the parameters of the market model for each bank. Daily returns assume dividend reinvestment and are adjusted for capital structure changes such as stock splits and stock dividends. (Source: Datastream)

Bank Variables