Banking Relationships and Conflicts of Interest: Market Reactions to Lending Decisions by Korean Banks

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This Shorter Version: January 2004

ABSTRACT

This paper examines how the forced closure of failing banks and the transfer of their loans to surviving banks affect the market value of firms borrowing from the closed banks. Surprisingly, the pre-existing banking relationships between firms and banks that acquire their loans are detrimental to the positive valuation effects of the event followed by the banks' own renewal decisions of the transferred loans. Banks have an incentive to favor pre-existing relationships to increase the value of previously extended loans, and therefore loan renewals to firms with prior relationships do not signal borrower quality to the market that is aware of the banks' conflicts of interest.

JEL Classification: G14; G21; G34
Keywords: Relationship banking; Conflicts of interest; Lending decision; Event study; Sequential equilibrium; Korea

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* I am grateful to Charles Calomiris and Richard Ericson for invaluable advice and support throughout the project. I also thank Allen Berger, Steve Bond, Mark Carey, Mark Carlson, Seth Carpenter, Jason Cummins, Gregg Forte, Penny Goldberg, Jaehoon Hahn, Nobuyuki Hanaki, Eslyn Jean-Baptiste, Charles Jones, David Robinson, David Smith, and seminar participants at the Board of Governors of the Federal Reserve System, Columbia University, and the Federal Reserve Bank of New York for their helpful comments and suggestions. I am indebted to Hyosoon Choi at the Korea Deposit Insurance Corporation for providing me with essential parts of the data. A portion of this paper was completed while I was with the Federal Reserve Board. The opinions expressed here are my own and should not be interpreted as reflecting the views of the Bank of Korea, the Federal Reserve Board, or their staffs. Address for correspondence: Wook Sohn, The Bank of Korea, Monetary Policy Department, 110 Namdaemun-Ro 3-Ga, Seoul 100-794, Korea; phone: +82-2-759-4452; fax: +82-2-759-4485; e-mail: wooksohn@bok.or.kr.

EXECUTIVE SUMMARY

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WOOK SOHN

Bank lending decisions provide valuable information about borrowing firms that is not available to the capital markets. This paper explores the impact of the bank loan signaling in the wake of a financial crisis, using the data from the Korean bank reform of 1998. The reform resulted in the forced closure of failing banks and transfer of their loans to surviving banks, which was followed by the acquiring banks' own renewal decisions. A commonly held view is that the acquiring banks' lending decisions to firms that had a prior relationship with the banks provide more informative signal because of an information advantage the banks possess.

Surprisingly, the abnormal returns of firms that had a prior relationship with the banks acquiring their loans are significantly lower than those of firms that had no prior relationship, after controlling for various firm and bank characteristics. This result suggests that banks have an incentive to favor firms with a pre-existing banking relationship at the time of loan renewal to increase the value of previously extended loans. Therefore, loan renewal does not necessarily signal borrower quality to the market that is aware of the banks' conflicts of interest.

A theoretical model shows that a positive loan announcement effect on the value of borrowers due to the standard information advantage can be more than offset by the bank's conflict of interest. A pre-existing relationship is more likely to be detrimental to the market's valuation when the size of the pre-existing loans is large. Consistent with this argument, the negative valuation effect of a pre-existing relationship increases with the size of pre-existing loans from the banks with conflicts of interest.

A direct investigation of the banks' lending decisions further supports the banks' conflicts of interest that come with banking relationships. Banks tend to maintain the lending relationships with the borrowing firms that had a pre-existing relationship. However, the loan growth rates of those firms are significantly lower than those of the firms that had no prior relationship but whose relationship established from the loan transfers is retained.

This study sheds light on a new perspective on the fundamentals of the value of bank-borrower relationships – conflicts of interest in banking relationships: A pre-existing banking relationship with a bank can be detrimental to the valuation effect of a bank loan consolidation due to the bank's conflict of interest. This result suggests that the intensity of a firm's pre-existing relationship with an acquiring bank is important in understanding how successful a bank consolidation is in speeding up the resolution of financially distressed borrowing firms.

1. Introduction

Banks produce valuable information about borrowers or their investment projects that is not available to other equity investors (Fama, 1985).[1] Therefore, a bank's announcements about loan agreements, renewals, and changes in contractual terms would provide additional information to the capital markets about the value of borrowing firms. Furthermore, the borrowing firms obtain a variety of relationship-specific advantages from proprietary information held by the banks. Thus, news about bank sustainability should affect the market value of borrowing firms.

This paper explores the impact of the Korean bank reform of 1998 – the forced exit of failing banks and transfer of their loans to healthier banks – followed by the acquiring banks' own renewal decisions on the stock market value of firms borrowing from the closed banks. I specifically examine (1) whether the loss of the banking relationship with the closed banks was more than offset by the gain from the improvement in quality of lending banks and (2) how firms' pre-existing relationships with the acquiring banks affected the market's valuation of the firms. The salient features of the sample – which make it possible to examine the two questions – are that each bank had to acquire the loan portfolio in its entirety from a failed bank, and that the pre-existing relationships between the borrowers of the acquired loans and the acquiring bank are identified. To the best of my knowledge, this is the first paper that analyzes pre-existing relationships of borrowers and lenders in depth over the course of bank acquisition.

[1] Information produced efficiently over time through lending relationships is derived from informal provision of insider information, subjective judgments on management abilities, accumulation of repayment history, and other private information associated with the monitoring of borrowing firms. Specifically, in the context of Myers and Majluf (1984), loans by banks are similar to internally generated funds (financial slack).

The destruction of the valuable banking relationships resulting from bank insolvency adversely affects the value of its borrowing firms, especially in a bank-centered financial system. In this regard, the exits of failing banks should pull down the stock returns of the banks' client firms. Surprisingly, the average cumulative abnormal returns (CARs) estimated using the standard market model turn positive during the two months after the event, a period that allows the market to observe the acquiring banks' loan renewal decisions following the involuntary loan acquisitions. The positive CARs suggest that the loan transfers generate gains that do more than offset any losses from the termination of the relationships with the closed banks. This result brings our attention to the importance of the specific mechanisms employed to transfer borrowers from failed banks without harming their value.

Furthermore, banks with a prior relationship with a firm whose loan was transferred to them have superior information for their own loan renewal decisions – the standard informational advantage of the banking relationship. Thus, the market's response to the event might be expected to be favorable to firms that had a prior relationship, because such loan renewals should be more informed decisions. It is puzzling, however, that the CARs of firms that had no prior relationship with the banks that had to acquire their loans are significantly lower than those of firms that had a prior relationship with the banks, after controlling for the extent of firm's exposure to the event, various firm characteristics, and bank dummy variables.

Banks have an incentive to favor pre-existing bank relationships to increase the odds of recovering previously extended loans (the soft-budget constraint) at the cost of degrading their reputation afterward. The market is aware of bank's conflict of interest, fully recognizing that a bank with a poor reputation can take the risk of extending loans to bad firms; therefore, the loan renewal may not signal good borrower quality to the market. In contrast, the market does place

credence in the renewal of loans to firms without a prior relationship with the banks acquiring their loans so long as the market believes that the bank screens firms to identify good firms. Hence, the renewal conveys a clear positive signal to the market.

A theoretical model, in fact, shows that a positive loan announcement effect on the value of borrowers due to the standard information advantage can be more than offset by the bank's conflict of interest. The effect of a pre-existing relationship is more likely to be negative when the size of the pre-existing loans is large and the screening costs of firms are low. Consistent with these arguments, the negative valuation effect of a pre-existing relationship increases with the size of pre-existing loans from the banks with conflicts of interest, and the screening costs are presumably low as the firms in the sample are all publicly traded firms.

I finally investigate the banks' lending decisions directly using the firm-bank level sample to see if the lending decisions are consistent with the stock market's expectations. I find that banks tend to maintain the lending relationships with the borrowing firms that had a pre-existing relationship, and however that the loan growth rates of those firms are significantly lower than those of the firms that had no prior relationship and whose relationship that came from the loan transfers is retained. These results suggest that banks have conflicts of interest that come with the pre-existing lending relationships.

This study sheds light on a new perspective on the fundamentals of the value of bank-borrower relationships – conflicts of interest in banking relationships: A pre-existing banking relationship with a bank can be detrimental to the valuation effect of a bank loan consolidation due to the bank's conflict of interest. This result suggests that the intensity of a firm's pre-existing relationship with an acquiring bank is important in understanding how successful a bank consolidation is in speeding up the resolution of financially distressed borrowing firms.

A number of articles examine the behavior of the publicly traded borrowing firms' stock returns in response to bank-related events – bank loan agreements, bank distress news, and bank consolidations – to measure the value of bank-borrower relationships to the borrower. First, several papers analyze the effects of bank loan announcements to argue for the existence of the value of relationship banking arising from the uniqueness of bank loans. James (1987) finds a positive stock price response to the announcement of new bank loan agreements that is larger than that associated with announcements of public debt offerings. Billett, Flannery, and Garfinkel (1995) refine the result by showing that higher-quality lenders' loan announcements are associated with higher abnormal stock returns of their client firms. Lummer and McConnell (1989) distinguish new bank loans and loan renewal announcements to show that loan renewal announcements exhibit a significant positive and stronger return than new loan announcements.

The second branch of the literature studies the effect of changes in bank quality on client firms' stock returns. Its main result is that a decrease in bank quality or increase in probability of bank's insolvency reduces the market value of client firms due to possible destruction of relationship-specific advantage and information. Slovin, Sushka, and Polonchek (1993) investigate news about a bank's financial distress followed by a regulatory authority's rescue package. Recently, Bae, Kang, and Lim (2002) use bank's bond downgrading in Korea, while Yamori and Murakami (1999) study a bank's insolvency in Japan.[2] These studies interpret a decrease in bank quality simply as an increase in the probability of termination of bank-firm relationships and do not explicitly consider any resolutions following the bank insolvency, which have significant bearing on the overall impact on the values of client firms.

[2] Unlike these studies, Ongena, Smith, and Michalsen (2003) report that the impact of bank distress on client firms is insignificant in Norway.

Third, studies on the market valuation effects of bank mergers and acquisitions (M&A) on client firms are also closely related to this paper. Karceski, Ongena, and Smith (2002) find that when both the acquiring and target banks involved in acquisitions are relatively small, small borrowers at target banks appear to benefit most from the consolidation, although not to a statistically significant degree. Djankov, Jindra, and Klapper (1999) argue that investors respond differently to changes in bank ownership: average abnormal return is negative for bank closure and domestic merger, and positive for nationalization and foreign sales. Unlike these studies, this paper explicitly incorporates the initial conditions of firms prior to consolidations such as the intensity of pre-existing lending relationship with acquiring banks and various firm characteristics. Furthermore, this paper studies a case of purchase and assumption (P&A). Under P&A, only assets and liabilities of a liquidated bank are transferred to an acquiring bank, whereas in M&A, an acquired firm's loan officers and other employees, as well as assets and liabilities, are transferred to an acquiring bank. This difference has implications for the transfer of private information about borrowing firms in the context of Calomiris and Karceski (1998), who argue that successful relationship banking depends on the careful management of the bank's human resources.

This paper is organized as follows. Section 2 describes the event, sample, and data. In Section 3, I conduct the estimation of CARs and various cross-sectional regressions. In Section 4, I briefly illustrate a theoretical model to explain the conflict of interest. In Section 5, I directly investigate bank's loan renewal decisions. Section 6 concludes.

2. Event, Sample, and Data

2.1. Event

In November 1997, Korea encountered a foreign exchange crisis that was ignited by capital outflows: The crisis revealed the structural problems of the economy (see Fig. 1 for the stock price indexes and economic indicators during 1997-1998). On December 4, 1997, the Korean government announced the blueprint of a financial-sector restructuring plan as one of the components of structural reform supported by a stand-by arrangement with the IMF. The main purpose of the plan was to address the problem of the banking system's large amount of bad loans and its weak capital structure. As a part of the plan, exit strategies had been developed for non-viable commercial banks.

The Financial Supervisory Service (FSS) announced on June 29, 1998, that five banks with negative net worth were to be closed, and their assets and liabilities, excluding nonperforming loans, were to be transferred to five financially sound and bigger banks in the form of a purchase and assumption (P&A) agreement.[3] The five banks that had to acquire the assets and liabilities of the closed banks were selected by the regulatory authority, which took the financial health and nationwide business networks of the acquiring banks into account. The bundle of assets and liabilities of each closed bank was transferred in its entirety to each acquiring bank: DongNam to Housing, Kyongki to KorAm, ChungChong to Hana, DaeDong to Kookmin, and DongHwa to Shinhan, respectively.[4] As a result of this arrangement, the total

[3] The nonperforming loans with a face value of 4.6 trillion won – 64.3% of total loans made by the closed banks at the time of their closures – were purchased by the Korea Asset Management Corporation (KAMCO) at 80% discount on average. The resultant gap between assets and liabilities (deposits less loans) in a closed bank was filled by the capital injection of the Korea Deposit Insurance Corporation (KDIC) at the time of transfer.

[4] The five acquiring banks' target clientele, locational strategies, and branching networks were the main factors used in pairing them with the five closed banks.

number of commercial banks in Korea dropped from 26 to 21. See Fig. 2 for a simple diagram of the asset transfers.

This event offers a natural experimental setting to study the importance of bank quality and bank's conflict of interest in banking relationships.[5] First, Korea has a bank-centered financial system. During 1990-1998, loans, stocks, and bonds represented 62.4%, 17.1%, and 20.5% of the external funds raised by Korean firms, respectively.[6] Therefore, the effects of the bank-related event on the market value of firms borrowing from the bank are likely to be substantial because such firms were so heavily dependent on bank financing.

Second, the event is purely exogenous to the banks and their client firms in that they did not participate in the decisions regarding the selection and matching of the failed and acquiring banks. Moreover, the loan portfolio of each closed bank was transferred in its entirety to each acquiring bank. Therefore, the involuntary characteristic of the event rules out the self-selection or endogeneity problem in the analysis of the effects on a firm when its lender changes.

Third, the distinction between the closed banks and the acquiring banks was so evident that a change in lender identity had potentially strong impacts on the firm value. The BIS capital adequacy ratios of the five closed banks ranged from 2.98% to 7.05%, while those of the five acquiring banks ranged from 8.57% to 10.29% as of the end of 1997 (Table 1, Panel A). The average percentage of non-performing loans of the closed banks is 9.08%, while that of the acquiring banks is 3.01% (Panel B). In addition to their financial soundness, they also differ

[5] This event does not overlap with recent studies about bank distress in Korea. Bae, Kang, and Lim (2002) identify only one main creditor bank of a publicly traded firm, which results in the exclusion of the five closed banks from their sample because none of the banks was the main creditor bank of a firm. Djankov, Jindra, and Klapper (1999) do not include this event in their study of the effect of bank insolvency on borrowing firms.

[6] The data are from Bae, Kang, and Lim (2002). In the U.S., loans represented only 9.7% of the external funds in 1997; In Japan, the ratios were 27.3% for large firms and 42.2% for small firms, respectively.

in market share – the total loan-market share of the closed banks is 6.95%, while that of the acquiring banks is 30.96% (Panel C).

Fourth, under the purchase and assumption (P&A) arrangement, no personnel were transferred from the failed banks to the acquiring banks.[7] This differs from M&A situations, in which most loan officers in an acquired bank are typically retained by an acquiring bank to maintain customer relationships, so that valuable information about the acquired bank's borrowers held by loan officers may be passed on to the acquiring bank.

2.2. Sample and data

I first identify the firms that had loan balances of more than 500 million won (equivalent to about $0.4 million) with at least one of the five closed banks as of June 28, 1998, one day before the bank closures.[8] Then, I identify 596 firms traded on the Korea Stock Exchange (KSE) as of the first trading day of 1997, excluding financial firms and firms that were delisted during 1997-2000. Because the goal of this paper is to assess valuation effects of the event that are due to the factors external to client firms, the exclusion of the insolvent or near-insolvent firms can be justified to isolate the impact of the event on solvent clients. In other words, the delisted firms could have caused the distress of the closed banks, and thus the exclusion clarifies the direction of analysis – effects of bank closure on client firms, not the other way around. Furthermore, and more importantly, the loans of delisted firms on the verge of

[7] The number of employees of the five acquiring banks remained unchanged (declined only 0.3%) during 1998. The Korean government chose to employ the hard-to-implement P&A arrangement in the belief that it would generate an efficient and competitive banking industry.

[8] The total number of firms is 1,857, and the data are from the Korea Deposit Insurance Corporation (KDIC).

insolvency should not be transferred to the healthy banks, because the loans were very likely to have been already classified as nonperforming loans. The final sample that satisfies the above two selection criteria consists of 118 firms, or about 20% of publicly traded firms.[9]

The most salient feature of the data set is that the firms' pre-existing relationships with the acquiring banks are identified. Some firms had borrowing relationships with more than one closed bank and consequently their loans were transferred to more than one acquiring bank. I therefore construct a variable indicating the intensity of prior lending relationships with acquiring banks as the number of the acquiring banks *with which a firm had prior relationships* as a fraction of the number of the acquiring banks (*Prior Relationship*). For instance, if a firm had a prior relationship with one of the two acquiring banks to which its loans were transferred, the value of *Prior Relationship* is 0.5. Another variable is used to measure the strength of prior lending relationships with the acquiring banks in terms of loan amount (*Loan_Acquiring/ Loan_All*).

Other explanatory variables analyzed in this study are classified into several categories (see Table 2). I consider whether a firm had a locational advantage with a closed bank (*Locational Advantage*) and whether an acquiring bank is a main creditor bank (*Main Creditor Bank)* of a firm.[10] Three event exposure variables are also defined: *#Closed/#Lending Banks*, *Loan_Closed/ Loan_All*, and *Collateralized Loan*. They each indicate an aspect of a firm's dependence on the closed banks prior to the event: *#Closed/#Lending Banks* indicates the

[9] By the exclusion of delisted firms, 22 firms are eliminated from the final sample. The reasons for delisting were acquisition (10), bankruptcy (8), impairment of the whole paid-in capital (1), foreign sale (1), and others (2). This suggests that those firms experienced serious financial distress that might have contributed to the closures of their lending banks.

[10] Since all the acquiring banks are nationwide banks, there does not exist a locational advantage from the acquiring banks. Also, since all the closed banks are smaller banks, none of them is a main creditor bank of a sample firm.

number of closed banks with which firms had lending relationships as a fraction of the total number of lending banks; *Loan_Closed/Loan_All*, the amount of loans granted by closed banks as a fraction of that granted by all lending banks; *Collateralized Loan*, the amount of collateralized loans as a fraction of the total amount of loans granted by closed banks.

One must control for firm characteristics to avoid the possibility that valuation effects differ only because different types of lenders tend to deal with different borrower classes. Firm age measures a firm's reputation, familiarity, or sustainability. Firm size also captures various aspects: the familiarity of a firm to banks and investors, the availability of public information, and possibly the degree of negotiation power over banks during loan contracting. Other firm-specific characteristics also considered. Sales growth reflects the strength of a firm's cash flow; profit indicates performance of firms; financing proportions from bond and equity markets are suggestive of the availability of alternative sources of funding.

I also employ a *Chaebol* dummy variable to measure the possibility of an extra financing source from affiliated firms or the strength of political power as a means of escaping from financial distress. Furthermore, in order to control for the difference in firm's ownership structure, the proportion of the largest, minority, and foreign shareholders are also included in the regressions.

Finally, the five bank pairs differ in financial health, market share, main business location, target customers, institutional charters, and exposure to further bank merger events. In addition, each acquiring bank differs in terms of the extent of overall loan contraction, changes in the number of employees, and their own stock market valuations. These various idiosyncratic aspects of the banks possibly affect the market reactions to the event. The most appropriate way

to control for possible bank-specific effects is to add the indicators for the five closed-bank/acquiring-bank pairs in the regressions.

Loan and collateral data are collected from the Corporate Loan Information database of the Korea Federation of Banks. The firm characteristics and ownership variables as of the end of 1997 are obtained through the Financial Analysis System of the Korea Information Service (KIS) and Listed Corporation Analysis of National Information & Credit Evaluation, Inc (NICE). Information on banks' financial situation and operations is published by the FSS. Finally, daily stock returns for the estimation of abnormal returns are obtained from the Stock Market Analysis Tool of the KIS; daily industry indexes are downloaded from the web site of the Korea Stock Exchange (www.kse.or.kr).

2.3. Summary statistics

The mean of *Prior Relationship* is 0.51, a value indicating that a half of firms borrowing from the closed banks also had relationships with the acquiring banks as well. (Table 3). The means of *Locational Advantage* and *Main Creditor Bank* are 0.20 and 0.09, respectively, values suggesting that only a small proportion of sample firms had benefits from closer relationships with their regional banks and main creditor banks. The number of closed banks with which an average firm had borrowing relationships is 1.6, and the ratio of the closed banks to the total number of lending banks is 18.3%, which implies that the average number of lending banks for a sample firm is 8.7. The loan proportion with the closed banks is 7.4%, of which 22.9% of the loans were covered by collateral.

On average, firms financed 30.0% of total funds from bond markets, 15.5% from equity markets, and 54.5% from loan markets, which confirms that a typical Korean firm, even a publicly traded one, relies heavily on loan financing. The sample firms differ a great deal, especially in size and age. About one-fourth of firms are among the firms associated with the chaebol. Because the closed bank of *Bank 5* pair is the only nationwide bank, 60% of sample firms had borrowing relationships with the bank. Since some firms had multiple relationships with the five closed banks, the sum of *Bank 1* through *Bank 5* is greater than one.

Of 118 firms, 45 firms had prior relationships with all of the acquiring banks to which their loans were transferred, 45 firms had no prior relationships with their acquiring banks, and 28 firms had prior relationships with some of their acquiring banks. In general, firms that had no previous relationships with the acquiring banks have greater *Locational Advantage, #Closed/#Lending Banks*, *Equity Finance,* and *Bank 1*, and lower *Loan_Acquiring/ Loan_All*, *Log_Size*, *Chaebol, Foreign Shareholders*, and *Bank 2*.

3. Empirical Evidence from Stock Market Valuation

3.1. Methodology

I estimate daily abnormal returns of individual stocks with the standard market model. Then, I calculate multiple-day or cumulative abnormal returns (CARs) by summing the abnormal returns for an event period. The CARs are averaged over all firms within the sample to produce a portfolio average CAR.

To prevent the overall financial crisis from influencing parameter estimates of normal returns, I set the estimation period as a 262-trading-day normal period from the first trading day of 1997 (t = -436) to one day before the Korean government sought a rescue package from the IMF (November 22, t = -175). The decision to close the five banks was made through a long process dating back to December 4, 1997 (t = -164). At that time, a broad plan of financial sector reform was announced, which was the first substantive action taken by the government for banking sector restructuring. The details about the bank reform were gradually revealed, but it was not until an ad hoc committee for the evaluation of bank viability was formed on June 20, 1998 (t = -7) that an extreme measure such as bank closure became probable.

The event periods, during which abnormal returns are calculated, consist of (1) an one-week pre-event (run-up) period, (2) the event period, and (3) a two-month post-event period. The run-up period, t = -7 to -2, begins with the day when the Bank Management Evaluation Committee was formed. The event period, t = -1 to +1, is the three days centered on the event day, June 29, when the closed and acquiring banks were announced. The post-event period, t = +2 to +51, ends on August 29, two months after the event day.[11] This post-event period may capture investors' revised expectations of the effects of the event on the borrowing firms, covering the period in which firms attempted at least one renewal of short-term debt.[12] A detailed chronicle of the event is described in the Appendix.

[11] Using a longer event period requires caution because the impact of an event might be contaminated by other confounding corporate events or macroeconomic shocks afterward. I check news about the sample firms as well as bank- and policy-related announcements after the bank closures, using the *Korea Economic Daily*, to find no significant news regarding the sample firms, influential policy changes, or macroeconomic shocks during the two months from the event day.

[12] Djankov, Jindra, and Klapper (1999) take a longer event period t =(0,+50), and James and Wier (1987) and Becher (2000) use a relatively long 30-day and 35-day event period, respectively, to analyze the impacts of bank mergers. Short-term loans often have a maturity of three months in Korea. The reason that I take a two-month, rather than three-month, post-event period is to avoid contamination by merger announcements by two acquiring banks.

3.2. Significance of the event

Although the bank closures studied here surprised the markets, some may wonder whether the bank closures are a significant event in view of the fact that the five closed banks are relatively small and regional and that the sample firms are all relatively large public firms. One way to evaluate the significance of the event is to calculate abnormal returns for firms that had *no relationships* with any of the five closed banks, and to compare them with those for the sample firms exposed to the event.

I divide the out-of-sample firms into two groups due to the following reason. To identify nonviable banks, twelve banks that did not meet the minimum capital ratio of 8% at the end of 1997 were ordered on February 27, 1998, to submit a recapitalization plan before the bank closure decision. The plans of the remaining seven banks were approved on the condition that the banks take remedial action. Therefore, the market value of the firms that had lending relationships with these seven surviving banks should be affected differently from those with the five closed banks by the announcement of the bank closures. However, the "too big to fail" expectation was wide-spread, implying that the market ignored the possibility of four of the seven – big, nationwide banks (ChoHung, Commercial, Hanil, and Exchange) – being forced to close. I thus consider only the three smaller of the seven surviving banks (Peace, Kangwon, and Choongbuk), which are regional and similar in size to the five closed banks as a reference portfolio.[13]

[13] At the end of 1997, the average share in loan markets of the three smaller surviving banks was 0.91%, an amount similar to that of the five closed banks (1.39%). The average market share was 9.32% for the four larger surviving banks, an amount similar to that of the five acquiring banks (6.19%).

I assembled portfolios of three sets of firms: (1) *Closed*: 118 firms that had lending relationships with at least one of the five closed banks; (2) *Surviving*: 42 firms that had lending relationships with at least one of the three surviving smaller banks, but not with any of the five closed banks; (3) *Others*: 436 firms that had lending relationships neither with the five closed banks nor with the three surviving banks.

Fig. 3 shows that the CARs of the three portfolios begin to diverge from the others on the day when the bank appraisal committee was formed (t = -7): The portfolio of firms with the surviving banks shows positive abnormal returns, while that with the closed banks displays negative abnormal returns.[14] The paths of the CARs diverge more during the two weeks centered on the event day – the CAR of the portfolio *Closed* is -20.56%, while that of *Surviving* is 10.67%. This result suggests that the continuity of banking relationships certainly have a positive effect on the firms borrowing from the surviving banks immediately following the event. It confirms that the event drew the close attention of the market and the market actually responded to the event.

3.3. Valuation effects

In this section, I analyze the CARs of the portfolio *Closed* in detail. This event – the destruction of valuable relationships with closed banks and the reallocation of the firms' loans from the closed banks to healthy banks – has countervailing effects on borrowers. Financial market efficiency implies that firm value should reflect the market's expectation of any losses or gains borrowers incur. Therefore, if the value of a bank relationship comes mainly from

[14] Since the quality of the 12 banks was known to investors, they were able to expect which bank had a greater probability of liquidation.

informational advantages arising from long-lasting bank-firm interactions, the event would have an overall negative impact on the value of the borrowing firms. On the other hand, if the value of bank relationship comes more likely from bank durability or quality, the event would have positive valuation effects.

Bank closures have an immediate and negative effect on the value of borrowing firms (Table 4, Panel A)[15]. For the three-day period around the announcement of the bank closures, t = -1 to +1, the mean CAR is -4.85% and significant at the 5% level. The mean two-week CAR (-7,+5) is even more negative (-19.45%), and 81.4% of firms have negative CARs. The results imply that a bank's closure and the consequent loss of long-lasting relationships are potentially harmful to the bank's client firms.

However, the market's response changes its direction beginning with the second week after the announcement. The mean CAR for the period up to two months after the event, t = +6 to +51, turns significantly positive, to 22.39%. During the gradual rebounding period, investors observe the bank's renewals of short-term loans and adjust their expectations, taking into account the positive effect of the event such as stability of loan provision, a larger pool of loanable funds, more efficient monitoring, and other future benefits to be expected from the healthy and bigger banks.

Overall two-month CAR including the event period, t = -1 to +51, is positive (8.73%).[16] This result suggests that the value of bank relationships does not derive from the information

[15] The results using the standard market model remain qualitatively unchanged when using a different pre-event estimation window, market-adjusted returns on buy-and-hold investment, and industry- and credit rating-referenced portfolios. The results are available from the author upon request.

[16] This result is not statistically significant because the t-statistic is calculated taking into account any cross-sectional dependence in abnormal returns caused by the clustering with respect to calendar time. In fact, a t-statistic assuming cross-sectional independence of abnormal returns rejects the null hypothesis of zero CARs for this event period at the 10% level.

generated by long-term relationships but rather from bank quality. Therefore, the termination of relationships due to a bank's insolvency may not necessarily reduce the market value of firms borrowing from the bank.[17] Depending on the specific mechanisms employed to replace failed banks, cutting off the relationship with a weak bank can raise the value of its client firms.

CARs were calculated in Panel B for three groups of firms: firms that had a prior borrowing relationship with *all* of the acquiring banks to which their loans were transferred (*Prior Relationship* = 1), firms that had a prior relationship with *none* of their acquiring banks (*Prior Relationship* = 0), and firms that had a prior relationship with *some* of their acquiring banks (0 <*Prior Relationship*< 1). During the longer period, t = -1 to +51, firms with no prior relationship had substantially greater positive valuation effects (13.26%) relative to firms with a prior relationship (2.62%).

3.4. Cross-sectional regressions

To capture the possible association between the magnitude of CARs and characteristics specific to firms, unaggregated individual firm's CARs are regressed against a variety of possible determinants of CARs such as banking relationship variables, proxies for event exposure, firm-specific characteristics, firm ownership variables, and bank dummies. I conduct OLS regressions for the three-day event period, t = -1 to +1, and the two-month event period, t = -1 to +51, to see if the market's immediate reaction is revised during a longer period. The t-

[17] This result could derive partly from the past loan granting practice based on personal connections, or government guidance and implicit government guarantee, rather than investment prospects. Therefore, the continuation of bank management may not be important for the firms.

statistic for statistical inferences is calculated using the heteroskedasticity-consistent White standard errors.

To account for the type of bank-firm relationships and firm characteristics, I regress CAR (-1,+1) and CAR (-1,+51) against relationship variables such as *Prior Relationship, Locational Advantage,* and *Main Creditor Bank*, and various firm-specific variables such as *Log_Age, Log_Size, Sales Growth, Profit/Interest, Bond Finance, Equity Finance,* and *Chaebol* (Table 5, specification 1). Given different extents of exposure to the event in terms of the number of closed banks and the amount of loan and collateral transferred to acquiring banks, I consider the variables *#Closed/#Lending Banks, Loan_Closed/Loan_All,* and *Collateralized Loan*. I also test whether the different closed and acquiring bank pairs have different effects on the value of firms and whether the ownership structure of a firm plays a role in determining the variation of CARs of each firm (specification 2).

In both specifications, estimated coefficients for the three-day period, t = -1 to +1, on *Prior Relationship* are positive, but statistically insignificant, so the evidence for the market's concern about the problem of asymmetric information is weak. The insignificance of the coefficients is not confined to *Prior Relationship* – almost all variables except *Main Creditor Bank* and *Bank 2* in the all specifications are not significant. It is interesting to see that the intercept term is significantly negative (-0.35 to -0.38). This suggests that when the market was hit by the event which was rather political, investors were in a panic and were not able to incorporate bank-borrower relationship and various firm characteristics in their valuation of firms.[18]

[18] The selection of regional, smaller banks for closure out of the policy-maker's considerations of minimizing shocks to financial markets suggests that the event had a political aspect. The Korean government hoped to signal to the rest of the banks and other financial institutions that any institutions with poor performance and financial health can be shut down, and to lead to voluntary bank mergers and acquisitions.

However, when we allow sufficient time (two months) for the market to observe and analyze a bank's own loan renewal decisions, the coefficients of several variables in the regressions of CAR (-1,+51) turn significant. Especially surprising is the fact that *Prior Relationship* has a significantly negative coefficient of -0.14 to -0.17 (t = -1.88 to -2.01). The specifications have a relatively high R^2 of 27.7% to 33.3%, which indicates that a high proportion of the variation in CARs is explained by the regressors.

I interact *Prior Relationship* with *Loan Finance* to see if the negative effect of prior relationships depends on the loan size of a firm (Table 6). This interaction variable measures the differential effect of prior relationships on a firm's dependence on the loan market in its financing. The estimate of the interaction term *Prior Relationship* Loan Finance* is -1.15 and significant at the 1% level (t = -2.70), which suggests that the negative impact of *Prior Relationship* is mainly due to firms that rely heavily on loan financing. In other words, the size of loan financing exacerbates the negative effect of prior relationships on firm valuation.

To see if the results are sensitive to a few gross outliers, I also conduct a robust regression with an initial screening based on Cook's distance greater than 1 (specification 2). It shows no significant changes in results. In specification 3, I replace the variable *Prior Relationship* with the intensity of the prior relationship in terms of the amount of loans granted by the acquiring banks (*Loan_Acquiring/Loan_All*). The signs of the coefficients remain unchanged but they are statistically insignificant because, unlike the dummy for indicating whether a firm had a relationship with an acquiring bank, the information about loan amount is unavailable to public.

Both types of firms experience the destruction of valuable relationships with, and private information held by, the closed lending banks. However, Type N firms face potentially severe information asymmetry when renewing their loans with the acquiring banks, while Type P

firms may not. Then, what makes the market think that Type N firms should have more incremental value than Type P firms during the longer post-event period?

A conflict of interest arising from the soft-budget constraint problem is central to investor concerns.[19] An acquiring bank that had prior debt claims has private information gained through its lending activities to Type P firms and can make more informed decisions on loan renewals (informational advantage). On the other hand, the bank also has an incentive to misuse the private information. By announcing renewals of loans that the bank privately knows to be potentially bad (the soft-budget constraint), the bank can protect its own interest, that is, it can help the firm finance from the equity market directly or other lenders indirectly to avoid writing off pre-existing outstanding loans. The market is well aware of a bank's conflict of interest, fully recognizing that a bank can take the excessive risk of renewing loans of bad firms. Accordingly, the market does not place credence in the signals of loan renewals to Type P firms. What underlies this market reaction is that the government may bear the costs of such risk under the "too-big-to-fail" rationale and full deposit insurance.

In contrast, the market believes that Type N firms whose loans are renewed with a totally new acquiring bank are good firms, although a possibility of misrepresentation exists because of the lack of information if the bank avoids the cost of investigating the firms. Hence, the renewal conveys a clear positive signal to the market.

The above interpretation is based on the presumption that all sample firms get their loans renewed. This presumption is reasonable because only performing loans were in the pool of banks' loan renewal decisions and the sample firms continued their businesses after the event.

[19] Of course, this is not an only explanation for the results. It is found that other possible explanations related to firm's quality effects, loan portfolio diversification, multiple bank relationship, and duration of relationship are in fact not the case. Details of the discussions are available from the author upon request.

However, the interpretation is problematic if more Type N firm's loans get renewed than Type P firm's loans, because the higher abnormal returns of Type N firms then should simply come from the higher probability of loan renewals. Unfortunately, the banks' loan renewal announcements are not directly observable.[20]

However, one can use a proxy for the banks' loan renewal announcements: a dummy variable, *Continuation*, indicating whether the firms continued their relationships with the acquiring banks, which is available only as of the end of year.[21] To examine the possible sample selection (or loan renewal) bias using this variable, I conduct the Heckman correction procedure. I first conduct the probit estimation of *Continuation* dummy variable on the market value of the borrowing firms and other controlling variables. Then, using the inverse Mills ratio computed from the probit estimation to control for any selection bias, OLS regressions of CAR (1,+51) are conducted on the selected sample firms that continue their relationships with the acquiring banks after the event (*Continuation* =1). In specification 1-3 of Table 7, various exclusion restrictions are employed, which takes into account that some variables may be

[20] Annual corporate reports show significant loans outstanding and the name of the lenders but not the date of the original loan agreement or renewal. A Korean daily financial newspaper, the *Korea Economic Daily*, also does not report the loan renewal announcements of individual firms. However, the loan renewal information of individual firms would have been made available to the stock market either through market analysts or corporate and bank staffs.

[21] This variable does not perfectly proxy the firms that are renewed because we still do not know whether the discontinuation of the banking relationships takes place during the two month post-event period (the event window where the CARs are calculated) or between thereafter and the end of 1998. If the termination of relationships takes places during the two-month post-event period, the use of the subsample of firms whose relationships are continued is more appropriate. If it takes place thereafter and before the end of six-month post-event period (the end of 1998), the use of the full sample is more appropriate. I compare the results of both cases in Table 7.

critical in an acquiring bank's decision on whether to continue lending relationships with a firm, but not in valuing the firm in equity markets.[22]

Both the Heckman correction procedure for the subsample of loan continuation and the full sample OLS without the inverse Mills ratio (last column) show positive coefficients of *Prior Relationship* and negative coefficients of *Prior Relationship*Loan Finance* (Table 7). Moreover, the difference between them is marginal, and the inverse Mills ratio term is statistically insignificant. These results confirm that the main finding – the significantly negative effect of *Prior Relationship* on valuation of firms with heavy loan financing – does not come from the different probability of a firm's loan renewal.

4. A Theoretical Model of Loan Signaling

I demonstrate in this section a formal model for analyzing a bank's lending decision and its subsequent loan announcement effect on the value of a borrowing firm. The model is based on a specific situation where the bank acquires a loan portfolio in its entirety from another bank, and where the acquiring bank has to determine whether to renew the acquired loans.[23] In the model, the bank maximizes its sequential profits which depend on its loan signals to the equity market, knowing the market's valuation of the signals. The equilibrium behavior of the bank is examined using the concept of sequential equilibrium.

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[22] The probit estimation of the continuation of banking relationships contains all variables, though not reported here, whereas specifications of Table 7 contains only a subset of the variables. If we include all variables used in the probit estimation, the estimates of the OLS for the selected sample become very imprecise because of the severe multicollinearity that comes from adding the inverse Mills ratio to the regressors. See Wooldridge (2001), p. 565.

[23] However, the results and their implications of the model can be applied to a more general setting where the loan announcement effect on the values of the borrowers is different depending on whether the borrowers have a substantial amount of prior loan balances before the loan announcement.

There are two types of the borrowers: ones with prior lending relationships with the acquiring bank, and ones with no such relationship. The bank's loan renewal announcement may have positive impact on the stock prices of the borrowers with prior relationships due to the lender's informational advantage. The model, however, demonstrates that such positive impact can be more than offset by the conflict of interest that comes with that prior relationship. The probability of the acquiring bank holding a bad loan portfolio is large, or the bank's ex ante reputation on its asset quality is poor, the bank is more likely to favor a pre-existing relationship when the borrower's prospects are poor. Therefore, renewals by the bank with a prior relationship can result in lower announcement effect. Furthermore, the effect is more likely to be negative when the size of the pre-existing loans is large.

The model has three dates. At $t = 0$, the loans of a closed bank are transferred to an acquiring bank. The transferred loan portfolio, L, is of two maturities, $t = 1$ and $t = 2$. Accordingly, the acquiring bank has to make decisions on the renewals of the loans at $t = 1$ and $t = 2$.

The firms are of two types in terms of the quality of their investment projects – good firm and bad firm. Good firm holds a project with a probability of success of one, while bad firm holds a project with a probability of success of zero. The discount rate is δ, and the loan interest rate r is $(1-\delta)/\delta$, i.e., $1 + r = 1/\delta$.

Firm's previously extended debt, D, if any, is either recovered or written off at its maturity, which is shortly after bank's renewal decision on the transferred loan L but before the next period arrives. That is, L_t matures at $t = i$ ($i = 1, 2$) and D_t matures at $t \in (i, i+1)$. However, for simplicity, the same discount rate δ is applied to $t = i$ and $t \in (i, i+1)$. Good firm's prior debt, D_t^G, is recovered, regardless of the renewal decision of its transferred loan, L_t^G, while bad

firm's prior debt, D_t^B, can be recovered *only if* the bank renews its transferred loan, L_t^B. It is assumed throughout the model that this renewal certifies the good quality of a firm. Then, the renewed firm can enjoy its increase in value, V, in the equity market, which in turn makes it more feasible to pay out the pre-existing bad debt that would be otherwise written off.[24] I assume that the total of the transferred loans at each period is two, half of which is good firm's and the half of which is bad firm's, that is, $L_t^G = L_t^B$. I also assume $D_t^G = D_t^B$. The bank has to select only half of the transferred loans to renew in each period, facing capital constraints.

There are two types of firms in terms of the existence of prior debts made by the acquiring bank – firm that had prior debts (Type P firm) and firm that had no prior debts (Type N firm). In other words, the bank holds prior debt claim, D, in a Type P firm, but not in a Type N firm. For Type P firm, the bank has perfect private information about the firm type through its prior lending and monitoring activities, and thus its critical decision is whether to renew the loans of good and bad firms. Meanwhile, Type N firm is new to the bank, and so the bank's critical decision is whether to bear screening costs, c, to identify the firm's quality and renew good firm's loan according to the screening result. The bank knows that Type N firm will be good firm with a probability of 1/2. The bank holds prior equity claims, $e > 0$, in percentage in both Type P and Type N firm.

There are two types of acquiring banks: high-quality bank (Type H bank) and low-quality bank (Type L bank). Type H bank has a superior ability (or incurs low screening costs) in identifying good and bad projects at the time of making the loan. Consequently, Type H bank possesses a low volume of bad debts. For simplicity, I assume that Type H bank incurs no

[24] The capital constraints that the acquiring banks face are well explained by the fact that the government required the banks to reduce capital, under a given schedule, by the amount of capital injected at the time of asset transfers.

screening costs and hence possesses no bad debt. On the other hand, Type L bank bears high screening costs (or poor ability) in identifying quality of firms, and consequently possesses some volume of bad debts.

Investors know whether a firm had a prior relationship with the bank (Type P or Type N firm). But investors do not know either the bank type (Type H or Type L bank) or the firm type (good or bad). However, at $t = 1$, investors know a prior probability of the bank being Type H, h_1, which can be interpreted as the ex ante reputation of the bank on its asset quality. The true type of a firm whose loan is renewed at $t = 1$ is revealed to investors prior to the bank's renewal decision at $t = 2$. Investors update their beliefs about the bank's reputation, h_2, through Bayes' rule, after observing the outcome of the project renewed at $t = 1$. Thus, the bank's renewal decision at $t = 1$ influences how investors value bank's loan renewal announcements at $t = 2$. Investors also know that a firm will be good firm with a probability of 1/2. Banks, firms and investors are all risk neutral. For a simple diagram of the players and the sequence of the game, see Fig. 4 and 5, respectively.

The following propositions describe the equilibrium and the incremental value of each type of firm from loan renewal announcement at t = 1.[25]

Proposition 1. (Type P Firm)
(Case 1: high h_1) If $\frac{(1-e)(1-\delta)D}{\delta kL} \le h_1 < 1$, *there exists a unique equilibrium in which the bank renews good firm's loan* $(i.e., g_1 = 1)$. *Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = kL$.
(Case 2: low h_1) If $h_1 = 0$, *there exists a unique equilibrium in which the bank renews bad firm's loan* $(i.e., g_1 = 0)$. *Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = 0$.

[25] For the detailed bank's lending decisions and resultant payoffs , investor's belief-updating mechanism, the proofs of the propositions, and an extension of the model to infinity, see Sohn (2003).

(Case 3: intermediate h_1) If $0 < h_1 < \frac{(1-e)(1-\delta)D}{\delta kL}$*, there exists a unique equilibrium in which the bank renews good firm's loan with a probability of* $g_1 = \frac{h_1}{1-h_1}[\frac{\delta kL}{(1-e)(1-\delta)D} - 1]$*. Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = \frac{h_1 \delta (kL)^2}{(1-e)(1-\delta)D}$.

If investors believe that the bank is very likely to be of Type H, that is, higher h_1 (Case 1), the bank has a strong incentive to maintain its reputation, leading it to renew good firm and create a high incremental firm value from the loan renewal announcement at $t = 1$. If the bank has a very poor reputation (Case 2), that is, investors believe that the bank is certainly of Type L ($h_1 = 0$), the bank derives no benefit from maintaining its reputation. Therefore, the bank will pursue one-period immediate gains by renewing bad firm to recover its prior bad debt, and investors would not add value to the firm renewed by this kind of bank. If the ex ante reputation of the bank is of intermediate value (Case 3), the bank plays mixed strategies. The bank does renew bad firm at $t = 1$ with a probability ($1 - g_1$) such that the expected benefits for the bank from renewing bad firm are equal to those from renewing good firm.

Proposition 2. (Type N Firm)

(Case 1: high h_1) If $\frac{4c}{\delta ekL} \le h_1 < 1$*, there exists a unique equilibrium in which the bank investigates and renews good firm* $(i.e., s_1 = 1)$*. Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = kL$.

(Case 2: low h_1) If $0 \le h_1 \le \frac{2c}{\delta ekL - 2c}$*, there exists a unique equilibrium in which the bank never investigates* $(i.e., s_1 = 0)$*. Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = \frac{1+h_1}{2}kL$.

(Case 3: intermediate h_1) If $\frac{2c}{\delta ekL - 2c} < h_1 < \frac{4c}{\delta ekL}$*, there exists a unique equilibrium in which the bank investigates and renews good firm with a probability of* $s_1 = \frac{\delta eh_1 kL - 2c(1+h_1)}{2c(1-h_1)}$*. Then, the incremental value of a firm from loan renewal announcement is* $V(h_1) = \frac{\delta eh_1 (kL)^2}{4c}$.

This proposition differs from Proposition 1 in that screening costs play a key role in the loan renewal decision of the bank. If the bank has a strong reputation (Case 1), the bank has a strong incentive to maintain its reputation, leading it to screen and renew good firm, and to generate a higher incremental value from the bank's signal. If the bank has a poor reputation (Case 2), it gains little from maintaining its reputation at $t = 2$. The bank does not have any incentive to bear screening costs to identify firm type. Consequently, the incremental value from the renewal announcement is small because investors will take into account the possibility of the renewed firm being bad. If the ex ante reputation of the bank is of intermediate value (Case 3), the bank plays mixed strategies. The bank does not spend on screening at $t = 1$ with some probability $(1 - s_1)$ such that the expected benefits for the bank from this random selection are equal to those from the screening and renewal of good firm.

The main element of the model is a bank's conflicts of interest over its loan renewal decisions: the conflict between increasing the odds of recovering bad prior loans (by renewing loans to bad firms) and maintaining its reputation on asset quality (by renewing loans to good firms), when facing firms whose qualities are known to the bank through the previous lending activities; the conflict between saving screening costs (by renewing loans randomly) and maintaining its reputation on asset quality (by screening firms to identify firm quality and subsequently renewing only good firms), when facing firms that are new to the bank.

Using this model of conflicts of interest, I now show the conditions under which a pre-existing relationship can be detrimental to the positive valuation effect of a loan announcement. An immediate result follows from the above propositions: When the bank's reputation is sufficiently high, the incremental value is equal to kL in both cases; When investors' expectation of the bank being Type H is zero, the incremental value from the event is zero for Type P firm, while the value is positive ($kL/2$) for Type N firm.

More interestingly, for intermediate values of h_1, whether the incremental value of Type P firm is higher than that of Type N firm will depend on the parameters: size of prior debt (D), discount rate (δ), equity claim (e), and cost of screening (c). In particular, the incremental value will be greater for Type N firm than for Type P firm if $e(1-e)(1-\delta)D > 4c$, assuming that h_1 falls into a common range of h_1 in Case 3 of Propositions 1 and 2. This is to say that with higher D and lower c, given a value of δ and e, the value of Type N firm is more likely to be greater than that of Type P firm. This result is consistent with the empirical finding in the previous section that size of prior loan exacerbates the negative effect of a prior relationship on firm valuation, and with the fact that the screening costs are likely to be low for the publicly traded firms in the sample.

To see the loan renewal effects more clearly, I calibrate the incremental value of each type that varies with the size of D and c, at a given level of other parameters. I assume that $e = 0.03$, $\delta = 0.9$, $k = 2$, $L = 1$, and $h_1 = 0.5$, and at a given range of D and c that satisfies the conditions of Case 3 of Propositions 1 and 2, I plot the announcement effects in terms of the incremental firm values. Fig. 6 shows that the loan announcement effect is more likely to be larger for Type N firm, as D gets larger and c gets smaller.

The model addresses an acquiring bank's incentive to nurture bad firms to avoid immediate loss realization in light of this severe moral hazard problem. This point is supported by the fact that the overall banking sector in Korea had a poor reputation, the banking system of Korea in 1998 was protected by deposit insurance, and the bailout of failing banks was widely expected. The bank's conflict of interest is also buttressed by the fact that the acquiring banks focused on "short-term" performance and improvement in capital structure to raise their stock values in the middle of the widespread merger talks in the banking sector.

5. Further Evidence from Bank Lending Behavior

This section investigates the acquiring banks' lending decisions directly from two perspectives: whether the banks continue lending relationships, i.e., whether loan balances remain positive, and whether the banks increase loan size once the relationships are maintained. The main purpose of the investigation is to demonstrate the effect of the pre-existing relationships on the banks' lending decisions and to see if the effect is consistent with what the stock market expects. The firm-bank matched sample consists of 181 firms. The size of the sample differs from that used in Section 3, the investigation of market valuation, because some firms had multiple lending relationships with the five closed banks and each firm-bank relationship is counted as one observation in this section.[26]

I first examine how the value of relationship banking in the form of loan availability evolves after the loan acquisitions. Fig. 7 shows the time-series characteristics of loan size after

[26] The total number of borrowing firms is reduced to 118. Using the 118 observations according to firm-based observations, as in Section 3, creates a problem that each acquiring bank's lending decisions are not clearly addressed. For instance, if one bank increases loan size, while another reduces it for a firm, overall changes in loan availability of the firm do not clearly reflect each bank's individual lending decision.

controlling for the overall loan demands of firms. Notice that *Loan_Acquiring/Loan_All* declines for both types of firms during six months after the loan transfers: from 9.3% to 7.3% for 94 Type P firms, and from 6.8% to 5.3% for 87 Type N firms, (Panel A.1 and A.2). The ratio, however, further decreases to 7.2% for Type P firms, whereas it rebounds and surpasses the original level to 8.3% for Type N firms during the following two years.

These results may partly come from the fact that some firms' relationships with the acquiring banks were completely terminated after the loan transfers. Therefore, it is interesting to see how many firms maintained the banking relationships, which has to be controlled for the analysis of changes in *Loan_Acquiring/Loan_All*. Sixty two of 94 Type P firms (67%) continued the relationships until the end of 2000, while only 41 of 87 Type N firms (47%) maintained the relationships with the acquiring banks. Most of the terminations were determined during the six month period after the loan transfers. These results suggest that the acquiring banks are more likely to maintain the relationships with Type P firms than with Type N firms.

Panel B.1 and B.2 show the changes in loan availability of the subsample of *firms that in fact continued the relationships*. The *Loan_Acquiring/Loan_All* of Type P firms remains statistically unchanged (10.0% to 11.2%) during the period, while that of Type N firms increases significantly from 9.5% to 17.0%. These results suggest that the acquiring banks prefer Type N firms to Type P firms in expanding their loan exposures, given that they continue the lending relationships.

I now examine more rigorously how the firm's pre-existing relationships affect the bank's loan granting behaviors, after controlling for the various firm characteristics and bank dummy variables. Table 8 reports the results of probit estimations whose purpose is to see if the bank's

decision on whether to continue the relationships, rather than whether to increase the loan size, depends on *Prior Relationship*.

The coefficients of *Prior Relationship* are 0.89-1.33 and significant at 1% level in all specifications, suggesting that the acquiring banks tend to continue the relationships with the firms that had lending relationships prior to the loan acquisitions. It is particularly interesting to see in specification 3 that the coefficient of *Market/Book Value* interacted with *Prior Relationship* is negative (-0.23 with t = -1.44) after controlling for those two variables. This result suggests that the acquiring banks tend to continue the relationships with less valuable firms that had prior relationships, which serves as evidence for the presence of banks' conflicts of interest.

Now, I conduct random effect panel regressions of changes in loan availability during each year on the various firm and bank characteristics (Table 9). The coefficient of *Prior Relationship* is -0.02 and significant at 1% level, suggesting that the pre-existing relationship plays a negative role in bank's lending decisions (specification 1). This result remains unchanged even after controlling for collateral requirements (specification 2) and the overall loan growth of firms (specification 3). The result of specification 3 further supports the conflicts of interest on the side of the banks. The coefficient of *Prior Relationship* is -0.02 with t = -2.89 and that of firm's loan growth rate is -0.12 with t = -9.12. However, when those two variables are interacted with each other, the coefficient is 0.13 with t = 6.37, suggesting that the acquiring banks tend to increase their loan exposures to Type P firms when the firms increase loan finance overall from all other lending banks. In other words, when firms' prospects are good enough to be funded well by all other banks, the acquiring banks provide more loans to those firms, even if they had previous lending relationships.

We see from the results of Table 8 and 9 that the acquiring banks are more likely to continue the relationships with firms that have prior relationships, but do not increase their loan exposures to these firms. In contrast, the banks tend to end the relationships with the firms that do not have previous relationships. However, once the relationships are maintained, the banks are enthusiastic to expand loan exposures. These results suggest that banks have a conflict of interest that comes with an incentive to favor the pre-existing relationships to increase the odds of recovering those pre-existing loans.

It is interesting to investigate how the market expectations on bank lending decisions (as reflected in abnormal returns) are related to the actual lending decisions of the acquiring banks. Table 10 shows that firms that experienced increases in loan availability ($\Delta Loan > 0$) during the six-month post-event period have higher two-month abnormal returns (18.3%) than those that experienced decreases in loan availability (5.1%). Furthermore, Type N firms have higher CARs than Type P firms even after controlling for the changes in loan availability: for firms with $\Delta Loan > 0$, Type N firms' CAR is 24.0% while Type P firms' CAR is 17.2%, and for firms with $\Delta Loan < 0$, Type N firms' CAR is 11.0% while Type P firms' CAR is -3.3%. This result may suggest that the abnormal returns do have forecasting power for future changes in loan availability, or that the market's valuation affect the subsequent lending decisions by the banks.

Table 10 also reports the CARs of firms whose relationships with the acquiring banks are terminated during the six-month post-event period, or whose loan balances at the end of 1998 turn zero. The average CAR of Type N firms is 11.0%, which is identical to that of the same type of firms with $\Delta Loan < 0$. However, the average CAR of Type P firms is significantly lower (-12.6%) than that of the same type of firms with $\Delta Loan < 0$ (-3.3%). These results

suggest that the termination of the pre-existing relationships conveys a stronger negative signal than the termination of transferred relationships to the stock market.

6. Conclusion

This paper questions a commonly held view that durable firm-bank relationships have value through proprietary information produced over the course of the relationships. The positive abnormal returns in response to a countervailing event – the forced exits of bad banks and the transfer of their loans to healthy banks – suggest that the losses from termination of the relationships with the closed banks are more than offset by the gains from the increase in quality of lending banks.

More interestingly, the abnormal returns of firms that had no prior borrowing relationship with an acquiring bank to which their loans were transferred outperform those of firms that had a prior relationship. Banks with a prior relationship have private information that can be used for their own loan renewal decisions; but these banks also have an incentive to favor pre-existing bank relationships to increase the odds of recovering previously extended loans, a fact that makes the renewal a weak or compromised signal to the market about borrower quality. In contrast, the market does place credence in the renewal of loans to firms that had no prior relationship with the acquiring banks when screening firms for renewal is less costly to the banks. This result suggests that the effect of the conflict of interest does more than offset any perceived advantage from the pre-existing banking relationship.

This study helps us understand the fundamentals of the value of bank-borrower relationships, especially the importance of the specific mechanisms employed to replace failed

banks without doing harm to the value of their client firms. It shows that government-driven liquidation of banks followed by transfers of their loans outstanding to better banks can make client firms better off, which in turn helps acquiring banks to enhance sound operations and capital adequacy. This result mitigates the policy-maker's concerns about potential negative effects of banking sector restructuring on the values of sound client firms of failed banks.

This study also suggests that the intensity of firms' pre-existing relationships with acquiring banks should be considered when the government plans a banking sector reform or when an individual bank searches for a target bank for acquisition. If moral hazard is present in the banking system, prior relationships with acquiring banks may pull down the value of firms from the consolidation. It is critical that the close connection between bank management staffs and client firms be completely severed in a bank restructuring, without which the problem of bad debt cannot be completely resolved.

Appendix. Chronicle of the Event

Nov. 22, 1997 (t = -174). The Korean government seeks a rescue package from the IMF to control a sharp decline of the Korean won.

Dec. 4, 1997 (t = -164). The Korean government announces a financial-sector restructuring plan as one of the agreements with the IMF. It includes addressing the problems of bad loans and the weak capital structure of the banking system. A successful restructuring is seen as essential to the recovery of Korea's international credit standing.

Feb. 27, 1998 (t = -101). The Financial Supervisory Service (FSS) orders 12 banks, among 24 excluding First and Seoul, that failed to meet the 8% of the BIS capital adequacy ratio as of the end of 1997 to submit their rehabilitation plans by Apr. 30, 1998 (t = - 48). After the plans are submitted, internationally recognized accounting firms conduct assessments and audits on the plans.

Jun. 20, 1998 (t = -7). The Management Evaluation Committee is formed to identify nonviable banks on the basis of its evaluation of the banks' rehabilitation plans.

Jun. 29, 1998 (t = 0). The FSS announces that five banks will be closed; their assets and liabilities will be transferred to five healthier and bigger banks in the form of purchase and assumption (P&A) agreements as of the same day.

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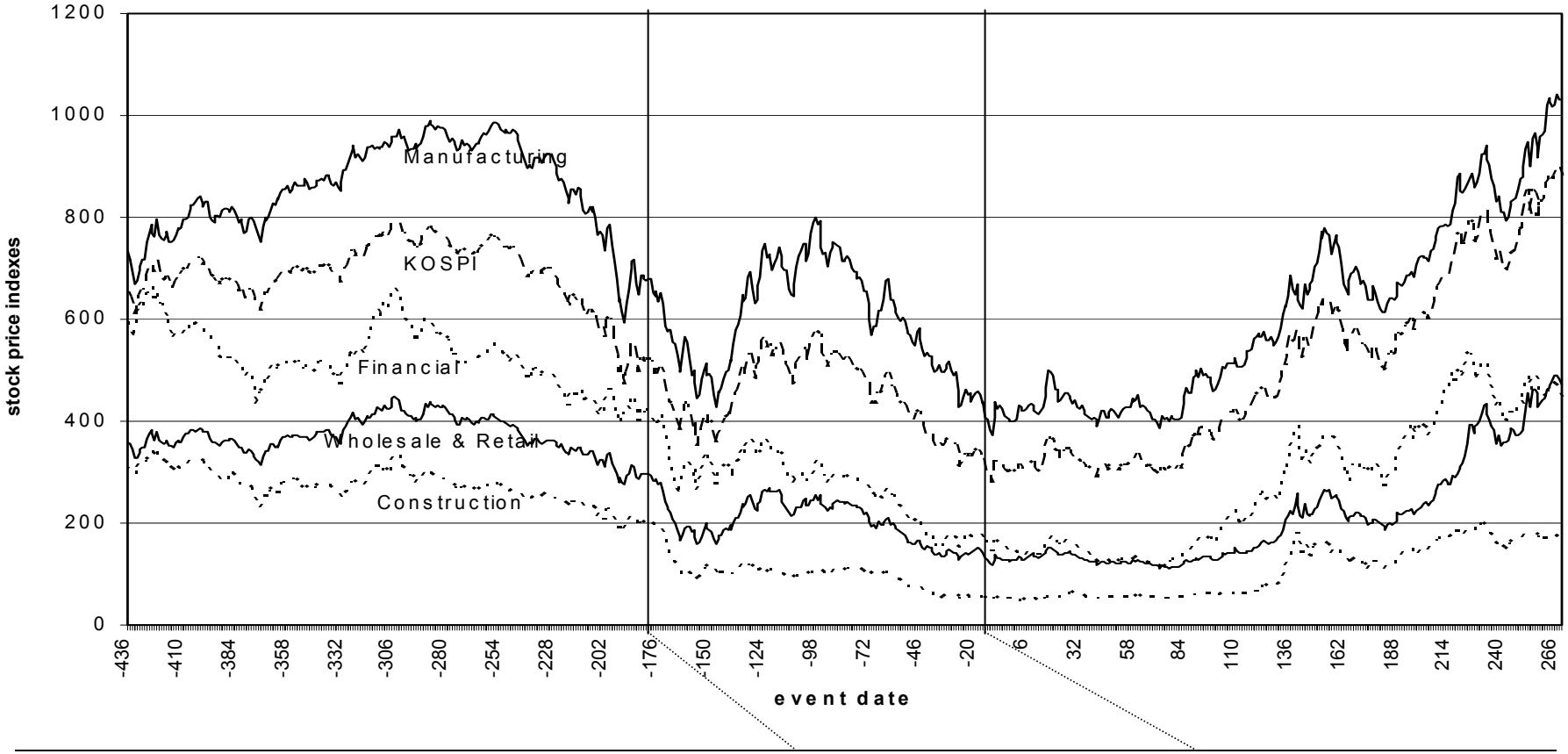
Fig. 1. Stock price indexes and main economic indicators around of the period of the financial crisis in Korea (1997-1998)



	3/97	4	5	6	7	8	9	10	11	**12**	1/98	2	3	4	5	**6**	7	8	9	10	11	12
Real GDP growth rate	4.9			6.2			5.5			**3.6**			-4.6			**-8.0**			-8.1			-5.9
Industrial production	8.3	6.8	2.0	9.1	4.8	7.1	9.3	7.4	2.5	**0.2**	-9.6	0.3	-9.5	-11	-11	**-14**	-14	-13	-1.8	-9.2	0.5	5.1
Unemployment rate	3.4	2.8	2.5	2.3	2.2	2.1	2.2	2.1	2.6	**3.1**	4.5	5.9	6.5	6.7	6.9	**7.0**	7.6	7.4	7.3	7.1	7.3	7.9
$/1000Won	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	.86	**.59**	.64	.61	.73	.75	.71	**.73**	.81	.74	.72	.76	.80	.83
Interest rate (3 years)	129	130	124	112	114	124	132	136	140	**213**	253	234	225	213	186	**163**	129	95	85	73	73	70
Dishonored bills ratio	.30	.32	.30	.29	.30	.27	.40	.56	.48	**2.1**	.72	.83	.62	.57	.62	**.58**	.69	.55	.42	.28	.26	.17

Fig. 2. Loan transfers from five closed banks to other five surviving banks. The loans of the closed bank 1 (C1) were transferred to the acquiring bank 1 (A1); C2 to A2; C3 to A3; C4 to A4; C5 to A5. There are two types of firms in terms of the existence of relationships with the acquiring banks prior to the transfer of their loans: Type P firms and Type N firms. L^{CLOSED} indicates the loans made by the closed banks, and $L^{ACQUIRING}$ indicates the loans made by the banks that had to acquire loan L^{CLOSED}.

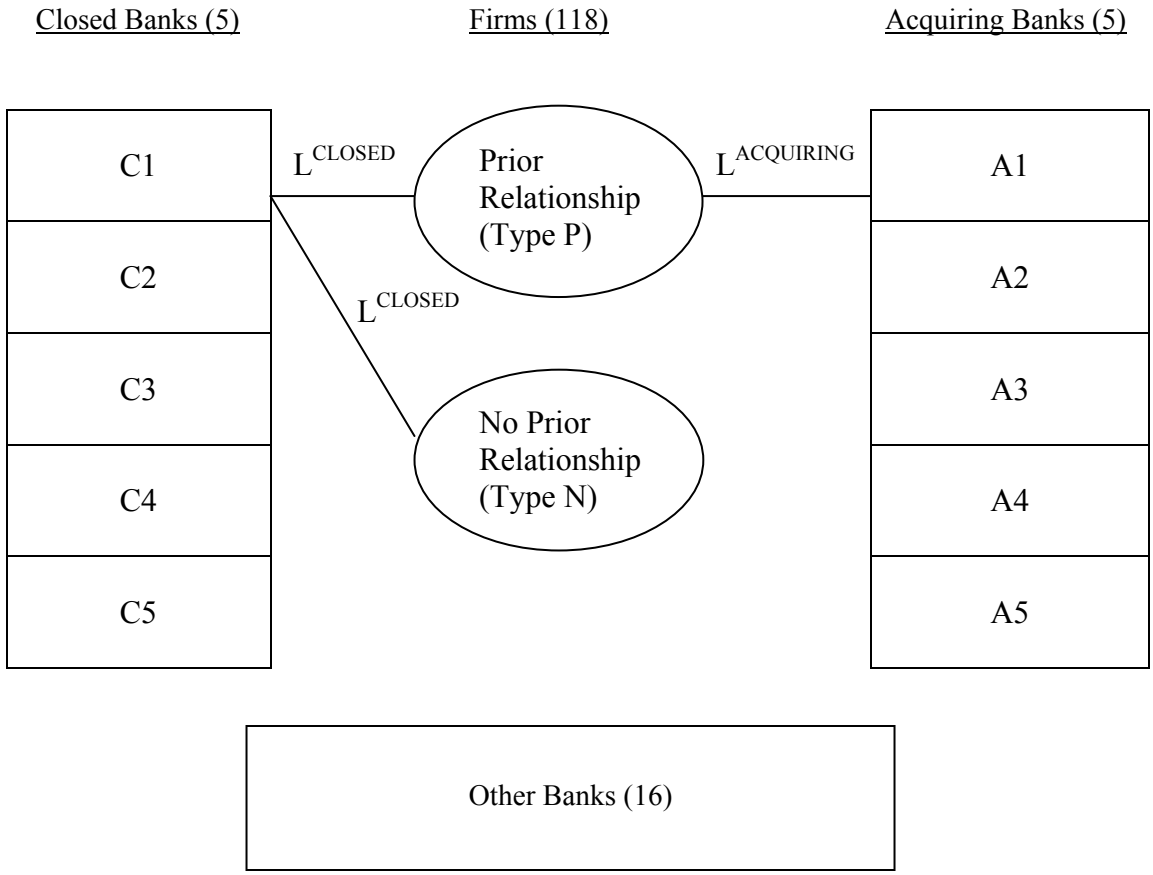
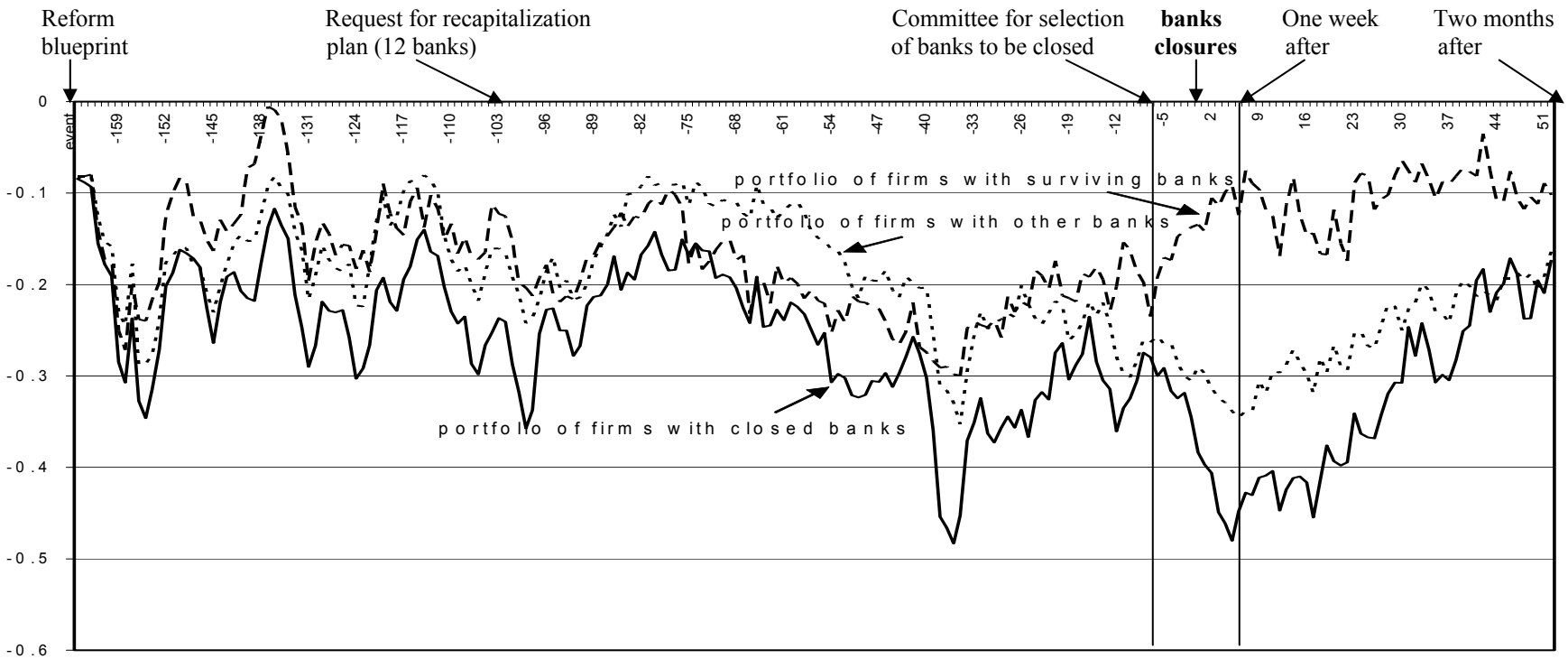


Fig. 3. Cumulative abnormal returns (CARs) of three portfolios. For each event window, the median CARs of three portfolios are estimated using the standard market model over the pre-event estimation window of t = -436 to t = -175 (pre-crisis period): (1) firms that had relationships with at least one of the closed banks; (2) firms that had relationships with at least one of the surviving banks but not with any of the closed banks; (3) firms that had relationships neither with the closed banks nor with the surviving banks. The surviving banks are the banks that were ordered to submit their recapitalization plans like the closed banks and were approved to continue their banking businesses.



	No. of firms	(-164,-8)	(-7,-2)	(-1,+1)	(+2,+5)	**(-7,+5)**	(+6,+51)	(-1,+51)
(1) Firms with the closed banks	118	-19.00	-4.39	-7.85	-8.31	**-20.56**	27.09	10.92
(2) Firms with the surviving banks	42	-11.62	5.60	0.00	5.07	**10.67**	0.20	5.27
(3) Firms with other banks	436	-17.57	-4.02	0.26	-4.13	**-7.89**	14.76	10.89

Fig. 4. Players and their types in the loan signaling game.

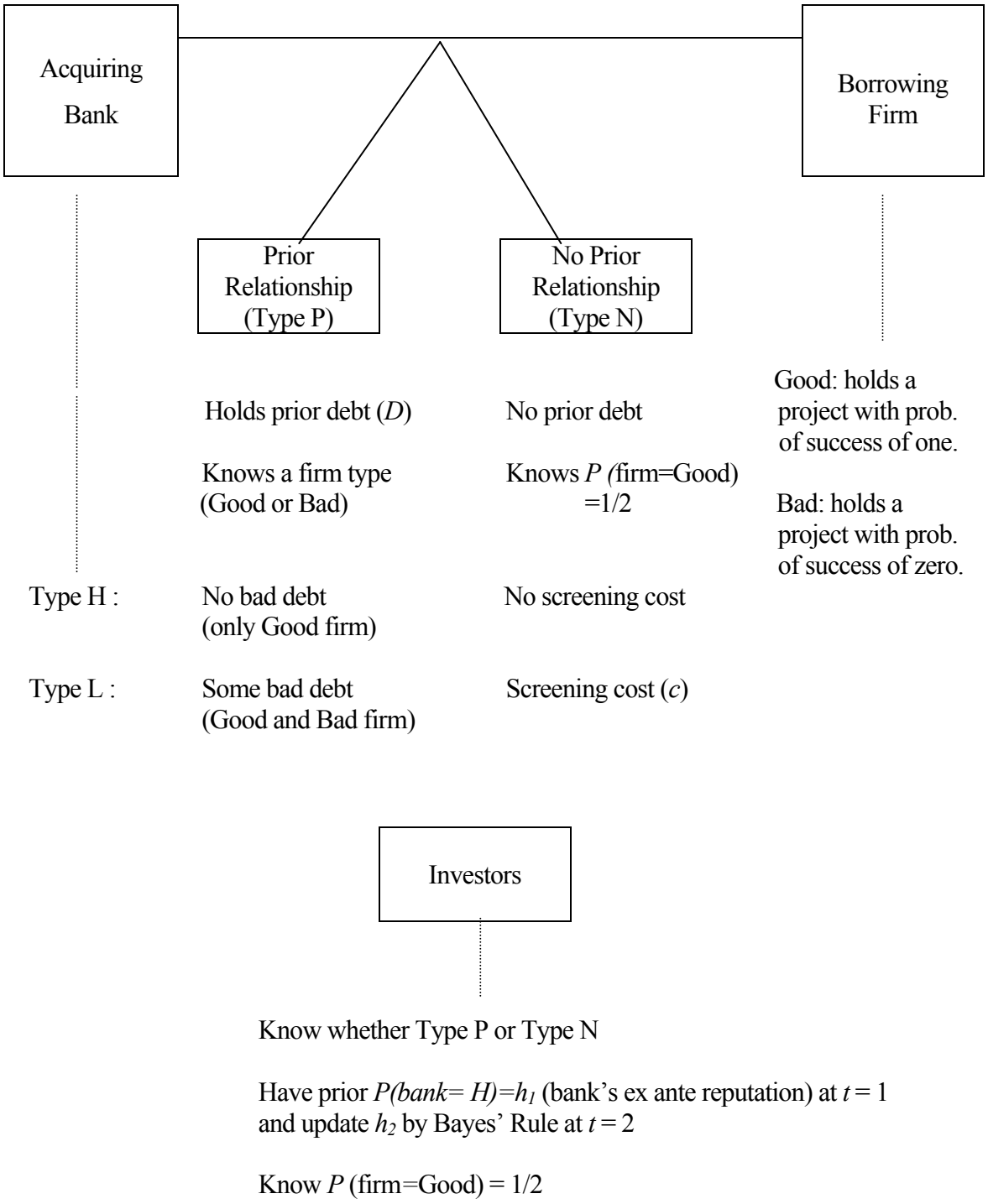
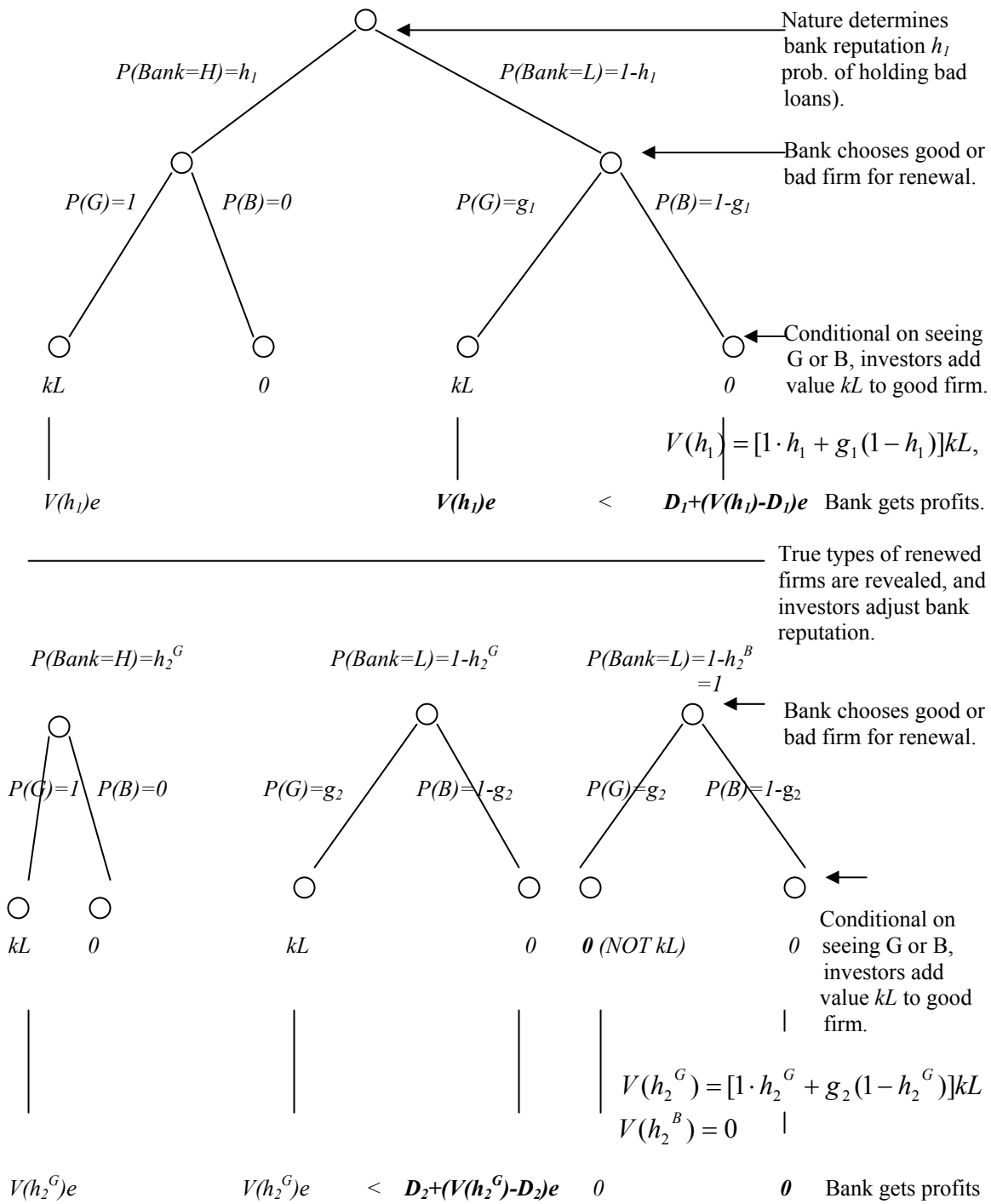


Fig. 5. Structure of the bank's loan renewal decisions of transferred loans and the resultant payoffs in the case of Type P firms.



Bank profits if renewing G at $t=1$ and B at $t=2$: $V(h_1)e + \delta\,[\,D_2+(V(h_2^G)-D_2)e]$
if renewing B at $t=1$ and B at $t=2$: $D_1+(V(h_1)-D_1)e + 0$

Fig. 6. Loan announcement effects in terms of stock market valuation in the Case 3 of Propositions 1 and 2. At given $e = 0.03$, $\delta = 0.9$, $k = 2$, $L = 1$, and $h_1 = 0.5$, the incremental value of each type of firm due to the bank's loan renewal announcements are plotted in a range of the size of prior debt (D) for Type P firms and screening costs (c) for Type N firms that satisfies the conditions of the Propositions.

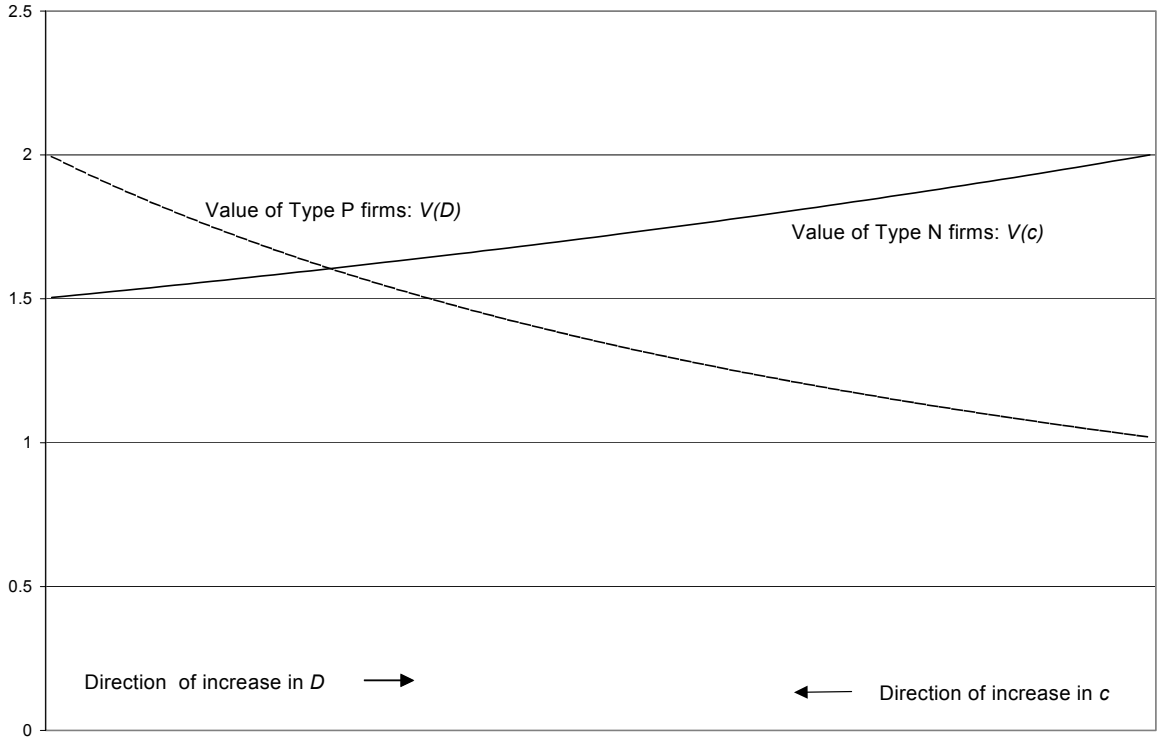
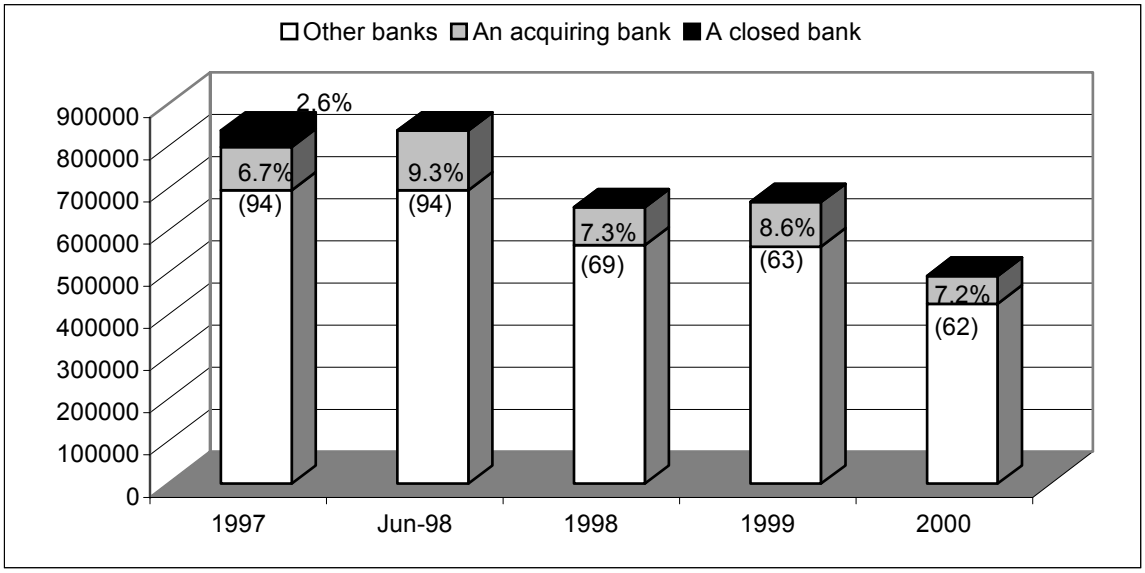
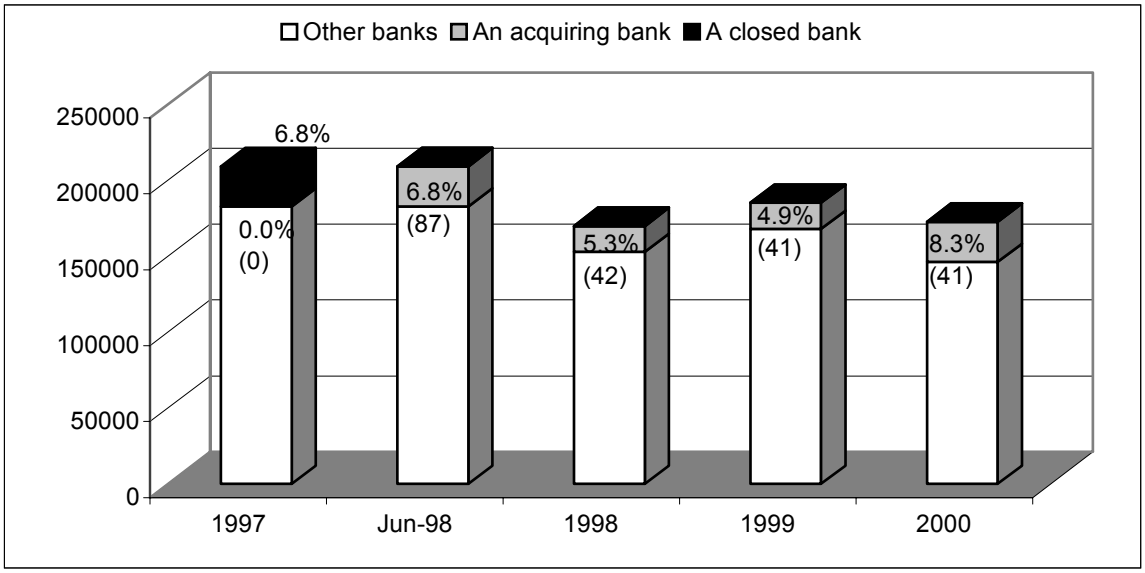


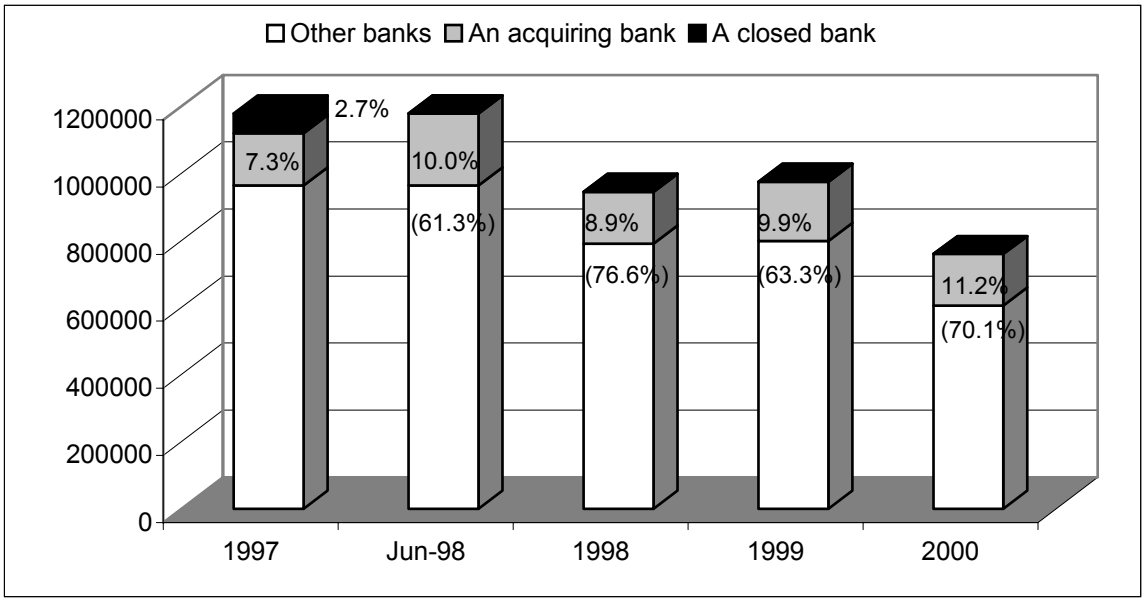
Fig. 7. Changes in the proportion of loans made by the acquiring banks over loans made by all lending banks (*Loan_Acquiring/Loan_All*) from the date of the loan transfers to the end of 2000. The number in parentheses is the number of firms in each case.



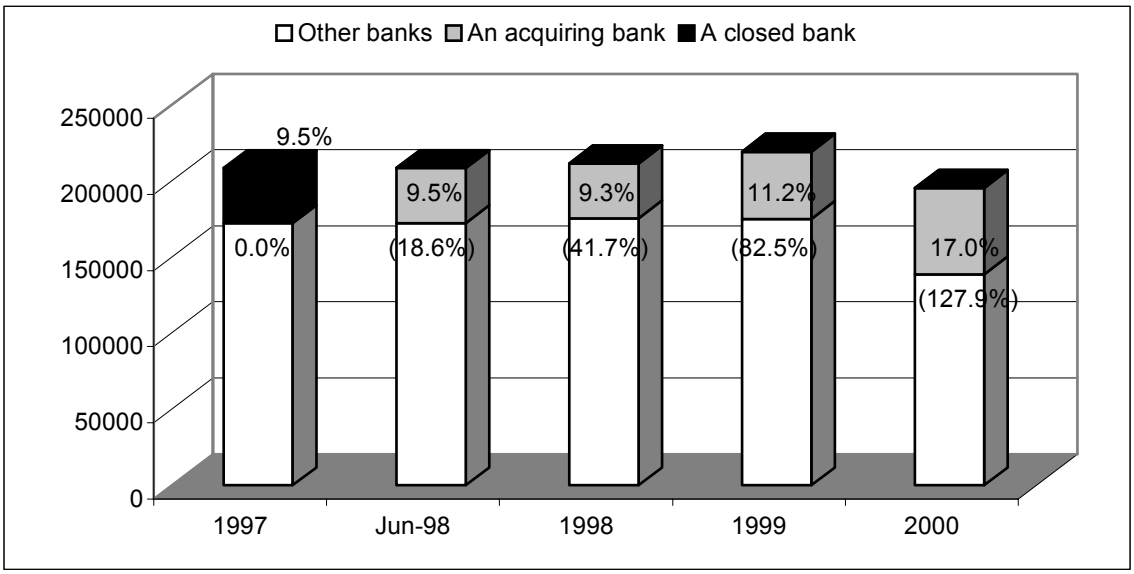
A.1. Type P firms (94): firms that had relationships with the acquiring banks prior to the loan acquisitions. The number in parenthesis is the number of firms that continued the relationships. All numbers are as of each year or month, except that 1997 indicates one day before the loan transfers.



A.2. Type N firms (87): firms that had no relationships with the acquiring banks prior to the loan acquisitions. The number in parenthesis is the number of firms that continued the relationships. All numbers are as of each year or month, except that 1997 indicates one day before the loan transfers.



B.1. Type P firms (62): firms that had relationships with the acquiring banks prior to the loan acquisitions and that continued relationships until the end of 2000. The number in parenthesis is the value of collateral over the loan. All numbers are as of each year or month, except that 1997 indicates one day before the loan transfers.



B.2. Type N firms (41): firms that had no relationship with the acquiring banks prior to the loan acquisitions and that continued relationships until the end of 2000. The number in parenthesis is the value of collateral over the loan. All numbers are as of each year or month, except that 1997 indicates one day before the loan transfers.

Table 1. Commercial banks in Korea

Panel A. BIS capital adequacy ratio (%)

	1996	1997	1998	1999	2000
DongNam	8.76	4.54			
Kyongki	8.96	6.69			
ChungChong	9.81	7.05			
DaeDong	9.07	2.98			
DongHwa	9.48	5.34			
Five closed banks (mean) [1)]	9.22	5.32			
Housing	- [2)]	10.29	10.79	11.74	9.92
KorAm	8.80	8.57	15.21	12.14	8.67
Hana	8.71	9.29	13.10	12.33	10.45
Kookmin	8.46	9.78	10.09	11.38	11.18
Shinhan	10.03	10.29	14.69	13.85	12.30
Five acquiring banks (mean) [1)]	9.00	9.64	12.78	12.29	10.50
All banks (mean)	9.78	7.55	6.67	10.73	10.56[4)]
Number of banks	25	26	20[3)]	17[3)]	17

1) On June 29, 1998, the assets and liabilities of DongNam were transferred to Housing, Kyongki to KorAm, ChungChong to Hana, DaeDong to Kookmin, and DongHwa to Shinhan, respectively.
2) In 1997, Housing Bank became a commercial bank from being a specialized bank owned by the government.
3) Later in 1998, Commercial merged with Hanil. In 1999, Kangwon and Chungbuk merged with Chohung, and Hana with Boram, respectively.
4) In January 2000, more rigid methods of calculating the capital adequacy ratio were applied following the advice of the IMF.

Panel B. Non-performing loan / total credit (%)

	1996	1997	1998	1999	2000
DongNam	2.49	5.65			
Kyongki	3.19	9.67			
ChungChong	4.59	12.52			
DaeDong	3.51	9.62			
DongHwa	2.69	7.94			
Five closed banks(mean)	3.30	9.08			
Housing	-	2.04	8.01	7.36	5.08
KorAm	1.75	3.36	2.99	13.73	9.00
Hana	0.79	2.37	3.13	8.58	5.60
Kookmin	2.45	3.25	4.93	11.27	6.98
Shinhan	2.75	4.05	4.39	6.72	3.98
Five acquiring banks (mean)	1.94	3.01	4.69	9.53	6.13
All banks (mean)	4.10	6.03	7.88	13.57[1)]	8.85
Number of banks	25	26	20	17	17

1) In December 1999, the Financial Supervisory Service (FSS) introduced new rigid standards for banks' asset classification to fully incorporate borrowers' capacity to repay.

Panel C. Share in the loan market (%)

	1996	1997	1998	1999	2000
DongNam	1.46	1.27			
Kyongki	1.80	1.67			
ChungChong	1.01	0.83			
DaeDong	1.41	1.25			
DongHwa	2.23	1.94			
Five closed banks (sum)	7.91	6.95			
Housing	-	9.53	10.27	13.53	15.93
KorAm	2.35	2.30	3.06	4.31	4.96
Hana	2.77	2.66	2.85	6.87[1)]	7.77
Kookmin	9.65	8.99	13.27	15.62[2)]	17.12
Shinhan	8.23	7.46	6.94	8.53	8.64
Five acquiring banks (sum)	23.01	30.96	36.39	48.85	54.44
All banks (sum, %)	100.00	100.00	100.00	100.00	100.00
(billion won)	207,971	270,037	265,592	244,114	273,055
Number of banks	25	26	20	17	17

1) In 1999, Hana merged with Boram.
2) In 1999, Kookmin merged with a specialized bank, Long-Term Credit Bank.

Table 2. Description of variables

Variable	Description
[Relationship banking]	
Prior Relationship	The number of acquiring banks with which a firm had prior lending relationships divided by that of all banks that acquired the firm's loans from the closed banks.
Loan_Acquiring/Loan_All	The amount of loans granted by acquiring banks divided by that granted by all lending banks.
Locational Advantage	1 if the headquarters of one of the closed banks is located in the same city or province as the firm's headquarters and zero otherwise. This value is divided by the number of closed banks with which a firm had lending relationships.
Main Creditor Bank	1 if one of the acquiring banks is the main creditor bank of the firm and zero otherwise. This value is divided by the number of acquiring banks to which a firm's loans were transferred.
[Exposure to the event]	
#Closed/#Lending Banks	The number of closed banks with which firms had lending relationships divided by that of all lending banks.
Loan_Closed/Loan_All	The amount of loans granted by closed banks divided by that granted by all lending banks.
Collateralized Loan	The amount of collateralized loans as a fraction of the total granted by closed banks.
[Firm characteristics]	
Log_Age	Logarithm of firm age.
Log_Size	Logarithm of total asset.
Sales Growth	Growth rate of sales.
Profit/Interest	Profit / interest payment.
Bond Finance	Proportion of the bond market finance.
Equity Finance	Proportion of the equity market finance.
Loan Finance	Proportion of the loan market finance.
[Firm ownership]	
Chaebol	1 if a firm is a subsidiary of the 64 conglomerates ("chaebol") and zero otherwise.
Largest Shareholder	Proportion of shares that the largest shareholder owns.
Minority Shareholders	Proportion of shares that minority shareholders (less than 1%) own.
Foreign Shareholders	Proportion of shares that foreign firms or individuals own.
[Bank pair]	
Bank 1 – 5	Indicators for the pair of five closed banks and five acquiring bank.

Table 3. Summary statistics. The number in the last column is the t-statistic for the null hypothesis that the values of Type N and Type P are not different from each other. ***, **, and * denote the significance at the 1%, 5% and 10% level, respectively.

			PriorRelationship			
Variables	Unit	Mean	0 (Type N)	(0,1)	1 (Type P)	t test
No. of firms	118		45	28	45	
Prior Relationship	[0,1]	0.506	0.000	0.524	1.000	
Loan_Acquiring/Loan_All	[0,1]	0.062	0.000	0.069	0.119	-8.549***
Locational Advantage	[0,1]	0.201	0.296	0.193	0.111	2.419**
Main Creditor Bank	[0,1]	0.091	0.133	0.036	0.083	0.829
#Closed/#Lending Banks	[0,1]	0.183	0.212	0.217	0.133	4.513***
(#Closed Banks)	{1,2,3,4,5}	1.610	1.267	2.393	1.467	-1.483
Loan_Closed/Loan_All	[0,1]	0.074	0.087	0.090	0.050	1.880*
Collateralized Loan	ratio	0.229	0.198	0.348	0.184	0.199
Log_Age	Log (year)	1.463	1.454	1.458	1.474	-0.442
Log_Size	Log (mil.won)	8.590	8.304	8.709	8.806	-4.276***
Sales Growth	ratio	0.131	0.147	0.079	0.147	-0.005
Profit/Interest	ratio	-0.504	-0.439	-0.935	-0.309	-0.408
Bond Finance	[0,1]	0.300	0.290	0.302	0.309	-0.585
Equity Finance	[0,1]	0.155	0.197	0.113	0.138	2.790***
Loan Finance	[0,1]	0.545	0.513	0.585	0.552	-1.060
Chaebol	{0,1}	0.288	0.156	0.393	0.356	-2.210**
Largest Shareholder	[0,1]	0.248	0.280	0.226	0.228	1.509
Minority Shareholders	[0,1]	0.494	0.464	0.487	0.529	-1.428
Foreign Shareholders	[0,1]	0.042	0.017	0.040	0.070	-2.519**
Bank 1	{0,1}	0.364	0.489	0.500	0.156	3.581***
Bank 2	{0,1}	0.186	0.156	0.286	0.156	-8.932***
Bank 3	{0,1}	0.212	0.200	0.321	0.156	0.000
Bank 4	{0,1}	0.246	0.244	0.429	0.133	0.546
Bank 5	{0,1}	0.602	0.178	0.857	0.867	1.345

Table 4. Estimation of cumulative abnormal returns (CARs). The CARs are estimated using the market model over the pre-event estimation window of t = -436 to t = -175. At t = -174, the Korean government sought a rescue package from the IMF. At t = -7, the ad hoc committee was formed to evaluate the viability of banks. At t = 0, bank closures and asset transfers were announced. t =+5 and t =+51 are one week and two months after the event, respectively. ***, **, and * denote the significance at the 1%, 5% and 10% levels, respectively.

Panel A: The mean and median of CARs in percentage and the number of positive and negative CARs for each event window. The number in parentheses is the t-statistic for the null hypothesis of zero means. The first number in brackets is the number of positive CARs and the second number is the number of negative CARs. The first number in braces is the z-statistic of a sign test and the second number is the z-statistic of a Wilcoxon signed ranks test for the null hypothesis of zero medians. The number of firms in the sample is 118.

Event window	Mean		Median [pos./neg.]	
(-7,-2)	-5.79**	(-2.48)	-4.39 [37/81]***	{-4.37 / -4.72}
(-1,+1)	-4.85**	(-2.94)	-7.85 [32/86]***	{-5.59 / -5.41}
(+2,+5)	-8.81***	(-4.62)	-8.31 [24/94]***	{-8.00 / -6.47}
(-7,+5)	-19.45***	(-5.65)	-20.56 [22/96]***	{-8.75 / -7.68}
(+6,+51)	22.39***	(3.46)	27.09 [74/44]***	{2.86 / 4.53}
(-1,+51)	8.73	(1.26)	10.92 [65/53]*	{1.11 / 1.78}

Panel B: The mean of CARs in percentage for the case of Type P and Type N firms. The number in the last column is the t-statistic for the null hypothesis that the values of each category are not different from each other –*Prior Relationship* = 0 versus 1. N is the number of firms.

	Prior Relationship			
	0 (Type N)	(0,1) (mixed type)	1 (Type P)	t test
N	45	28	45	
(-1,+1)	-5.62	-7.10	-2.68	1.61
(-1,+51)	13.26	11.29	2.62	-1.28

Table 5. OLS regressions of CAR (-1,+1) and CAR (-1,+51) in two specifications. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively. The number of firms in the sample is 118.

	[1] CAR (-1,+1)	[2] CAR (-1,+1)	[3] CAR (-1,+51)	[4] CAR (-1,+51)
Prior Relationship	0.025	0.014	-0.144*	-0.174**
	(1.274)	(0.616)	(-1.880)	(-2.012)
Locational Advantage	0.041	0.039	0.167	0.196
	(1.596)	(1.391)	(1.371)	(1.513)
Main Creditor Bank	0.054	0.058	-0.061	-0.012
	(1.583)	(1.538)	(-0.455)	(-0.084)
Log_Age	0.042	0.044	0.261*	0.249
	(0.894)	(0.897)	(1.841)	(1.629)
Log_Size	0.023	0.026	-0.047	-0.014
	(1.107)	(1.114)	(-0.567)	(-0.142)
Sales Growth	0.042	0.038	-0.099	-0.154
	(1.260)	(1.128)	(-0.741)	(-1.081)
Profit/Interest	0.003	0.001	0.008	0.007
	(0.409)	(0.154)	(0.370)	(0.333)
Bond Finance	0.032	0.036	-0.471*	-0.566**
	(0.556)	(0.603)	(-1.920)	(-2.155)
Equity Finance	-0.020	0.004	-2.308***	-2.261***
	(-0.173)	(0.032)	(-5.353)	(-4.862)
Chaebol	-0.007	-0.009	-0.223**	-0.161
	(-0.322)	(-0.377)	(-2.315)	(-1.593)
#Closed/#Lending Banks		-0.083		-0.136
		(-0.676)		(-0.213)
Loan_Closed/Loan_All		-0.042		-0.193
		(-0.557)		(-0.604)
Collateralized Loan		0.017		0.034
		(0.899)		(0.429)
Bank 1		0.007		0.067
		(0.326)		(0.851)
Bank 2		0.035**		-0.176*
		(2.017)		(-1.684)
Bank 3		-0.002		0.009
		(-0.087)		(0.088)
Bank 4		-0.027		-0.140
		(-1.267)		(-1.431)
Largest Shareholder		0.039		0.022
		(0.575)		(0.083)
Minority Shareholders		0.022		0.039
		(0.448)		(0.205)
Foreign Shareholders		-0.016		0.063
		(-0.124)		(0.116)
Intercept	-0.345*	-0.377*	0.736	0.527
	(-1.780)	(-1.626)	(0.972)	(0.559)
F test	1.580	1.260	4.580***	3.580***
R-square	0.129	0.192	0.277	0.333

Table 6. OLS regressions in alternative specifications of CAR (-1,+51). Specification [1] includes an interaction variable of *Prior Relationship* and *Loan Finance*. Specification [2] is the robust regression with an initial screening based on Cook's distance >1 to eliminate gross outliers. In specification [3], *Prior Relationship* is replaced by *Loan_Acquiring/Loan_All*. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively. The number of firms in the sample is 118.

	[1] interaction effect	[2] robust regression	[3] using intensity of prior relationship
Prior Relationship	0.436*	0.465	
	(1.719)	(1.612)	
Prior Relationship Loan Finance*	-1.147***	-1.210**	
	(-2.697)	(-2.344)	
Loan_Acquiring/Loan_All			1.816
			(0.932)
*Loan_Acquiring/Loan_All * Loan Finance*			-3.399
			(-1.065)
Locational Advantage	0.176	0.162	0.238*
	(1.498)	(1.402)	(1.843)
Main Creditor Bank	0.026	0.045	0.025
	(0.176)	(0.314)	(0.163)
Log_Age	0.262*	0.234	0.283*
	(1.828)	(1.278)	(1.863)
Log_Size	0.007	0.020	-0.048
	(0.080)	(0.214)	(-0.567)
Sales Growth	-0.145	-0.153	-0.128
	(-1.141)	(-0.943)	(-0.873)
Profit/Interest	0.014	0.016	0.010
	(0.753)	(0.858)	(0.464)
Bond Finance	-0.940***	-0.997***	-0.718**
	(-3.300)	(-3.343)	(-2.560)
Equity Finance	-2.639***	-2.571***	-2.366***
	(-5.441)	(-5.323)	(-4.615)
Chaebol	-0.147	-0.139	-0.160*
	(-1.537)	(-1.290)	(-1.678)
#Closed/#Lending Banks	-0.140	0.008	-0.052
	(-0.240)	(0.014)	(-0.087)
Loan_Closed/Loan_All	-0.160	-0.211	-0.212
	(-0.540)	(-0.531)	(-0.666)
Collateralized Loan	0.020	0.020	0.007
	(0.286)	(0.260)	(0.085)
Bank 1	0.074	0.101	0.116
	(1.042)	(1.198)	(1.460)
Bank 2	-0.208**	-0.242**	-0.161
	(-2.050)	(-2.373)	(-1.543)
Bank 3	-0.023	-0.067	0.031
	(-0.221)	(-0.656)	(0.304)
Bank 4	-0.136	-0.174*	-0.096
	(-1.416)	(-1.923)	(-1.000)
Intercept	0.552	0.472	0.709
	(0.715)	(0.536)	(0.847)
F test	3.820***	2.980***	3.490***
R-square	0.368		0.321

Table 7. Heckman selectivity correction estimation of CAR (-1,+51) for the subsample of firms that continued relationships with the acquiring banks after the loan transfer. Inverse Mills ratio computed from the probit estimation is included in the explanatory variables in specifications [1]-[3] for the subsample with *Continuaion* = 1. The last column is the OLS estimation of CAR (-1,+51) for the full sample including firms whose relationships are terminated as of the end of 1998. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic or Chi-square statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively.

	[1]	[2]	[3]	Full sample
Prior Relationship	0.615**	0.545*	0.513*	0.486**
	(2.098)	(1.729)	(1.673)	(2.104)
Prior Relationship Loan Finance*	-1.507***	-1.073**	-0.933*	-1.237***
	(-2.783)	(-1.966)	(-1.674)	(-3.095)
Locational Advantage	-0.947**	0.200	0.283*	0.156
	(-2.641)	(1.241)	(1.816)	(1.430)
Main Creditor Bank	-2.806***	-0.023	-0.025	0.025
	(-4.504)	(-0.118)	(-0.125)	(0.172)
Log_Age		0.330	0.365	0.255*
		(1.276)	(1.543)	(1.853)
Log_Size		-0.130	-0.093	0.015
		(-1.325)	(-0.929)	(0.188)
Sales Growth		0.037	0.010	-0.129
		(0.201)	(0.058)	(-1.099)
Profit/Interest		-0.047	-0.044	0.014
		(-0.894)	(-0.809)	(0.781)
Bond Finance		-0.774*	-0.788*	-0.973***
		(-1.874)	(-1.891)	(-3.516)
Equity Finance		-3.023***	-2.941***	-2.653***
		(-4.255)	(-4.268)	(-5.870)
Chaebol		-0.158	-0.131	-0.144
		(-1.362)	(-1.229)	(-1.551)
Bank 1			0.111	0.069
			(1.217)	(1.038)
Bank 2			-0.148	-0.217**
			(-1.308)	(-2.283)
Bank 3			0.059	-0.043
			(0.497)	(-0.485)
Bank 4			-0.141	-0.143
			(-1.121)	(-1.573)
Inverse Mills ratio	0.473	0.308	0.554	
	(1.076)	(0.687)	(1.128)	
Intercept	0.756***	1.336	0.820	0.483
	(3.109)	(1.465)	(0.948)	(0.695)
F test	4.240***	2.880***	3.060***	4.670***
R-square	0.242	0.326	0.385	0.371
No. of firms	82	82	82	118

Table 8. Probit estimations of the dummy variable indicating the continuation of bank-firm relationships. For the full sample of firms (181) whose loans were transferred to the acquiring banks, probit regressions of the dummy variable indicating whether a firm continued relationships with an acquiring bank until the end of 2000 on the explanatory variables as of prior to the loan acquisitions. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. Chi-square statistic is for Wald test for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5%, and 10% levels, respectively.

	[1]	[2]	[3]
Prior Relationship	0.885***	1.259***	1.330***
	(3.332)	(4.055)	(3.566)
Market/Book value			2.093**
			(2.323)
*Prior Relationship*Market/Book value*			-0.229
			(-1.344)
#Closed/#Lending Banks	1.915	3.017*	3.172*
	(1.217)	(1.798)	(1.895)
Loan_Closed/Loan_All	7.495***	7.753***	7.545**
	(2.801)	(2.618)	(2.334)
Locational Advantagy	0.853**	0.725*	0.729*
	(2.248)	(1.878)	(1.879)
Main Creditor Bank	0.336	-0.190	-0.127
	(0.779)	(-0.476)	(-0.299)
Log_Age	-0.251	-0.120	-0.310
	(-0.505)	(-0.220)	(-0.570)
Log_Size	0.657**	0.552	0.810**
	(2.130)	(1.620)	(2.246)
Sales Growth	0.300	0.275	0.442
	(0.482)	(0.464)	(0.715)
Profit/Interest	0.269**	0.239**	0.313***
	(2.318)	(2.015)	(3.552)
Bond Finance	-0.332	0.096	-0.211
	(-0.434)	(0.112)	(-0.233)
EquityFinance	-3.732***	-3.673***	-5.304***
	(-2.643)	(-2.590)	(-3.362)
Chaebol	-0.077	0.078	0.058
	(-0.234)	(0.206)	(0.150)
Largest Shareholder	1.615*	2.313**	2.047*
	(1.821)	(2.212)	(1.914)
Minority Shareholders	0.670	1.047*	1.004*
	(1.282)	(1.834)	(1.724)
Foreign Shareholders	0.175	0.057	-0.635
	(0.120)	(0.045)	(-0.464)
Bank1	-0.088	0.015	0.118
	(-0.266)	(0.043)	(0.330)
Bank2	-0.043	0.295	0.297
	(-0.103)	(0.653)	(0.643)
Bank3	-0.484	-0.522	-0.500
	(-1.522)	(-1.604)	(-1.451)
Bank4	0.267	0.625	0.590
	(0.695)	(1.218)	(1.129)
Collateralized Loan_Acquiring		-0.659*	-0.654*
		(-1.860)	(-1.920)
Collateralized Loan_Closed		0.532**	0.471*
		(2.068)	(1.836)
Constant	-6.102**	-6.318**	-8.316**
	(-2.010)	(-1.932)	(-2.429)
Wald test	65.30***	62.76***	77.40***
Pseudo R-square	0.311	0.368	0.386

Table 9. Random effect panel regressions of changes in loan size. For the subsample of firms (103x3) whose loans were transferred to the acquiring banks, and whose relationships with the banks were continued until the end of 2000, random effect panel regressions of changes in *Loan_Acquiring/Loan_All* during each year on the explanatory variables as of the end of previous year. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. Wald test is a statistic for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5%, and 10% levels, respectively.

	[1]	[2]	[3]
Prior Relationship	-0.022***	-0.015***	-0.015***
	(-4.291)	(-2.818)	(-2.889)
Δ Log_Loan_All			-0.122***
			(-9.124)
Prior Relationship Δ Log_Loan_All*			0.126***
			(6.370)
#Closed/#Lending Banks	0.065*	-0.007	-0.004
	(1.903)	(-0.159)	(-0.076)
Loan_Closed/Loan_All	-0.081	-0.027	-0.050
	(-1.493)	(-0.507)	(-1.070)
Locational Advantagy	-0.002	0.007	0.012
	(-0.255)	(0.774)	(1.367)
Main Creditor Bank	0.008	0.002	-0.004
	(0.757)	(0.147)	(-0.303)
Log_Age	-0.017	0.003	0.019
	(-0.946)	(0.188)	(1.000)
Log_Size	0.015**	0.015**	0.010
	(2.175)	(2.091)	(1.460)
Sales Growth	0.011	0.019**	0.018**
	(1.431)	(2.400)	(2.320)
Profit/Interest	0.006***	0.002	0.001
	(3.060)	(1.081)	(0.746)
Bond Finance	-0.038**	0.018	0.019
	(-2.333)	(1.114)	(1.179)
EquityFinance	-0.016	-0.034	0.000
	(-0.553)	(-1.167)	(0.001)
Chaebol	-0.012**	-0.006	-0.005
	(-2.009)	(-0.922)	(-0.594)
Largest Shareholder	-0.091***	-0.029	-0.013
	(-5.672)	(-1.599)	(-0.754)
Minority Shareholders	-0.074***	-0.045***	-0.037***
	(-5.538)	(-2.947)	(-2.594)
Foreign Shareholders	-0.042	-0.028	-0.022
	(-1.345)	(-0.933)	(-0.653)
Bank1	0.021***	0.014*	0.012*
	(2.754)	(1.869)	(1.682)
Bank2	-0.007	-0.002	-0.006
	(-1.104)	(-0.325)	(-0.712)
Bank3	0.018*	0.016	0.013
	(1.860)	(1.454)	(1.119)
Bank4	0.002	0.012	0.010
	(0.190)	(1.365)	(1.052)
Collateralized Loan_Acquiring		-0.001	-0.001
		(-0.542)	(-0.546)
Collateralized Loan_Closed		0.005*	0.005**
		(1.697)	(2.013)
Constant	-0.017	-0.099*	-0.094
	(-0.290)	(-1.760)	(-1.547)
Wald (chi^2)	114.97***	43.09***	365.82***
Log-likelihood	661.74	602.91	606.27

Table 10. Market reactions versus bank lending decisions: control for changes in loan size. For each event window and each category classified by whether changes in the proportion of loans made by the acquiring banks over loans made by all lending banks during the six months after the loans transfers are positive, the CARs (in percentage) are estimated using the market model over the pre-event estimation window of t = -436 to t = -175. The number in the last column is the t-statistic for the null hypothesis that the CARs of Type N firms (*Prior Relationship* = 0) and Type P firms (*Prior Relationship* = 1) are not different from each other. ***, **, and * denote the significance at the 1%, 5% and 10%, respectively. N is the number of firms in each category. The total number of firms is not 118 because three firms experience no changes in the proportion of loans

			Prior Relationship			
			0 (Type N)	(0,1) (mixed type)	1 (Type P)	t test
$\Delta Loan > 0$						
	N	34	11	10	13	
	(-1,+1)	-5.23	-6.80	-4.68	-4.32	0.89
	(-1,+51)	18.33	24.02	13.57	17.17	0.29
$\Delta Loan < 0$						
	N	81	31	18	32	
	(-1,+1)	-4.43	-4.59	-8.44	-2.01	1.26
	(-1,+51)	5.12	10.96	10.02	-3.29	1.96**
(*Loan at end-1998* = 0)						
	N	36	23	5	8	
	(-1,+1)	-6.95	-5.97	-10.12	-7.80	0.38
	(-1,+51)	3.98	10.96	1.12	-12.56	1.43

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