Banks and Firms in Financial crisis: The Thai Experience in the late 1990s

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Abstract

The outbreak of Asian financial crisis in Thailand in July 1997 has caused a large decline in economic activities. Both financial and corporate sectors were severely hit by sharp currency depreciation, declines in asset prices, speculative attacks and a strong economic downturn. Taking the corporate sector for example, the excessively high leverage and extremely reliance on short-term and unhedged foreign currency debt brought about the condition where firms' financial position becomes vulnerable to economic shocks. In other words, the recent crisis has caused the deterioration of firms' balance sheet conditions, which may lead to the higher costs of external financing, the severe liquidity problems, and subsequently, the sharp contraction in the capital investment and production activities. Meanwhile, the crisis has also driven a dramatic change in financial sector. In August 1998, the Thai authorities shut down fifty-six finance firms. Several banks were closed, either through the taking over by the government or being merged into larger rivals. Most of the remaining banks were experienced a large burden of Non-performing loans (NPLs) and were forced to seek out strategic foreign investors to help speed up their recovery. The increasing number of foreign banks has therefore influenced the Thai financial market considerably, particularly after the relaxation of foreign-ownership restrictions in the post-crisis period. In response to these banking sector and corporate sector weaknesses, the Thai government has adopted several policies focusing on the structural reforms in the financial and corporate sectors together with the implementation of macroeconomic stabilization policies.

Although the existing literature has widely discussed the causes of the financial crisis, its impacts, and the effects of policy responses to the crises, most studies are essentially based on the macroeconomic aspects (for example, Krugman 1998, Kawai 1998, Corsetti, Pernti, and Roubini 1999). While the aggregate data could provide some general information, using the micro-level data also enable us to analyze in details on how individual firms and banks with different characteristics were differently affected by the crises. However, microeconomic evidence to support this issue is still very limited. The purpose of this dissertation is to fill this gap by examining the impacts of the 1997 financial crisis on corporate sector and the financial sector. In details, this dissertation aims to examine the behaviors of firms and banks under the changing in financial environment during the post-crisis period, through the micro aspects using individual firm-level and bank-level data. In addition, as banks and firms in Thailand have a close and long-term relationship with each other, any changes in their behaviors inevitably have a significant effect on their relationship. By using a unique detailed borrower-lender matched data, the roles of bank as a relationship lender as well as the costs of bank-firm relationship are to be examined in subsequent chapters. By studying the behavior of financial and corporate sectors in the economy and their relationships, this dissertation is believed to provide a better understanding on the effects of crises on the economy, its solutions as well as

to bring in the opportunity to discuss further of the economic crisis implications for future policies.

One assumption commonly used in the traditional macroeconomic model is complete markets and perfect information. The complete market approach is widely applied in various economic issues such as the pricing of financial markets, real business cycle, dynamic macroeconomic modeling. Among them, Modigliani and Miller (1958) have introduced the concept of the perfect information into the analysis of firms' capital structures. With the perfect information, the pattern of firm financing has no effect on the real economic activities, e.g. output, employment, production, or investment. The roles of financial intermediation are thus ignored. Akerlof (1970) is one of the first attempts to explain the roles of imperfect information between two parties in the market for used cars. He argues that the complete-market approach cannot explain the market with the existence of informational asymmetries. In this case, the determination of prices cannot be explained by only the supply and demand of goods. Several literatures in the beginning of 1990's then address the existence of information asymmetries in the analysis. The well-known researches conducted by Stiglitz and Weiss's (1981) on the loan market and Myers and Majluf's (1984) on the equity are the fine examples.

In most emerging market countries including Thailand where capital market is still not well developed and information asymmetries are severe, the assumption of the perfect information in the M&M's theory is particularly not applicable. This dissertation, thus, will be conducted based on the asymmetric information approach to examine the behaviors of firms and banks and their relationship in the economy particularly after the financial crisis. The dissertation are divided into three main parts as follows.

Firstly, the impacts of financial crisis on corporate sector will be examined. In Chapter 2, whether and to what extent the deterioration of balance sheet after the crisis contributed to affect firms' investment behaviors will be further explored. When information asymmetries exist, financial crisis can propagate to the real economy not only through the traditional money channel, but also through the balance sheet channel (Bernanke and Gertler 1995). According to the balance sheet channel, any shock that weaken the financial conditions of firms could have an effect on firms' investment decisions through the changes in the wedge between the internal and external funds. Under the existence of information asymmetries, external financing costs are higher than internal costs of funds. The wedge between the internal and external funds is called "external finance premium". The size of external finance premium reflects the level of information asymmetries, and is inversely related to firms' net worth or firms' balance sheet problems (Bernanke and Gertler 1989). An external shock causes a decrease in land and property price which firms use as collateral when borrowing. A reduction in asset prices also reduces the value of other assets held by the firm. Consequently, firms' balance sheet conditions deteriorate and the cost for external finance (external finance premium) increases. This could diminish the ability of firms to access external funds, and hence affect the level of investment activity. All else equal, those firms with higher net worth or lots of liquid assets are likely to undertake more capital investments than those with a weak balance sheet who must rely on external finance.

The second part of this dissertation focuses on the impacts of financial reform policies on the banking sector after the financial crisis. A significant change in the Thai financial market, occurred as part of the financial restructuring program following the financial crisis of 1997, was the relaxation of regulation on foreign shareholding limit in Thai commercial banks. Following the crisis, Thai authorities increased the proportion of shares that foreign investors could hold in Thai commercial banks for up to 10 years from 25 percent to 49 percent. Chapter 3 explains background and review literature of the impact of foreign bank entry on Thai bank. Chapter 4 investigates the changing production technologies of foreign and domestic banks in Thailand in relation to increased foreign bank penetration. While the information production which represents the main function performed by banks cannot be measured directly, technological differences between foreign and domestic banks are reflected in the different cost performances between them. Based on this idea, by applying panel data from 28 commercial banks taken from the period 1990–2002, the cost function of Thai domestic banks, foreign-acquired banks and foreign bank branches will be estimated, paying attention to the impact of financial reform policies.

The third part is the attempt to shed light on the relationship between financial sector and corporate sector. There are the growing literatures on financial intermediation which mainly focus on the roles of bank to facilitate monitoring and overcome asymmetric information problems between lenders and borrowers [1]. Bank's comparative information advantages are gained by establishing a close and long-term relationship to its customer firms (Diamond 1984, Fama 1985). By employing the detailed data set of corporate lending, Chapter 5 investigates the role of banks as relationship lenders specializing in serving the information-problematic firms. Specifically, a comparison between banks and other non-bank private lenders (here, referred to finance companies) will be examined and the question whether different types of lenders are performing similar pattern in serving borrowers posing differing information problems and credit risks will be investigated. This is expected to provide additional evidence for a better understanding on the role and functions of different types of private lenders.

However, the ability of banks to privately observe proprietary information and maintain a close relationship with their customers can also impose costs on the customers. The financial problems of banks, which cause the disruption in banking relationship, can adversely affect the borrowing firm's values. Ferri, Kang and Kim (2001) explain that when banks face with financial difficulties, banks are likely to recall their loans and their borrowers if they cannot find other substitute sources of external financing, face financial constraints. It is also costly for firms to replace their existing banks and establish new relationships (Brewer et al. 2003). Moreover, Slovin et al. (1993) suggests that bank failure may increase the probability of bankruptcy for client firms, especially highly levered firms that use bank-lending agreements as a major source of liquidity.

Chapter 6 examines how client firms are negatively affected when their lenders are in financial distress and cannot play the intermediary function as usual. Additionally, this chapter also further investigates whether the similar pattern is likely to be the case

[1] See the comprehensive survey on the relationship banking in Boot (2000)

of those firms whose financing rely heavily on finance companies. This is important in order to verify whether bank distress effect on firms reported in the previous literatures differ from non-bank distress. Similar to banks, if finance companies establish close and long-term relationships with their borrowing firms, a closure of finance companies which cause a disruption in the lending relationships should also impose costs on the client firms. This is because firms lose the benefits of the durable relationship for the future.

Alternatively, in addition to the previously mentioned “balance sheet channel”, another channel that the financial crisis can affect real economic activity is through “the bank lending channel”. According to Bernanke and Gertler (1995), banks play a special role in overcoming asymmetric informational problems between lenders and borrowers in credit market. If the supply of bank loans is disrupted, bank dependent borrowers may not be literally shut off from credit. However, costs associated with finding a new lender or creating new lending relationships incur. Thus, the reduction in the supply of bank loans is likely to increase the external finance premium and cause negative impacts on firm’s investment activities. Chapter 6 provides indirect evidence on the bank lending channel in that monetary shocks can have an effect on the real economy not only through the changes in firms’ financial conditions themselves, but also through the shift of the supply of bank loans.

Empirical results

Regarding the corporate sector, Chapter 2 examined the difference in the effects of balance sheet problems on firms’ investment behaviors and found that it varies in accordance with the degree of information asymmetry of firms. Firms with higher degree of information asymmetry are likely to face more serious liquidity problems in investment activities. Small firms with high agency costs of external financing tend to face a greater liquidity constraint than large firms in both periods. Although firms in general suffer from the deterioration of their balance sheet conditions and face greater binding liquidity constraints in the aftermath of the financial crisis, they are not symmetrically affected by crisis. Small firms are likely to be more adversely affected by the financial crisis than large firms. As for bond-issuing firms and nonbond-issuing firms, the results show that investment of firms with no-bond issuance is more sensitive to their balance sheet conditions than the investment of firms with bond issuance, especially in the aftermath of the crisis. The chapter also provides evidence supporting the existence of the balance sheet channel. Firms with less creditworthiness and fewer financing sources tend to have higher elasticity of investment with respect to liquidity, especially after a crisis or changes in monetary policy. Moreover, firms that rely heavily on bank borrowing are negatively affected by the crisis in the banking sector during the economic downturn. The results then provide indirect evidence of the role of bank-lending channels and support the notion of the adverse effects of the banking relationship addressed in earlier studies (e.g., Kang and Stulz, 2000). Although the bank–firm relationship theory suggests the advantages of a close banking relationship, such as to mitigate information problems and to reduce the costs of financial distress, adverse shocks in the banking sector that deteriorate the bank’s balance sheet condition and affect the ability of the bank to extend credit can cause problems in firms. The effect of these problems is supposed to be more serious for bank-dependent firms as they have fewer substitutes for bank loans. Moreover, since banks are unable to perform their intermediary functions as usual, those firms will lose the value of the banking relationship and the costs of borrowing increase. As a result, bank-dependent firms are found to face a higher cost of external financing and display a further decrease in investment.

The above argument which indicates that adverse shocks in the banking sector which deteriorate the banks' balance sheet condition and affect the ability of banks to extend credit can cause problems in firms is to be investigated further in Chapter 6. By using individual corporate lending data, how negatively client firms are affected when their lenders are in financial distress and cannot play the intermediary function as usual will be examined in details. Not only banks' effects, this chapter also investigates whether there is a similar pattern is in the case of firms, which rely heavily on finance companies. The empirical evidence suggests that whereas the acquisition by foreign bank is a positive event for client firms, the nationalization of banks, which implies the increase in the probability of dissolution of bank-borrower relationships, is a negative event. On the other hand, the effects of finance company distress on equity values of client firms are not statistically different from equity values of non-client firms. Unlike a disruption in lending relationship with banks which impose costs on the client firms, a disruption in lending relationship with finance companies do not impose significant costs on firms. This supports the previous literatures on the values of bank lending relationship particularly during the time banks experienced financial difficulties.

Chapter 5 studies the roles of relationship lenders by examining whether three types of private lenders: domestic banks, finance companies and foreign banks are performing similar pattern in serving borrowers which pose differing information problems and credit risks. The results suggest that financial intermediary in general, not banks in particular, perform the similar role in mitigating the asymmetric information problems of borrowing firms.

Regarding the banking sector, the technological differences between foreign and domestic banks are to be examined in Chapter 4. In this chapter, cost performances which reflect the technological differences between foreign and domestic banks are estimated. The results from Chapter 4 indicate that the financial reform policies adopted after the Asian crisis pushed up the operational costs of Thai domestic banks, whereas they contradictorily pushed down the operational costs of foreign bank branches. This suggests that strengthening prudential regulations and upgrading monitoring systems significantly increases the cost of screening and monitoring borrowers which is inevitable for modernizing the risk management functions of Thai domestic banks. On the other hand, the modernization of business practices and improvement of financial regulations and corporate laws after the Asian financial crisis substantially lessened the disadvantage of foreign bank branches in information correction and credit risk examination in Thai banking market. This, therefore, enabled foreign bank branches to make the most of their advanced skills and technology in information production as well as risk management functions for providing financial services.

The rest of the dissertation is organized into 6 chapters as follows. Chapter 2 examines the deterioration of firms' balance sheet and investment behavior by using panel data on Thai firms. Chapter 3 explains background and review literatures on the impact of foreign bank entry on Thai banking market. The comparative cost study of foreign and Thai domestic banks are examined in Chapter 4. Chapter 5 tests whether bank and non-bank lending are different, using Thai Corporate Lending data. Chapter 6 studies the financial institution's health effects on borrowing Firms. The chapter summary is as presented below.

Chapter 2: The Deterioration of Firm Balance Sheet and Investment Behavior: Evidence from Panel Data on Thai Firms

Using firm-level data, this chapter investigates whether, and to what extent, firms' balance sheet problems mattered for investment over the period 1992–2002. Various categories of firms are compared, with firms being grouped according to their *a priori* degree of liquidity constraint. Firms are also divided into pre-crisis and post-crisis periods to examine the impact of the financial crisis on firms' investments. The results support the existence of the balance sheet channel and suggest that Thai firms faced greater liquidity constraints following the financial crisis. Small firms and nonbond-issuing firms are found to have been more adversely affected by the crisis than large firms and bond-issuing firms.

Chapter 3: The Effects of Foreign Bank Entry on the Thai Banking Market: Background and Review Literature

A significant change in the Thai financial market took place again as part of the financial restructuring program in the aftermath of financial crisis in 1997. One such change was the relaxation of the regulation on foreign shareholding limit in Thai commercial banks. This chapter reviews related studies, including recent studies of Asian banking markets and then summarizes their major findings and limitations. In addition, an overview of the evolution of foreign bank entry in the Thai banking market is presented.

Chapter 4: Comparative Cost Study of Foreign and Thai Domestic Banks: Estimating Cost Functions of the Thai Banking Industry

This chapter investigates the changing production technologies of foreign and domestic banks in Thailand in relation to increased foreign bank penetration by estimating their cost functions using panel data from 28 banks during 1990–2002. The analysis suggests that foreign and domestic banks have the different advantages in their information production and processing. After the Asian crisis, more stringent prudential regulations improved the comparative cost performance of foreign banks. Foreign acquisition of domestic banks reduced costs associated with fee-based businesses and improved their operational efficiency. The analysis provides some evidence that consolidating domestic banks, allowing greater foreign bank penetration and enhancing information sharing system are needed to build a desirable banking industry structure.

Chapter 5: Is Bank and Non-Bank Lending Different? Evidence from Thai Corporate Lending

Using the unique debt data of Thai listed firms from 1996-2001, this chapter examines whether three types of private lenders: domestic banks, finance companies and foreign banks, are similar in serving borrowers posing differing information problems and credit risks. The study implies that financial intermediaries in general are special with respect to information, not banks in particular. Regarding observable risk, the results suggest that high-risk firms are likely to carry a higher proportion of loans from finance companies than from they are from banks. Likewise, domestic banks tend to lend more to risky firms than do foreign ones.

Chapter 6: Financial Institution's Health Effects on Borrowing

This chapter examines the negative side of lending relationships during the financial crisis in Thailand. The effects of banks and finance companies' distress on stock prices of its client and non-client firms are analyzed. Our empirical evidence suggests that the nationalization of banks which implies the increase in the probability of dissolution of bank-borrower relationships is a negative event whereas the acquisition by foreign bank is a positive event for client firms. On the other hand, the announcement of finance company closure did not have significant adverse effects on client firm equity values. This suggests that there are costs of bank relationship on the client firms particularly during the time banks experienced severe difficulties since firms lose the advantages of the durable bank relationship for the future