

## Chapter 4

### Empirical Analyses

Corporate restructuring is generally perceived as an appropriate response for a firm to take in a crisis. Hence, if bank connections have a positive effect on the incidence of corporate restructuring actions, it suggests that connected banks play an important role on the firm's financial strategy to turnaround. In this chapter, we discuss the results of our empirical investigation. We first present the characteristics of firms undertaking restructuring actions during the period 1996-2000. Then we describe attributes of bank-connected firms. We also make a comparison between connected firms and non-connected firms. Next, using univariate analyses, we show how firms associated with bank connections restructure in response to the crisis. We also examine how firms with the different connection strength engage in restructuring activities. Finally, we test whether bank connections are related to the more likelihood of restructuring activities.

#### 4.1 Characteristics of firms undertaking restructuring actions

Table 1 exhibits the summary statistics of a number of characteristics of firms that undertake restructuring actions in our sample periods 1996-2000, compared with firms that do not.<sup>13</sup> 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 at the significance level of 1%. This result is also documented in Polsiri and Wiwattanakantag (2006). As expected, restructuring firms have a higher level of leverage and poorer firm performance than non-restructuring counterparts. These findings hold in all periods and have the significance level of 1%. Similarly, the findings of industry performance suggest that restructuring firms have lower industry performance during the crisis and in the post-crisis period, at the 1% and 10% significance level, respectively.

In addition, consistent with the literature, we find that larger firms are more likely to restructure at the 1% level of significance. Nonetheless, during the crisis, both large and small firms are as likely to restructure. This result may reflect the severity of the economic

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<sup>13</sup> The distribution of firms undertaking restructuring activities by years is shown in Appendix 1.

**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	<i>p-value</i>	Undertaking restructuring	Not undertaking restructuring	<i>p-value</i>	Undertaking restructuring	Not undertaking restructuring	<i>p-value</i>
Number of observations	234	65		607	63		560	78	
Percentage of firms in business groups (%)	52.14	47.69	0.53	51.07	31.75	<b>0.00</b>	46.79	39.74	0.24
Total debt/Total assets (%)	41.25	29.87	<b>0.00</b>	48.90	36.18	<b>0.01</b>	53.58	20.85	<b>0.00</b>
Book value of total assets (million baht)	7,787.34	1,795.82	<b>0.00</b>	8,578.66	4,703.42	0.17	9,671.81	2,591.77	<b>0.01</b>
EBIT/Total assets (%)	7.91	11.79	<b>0.00</b>	4.58	9.81	<b>0.00</b>	0.20	11.45	<b>0.00</b>
Industry EBIT/Total assets (%)	8.52	8.87	0.26	6.33	7.74	<b>0.00</b>	4.79	6.16	<b>0.07</b>
Current assets/Current liabilities	2.03	1.53	0.53	1.35	1.76	<b>0.06</b>	4.01	4.22	0.97

crisis. Liquidity appears not significantly different between two subsamples although restructuring firms show marginally lower liquidity than non-restructuring firms during the crisis.

#### **4.2 Characteristics of bank-connected firms**

In Table 2, we present the characteristics of bank-connected and non-connected firms.<sup>14</sup> 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. 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 at the 1% significance level. It should be noted here that after the crisis hit followed by the depreciation of the Baht in July 1997, the debt ratio goes up for both connected and non-connected firms. Regarding firm size, bank-connected firms are significantly larger than non-connected firms in terms of total assets in all periods.

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 in the pre-crisis period. During the crisis, however, bank-connected firms have lower firm and industry performances with the significance level of 1%. In the post-crisis period, although industry performances are not different between both subsamples, connected firms show marginally better firm performance. These finding may be inferred 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 at the 10% significance level.

#### **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. Furthermore, we investigate the impact of the connection strength. To do so, we classify connected firms into two categories: firms with director connections and firms with

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<sup>14</sup> The distribution of bank-connected firms by years is shown in Appendix 2.

**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 (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). 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	<i>p</i> -value	Bank-connected firms	Non-connected firms	<i>p</i> -value	Bank-connected firms	Non-connected firms	<i>p</i> -value
Number of observations	239	60		525	145		301	337	
Percentage of firms in business groups (%)	58.16	23.33	<b>0.00</b>	55.81	25.52	<b>0.00</b>	54.49	38.28	<b>0.00</b>
Total debt/Total assets (%)	38.60	39.45	0.77	47.67	47.82	0.96	43.52	54.99	<b>0.00</b>
Book value of total assets (million baht)	7,425.43	2,738.12	<b>0.02</b>	9,514.93	3,505.02	<b>0.00</b>	11,923.50	6,021.94	<b>0.00</b>
EBIT/Total assets (%)	8.63	9.27	0.54	4.22	8.17	<b>0.00</b>	3.36	-0.01	<b>0.10</b>
Industry EBIT/Total assets (%)	8.52	8.91	0.23	6.19	7.46	<b>0.00</b>	4.91	4.99	0.87
Current assets/Current liabilities	1.99	1.66	0.69	1.39	1.37	0.88	7.20	1.22	<b>0.09</b>

ownership connection.<sup>15</sup> For each specification, differences in the percentage of firms undertaking restructuring actions between two categories are analyzed. Again, we divide the sample period into the pre-crisis (1996), during-crisis (1997-1998), and post-crisis (1999-2000) periods. The results are presented in Table 3 and Table 4.

#### *The presence of bank connections*

The first classification tests whether the presence of bank connections increases the likelihood of corporate restructurings. Table 3 shows that in the pre-crisis period, firms with bank connections are more likely to undertake restructuring actions. This difference is driven by a higher frequency of dividend cut (at the 1% significance level) and capital raising (at the 5% significance level) in connected firms. According to our hypothesis, the result suggests that connected banks provide the firms with financial advices and thus increase the likelihood of restructurings.

During the crisis, although overall connected and non-connected firms are as likely to restructure in response to the crisis, top management turnover and capital raising occur among connected firms more often, with the significance levels of 5%. Connected firms also have a marginally higher probability of debt restructuring. 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 time. 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 more likely to engage in this activity.

The results of the post-crisis period are similar to those of the during-crisis period. The higher frequency of overall restructuring actions in connected firms is significant only at the 10% level. However, when considering individual actions, we find that connected firms are more likely to change their top executives and raise more capital. These results support our hypothesis and are significant at the 5% level. Nevertheless, unlike in the during crisis period, firms with bank connections are less likely to engage in debt restructuring. This result is rather surprising since we expect that connected firms should be able to better negotiate with

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<sup>15</sup> The distribution of director-connected and ownership-connected firms by years is shown in Appendix 3.

**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 (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). 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	<i>p</i> -value	Bank-connected firms	Non-connected firms	<i>p</i> -value	Bank-connected firms	Non-connected firms	<i>p</i> -value
Number of observations	239	60		525	145		301	337	
<b>Percentage of firms undertaking</b>									
Any restructuring actions	81.17	66.67	<b>0.01</b>	91.43	87.59	0.16	90.37	85.46	<b>0.06</b>
Asset downsizing	23.85	21.67	0.72	20.95	17.24	0.32	21.59	24.93	0.32
Management turnover	10.46	6.67	0.38	35.81	25.52	<b>0.02</b>	47.18	38.58	<b>0.03</b>
Dividend cut	65.69	43.33	<b>0.00</b>	83.62	77.93	0.11	68.11	70.92	0.44
Debt restructuring	1.67	1.67	1.00	6.48	2.76	<b>0.09</b>	10.30	17.51	<b>0.01</b>
Capital raising	41.84	25.00	<b>0.02</b>	32.00	22.76	<b>0.03</b>	35.88	27.60	<b>0.02</b>

the banks than their non-connected counterparts. We will further examine this result when we conduct probit models.

#### *The strength of bank connections*

Considering the strength of the connections, Table 4 shows that although the director connections are considered weaker than the ownership connections, their impact on firm restructurings is not significantly different. The only exceptions are the lower likelihood of dividend cut and higher likelihood of capital raising in firms with director connections in the post-crisis period, which are significant at the 5% level. The higher probability of dividend cut in firms with ownership connections may imply that when a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, he or she prefers undertaking dividend cut. This restructuring action involves all shareholders, not only the major shareholder, sharing the dividend cut. Regarding the higher probability of capital raising in firms with director shareholders, it can be interpreted that bank directors give good financial recommendation to the firms in order to make use of the capital market.

#### **4.4 Probit analyses of the impact of bank connections on restructuring actions**

The univariate specifications discussed previously have two main limitations. First, the univariate analysis fails to control for other variables that also have a significant impact on the likelihood of restructuring actions. Second, the univariate analysis is not able to capture the effects of connection magnitude which may also affect the incidence of restructuring. To control for the impacts of other significant variables, and to incorporate the effects of connections, this section performs probit estimations, and discusses and interprets their results.

This probit analysis is used to examine the sample firms experiencing restructuring activities in different periods of time (i.e. pre-crisis, during crisis and post-crisis). In these probit models, dependent variables are dummies indicating if a particular restructuring action occurs, while explanatory variables include variables representing the impact of connections and other control variables for which significance is documented in existing literature. We further classify the connected firms into two types, including ownership connected firms and director connected firms, to spell out the degree of connections and the effect of such difference in connections.

**Table 4:** Univariate tests of the impact of the strength 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 *with bank connections* is defined as if 1) a major shareholder of a bank or a member of his related families holds 10% shareholding or more of the firm, 2) 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 a director-connected firm if CONN2, CONN3 or CONN4 equals to one and CONN1 equals to zero. A firm is an ownership-connected firm if CONN1 equals to one. 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		
	Director-connected firms	Ownership-connected firms	<i>p</i> -value	Director-connected firms	Ownership-connected firms	<i>p</i> -value	Director-connected firms	Ownership-connected firms	<i>p</i> -value
Number of observations	175	64		388	137		213	88	
<b>Percentage of firms undertaking</b>									
Any restructuring actions	80.00	84.38	0.45	91.49	91.24	0.93	89.67	92.05	0.53
Asset downsizing	25.71	18.75	0.27	20.36	22.63	0.58	22.07	20.45	0.76
Management turnover	10.86	9.38	0.74	37.11	32.12	0.30	47.89	45.45	0.70
Dividend cut	65.71	65.63	0.99	82.22	87.59	0.14	64.32	77.27	<b>0.03</b>
Debt restructuring	2.29	0.00	0.22	7.22	4.38	0.25	9.86	11.36	0.70
Capital raising	40.57	45.31	0.51	30.41	36.50	0.19	39.44	27.27	<b>0.05</b>

In Table 5, there are 299, 670 and 638 observations in the pre-crisis (1996), during crisis (1997-1998) and post-crisis (1999-2000) period, respectively. We report the results of the effect of bank connection on restructuring activities in Panel 1-6. In Panel 1, the results support our hypothesis and show that connections between firms and banks increase the likelihood of restructuring in the pre-crisis and post-crisis periods at the significance level of 10% and 5% respectively. The firm performance, measured by the ratio of EBIT to total assets, is negatively related to the possibility of restructuring activities in all sample periods. The significance level is at 1% for the pre-crisis and post-crisis period and at 5% during the crisis. It confirms that the restructuring activities occur to help deteriorated firms. In contrast, the leverage ratio is positively associated with the likelihood of restructuring in the pre-crisis and post-crisis period, showing that firms with higher leverage ratio are more likely to restructure in the pre-crisis and post-crisis periods. We find that the size of firms is positively related to the possibility of restructuring in pre- and post-crisis at the significance level of 1%. Interestingly, firms in a business group are more likely to restructure only during the crisis at the significance of 10%. Furthermore, the results surprisingly show that, in the pre-crisis period, the possibility of firm restructuring increases if the liquidity of firms is higher.

Panel 2 to 6 of Table 5 show the results of the impact of bank connections on each type of restructuring activities, including asset downsizing, management turnover, dividend cut, debt restructuring and capital raising, in three different sample periods (i.e. pre-crisis, during and post-crisis). In Panel 2 of Table 5, 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 the company in all sample periods. This relationship is significantly positive at the significance of 5% in the pre-crisis and during crisis and of 1% in the post-crisis. Moreover, we find that, before and during the crisis, firms will engage in asset downsizing if their performance becomes poorer at the significance level of 1%. The results also show that being a firm in a business group will increase the likelihood to downsize the company's assets during the crisis; although the relationship is significantly marginal at 10%. After crisis, we find that firms with lower liquidity are more likely to restructure; however the relationship between liquidity status and the likelihood of restructuring is marginally significant at the 10% level.

**Table 5:** Probit regressions of the impact of bank connections on restructuring actions

This table reports the results of a 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 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 (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). 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. Other independent variables are Debt to total assets ratio, Log (total assets), total current assets to total current liabilities ratio, EBIT/total assets and Industry EBIT/total assets, which are measured of as of Year  $t-1$ . The probit regression controls for year effect. 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 connections on restructuring activities

	Pre-crisis	During-crisis	Post-crisis
Connection dummy	0.397 * (0.072)	-0.020 (0.905)	0.313 ** (0.039)
Business group dummy	-0.209 (0.292)	0.276 * (0.069)	-0.063 (0.674)
Debt/total assets	0.947 * (0.093)	0.527 (0.151)	1.651 *** (0.000)
Log (Total assets)	0.392 *** (0.000)	0.108 (0.149)	0.148 *** (0.013)
EBIT/total assets	-3.309 *** (0.008)	-1.585 ** (0.021)	-2.459 *** (0.000)
Industry EBIT/total assets	1.507 (0.707)	-6.685 *** (0.006)	-0.719 (0.602)
Current assets/current liabilities	0.117 * (0.097)	-0.022 (0.578)	0.001 (0.472)
Number of observations	299	670	638
Prob. > $\chi^2$	0.00	0.00	0.00
Pseudo $R^2$	0.1704	0.1307	0.2134

**Panel 2:** The impact of connections on asset downsizing actions

	Pre-crisis	During-crisis	Post-crisis
Connection dummy	-0.098 (0.672)	-0.049 (0.737)	-0.179 (0.128)
Business group dummy	-0.011 (0.952)	0.209 * (0.078)	-0.031 (0.790)
Debt/total assets	0.281 (0.576)	0.144 (0.448)	0.077 (0.562)
Log (Total assets)	0.193 ** (0.012)	0.112 ** (0.018)	0.154 *** (0.001)
EBIT/total assets	-4.667 *** (0.000)	-1.481 *** (0.002)	0.053 (0.834)
Industry EBIT/total assets	5.816 (0.143)	0.172 (0.930)	-2.050 * (0.051)
Current assets/current liabilities	-0.029 (0.472)	0.007 (0.863)	-0.076 * (0.056)
Number of observations	299	670	638
Prob. > $X^2$	0.00	0.00	0.00
Pseudo $R^2$	0.0831	0.0423	0.0471

**Panel 3:** The impact of connections on management turnover actions

	Pre-crisis	During-crisis	Post-crisis
Connection dummy	-0.071 (0.823)	0.286 ** (0.032)	0.167 (0.111)
Business group dummy	-0.080 (0.735)	-0.142 (0.188)	-0.031 (0.769)
Debt/total assets	-2.332 *** (0.000)	-0.070 (0.692)	-0.221 (0.239)
Log (Total assets)	0.374 *** (0.000)	0.073 * (0.099)	0.056 (0.178)
EBIT/total assets	-5.852 *** (0.000)	-0.182 (0.682)	-0.211 (0.468)
Industry EBIT/total assets	-2.030 (0.635)	-0.420 (0.807)	1.284 (0.178)
Current assets/current liabilities	-0.025 (0.731)	-0.030 (0.313)	0.001 (0.614)
Number of observations	299	670	638
Prob > $X^2$	0.00	0.00	0.00
Pseudo $R^2$	0.1556	0.014	0.0172

**Panel 4:** The impact of connections on dividend cut actions

	<b>Pre-crisis</b>	<b>During-crisis</b>	<b>Post-crisis</b>	
Connection dummy	0.603 *** (0.003)	0.028 (0.843)	-0.023 (0.854)	
Business group dummy	-0.079 (0.629)	0.131 (0.312)	-0.110 (0.390)	
Debt/total assets	1.243 *** (0.008)	0.542 (0.250)	2.616 *** (0.000)	
Log (Total assets)	0.016 (0.829)	0.092 (0.139)	-0.009 (0.862)	
EBIT/total assets	-3.313 *** (0.004)	-2.129 *** (0.002)	-2.999 *** (0.000)	
Industry EBIT/total assets	-2.632 (0.447)	-5.818 *** (0.005)	-4.614 *** (0.000)	
Current assets/current liabilities	0.027 (0.192)	-0.043 (0.202)	0.003 * (0.068)	
Number of observations	299	670	638	
Prob. > $\chi^2$	0.00	0.00	0.00	
Pseudo $R^2$	0.096	0.1268	0.3146	

**Panel 5:** The impact of connections on debt restructuring actions

	<b>Pre-crisis</b>	<b>During-crisis</b>	<b>Post-crisis</b>	
Connection dummy	0.183 (0.662)	0.230 (0.377)	-0.322 ** (0.035)	
Business group dummy	-0.704 (0.130)	-0.397 ** (0.040)	-0.067 (0.625)	
Debt/total assets	2.533 ** (0.042)	0.312 * (0.077)	0.284 (0.181)	
Log (Total assets)	-0.073 (0.636)	0.192 ** (0.013)	0.156 *** (0.006)	
EBIT/total assets	-0.087 (0.967)	-2.711 *** (0.000)	0.219 (0.512)	
Industry EBIT/total assets	-17.780 * (0.075)	0.893 (0.747)	-3.956 *** (0.003)	
Current assets/current liabilities	0.011 (0.482)	0.001 (0.987)	-0.698 *** (0.007)	
Number of observations	299	670	638	
Prob. > $\chi^2$	0.00	0.00	0.00	
Pseudo $R^2$	0.197	0.1882	0.2084	

**Panel 6:** The impact of connections on capital raising actions

	<b>Pre-crisis</b>	<b>During-crisis</b>	<b>Post-crisis</b>
Connection dummy	0.171 (0.441)	-0.017 (0.904)	0.034 (0.775)
Business group dummy	0.059 (0.730)	0.077 (0.517)	-0.006 (0.960)
Debt/total assets	1.069 ** (0.027)	0.190 (0.326)	-0.066 (0.704)
Log (Total assets)	0.539 *** (0.000)	0.507 *** (0.000)	0.459 *** (0.000)
EBIT/total assets	-0.241 (0.851)	-0.351 (0.537)	-0.125 (0.660)
Industry EBIT/total assets	2.584 (0.494)	1.743 (0.370)	-0.495 (0.639)
Current assets/current liabilities	0.008 (0.405)	-0.039 (0.259)	-0.118 *** (0.007)
Number of observations	299	670	638
Prob. > $\chi^2$	0.00	0.00	0.00
Pseudo $R^2$	0.215	0.1929	0.1816

The results in Panel 3 of Table 5 show that the likelihood of management turnovers increases in connected firms during the crisis, thus our hypothesis is accepted. This positive relationship is significant at 5%. Furthermore, as shown in Panel 4 of Table 5, connected firms are more likely to restructure by cutting their dividend payment before the crisis. The effect of connections on the dividend cut activities is significant at 1%. We also find that the possibility of dividend cut is driven by firm performance. The relationship between the dividend cut activities and performance is significantly negative at 1% in all sample periods.

Interestingly, the findings in Panel 5 of Table 5 show that connected firms are less likely to engage in debt restructuring activities in the post-crisis period, which is different from our hypothesis. Firms that belong to a business group are also less likely to restructure their debt financing during the crisis. These negative effects are significant at 5%. We further investigate into the debt restructuring activities after the crisis and find the reason to explain why the relationship between connections and the possibility of debt restructuring is negative. In unreported tests, we find that the appointment of financial advisers is significantly lesser in connected firms in the post-crisis period at the 5% level. It is possible that those firms receive financial advices from their connected banks; hence it is not necessary for them to appoint more financial advisers during the debt restructuring process.

Panel 6 of Table 5 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. The relationship between firm size and the possibility of capital raising is positively significant at 1% in all sample periods.

In this research, we investigate whether the strength of bank connections have an impact on the likelihood of restructuring activities. We classify the strength of connections by separating connected firms into ownership-connected firms (as the strong type of connections) and director-connected firms (as the weaker type of connections). In the probit regressions not presented here, we find that the strength of connections is not related to the likelihood of restructuring activities, except for the capital raising activity. More precisely, the results in Table 6 show that director-connected firms are more likely to restructure by raising capital in the post-crisis; however the relationship between the possibility of capital raising and director connection dummy is only marginal at 10%. We further examine the financing method connected firms use to raise their capital after crisis. In the unreported regressions, we find that their capital raising activity is driven by new debt financing.

In conclusion, our results show that bank connections significantly affect the likelihood of restructuring activities. The possibility of restructuring activities increases if firms are connected to banks in the pre-crisis and post-crisis periods. The restructuring activities of connected firms differ in each economic situation. Connections between firms and banks support firms to engage in the dividend cut activity in the pre-crisis period and management turnover activity during the crisis. Thus, the findings are consistent with our hypothesis and support that connected firms obtain useful advices from close banks to engage in restructuring activities. Interestingly, we also find that, after the financial crisis, connected firms are less likely to restructure their debt, in particular appointing fewer financial advisers as part of debt restructuring process.

#### **4.5 Performance of bank-connected firms following restructuring actions**

As previously discussed, corporate restructurings appear to be appropriate actions in response to a crisis. If connected banks play an important role, e.g. advisory role and monitoring role, firms with bank connections should be more likely to restructure. The above results support

**Table 6:** Probit regressions of the impact of the strength of bank connections on capital raising actions

This table reports the results of a probit model of the impact of the strength of bank connections on the likelihood of capital raising 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 between 1996 and 2000. The dependent variable is a dummy equal to 1 if a capital raising 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). A firm is a director-connected firm if CONN2, CONN3 or CONN4 equals to one and CONN1 equals to zero. 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. Other independent variables are Debt to total assets ratio, Log (total assets), total current assets to total current liabilities ratio, EBIT/total assets and Industry EBIT/total assets, which are measured of as of Year  $t-1$ . The probit regression controls for year effect. 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.

	Pre-crisis	During-crisis	Post-crisis	
Director connection dummy	-0.009 (0.967)	-0.036 (0.813)	0.350 (0.067)	*
Business group dummy	0.082 (0.683)	0.071 (0.597)	0.100 (0.567)	
Debt/total assets	1.343 (0.010)	** 0.090 (0.680)	-0.142 (0.656)	
Log (Total assets)	0.513 (0.000)	*** 0.499 (0.000)	*** 0.385 (0.000)	***
EBIT/total assets	-0.704 (0.620)	-0.655 (0.248)	0.465 (0.388)	
Industry EBIT/total assets	4.986 (0.230)	1.363 (0.539)	-1.231 (0.433)	
Current assets/current liabilities	0.005 (0.646)	-0.037 (0.298)	-0.222 (0.004)	***
Number of observations	239	525	301	
Prob. > $\chi^2$	0.00	0.00	0.00	
Pseudo $R^2$	0.2192	0.1972	0.1969	

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. Hence, we examine the impact of bank connections on the operating performance changes of the firms following restructuring actions. We compare the 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 7 shows that changes in industry-adjusted performances following restructuring actions are not significantly different between the two subsamples although connected firms have better performance changes. 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 restructuring has no significant value-added to the firms. Therefore, we cannot conclude that the firms are beneficial from their connections with a bank.

**Table 7:** Changes in performance following restructuring actions and test of differences between bank-connected and non-connected firms

This table reports mean values (in percent) 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 (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). 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	<i>p</i> -value	Bank-connected firms	Non-connected firms	<i>p</i> -value
Number of observations 1997	248 0.29	61 -3.89	0.13	238 -2.67	57 -9.64	0.14
Number of observations 1998	216 -2.86	58 -6.76	0.39	208 -7.04	56 -8.62	0.89