Bank Connections and Corporate Restructurings: Evidence from Thailand

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Abstract

This study analyzes the importance of bank connections that occur as a result of family relationships and social relations using the data from Thailand. The sample periods covering the 1997 East Asian economic crisis are separated into three phases: pre-crisis (1996), during the crisis (1997-1998) and post-crisis (1999-2000). The presence of relationships between firms and banks is expected to increase the possibility of firm restructuring activities because of useful and timely advice from their close banks. In the pre-crisis period, the probability of dividend cut is higher among bank-connected firms than non-connected firms; during the crisis, top management turnover appears to be the restructuring strategy adopted by connected firms. In the post-crisis period, however, connected firms are less likely to undertake debt restructuring actions, which are mainly driven by a lower incidence of financial advisor appointments. Nevertheless, we find no strong evidence that bank relationships add value to the firms because changes in performance after undertaking restructuring activities are not significantly different between connected and non-connected firms. Overall, the results of this research suggest that connected banks play an important role on a firm's key financial strategy.

Keywords: Bank connections; Restructuring; East Asian economic crisis
JEL Classification Codes: G01, G21, G34

1. Introduction

The significance of bank relationships are pronounced (Ongena and Smith, 2000; Elyasiani and Goldberg, 2004). Banks act as firms' external financing providers, and bank financing plays an important role in developing a country's financial system (Mayer, 1990). In practice, banks adopt a monitoring role to ensure that firms are able to repay their loans, and in gathering updated information to review firms' financial status and operations. In Germany, banks take an active role in monitoring and governing firms according to the agency theory (Edwards and Fischer, 1994; Chirinko and Elston,

2006). Aoki (2000) uses the concept of information asymmetry and documents that Japanese banks work closely with firms to gain information and to monitor firms' investments.

Firms benefit from bank relationships in terms of access to external funds (Gugler, 2001; McCahery, 2002; Espenlaub et al., 2010). Bank connections also help firms obtain a lower cost of external funds (Berger and Udell, 1995; Greenbaum and Thakor, 1995; Charumilind et al., 2006), provide financial advice (Mayer, 1990), and aid in firms' survival during financial distress (Sheard, 1994).

In this paper, we hypothesize that bank connections would increase the possibility that firms will engage in restructuring actions. Connected banks are likely to closely monitor top management and advise distressed firms to help them recover from financial difficulty. Firms might also be able to negotiate with their connected banks, enhancing incidents of restructuring. There are several types of restructuring actions that firms can choose to practice. Studying the impact of bank connections on the likelihood of corporate restructurings will provide additional evidence on the role of banks on a firm's key strategies.

This study contributes to the literature on bank connections and corporate restructurings. First, previous literature examines the impact of bank connections on firm performance (James, 1987; Gorton and Schmid, 2000; Kang and Stulz, 2000), management turnover (Sheard, 1989; Kaplan and Minton, 1994), and resolution of distress (Claessens et al., 2003; Faccio and Sengupta, 2011). Our study complements those existing studies by focusing on the role of bank connections on corporate restructuring.

Second, we define bank connections that occur as a result of family relationships and social relations in Thailand, in addition to the settings of the US, the Japanese, and the German financial systems. Previous research investigates the impact of bank connections on corporate restructurings only in the US, the Japanese, and the German financial systems (Bulow and Shoven, 1978; Sheard, 1989; Diamond, 1994; Kaplan and Minton, 1994; Aoki et al., 1994; Sheard, 1994). Many Thai firms are connected with banks through family ownership and board of directors. In particular, Espenlaub et al. (2010) find that connected firms account for 80% of total non-financial listed firms in the pre-crisis period. This characteristic of Thai firms allows us to examine how bank connections influence restructuring decisions of the firms in difficult times.

Third, unlike previous studies that analyze firm restructurings during an economic crisis, our study covers pre-, during and post-crisis periods. We use the 1997 East Asian economic crisis as a setting for economic shocks, and examine how bank-connected firms experiencing an economic shock undertake restructuring actions and what factors determine the likelihood of such actions. In addition, the 1997 financial crisis allows us to investigate the impact of bank connections on firm restructuring activities before the crisis (1996) and after the crisis (1999-2000).

Using univariate analyses and multivariate probit estimations, we examine the effect of bank connections on the likelihood of restructuring activities in Thailand, covering three periods: the pre-crisis period, the period during the 1997 economic crisis, and the post-crisis period. We further investigate the effects of the types of connections, which are ownership and director connections. Moreover, we examine the impact of connections on firm performance following restructuring actions.

Our results support the role of connected banks on corporate restructurings. More precisely, univariate analyses show that in the pre-crisis period, bank-connected firms engage in dividend cut and capital raising activities more often than non-connected firms. Both in the during-crisis period and in the post-crisis period, firms with bank connections show higher likelihood of top management turnover and new capital raising when compared with firms without connections.

Consistent with the findings of univariate analyses, our multivariate probit estimations show that in the pre-crisis period, connected firms are more likely to cut dividend payment to restructure; while during the crisis they are more likely to replace top management turnover. Surprisingly, the likelihood of debt restructuring activities is lower in firms with bank connections than in firms without connections. This result is mainly attributable to a lower incidence of financial advisor appointments,

which is defined as a part of debt restructurings, in connected firms. Since connected banks could provide financial advice to the firms, firms with bank connections may find it unnecessary to appoint financial advisors when they are in distress. It is also possible that connected firms receive financial support from the banks to lower their debt burden. Hence, connected firms are less likely to engage in debt restructuring activities. When separating bank connections into ownership and director connections, we find that both types of connections have significant impact on restructuring actions. Nevertheless, connections through ownership seem to influence firms' restructuring activities to a greater extent than connections through boards of directors.

Although connected banks play an important role on a firm's financial strategy, we document no strong supportive evidence that relationships with banks are valuable to the firms. Specifically, our results show that changes in operating performance after undertaking restructuring actions are not significantly different between connected and non-connected firms.

The research suggests that policy makers should be aware of the presence of bank connections because it might lead to unfair treatment among firms. More precisely, connected firms might have easier access to bank loans and obtain valuable information and advice from the connected banks for their restructurings. It also implies that banks might provide greater opportunity to restructure for connected firms because of lower asymmetric information problems between banks and firms.

The rest of the study is structured as follows. Section 2 reviews the significance of bank connections and the efficiency of restructuring actions taken in response to a crisis. It also describes the effect of bank connections and other factors on the likelihood that a firm engages in restructuring activities. Section 3 discusses data, variables, and methodology used in this study. Section 4 analyzes the empirical results of our developed models and examines the impact of bank connections and other factors that determine restructuring choices of Thai firms over the economic crisis. Finally, Section 5 concludes the study.

2. Bank Connections and Corporate Restructurings
2.1. The Significance of Bank Connections

Bank connections are commonly found in most economies (Boot, 2000; Ongena and Smith, 2000). In practice, they adopt a monitoring role in ensuring that firms are able to repay their loans, and in gathering updated information to review firms' financial status and operations. The extent to which banks participate or play such a monitoring role in firms depends on the development of a financial system and the institutions in each country. In countries with active capital markets, market control mechanisms and financial service institutions, such as credit rating and information outsourcing companies, act to monitor firms, and this system allows banks to lessen their monitoring effort because such activity is complemented by market control and the monitoring roles of other financial service institutions. In other countries, market control does not play an active role in disciplining a firm's management, and financial service companies are not well established.

Mayer (1990) notes that banks act as financial intermediaries to reduce information asymmetries. Banks appear to improve contract enforcement and reduce agency problems. Moreover, they seem to control and participate in firms' business by monitoring credit compliance and providing management advice. Diamond (1984, 1996) discusses the role of financial intermediaries and benefits of bank monitoring in the arms' length financial system. Active monitoring may minimize the costs of firms' financial distress. Public debt holders and public equity holders tend to have no incentive to monitor firms as a result of higher monitoring costs. In addition, Diamond (1991) suggests that the benefits of bank monitoring increase firms' access to other sources of external funds. Through the monitoring process, firms may acquire reputation, which could be used to predict their future profits. Thus, firms can rely on reputation in obtaining access to public debt.

The existence of bank connections significantly affects firm value. James (1987) finds that stock prices of the borrowing firms significantly increase as a result of loan announcements, while the

announcements of private placements and public debts are negatively associated with stock prices. Using the German firms, Gorton and Schmid (2000) find that firm performance is positively related to banks' equity control rights and concentration of control rights. In addition, Limpaphayom and Polwitoon (2004) find that the relationship between bank equity ownership and firm performance is non-linear in Thailand. The percentage of bank ownership (a proxy for bank relationship) is positively related to Tobin's Q ratio (a measure of firm performance) at a lower level of bank equity ownership, but negatively related at a higher level of bank ownership. It is important to note that the definition of bank relationships used in this study may underestimate the real bank relationships that could be traced through ultimate shareholdings in the institutional framework of concentrated ownership and family business groups in Thailand.

Firms that have developed relationships with banks possibly become more stable because they are able to secure a committed source of funds (Neuberger and Rathke, 2009). More importantly, they may also receive preferential credits to reduce their cost of capital (Greenbaum and Thakor, 1995; Boot, 2000). Berger and Udell (1995) also find that banks grant lower interest rate loans to firms with longer bank relationships. These firms have a lower possibility of pledging collateral to banks. Furthermore, Petersen and Rajan (1994) show that the likelihood of late payments on trade credits is negatively related to the length of the longest relationship with a bank.

Although bank relationships are crucial and contribute to various benefits, they result in several drawbacks. Boot (2000) discusses the adverse consequences of relationships between firms and banks, categorizing these into soft budget constraints and hold-up problems.[1] Close ties between firms and banks not only lead to ineffective contract enforcement, but also result in the looting dilemma. La Porta et al. (2003) show that in Mexico the controlling shareholders use their control over lending policies and channel bank capital to their related parties and other private businesses.

In some circumstances, bank relationships adversely affect firm performance. Kang and Stulz (2000) document that during the decline of the stock market when connected banks faced financial problems and decreased bank lending, firms that were more dependent on bank loans experienced poorer stock returns and lower investment. Furthermore, Bae et al. (2002) also find that the negative news announcements led to a decline in cumulative abnormal returns of banks and of their client firms. In Thailand, firms with bank connections obtained easier access to bank loans in the pre-crisis; however, they poorly performed during the financial crisis (Espenlaub et al., 2010).

2.2. Corporate Restructurings in Response to Crisis

Restructuring actions are well documented as firm responses to performance deterioration (Jain, 1985; John et al., 1992; Ofek, 1993; Kang and Shivdasani, 1997; Lai and Sudarsanam, 1997**;** Denis and Kruse, 2000). The primary objective of restructuring actions is to recover from performing poorly relative to past performances or to competing firms (Brickley and Van Drunen, 1990). In many cases, though, restructuring actions are also undertaken in order that firms may avoid (further) financial distress or bankruptcy (Khanna and Poulsen; 1995). Previous research also shows that firms restructure in response to adverse macroeconomic conditions (Lai and Sudarsanam, 1997; Gilson, 2001; Kang et al., 2010; Faccio and Sengupta, 2011).

If restructuring actions are an efficient response to an economic crisis or a fall in earnings, performance improvements should be observed after restructuring activities are undertaken. Also, among poorly performing firms, firms that restructure should improve their performance in subsequent periods to a greater extent than those that do not restructure. Consistent with the view that restructuring actions are beneficial to performance, investors generally consider corporate restructuring as good news. For instance, studies have shown positive and significant abnormal returns after troubled firms announce the replacement of a top executive (Bonnier and Bruner, 1989), asset restructuring (Hite et al., 1987; Khanna and Poulsen, 1995; Lang et al., 1995; Denis and Kruse, 2000; Baek et al., 2002;

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[1] The term "soft budget constraint" has been used in the previous literature on the socialist system.

Baek et al., 2004), and an internal reorganization (Berger and Ofek, 1999; Baek et al., 2002). The market also reacts favorably to announcements of corporate restructuring to reduce costs and increase efficiency (Brickley and Van Drunen, 1990), or after suffering a decline in operating performance (Nohria and Love, 1996).

There is also evidence supporting the argument that firms restructure to improve stock price performance and accounting profitability. For example, John et al. (1992) find that changes in operations and levels of investments help companies to recover from negative earnings. Many studies find that firms engaging in asset sales have improved their operating performance in the periods that follow (John and Ofek, 1995; Kang and Shivdasani, 1997; Denis and Kruse, 2000; Kang et al., 2010). Likewise, internal control changes, in particular the replacement of top management, play an important role in enhancing subsequent operating performance (Denis and Denis, 1995; Kang and Shivdasani, 1995). When financially distressed firms successfully restructure their debt out of court, their stock delivers significant positive abnormal returns (Gilson et al., 1990).

2.3. Bank Connections and Corporate Restructurings

Diamond (1994) provides an additional aspect of bank monitoring benefits, explaining that firms may prefer bank loans to public debt because banks can exercise control of debt over firms and help firms save the costs of reorganization. If firms go bankrupt, banks will allow them to continue operations and invest in productive projects, whereas public debt holders will force them to liquidate.

The roles and benefits of bank relationships in monitoring and rescuing firms are often highlighted in the Japanese main bank system, which as Corbett (1987) explains, involves bank monitoring through regular visits, exchanges of information and exchanges of personnel between firms and banks. A screening process is carefully conducted by banks at the beginning of such relationships, and in the subsequent stages of long-term relationships, recurring monitoring is carried out to allow banks and firms to renegotiate loan contracts and to limit agency problems. Sheard (1989) additionally notes that in Japan, main banks actively take control and intervene in firms' business during reorganization by replacing incompetent managers with bank executives. Kaplan and Minton (1994) find that the likelihood of bank director appointments is higher in firms with negative income and is positively associated with the strength of bank relationships, measured by the proportion of bank lending.

Bulow and Shoven (1978) argue that main creditors may act in the equity holders' interests because they grant firms large loans. The main creditors possibly provide extra funds to help the firms avoid bankruptcy during financial distress periods. The findings of Hoshi et al. (1990) also show that main banks in Japan play a key role in rescuing financially distressed firms and report that, after the periods of financial distress, the investment rate and sales growth of bank-connected firms are better maintained compared to those of firms without bank relationships. Aoki et al. (1994) and Sheard (1994) agree that in the system of the Japanese main banks, firms seem to be bailed out by their main banks that are, typically, major creditors and hold an ownership shareholding in firms. Thus, the main banks may have incentives to rescue connected firms by extending loans during periods of financial distress. Additionally, main banks are a substitute for courts in the formal bankruptcy process because the reorganization of firms is done informally between them and the financially distressed firms.

In addition, bank connections have been seen to be beneficial in protecting firms against the possibility of filing for bankruptcy during the East Asian crisis. Claessens et al. (2003) find that firms that are owned by banks have a lower possibility of filing for bankruptcy. Bank connections contribute to advantages in terms of information and resource allocation in rescuing firms, and out-of-court renegotiations seem to take place informally to reduce the likelihood of bankruptcy. Furthermore, banks can often be a part of business groups and are known for giving group-affiliated firms preferential access to capital, particularly for the firms in distress. This group membership of banks also makes bank-led creditor workouts easier for group-affiliated firms. Moreover, negotiations

between a distressed firm and its creditors are an important consideration in the resolution of distress (Faccio and Sengupta, 2011).

As reviewed above, we hypothesize that bank connections increase the likelihood of firm restructuring. Connected banks appear to closely monitor firms and provide financial advice during a crisis, when a useful financial strategy, e.g. restructuring, is needed to turn the company around. Moreover, we expect that if bank connections are valuable to firms, connected firms should have better performance changes than non-connected firms after restructurings.

3. Data and Methodology
3.1. The Sample

Sample firms are non-financial firms listed on the Stock Exchange of Thailand (SET). The sample period covers the period of 1996-2000. This sample period reflects restructuring activities in Thailand before, during and after the 1997 financial crisis. The sample period is divided into three sub-sample periods: the pre-crisis (1996), during-crisis (1997-1998), and post-crisis (1999-2000) periods.[2] We exclude firms in the banking and financial sector because of their non-traditional financial statements. We define 1997 as the base year since this is when firms experienced the economic shock and might have undertaken various restructuring actions in response. As firms may not have responded to the shock immediately, we think that it is more appropriate to investigate restructuring actions over a longer period.

3.2. Data

3.2.1. Data on Bank Connections
We classify firms into two groups: bank-connected and non-connected firms. For connected firms, we also classify the firms into two types: ownership connected firms and director-connected firms. The information used to define bank connections is only publicly available information from the SET. For each sample year, we have cross-section data. For each cross- section data, we classify firms into "bank-connected" and "non-connected" firms according to the data on ownership and boards of directors in that year.[3] A firm is a bank-connected firm under the following conditions: 1) a major shareholder of a bank or a member of his related families holds at least 10% shareholding of the firm (CONN1)[4], 2) a major shareholder of the firm or a member of his related families is a director of a bank (CONN2), 3) a major shareholder of a bank or a member of his related families is a director of a firm (CONN3), or 4) a bank director is a director of a firm (CONN4). In addition, to analyze the effect of the connection types, we define the dummy of ownership connections equal to 1 if CONN1 = 1 only. The dummy of director connections is equal to 1 if CONN2, CONN3 or CONN 4 = 1, and CONN1 $\neq$ 1. Compared to the director connections, the ownership connections are considered the stronger type of connection.

In order to define connection variables, we obtain lists of family business groups and lists of ownership structure of Thai firms, commercial banks and finance companies. In addition, lists of board of directors of Thai firms, commercial banks and finance companies are collected from the SETSMART database of the Stock Exchange of Thailand and the annual company reports.

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[2] The 1995 data are not included in the pre-crisis period because there were only a small number of restructuring actions taken in that year. In addition, some of the independent variables that are measured as of one year prior to the restructuring year are not available for 1995.

[3] We exclude the crisis period (1997 and 1998) because, during this time interval, various government actions and the ongoing process of bank closures and capital injections in Thai financial institutions make it difficult to define the existence of bank connections. Therefore, we assume that the existence of bank connections in 1997 and 1998 remains the same as in 1996.

[4] We use a cut-off point of ownership shareholding at 10% to define a major shareholder, as prior literature (La Porta et al., 1999) suggests that such a stake lends sufficient power.

3.2.3. Data on Firm Characteristics

Firm characteristics in our study include the affiliation with large Thai business groups and financial characteristics. Data on business group membership are collected from *Thai Business Groups 1996/1997: A Unique Guide to Who Owns What*, published by Tara Siam Ltd. in 1997. This book reports the list of the top 150 business groups in Thailand. Data on financial characteristics are obtained mainly from the SETSMART database, which contains financial information on Thai listed companies, including financial statements, notes to financial statements, auditors' reports, released on a quarterly basis, and stock prices. In this paper, all financial data are winsorized at 1% and 99%.

3.2.4. Data on Corporate Restructuring Actions

The announcements of restructuring actions are posted on the SET website for six months and are updated daily. It is then kept in the company daily news database. Data collection for this section requires one to go through all companies' daily news databases and extract relevant information relating to restructuring activities. Data on some restructuring actions are also gathered from additional sources including press reports in *The Bangkok Post* and company annual reports and financial statements.

Following the literature, restructuring actions can be categorized into the five broad types: 1) *asset downsizing*, occurring when a firm undertakes any of the following activities—selling assets, closing down a plant, reducing production capacities, discontinuing or suspending production operations or shutting down a division/office/branch/subsidiary; 2) *management turnover*, occurring when a firm replaces at least one of its top management positions, including Chairman of the Board, President, Vice President, Chief Executive Officer, Managing Director, Deputy Managing Director, and Deputy General Manager; 3) *dividend cut*, occurring when a firm reduces its dividend payout from the previous year or omits its dividend payout after paying a dividend in the previous year; 4) *debt restructuring*, occurring when a firm undertakes any of the following activities—negotiating with creditors that leads to lower interest and principal payments or an increase in the maturity of the firm's debt, exchanging equity securities for debt or offering creditors the firm's equity securities, or appointing a financial advisor to assist in the debt restructuring process; and 5) *capital raising*, occurring when a firm issues new loans, debentures, common stock or hybrid securities. Note that *employee layoffs* are not included in this study because such data are not available for Thai firms.

3.3. Methodology

3.3.1. Univariate Analyses

We hypothesize that firms that possess bank connection characteristics are expected to show a higher restructuring frequency. Using univariate estimations, we divide sample firms into two subsamples to investigate whether firms with bank connections exhibit a higher restructuring frequency, relative to firms without bank connections.

3.3.2. Multivariate Probit Analyses

To control for the effects of other significant variables on the restructuring likelihood, we conduct probit estimations. It is likely that firms would make decisions on taking all kinds of restructuring actions simultaneously. Hence, each action may affect the likelihood that others would occur, and vice versa. To control for those problems, we use the multivariate probit model. Specifically, we estimate a system of five regressions representing each type of the restructuring actions. In our multivariate probit models, dependent variables are binary variables taking a value of one if a particular restructuring action occurs and zero otherwise, while explanatory variables are a set of variables regarding bank connections and other control variables. As pointed out by previous literature, business group affiliation, size, leverage, firm and industry performances, and liquidity are also significant factors that determine the likelihood of restructuring. Thus, we include the following control variables in our multivariate probit models: bank connections, business group affiliation, leverage (proxied by the ratio

of total debt to total assets), size (proxied by the log of total assets), performance (proxied by the ratio of EBIT to total assets), industry-based performance (proxied by the median ratio of EBIT to total assets of the industry in which a firm is classified), and liquidity (proxied by the ratio of current assets to current liabilities). The presence of bank connections and the affiliation to a large business group are measured as of the year in which restructuring is taken (Year 0), while financial explanatory variables are measured as of the year prior to the restructuring year (Year -1). The model is described in Appendix 1.

4. Empirical Analyses
4.1. Characteristics of Firms Undertaking Restructuring Actions

Table 1 exhibits the summary statistics of a number of significant characteristics of firms that undertake restructuring actions in our sample periods 1996-2000, compared with firms that do not. Such characteristics include business group affiliation, leverage, size, firm and industry performances, and liquidity. In the pre- and post-crisis periods, restructuring and non-restructuring firms are as likely to be affiliated with a large business group. However, during the crisis, firms that belong to a big business group engage in restructuring activities more often. This result is also documented in Polsiri and Wiwattanakantag (2006). Consistent with the literature, we find that larger firms are more likely to restructure. As expected, restructuring firms have a higher level of leverage and poorer firm performance than non-restructuring counterparts. These findings hold in all periods. Similarly, the findings of industry performance suggest that restructuring firms have lower industry performance during the crisis and in the post-crisis period. In addition, liquidity appears significantly different between two subsamples during and after the crisis. That is, restructuring firms have a lower ratio of current assets to current liabilities than non-restructuring firms.

Table 1: Firm characteristics and test of differences between firms undertaking and not undertaking restructuring actions

This table reports the mean values of firm characteristics of non-financial firms listed on the Stock Exchange of Thailand between 1996 and 2000. The pre-crisis period covers 1996. The during-crisis period covers 1997-1998. The post-crisis period covers 1999-2000. A firm *undertaking restructuring* is a firm that undertakes at least one of the following restructuring actions: asset downsizing, management turnover, dividend cut, debt restructuring, and capital raising. A firm is in a *business group* if a firm's largest shareholder is among families who own one of the 150 largest business groups. The "*p*-value" columns report *p*-values of the two-tailed t-tests of equal means for each characteristic between two subsamples.

Firm characteristics	Pre-crisis period			During-crisis period			Post-crisis period		
	Undertaking restructuring	Not undertaking restructuring	*p*-value	Undertaking restructuring	Not undertaking restructuring	*p*-value	Undertaking restructuring	Not undertaking restructuring	*p*-value
Number of observations	231	68		592	78		528	110	
Percentage of firms in business groups (%)	52.81	45.59	0.30	51.86	29.49	**0.00**	47.35	39.09	0.11
Book value of total assets (million baht)	7,672.61	1,828.08	**0.00**	7,965.14	4,217.26	**0.04**	8,956.59	2,491.92	**0.00**
Total debt/Total assets (%)	41.43	29.74	**0.00**	48.48	34.34	**0.00**	53.61	19.09	**0.00**
EBIT/Total assets (%)	7.96	11.29	**0.00**	4.48	10.16	**0.00**	0.10	11.43	**0.00**
Industry EBIT/Total assets (%)	8.53	8.83	0.32	6.31	7.66	**0.00**	4.66	6.38	**0.01**
Current assets/Current liabilities	1.60	1.65	0.79	1.30	1.78	**0.00**	1.20	2.45	**0.00**

4.2. Characteristics of Bank-Connected Firms

In Table 2, we present the characteristics of bank-connected and non-connected firms. Consistent with Polsiri and Wiwattanakantang (2006) who show that banks are commonly a part of big business groups in Thailand, bank-connected firms are more likely to be affiliated with a business group than non-connected firms. The result holds in all periods and is highly significant. Bank-connected firms are also significantly larger than non-connected firms in terms of total assets in all periods. Considering the use of debt, we find that there is no difference in financing structure between the two groups in the pre-crisis and during-crisis periods. Nevertheless, in the post-crisis period, firms with bank connections use less debt. It should be noted here that after the crisis hit, followed by the depreciation of the baht in July 1997, the debt ratio went up for both connected and non-connected firms.

As for performance of the firm and performance of the industry in which the firm is classified, connected and non-connected firms show no significant differences before the crisis. During the crisis, however, bank-connected firms have lower firm and industry performances. After the crisis, although industry performances are not different between both subsamples, connected firms show better firm performance. It may be inferred from these findings that connected firms are hit harder by the economic crisis but seem to recover better, relative to non-connected firms. Concerning liquidity, only in the post-crisis period, connected firms have higher liquidity.

4.3. Univariate Analyses of the Impact of Bank Connections on Restructuring Actions

To examine the impact of bank connections on the incidence of corporate restructurings, sample firms are divided into two subsamples, depending on whether a firm has relationships with a bank. Then differences in the percentage of firms undertaking restructuring actions between two categories are analyzed.

Table 3 shows that in the pre-crisis period, firms with bank connections are more likely to cut dividend and raise new capital. According to our hypothesis, the result suggests that connected banks provide the firms with financial advice and thus increase the likelihood of restructurings. During the crisis, top management turnover and capital raising occur more often among connected firms. Connected firms also have a marginally higher probability of debt restructuring. The likelihood of debt restructuring is also marginally greater in connected firms. The finding may suggest that firms with bank connections can negotiate with the banks and are more likely to engage in this activity.

The results of the post-crisis period also show that connected firms are more likely to raise additional capital. This result supports our hypothesis. Nevertheless, unlike in the during-crisis period, firms with bank connections are less likely to engage in debt restructuring. This finding is rather surprising since we expect that connected firms should be able to better negotiate with the banks than their non-connected counterparts can. We further examine this result when we conduct probit models.

4.4. Multivariate Probit Analyses of the Impact of Bank Connections on Restructuring Actions

The multivariate probit analyses are used to examine the impact of bank connections and other control variables on the restructuring likelihood of the sample firms in different periods of time (i.e., pre-crisis, during crisis and post-crisis). Table 4 shows that there are 299, 670, and 638 firm-year observations in the pre-crisis (1996), during crisis (1997-1998) and post-crisis (1999-2000) periods, respectively. We report the results of the effects of bank connections on restructuring activities in Panels 1-5. In Panel 1 of Table 4, the presence of bank connections does not affect the possibility of asset downsizing activities; however, the size factor is the only impact on the likelihood of asset downsizing of thecompany in all sample periods. Moreover, we find that, before and during the crisis, firms will engage in asset downsizing if their performance becomes poorer. The results also show that being a firm in a business group increases the likelihood of downsizing the company's assets during the crisis, although the relationship is significantly marginal at 10%.

Table 2: Firm characteristics and test of differences between bank-connected and non-connected firms

This table reports the mean values of firm characteristics of non-financial firms listed on the Stock Exchange of Thailand between 1996 and 2000. The pre-crisis period covers 1996. The during-crisis period covers 1997-1998. The post-crisis period covers 1999-2000. A firm is a bank-connected firm if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, 2) if a major shareholder of the firm or a member of his related families is a director of a bank, 3) a major shareholder of a bank or a member of his related families is a director of a firm, or 4) a bank director is a director of a firm. A firm is in a *business group* if a firm's largest shareholder is among families who own one of the 150 largest business groups. The "*p*-value" columns report *p*-values of the two-tailed t-tests of equal means for each characteristic between two subsamples.

Firm characteristics	Pre-crisis period			During crisis period			Post-crisis period		
	Bank-connected firms	Non-connected firms	*p*-value	Bank-connected firms	Non-connected firms	*p*-value	Bank-connected firms	Non-connected firms	*p*-value
Number of observations	239	60		525	145		301	337	
Percentage of firms in business groups (%)	58.16	23.33	**0.00**	55.81	25.52	**0.00**	54.49	38.28	**0.00**
Book value of total assets (million baht)	7,248.51	2,738.12	**0.01**	8,640.15	3,505.02	**0.00**	10,370.06	5,583.99	**0.00**
Total debt/Total assets (%)	38.60	39.45	0.77	46.71	47.27	0.84	42.28	52.46	**0.00**
EBIT/Total assets (%)	8.58	9.27	0.50	4.32	8.11	**0.00**	4.28	1.47	**0.03**
Industry EBIT/Total assets (%)	8.52	8.91	0.23	6.19	7.46	**0.00**	4.91	4.99	0.87
Current assets/Current liabilities	1.60	1.66	0.79	1.35	1.37	0.90	1.63	1.22	**0.01**

Table 3: Univariate tests of the impact of bank connections on restructuring actions

The sample consists of non-financial firms listed on the Stock Exchange of Thailand between 1996 and 2000. The restructuring frequency is the percentage of firms in that category that undertake a certain restructuring action. The pre-crisis period covers 1996. The during-crisis period covers 1997-1998. The post-crisis period covers 1999-2000. A firm is a bank-connected firm if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, 2) if a major shareholder of the firm or a member of his related families is a director of a bank, 3) a major shareholder of a bank or a member of his related families is a director of a firm, or 4) a bank director is a director of a firm. The "*p*-value" columns report *p*-values of the test for equal restructuring frequencies between two subsamples.

Type of restructuring actions	Pre-crisis period			During-crisis period			Post-crisis period		
	Bank-connected firms	Non-connected firms	*p*-value	Bank-connected firms	Non-connected firms	*p*-value	Bank-connected firms	Non-connected firms	*p*-value
Number of observations	239	60		525	145		301	337	
Percentage of firms undertaking									
Asset downsizing	23.85	21.67	0.72	20.95	17.24	0.32	21.59	24.93	0.32
Management turnover	6.69	3.33	0.33	12.00	4.83	**0.01**	16.94	12.46	0.11
Dividend cut	65.69	43.33	**0.00**	83.62	77.93	0.11	68.11	70.92	0.44
Debt restructuring	1.67	1.67	1.00	6.48	2.76	**0.09**	10.30	17.51	**0.01**
Capital raising	41.84	25.00	**0.02**	32.00	22.76	**0.03**	35.88	27.60	**0.02**

The results in Panel 2 of Table 4 show that bank relationships increase the likelihood of management turnover during the crisis. Consistent with our hypothesis, the higher probability of top management turnover in firms with bank connections may imply that connected banks closely monitor

managers of the firms and advise them to change executives who might not be able to deliver their best services during difficult times. Regarding other significant determinants of the top management replacement likelihood, we find that before the crisis the likelihood is positively related with firm size and negatively related with leverage and performance. The size effect is also significant in determining management turnover in the post-crisis period, while the leverage and performance effects are marginally significant.

We also document the impact of bank connections on the incidence of dividend cut. As presented in Panel 3 of Table 4, connected firms are more likely to restructure by cutting their dividend payment before the crisis. It is possible that connected banks advise the firm to choose this restructuring activity because the firm's shareholders will bear the cost, rather than its creditors, and this strategy may also improve the firm's debt repayment ability. Not surprisingly, we find that the possibility of dividend cut is driven by firm performance in all sample periods. Moreover, firms with a higher debt ratio have a greater possibility to cut their dividend. Nevertheless, this finding does not hold in the post-crisis period.

Interestingly, the findings in Panel 4 of Table 4 show that connected firms are less likely to engage in debt restructuring activities in the post-crisis period, which is different from our hypothesis. We further investigate into the debt restructuring activities after the crisis and find the reason to explain why the relationship is negative between connections and the possibility of debt restructuring. In unreported tests, we find that the appointment of financial advisors is significantly lesser in connected firms. This finding may imply that those firms receive financial advice from their connected banks; hence it is not necessary for them to appoint financial advisors during the debt restructuring process. Moreover, the connected banks may assist the firms to service debt obligations by injecting some funds; hence it reduces the probability of debt restructuring. However, during the crisis, the insignificant impact of bank connections on financial restructuring actions may partly result from the fact that banks are also severely hit by the crisis and struggle to restructure themselves. The result also shows that firms in a business group are less likely to restructure their debt financing before and during the crisis. As expected, the use of debt is positively related with the possibility of debt restructuring.

Panel 5 of Table 4 reports the results of the effect of connections on capital raising activities. We find that the presence of connections does not affect the likelihood of capital raising activities; however, firm size is the key determinant of firms to restructure by raising more funds. As expected, larger firms are more likely to increase their capital when compared with small firms. The positive relationship between firm size and the possibility of capital raising holds in all sample periods. In addition, liquidity appears to be negatively associated with the probability of capital raising in the post-crisis period.

We further investigate the impact of the connection types on the likelihood of restructuring activities. Bank connections are separated into ownership and director connections. To save some space, Table 5 presents only the estimations of restructuring activities on which the different types of bank connections have a significant impact. We find that before the crisis, both types of connections have a positive effect on the likelihood of dividend cut. This result is consistent with our prior results. Connections through ownership also significantly affect the likelihood of debt restructuring. However, its impact is negative. It is possible that the owners of banks who are also the owners of firms inject funds to help the firms with financial burden and hence reduce the probability that firms enter a debt restructuring process.

During the crisis, firms with ownership and director connections are more likely to adopt top management replacement as their restructuring strategy. Nevertheless, the effects of banks connections on executive turnover are significant only at 10%. After the crisis, we find that ownership connections are positively related with the dividend cut activity, while director connections have no significant relation. Moreover, firms with both ownership and board connections have a lower possibility to engage in debt restructuring activities. But the impact is marginally significant.

Table 4: Multivariate probit regressions of the impact of bank connections on restructuring actions
This table reports the results of a multivariate probit model of the impact of bank connections on the likelihood of restructuring actions in the pre-crisis (1996), during-crisis (1997-1998), and post-crisis (1999-2000) periods. The sample consists of non-financial firms listed on the Stock Exchange of Thailand (SET) between 1996 and 2000. The dependent variable is a dummy equal to 1 if a particular restructuring action is taken in Year t, and zero otherwise. The restructuring actions can be categorized into the five broad types, including asset downsizing, management turnover, dividend cut, debt restructuring and capital raising. A firm is a bank-connected firm if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, 2) if a major shareholder of the firm or a member of his related families is a director of a bank, 3) a major shareholder of a bank or a member of his related families is a director of a firm, or 4) a bank director is a director of a firm. Connection dummy is equal to one if a firm is bank-connected. Business group dummy is a dummy indicating if a firm's largest shareholder is among families who own one of the 150 largest business groups. The probit regression controls for year effects. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests. Robust standard errors control for correlation and clustering at firm level.

Panel 1: The impact of bank connections on asset downsizing

Explanatory variables	Pre-crisis		During-crisis		Post-crisis	
Connection dummy	-0.098		-0.034		-0.166	
	(0.670)		(0.817)		(0.161)	
Business group dummy	-0.016		0.209	*	-0.033	
	(0.930)		(0.079)		(0.782)	
Debt/total assets	0.315		0.244		0.193	
	(0.532)		(0.286)		(0.282)	
Log (Total assets)	0.201	***	0.113	**	0.157	***
	(0.010)		(0.020)		(0.001)	
EBIT/total assets	-4.718	***	-1.513	***	0.173	
	(0.000)		(0.004)		(0.683)	
Industry EBIT/total assets	5.990		0.611		-1.483	
	(0.132)		(0.737)		(0.150)	
Current assets/current liabilities	-0.026		-0.009		-0.063	*
	(0.578)		(0.856)		(0.089)	
Number of observations	299		670		638	

Panel 2: The impact of bank connections on management turnover

Explanatory variables	Pre-crisis		During-crisis		Post-crisis	
Connection dummy	-0.026		0.389	**	0.096	
	(0.949)		(0.046)		(0.440)	
Business group dummy	-0.085		0.099		-0.177	
	(0.754)		(0.474)		(0.173)	
Debt/total assets	-3.162	***	-0.329		-0.394	*
	(0.001)		(0.317)		(0.091)	
Log (Total assets)	0.472	***	0.092		0.205	***
	(0.000)		(0.102)		(0.000)	
EBIT/total assets	-7.606	***	-0.239		-0.830	*
	(0.000)		(0.659)		(0.085)	
Industry EBIT/total assets	-2.537		-0.911		1.181	
	(0.644)		(0.668)		(0.109)	
Current assets/current liabilities	-0.212		-0.055		-0.008	
	(0.336)		(0.304)		(0.832)	
Number of observations	299		670		638	

Panel 3: The impact of bank connections on dividend cut

Explanatory variables	Pre-crisis		During-crisis		Post-crisis	
Connection dummy	0.618	***	0.041		0.045	
	(0.002)		(0.766)		(0.718)	
Business group dummy	-0.061		0.147		-0.094	
	(0.708)		(0.248)		(0.449)	
Debt/total assets	1.268	**	0.559		2.480	***
	(0.011)		(0.130)		(0.000)	
Log (Total assets)	0.008		0.103	*	-0.009	
	(0.912)		(0.071)		(0.863)	
EBIT/total assets	-3.348	***	-2.385	***	-2.831	***
	(0.005)		(0.001)		(0.000)	
Industry EBIT/total assets	-2.323		-2.284		-2.612	**
	(0.504)		(0.264)		(0.029)	
Current assets/current liabilities	0.052		-0.030		0.017	
	(0.378)		(0.464)		(0.639)	
Number of observations	299		670		638	

Panel 4: The impact of bank connections on debt restructuring

Explanatory variables	Pre-crisis		During-crisis		Post-crisis	
Connection dummy	0.064		0.225		-0.363	**
	(0.863)		(0.382)		(0.032)	
Business group dummy	-0.673	*	-0.410	**	-0.039	
	(0.075)		(0.029)		(0.775)	
Debt/total assets	2.721	**	0.509	**	0.288	
	(0.032)		(0.032)		(0.170)	
Log (Total assets)	-0.091		0.188	**	0.715	***
	(0.568)		(0.023)		(0.003)	
EBIT/total assets	0.562		-3.334	***	0.047	
	(0.802)		(0.000)		(0.925)	
Industry EBIT/total assets	-17.860	*	-1.204		-3.898	***
	(0.062)		(0.670)		(0.003)	
Current assets/current liabilities	0.042		0.002		-0.530	**
	(0.478)		(0.983)		(0.024)	
Number of observations	299		670		638	

Panel 5: The impact of bank connections on capital raising

Explanatory variables	Pre-crisis		During-crisis		Post-crisis	
Connection dummy	0.207		0.012		0.021	
	(0.359)		(0.934)		(0.863)	
Business group dummy	0.045		0.087		0.008	
	(0.795)		(0.463)		(0.945)	
Debt/total assets	1.240	**	0.113		-0.279	
	(0.012)		(0.651)		(0.149)	
Log (Total assets)	0.538	***	0.543	***	0.476	***
	(0.000)		(0.000)		(0.000)	
EBIT/total assets	-0.231		-0.356		-0.704	
	(0.857)		(0.565)		(0.102)	
Industry EBIT/total assets	3.144		4.537	***	-0.144	
	(0.403)		(0.010)		(0.891)	
Current assets/current liabilities	0.085		-0.019		-0.132	***
	(0.122)		(0.611)		(0.002)	
Number of observations	299		670		638	

Table 5: Multivariate probit regressions of the impact of bank connection types on restructuring actions
This table reports the results of a multivariate probit model of the impact of bank connection types on the likelihood of restructuring actions in the pre-crisis (1966), during crisis (1997-1998) and post-crisis period (1999-2000). The sample consists of non-financial firms listed on the Stock Exchange of Thailand (SET) between 1996 and 2000. The dependent variable is a dummy equal to 1 if a particular restructuring action is taken in Year t, and zero otherwise. A firm is a bank-connected firm if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm (CONN1), 2) if a major shareholder of the firm or a member of his related families is a director of a bank (CONN2), 3) a major shareholder of a bank or a member of his related families is a director of a firm (CONN3), or 4) a bank director is a director of a firm (CONN4). Ownership connection dummy is equal to 1 if CONN1 = 1 only. Director connection dummy is equal to 1 if CONN2, CONN3 or CONN 4 = 1 and CONN1 $\neq$ 1. Business group dummy is a dummy indicating if a firm's largest shareholder is among families who own one of the 150 largest business groups. The probit regression controls for year effects. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests. Robust standard errors control for correlation and clustering at firm level.

Explanatory variables	Pre-crisis				During-crisis		Post-crisis			
	Dividend cut		Debt restructuring		Management turnover		Dividend cut		Debt restructuring	
Ownership connection dummy	0.606	**	-4.037	***	0.421	*	0.474	**	-0.395	*
	(0.019)		(0.001)		(0.072)		(0.021)		(0.073)	
Director connection dummy	0.621	***	0.198		0.381	*	-0.092		-0.298	*
	(0.002)		(0.588)		(0.054)		(0.491)		(0.081)	
Business group dummy	-0.058		-0.425		0.090		-0.148		-0.028	
	(0.732)		(0.235)		(0.521)		(0.238)		(0.837)	
Debt/total assets	1.269	**	3.090	***	-0.331		2.517	***	0.721	***
	(0.011)		(0.009)		(0.311)		(0.000)		(0.003)	
Log (Total assets)	0.008		-0.149		0.092		0.001		0.171	***
	(0.912)		(0.436)		(0.102)		(0.985)		(0.004)	
EBIT/total assets	-3.347	***	0.600		-0.240		-2.935	***	0.033	
	(0.005)		(0791)		(0.658)		(0.000)		(0.947)	
Industry EBIT/total assets	-2.361		-19.468	*	-0.909		-2.585	**	-3.874	***
	(0.501)		(0.055)		(0.669)		(0.029)		(0.003)	
Current assets/ current liabilities	0.052		0.106		-0.055		0.019		-0.529	**
	(0.378)		(0.136)		(0.304)		(0.591)		(0.025)	
Number of observations	299	670	638							

4.5. Performance of Bank-Connected Firms Following Restructuring Actions

As previously discussed, corporate restructurings appear to be valuable to a firm, especially when it experiences financial difficulty. If connected banks play an important role, e.g., an advisory role and a monitoring role, firms with bank connections should be more likely to restructure. The above results support this argument. If bank connections are valuable to the firms, we should observe a significant difference in performance changes between connected and non-connected firms after underrating restructuring actions. Therefore, we examine the impact of bank connections on the operating performance changes of the firms following restructuring actions. We compare changes in industry-adjusted operating performances one and two years subsequent to corporate restructurings, between bank-connected and non-connected firms. Here, the focus is on restructuring firms during the crisis period 1997-1998.

Table 6 shows that one- and two-year changes in industry-adjusted performances following restructuring actions are not significantly different between the two subsamples, although connected firms have better performance changes. The only exception is for connected firms restructuring in

1997, which only have marginally better performance changes in one year after undertaking the actions. The results may suggest that even though connected banks play an important role that increases the restructuring likelihood, the effect of bank connections on corporate restructurings has no significant added value to the firms. Therefore, we cannot conclude that firms are beneficial from their connections with a bank.

Table 6: Changes in performance following restructuring actions and test of differences between bank-connected and non-connected firms

This table reports mean values (in percentage) of the changes in the industry-adjusted ratio of EBIT to total assets of the sample firms in an economic crisis for the period between Year 0 and one and two years following Year 0. Year 0 denotes the year in which restructuring actions are taken. The sample consists of non-financial firms listed on the Stock Exchange of Thailand during 1997-1998. A firm is a bank-connected firm if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, 2) if a major shareholder of the firm or a member of his related families is a director of a bank, 3) a major shareholder of a bank or a member of his related families is a director of a firm, or 4) a bank director is a director of a firm. The "*p*-value" columns report p-values of the two-tailed *t*-tests of equal means for the changes in the industry-adjusted ratio of EBIT to total assets between two subsamples.

Year undertaking restructuring actions	Year (0, +1)			Year (0, +2)		
	Bank-connected firms	Non-connected firms	*p*- value	Bank-connected firms	Non-connected firms	*p*- value
Number of observations	244	58		234	55	
1997	1.15	-3.16	**0.06**	-1.53	-5.26	0.20
Number of observations	211	56		203	54	
1998	-2.38	-3.05	0.81	-2.53	-7.18	0.13

5. Conclusions

Using data of Thai non-financial listed firms over the period of the East Asian financial crisis, we study the characteristics of restructuring versus non-restructuring firms and bank-connected versus non-connected firms. Then we examine the effects of bank relationships on corporate restructurings, which in turn suggest the role of connected banks on a firm's financial strategies. We also analyze the impact of connection types on the restructuring likelihood. Finally, we investigate if connections are valuable to the firms.

We find that firms affiliated with a business group are more likely to undertake restructuring actions during the East Asian economic crisis. Consistent with previous literature, we document that restructuring firms are larger and tend to have higher level of leverage and total assets and poorer firm and industry performances, relative to non-restructuring firms. Regarding the attributes of bank-connected firms, we find that they are more often part of a business group and are larger than non-connected counterparts.

Our findings are consistent with our hypothesis and support that connected firms obtain useful advice from close banks to engage in restructuring activities. Specifically, we find that the presence of bank connections is associated with the likelihood of restructuring actions. In particular, connected firms are more likely to cut dividend payment to restructure their firms in the pre-crisis period; while they are more likely to engage in management turnover activity during the crisis. In the post-crisis period, the result shows that the likelihood of debt restructuring is lesser in connected firms. It seems that connected firms do not need to appoint more financial advisors to participate in debt restructuring activity. It is also possible that connected firms receive financial assistance from the banks to service their debt obligations. Considering types of bank connections, we find that both ownership and director connections are significant in determining the choices of restructuring activities.

The results discussed above suggest that connected banks significantly affect the decision on restructuring activities, supporting an important role of connected banks as documented in prior studies (Aoki, 2000; Edwards and Fischer, 1994; Diamond, 1994). However, we find no strong support for the value that bank relationships add to the firms. In other words, our univariate analysis shows that only connected firms that restructure in 1997 have marginally better one-year performance changes following restructuring actions. The finding is similar to that of Sitthipongpanich (2009) who documents that connections are not valuable although they play a role in influencing firm investment behavior and financial strategy as shown in this study.

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Appendix 1

Multivariate probit estimation of the impact of bank connections on corporate restructuring.

A multivariate probit model estimates Q-equation probit models, by the method of simulated maximum likelihood (SML).

The general specification for a Q-equation probit model:

$$y^*_i = \beta'_i x + \varepsilon_i, \quad i = 1, 2, \ldots, Q,$$
$$y_i = 1 \text{ if } y^*_i > 0, \ 0 \text{ otherwise}$$
$$E[\varepsilon_i] = 0,$$
$$Var[\varepsilon_i] = 1,$$
$$Cov[\varepsilon_i, \varepsilon_j] = \rho_{ij}.$$

In this study, the multivariate probit model is

$$Pr(y_1 = 1, y_2 = 1, y_3 = 1, y_4 = 1, y_5 = 1 \mid x) = \Phi_5(\beta'_1 x, \beta'_2 x, \beta'_3 x, \beta'_4 x, \beta'_5 x, R),$$

where R is a 5-dimensional matrices with typical element ρ_{ij}, and $\Phi_5(.)$ is a quintvariate cumulative Gaussian distribution function.

The dependent variables are $y_1, y_2, y_3, y_4, y_5, y_6$.

The independent variables are

(i)   Constant term: z_1.

(ii) Variables regarding bank connections: $z_2, z_3, \ldots, z_n$.

(iii) Control variables: $z_{n+1}, z_{n+2}, \ldots, z_{n+m}$.

The regressor vectors are $x = z_1, z_2, z_3, \ldots, z_n, z_{n+1}, z_{n+2}, \ldots, z_{n+m}$.