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Economic Growth**

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The effects of Bank restructuring on economic growth

----The Case of China

Dai Jianzhong

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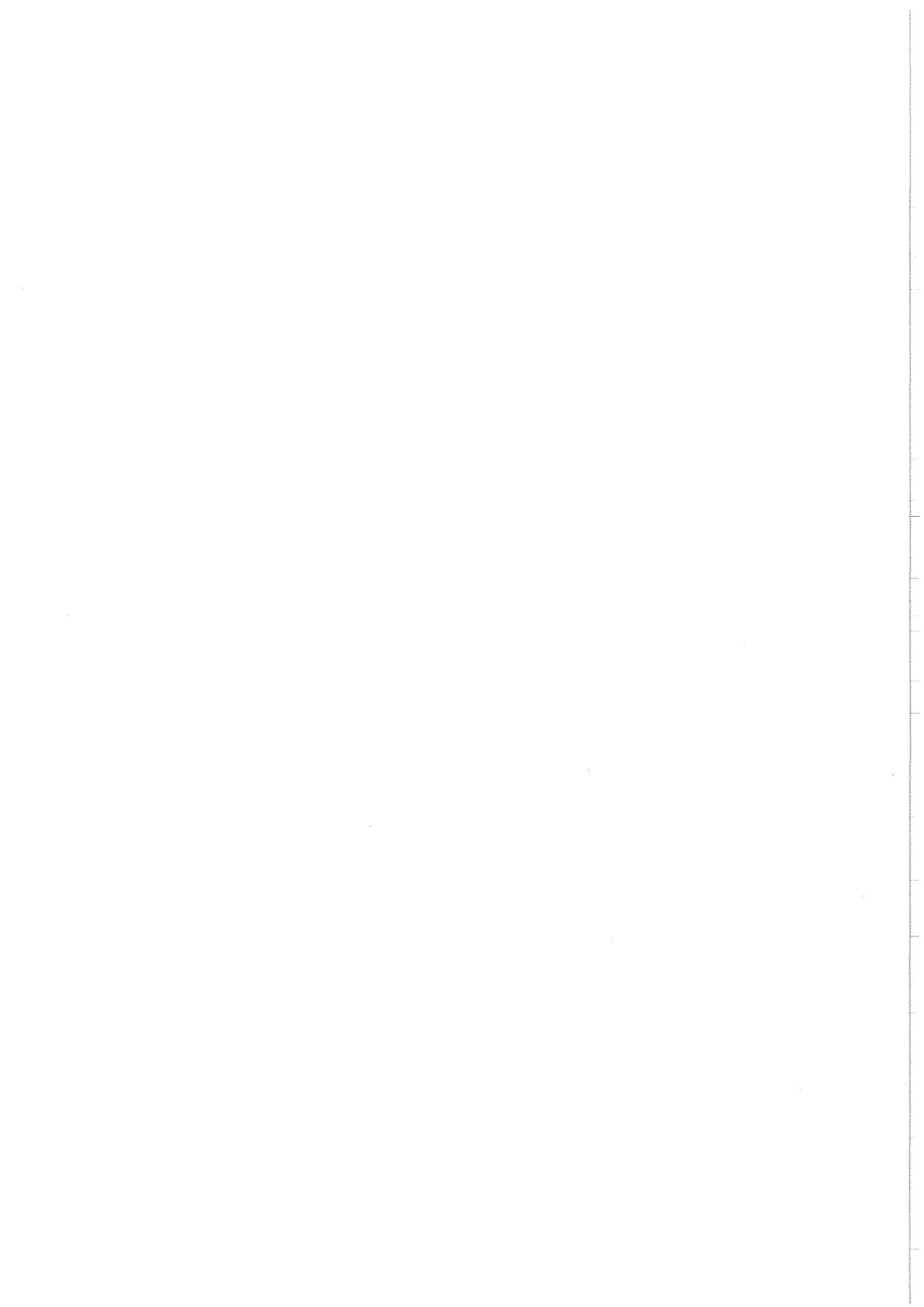
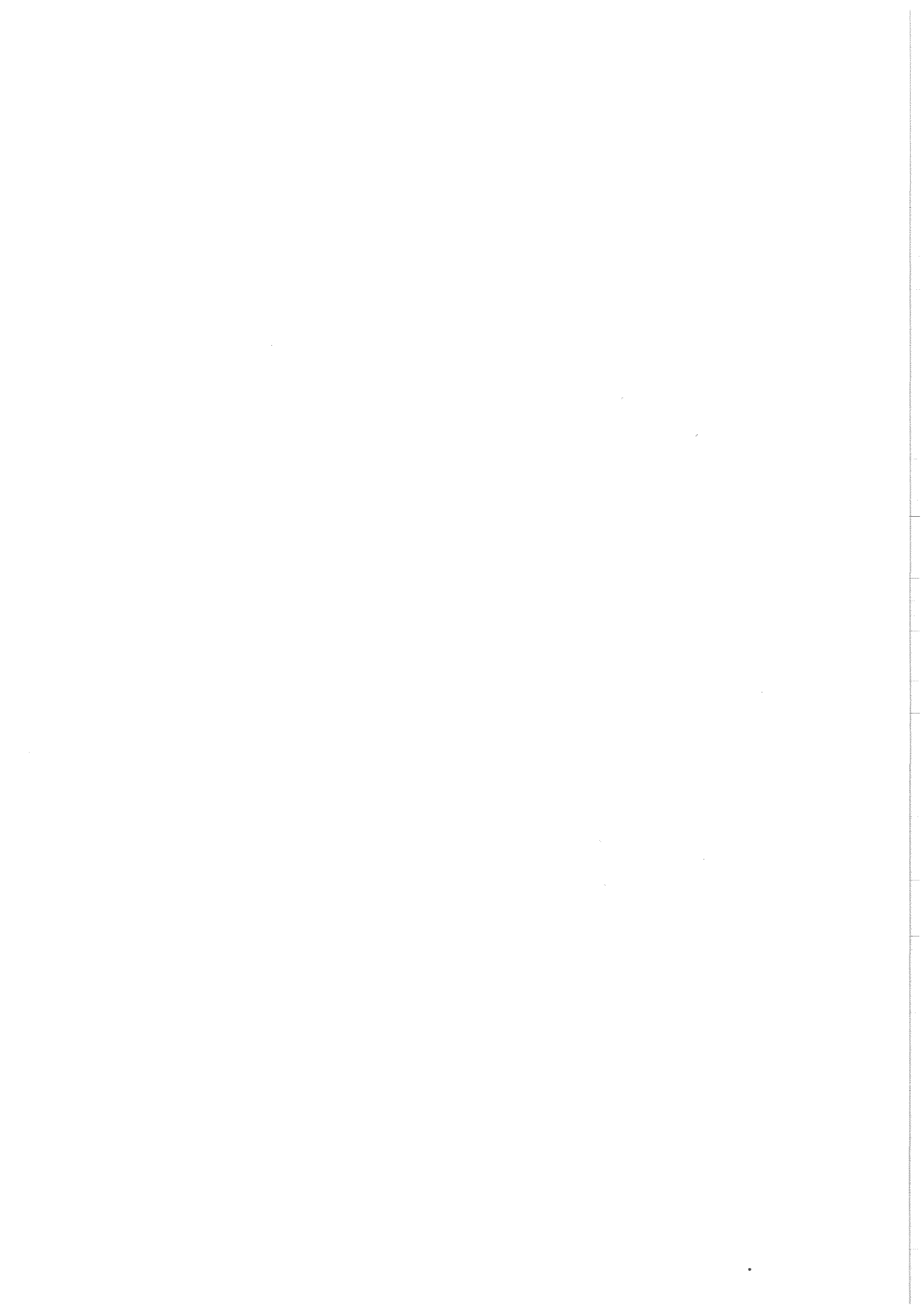


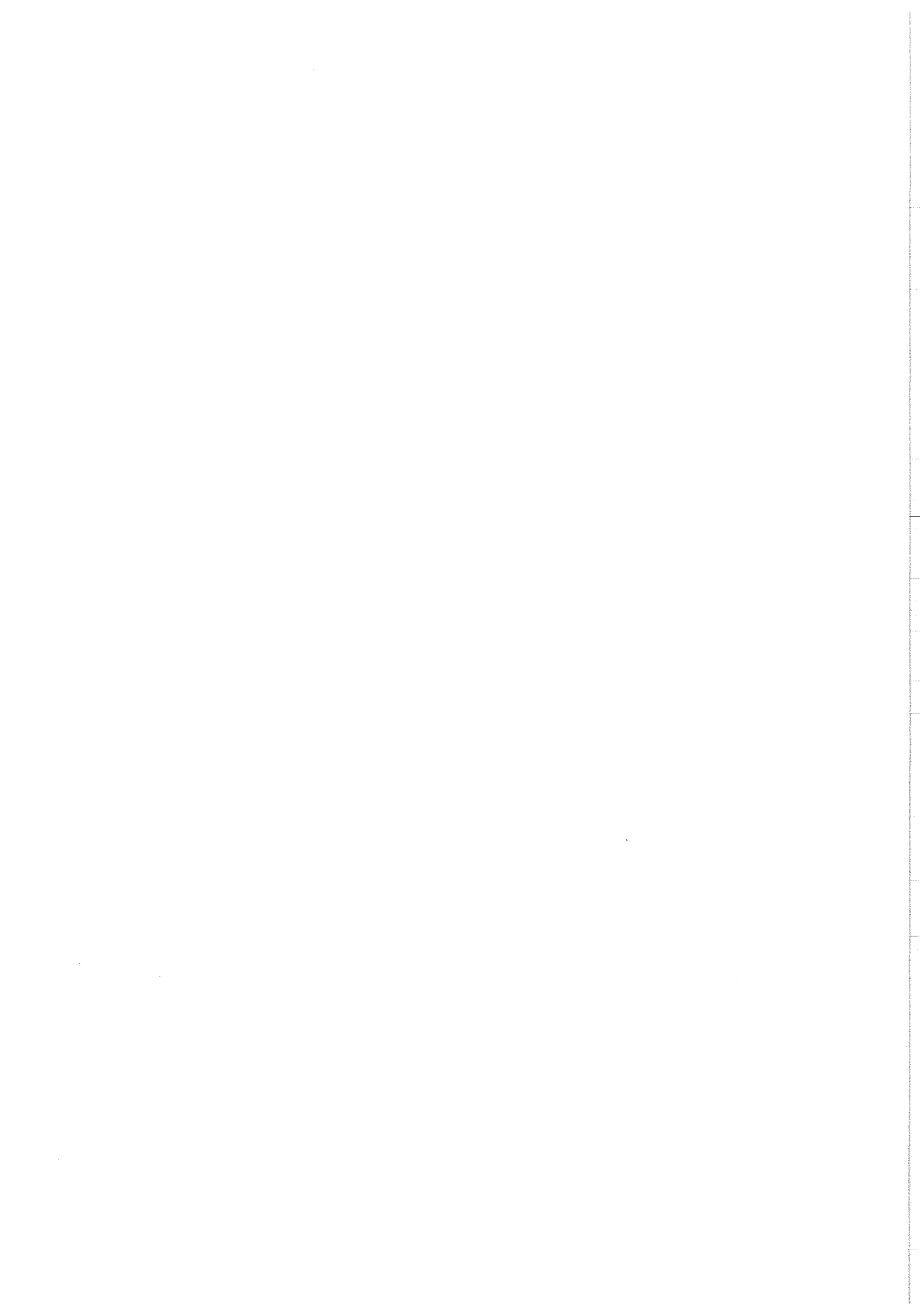
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Introduction

Banking system problems in developing and transitional economies now attract more and more attentions of economists, policy makers and politicians. According to IMF, from 1980 to 1996, two third of its membership have experienced bank crisis. Among them fifty countries' banking systems have lost all of its capitals. Some countries even have bank crisis more than once. This phenomenon demonstrated the importance of constructing a sound banking system.

This paper will not deal mainly with the causes of bank crisis itself or the bank restructuring on general terms, upon which a lot of research has already been done. It will rather focus on the effects of bank restructuring on economic growth and how to deal with them.

A sound banking system is very essential for an efficient and sustainable economic growth. Due to these reasons restructuring an inefficient and malfunctioning banking system surely is beneficial for economic growth from a long term point of view. However, dealing with bank problems is very costly and this cost can have negative effects on economic growth. The effects of the changing mode of behaviors of banks due to the bank restructuring on economic growth normally are also concessionary in the short run. If bank restructuring is carried out in an inflationary environment, then usually there is no serious conflict between economic growth and bank restructuring. Unfortunately, most bank restructurings since 1990s occurred at a time when a recession is prevailing. A common phenomenon at the start of a bank restructuring is: there is a huge volume of non-performing loans (NPLs) in the banking system, even a

bank crisis has just broken out. Meanwhile the economy is in recession; exchange rate is free falling and availability of foreign funds is reduced while the premium of international borrowing is higher (Hawkins and Turner, 1998). This is not surprising because bank crisis and the urgency for bank restructuring are usually triggered by the deterioration of economic environment. In this situation the relationship between economic growth and bank restructuring is quite complex. For reasons of long-term economic growth and stability, bank restructuring should be carried out as early as possible. To delay bank restructuring will only keep the bank problem to accumulate, resulting in the increase of the cost of bank restructuring which is inevitable in the end. On the other hand, when we design a bank restructuring program we must pay attention to the negative feedback effects of deteriorating economic condition due to the bank restructuring.

There are more and more evidences of the conflict between economic growth and bank restructuring since the 1980s. For example, the United States has experienced a "Credit Crunch" in 1990-1992. In the 1994 Mexico financial crisis, there is also a bank crisis and credit crunch. Japan since 1995 and Southeast Asia after 1997 also have been in the situation of this dilemma.

In all these bank crisis or bank distress bank loans declined sharply. For example, from 1989-1992, domestic commercial and industrial (C&I) loans held by the U.S. banks declined in real term by about 23% (Berger, Kyle and Scalise, 1999). In the Japanese and Southeastern Asian financial crises there are also drastic decline of bank loan (see table 0-1). This decline of bank loan aggravated the economic recession and the bank restructuring more difficult.

Table 0-1: Growth rate of real bank credit in some Asian Countries

	Unit: %			
	1990-1995	1996	1997	1998
Indonesia	19	12	20	-26
HongKong	6	7	17	-8
Korea	11	12	15	-7
Malasia	14	24	21	-1
Philipine	13	40	27	-12
Singapore	13	15	11	0
Thailand	20	12	9	-12
Japan	2	1	-1	-1

Source: John Hawkins and Philip Turner (1999) Bank restructuring in practice: an overview. BIS working paper

However, the result of the bank restructuring is very different. After 1993 the conditions of the banks in the United States had improved due to their continuous and determined efforts and banks began to resume their lending. From 1993-1998, total domestic commercial loans rose by 50% in real dollars, more than recovering from its 23% decline in the credit crunch period (Berger, Kyle and Scalise, 1999). From 1993-2000 the United States enjoyed a historical long term high economic growth.

In the Japanese and Southeastern Asian country cases, however, things are much worse. The decline of bank loan supply leads to widespread bankruptcy of firms, some of which might have survived if they could get bank loans. Lack of liquidity also hindered the exporters to fully utilize the benefits of the drastic depreciation of the local currency and kept the L-curve effects for a longer time. The deteriorating of the economy made the banks situation further worse despite their caution to lend money. For example, in 1998, non-performing loans reach as high as 35% of total financial assets in Thailand and 40%-50% of GDP in Korea.

As a transitional economy, China also faces the challenging task of bank restructuring. This task becomes more and more urgent as China will soon join the WTO. Yet in

China bank problems are also combined with a drastic slowdown of the economy. Beside the aim of constructing a sound banking system, dragging the economy out of economic slowdown becomes another important objective of Chinese policy makers.

This paper analyzes the complex relationship between economic growth and bank restructuring using the case of China. The structure of the paper is arranged as: In Chapter 1 I will outline a literature survey about the theoretical and empirical studies which enlighten the study of this paper. Chapter 2 will deal with the background of the bank restructuring in China. In Chapter 3 I will analyze the effects of bank restructuring on the supply of bank loans. Chapter 4 will analyze the effects of the slowdown of bank loan supply on economic growth. Chapter 5 will make some policy suggestions about dealing with the dilemma between the bank restructuring and economic growth. In the conclusion part I will sum up the result of the analysis and draw some conclusions.

1. A Literature Survey

In this part a short literature survey is made. The purpose is to make a theoretical foundation for the further analysis in the paper. The survey is divided into two parts: The theoretical part and the empirical part.

1.1 The theoretical part

In the 1980s and 1990s there are great progress in the bank theory, especially after the introduction of the result of progress in the information and the principal-agent theory into the analysis of bank activities. It is not possible here to fully exhibit the progress, only those which are relevant to the study of this paper are mentioned below.

1.1.1 the role of banks in the economy

Banks plays a very important role in the economy. In most countries they are: (1) the major sources of finance for investment; (2) the main mechanism of settlement; and

(3) the major participants in the foreign exchange market. The settlement function of the banks was once the main concerns of economists. It stems from the fear that one bank's inability to pay its bill will trigger a chain reaction in the settlement system and causes a systematic crisis of the banking system. However, with the advances of the international settlement system this risk is unlikely to be a great threat in a banking system and it is also relatively easy to handle with (by simply offering liquidity to the sound banks). Foreign exchange function normally also will not be seriously handicapped by the problem of the banks since these functions are out of balance sheet operations. So here we focus on the role of finance played by the banks.

Unlike the bond and stock market, bank loan is an indirect form of finance. By mediating between savers and investors a well developed banking system will increase the volume available for investment and the efficiency of its distribution.

However, for a long time some classical economists treated the financial intermediaries such as the banks as neutral to the real economies. This is because in classical economics it is assumed that the market is in perfect condition, which means all agents can get full information. Because of this, in classical economics there is no distinction between internal and external finance as well as indirect finance like bank loan and direct finance as the security market. This attitude is reflected in the famous Modigliani and Miller (MM) theorem. On the ground mentioned above the MM theorem states that there is no distinguish between the cost of internal and external finance so that the structure of finance of a firm will not affects its net value (Modigliani and Miller, 1958).

The incomplete and asymmetric information theory offered a new angle to analyze the role of banks in the economy (beginning with Akerlof). According to this approach, there is an asymmetry of information between borrowers and lenders. This asymmetry of information produces the so-called external finance premium. The external finance premium is the difference of the cost between the fund raised externally and internally due to the imperfect information in the credit market that made a gap between the expected return by the banks and by the potential borrowers. With the malfunction of

the banking system, this “external finance premium” can be widened and will have negative effects on the economy. Due to this market imperfection, the famous MM theorem becomes invalid and the banking system is no longer neutral.

In the classical theory, there is also no room for institutional factors. Financial system is assumed fully developed. The famous McKinnon-Shaw theories showed that institutional characteristics of a banking system played a much more active role in the economy than some classical economists have thought. McKinnon and Shaw also assume that market is imperfect and the external finance is more expensive, but argued the availability of external finance is more important than its cost. They focus on the institutional constraints which can hinder the development of financial systems. They argued that financial liberalization and high interest rate would stimulate the development of financial institutions and the growth of savings (financial deepening), thus increase the funds available for investment.

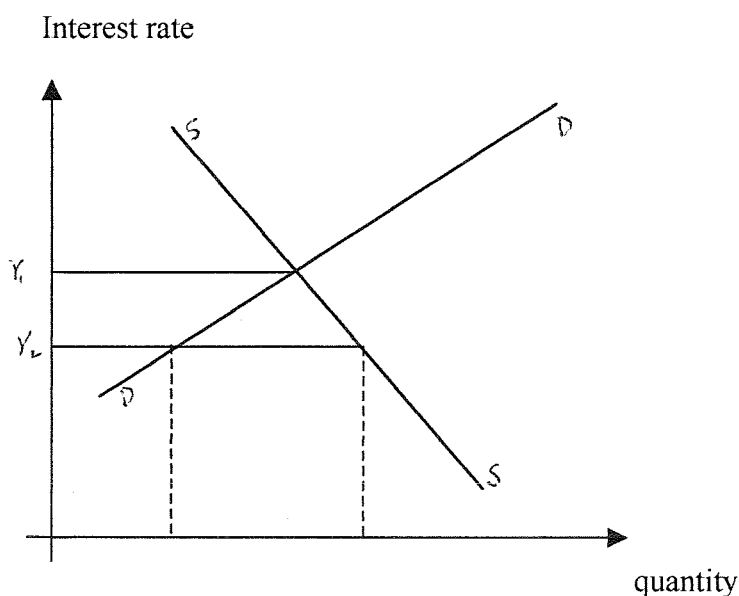
Based on the M-S theory, Kapur (1984) and Mathieson (1980) developed formal theoretical models by combining the endogenous growth theory and M-S theory to describe the relationship between the credit growth and economic growth in developing countries. To isolate the effects of investment on economic growth, Kapur and Mathieson use the Domar model as the endogenous growth model, that is: $Y = AK$, Where Y = national income, A = output/capital ratio. This Domar model can also be called AK model. The key assumption of AK model is that the labor elasticity of output equals zero and the return to scale is constant. By establishing a relationship between bank loan and capital (simply by assuming a fixed proportion of capital will be financed through banks) they are able to build up models which show the relationship between the growth of bank loans and the economy.

Although the purpose of Kapur’s and Matheson’s model is to show the need for financial deepening, their model can easily be used to analyze the effects of the decline of bank loans on the economic growth in the period of bank restructuring.

1.1.2 The equilibrium of bank loan market

To understand the effects of bank restructuring on the economy we must understand how the “price” (the interest rate) and quantity of loan are decided in the loan market. In the classical economist model, bank loans are treated as a common commodity. Thus like other commodities, the demand for and supply of bank loan is cleared through the change of its price. That is, the interest rate (see figure 1-1). Thus the decline of quantity of bank loan “sold” in the market can either be caused by the demand side factor or the supply side factors.

Figure 1-1 the equilibrium of loan market



However, some economists find that “credit rationing” is very common in the practice of bank lending (Jaffe and Stiglitz 2000). By “credit rationing” banks keep the interest rate below the equilibrium level (r_2 , figure 1-1). That means there will be excessive demand under the market rate. Banks will cut the excess demand through quantity rationing. Credit rationing means some borrowers will not get the whole volume of loan they demand or even not get it at all under the prevailing interest rate.

Various theories have been offered to explain why credit rationing exists. Early researchers think it is because various of loan market imperfection such as risk of

default, borrower classification and customer relations (Jaffe and Stiglitz 2000). Modern researchers use imperfect information theory to explain the existence of credit rationing (Jaffe and Stiglitz 2000).

Bank loans are very different from ordinary commodities in that the credibility of the customers is more important than the price of the loans. Imperfect information theory believes that the expected return of banks does not increase monotonously with the rise of interest rate because with the rise of interest rate the possibility of default will also increase. Thus over an optimum level of interest rate, the expected return of the banks will begin to decrease. Two basic reasons can explain why the possibility of default will increase: adverse selection effect and adverse incentive effect. The adverse selection effect is that with the increase of interest rate conservative potential borrower will drop out of the market and only risk-like customers will be left. The adverse incentive effect says that when the interest rate is increased, the same borrowers will take riskier projects. Both effects are based on the assumption that risk is positively related with the expected income of the project. Thus when the interest rate is increased, borrowers have to take riskier projects to maintain their after-interest profits.

The “credit rationing” assumption is very important in analyzing the effects of decline of the bank supply on economic growth. It means when banks want to reduce the loan supply, it may not take the form of increasing interest rate but by lowering the rationing of the credit. It is the basis of the so-called “credit channel” school which we will deal with later in next section.

1.1.3 The bank behavior and business cycles

Beside the classical tradition which treated the banking system as neutral to the economy, there is also a long-standing tradition in macroeconomics which emphasize the importance of credit in the business cycles. In these theories, deteriorating credit market conditions such as bank distress are not simply the passive reflection of the deterioration of the real economic conditions but are themselves an important factor

accelerating the economy recession. For example Marx has analyzed the complex inter-active relationship between the physical part and financial part of a capitalist economy in the business cycle in the third volume of his famous “Capital”. I. Fisher (1933) had attributed the Great Depression partly to the bank distress in the 1930s (quoted from Bernanke, Gertler, Gilchrist, 1999).

Since the 1990s the frequent outbreaks of financial crisis ignited renewed interests among economists on the role of banking systems in business cycle. Several theoretical models have been offered.

Bernanke, Gertler and Gilchrist (1996) proposed a “financial accelerator” theory. Based on the theory of external finance premium mentioned above, this theory established an endogenous relationship between the external finance premium and the asset prices. Because of information asymmetry banks have to rely on the value of a borrower’s assets which can be used as mortgage, thus the external finance premium is negatively related to the net value of the borrower’s asset. Because the asset price is procyclical, the external finance premium will be counter-cyclical, thus the bank lending will be procyclical. For example, suppose some external shock lead the price of the assets of a borrower declined, this will immediately weaken the credibility of the borrower and his cost of borrowing will rise. Because his ability of borrowing is weakened he may have to decrease the purchase of new assets, even sell some old assets. This will trigger a spiral decline of asset price and bank lending and accelerating the decline of economic growth.

Borio, Furfine and Lowe (2000) analyze the procyclical tendency of the banking system in a similar way. They analyze the risk evaluation system of the banks, the supervision agency and the external credit rating companies. They found that all of them have an inclination to focus on the risk of individual debtors, but neglect the systematic risks. Because of this bias debtors and bank themselves tend to get a higher rating of credibility during the economic boom, thus bank lending tend to increase too fast. The opposite will happen in the period of economic bang.

1.1.4 The effects of the bank restructuring on loan market

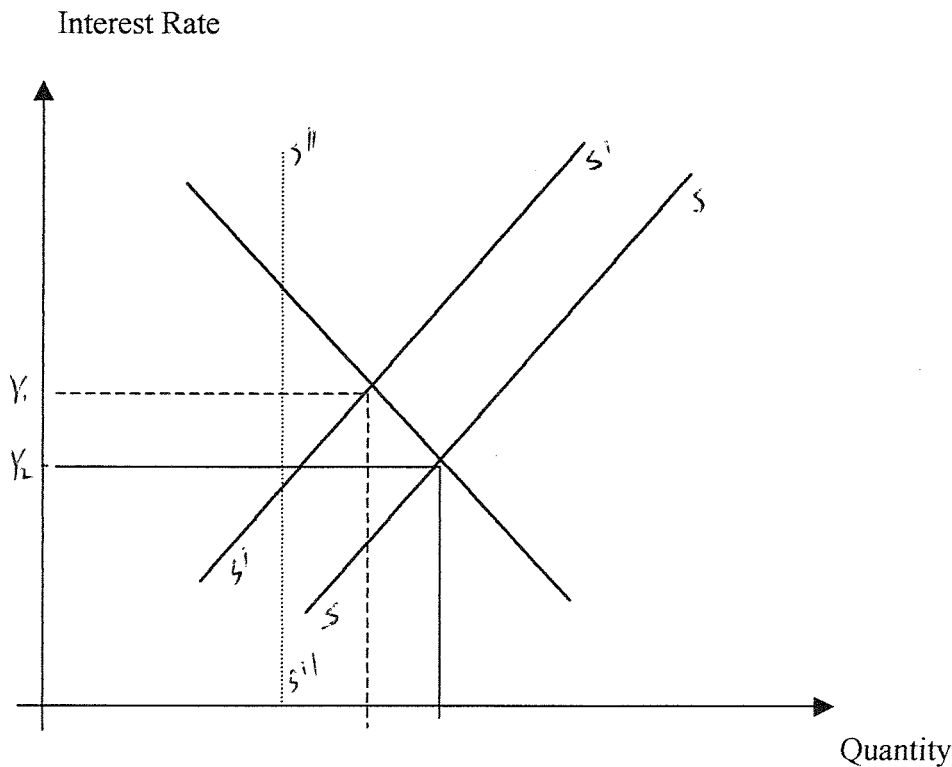
In this part, I will outline a theoretical framework about the explanation for the cause of decline of bank loans in the period of bank restructuring using the theory of loan market outlined above.

a) The loan supply and bank restructuring

As pointed out above, decline of loan growth can be caused either by supply factors or demand factors or both. At first we describe the supply factors which can cause the decline of the loan growth.

From the classical model, the decrease of supply will mean an up-left shift of the supply curve. It means less quantity of loans but higher interest rate. However, unlike ordinary commodity interest rate is not the only “price” of the loan, terms, fees, and collateral requirement are also important conditions of a loan. When banks want to shrink the loan supply, they may choose to raise the other conditions rather than the interest rate. More loans will require collaterals and they will be valued at a lower price. More important, as pointed out above, banks may cut back loans not through raising the interest rate but through credit rationing.

Figure 1-2 The change of the supply curve



The credit rationing and the use of other conditions will make the loan supply curve less sensitive to the interest rate, which means a more steep supply curve for the loans (Line $S''S''$).

In analyzing the causes behind the occurring of a decline (or slowdown) of loan supply in the period of bank restructuring, a difference must be emphasized here at first: the unwillingness and inability of the banks to supply loans.

The unwillingness of the banks to supply loans

Unwillingness to supply loans has nothing to do with the banking system problems. Even in a healthy banking system where the banks have enough capitals, in a recession period banks tend to reduce the supply of loans. As Bernanke et, als (1996)

have pointed out, in a market oriented banking system bank credit usually has a pro-cyclical or overshooting nature.

Although unwillingness to lend in a recession period is common in a market oriented banking system, it must be emphasized here that this is also a part of the results of bank restructuring which transformed the government controlled banking system to a more market oriented system. Market oriented bank restructuring will change the behavior mode of the banks and make them more market conscious. They will take more care about the quality of their assets and pay more attention to the credibility of the borrowers. Therefore compared to the age before the reform, they are more reluctant to lend loans, especially in the period of economic slowdown.

The inability of the banks to supply loans

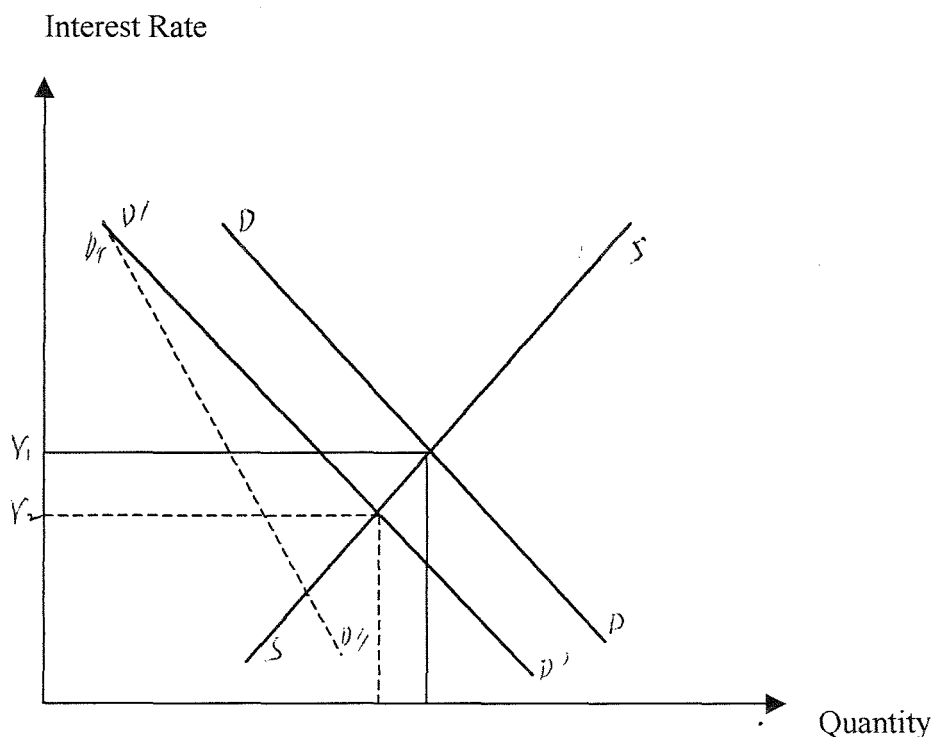
The ultimate loan supply capacity of a bank in a market oriented system is determined by its capitals. One of the most important factors influencing banks' capitals is the accumulated NPLs. In the period of bank restructuring, banks begin to care about their NPLs and want to decrease it to a safe level. This will greatly deplete the banks' capitals. Combined with the application of the risk weighted capital adequacy requirement, the exhaustion of bank capital will severely weaken bank's ability to provide loans.

The tightening of the bank supervision also will let the bank take a more conservative policy in loan decision and reduce the ability of banks to provide loans.

b) The demand factor of Loan decline

However, the decline of bank loans can also be caused by the demand side factors. In the classical model, a decline of loan demand is a down-left shift of the loan demand curves. It will lead to less quantity of bank loans as well as a low interest rate (see figure 1-3).

Figure 1-3 The shift of loan demand curve



In a recession period the enterprises also tends to be pessimistic about the economic futures and their desire for loans will decrease. Their sensitivity to interest rate can also increase, which means a more steep loan demand curve.

Again in a transforming economy the decline of the loan demand in a recession period cannot solely be attributed to business cyclical factors. The institutional factors also play an important role. The SOE restructuring which occurred simultaneously with the bank restructuring in China also changed significantly the behavior of the enterprises (although till now they are still not a real enterprises). The reform put more responsibility on the firm managers for their investment decisions. As the result, they pay more attention to the risk of their investment projects and their debt burden. In a word there no longer exists an unlimited demand for the bank loans as it did before the SOE reform.

The demand factor makes it very difficult to decide, let alone accurately measure the cause of a loan decline in a recession period because in this situation both supply

factor and demand factor may cause the decline. Theoretically this job can only be done by the calculation of the supply and demand curve at different period and decompose the difference of their equilibrium results. In practice, however it is almost impossible.

1.1.5 Banks and Monetary Policies

Economists are still not very clear about the exact mechanism how monetary policy work through the economy. It is regarded as a “Black Box” (Bernake and Bertler 1999). According to the IS-LM model of Keynesians, the major monetary policy instrument is the interest rate. By influencing the fundamental interest rate (such as the federal fund rate in U.S) the monetary authority will be able to affect the lending rate of the banks. The change of lending rate will in turn influence the capital expenditure of the firms and durable good consumption of the consumers (the cost of capital effects). These influences in turn will affect economic growth.

Monetary economists see the channel of monetary policy effects in a more direct way. They believe that monetary policy will affects the economy directly through the increasing of money supply. This will affects the general demand, thus stimulate or cool down the economy.

Like the classical model, both in the Keynesian and Monetary model the conditions in the financial market and banking system does not affect the real economy. However, some empirical studies (Bernake and Bertler 1999, for example) find that in practice these orthodox theories fail to explain the behavior of the economy after the application of a monetary policy.

To solve the paradox, some economists try to analyze the direct role of bank credit in the mechanism of monetary policy transmissions instead of the indirect channel such as interest rate or money supply. They called it the “credit channel”. The “credit channel” actually can be divided to two sub-channels: the balance sheet channel and the bank lending channel. The balance sheet channel explains the influence of monetary policy through its effects on the balance sheet of the borrowers. When the

central bank decides to loose (tighten) the money supply, the expansion (shrink) of the economy caused by the policy will improve (deteriorate) the balance sheet conditions of the firms, making them more credible for, also more willing to borrow money from the banks. The bank lending channel focus on the effects of monetary policy on the supply of loans by banks. When the central bank decides to loose (tighten) the money supply, this will immediately increase (decrease) the reserve of the banks, enhancing (weakening) their ability to lend loans.

The “credit channel” school differs from the monetarist school in that the later emphasize the change of money supply while the former focus on the change of loan supply.

The “Credit Channel” theory can be easily used to explain the weak effects of monetary policy in the period of bank restructuring. Suppose that a government want to loose the monetary policy, it can increase the reserves of the banks through open market operation, reserve requirement policy, etc. In a sound banking system this will immediately increase the loan supply because of the increase of loanable funds (the bank lending channel). However, when the banking system is facing severe problems and need restructuring, banks may fail to response the loose monetary policy by increasing the loan supply. Even the bank did want increase the loan supply and low the interest rate, the deteriorating balance sheet conditions of many borrowers may lead them unwilling, also unqualified, to borrow more money (the balance sheet channel).

1.2 The empirical studies

During and after the “credit crunch” in the United States in 1989-1992, there was a lot of research about the effects of the bank restructuring on the economic growth. Up till now these studies are still the major empirical works on the effects of bank restructuring on the economy.

Some analysts used an indirect way to explore the role played by banks in the “Credit Crunch” by analyzing the demand factors (the economic fundamentals). The reasoning is that if the demand factors cannot fully explain the slowdown of bank loans, then the supply factors must have something to do with it. One of this kind of research is done by Mossier and Steindel (1993). They build demand models for four forms of credits. For every form of credit they compare the predicted value (Y^*) with the actual value (Y) and examine the residual ($Y-Y^*$). They found the models significantly over-predict the real values in all of the four models ($Y-Y^*<0$) in the period of “credit crunch”. That means in this period the growth rate of credit is exceptionally low and cannot fully be explained by the demand factors. There must have been some supply factors behind it.

However, there is a major restriction in the demand side approach. That is: It implicitly assumed that there is no structural change in the loan demand model. Otherwise it is not appropriate to use historical data to predict the loan demand. If the demand effects cannot be correctly predicted, then the supply effects also cannot be correctly estimated. For example some analysts pointed out that new inventory management technology has greatly decreased the needed volume of inventories in many industries and was partly responsible for the decline of firm’s demand for liquidity credit in the United States. It is also not suitable for the analysis of bank restructuring in a transforming economy, since in these countries there are usually also enterprise reforms operating in the same time with the bank restructuring.

Other economists directly analyze the factors which influence the loan supply. For example, Cara Lown and John Wenninger (1993) analyzed the role of banking system in the “credit crunch” of the United States. Lown and Wenninger use a cross-sectional regression model to analyze the effects of bank conditions on loan supply. For each year from 1988-1991, they run a cross-sectional (sorted by State) regression linking loan growth to CAR ratio, loan loss reserve/total loan ratio and employment growth (as a proxy for economic growth). The regressions proved that the link between bank capital adequacy and loan growth is stronger in the period of 1989-1991 than 1988

(the coefficient, its t-value and R^2 ratio is much higher), especially when only CAR is included in the model.

Berger and Udell analyzed the effects of tightening regulations on the “credit crunch” period of United States. Berger and Udell first test whether the supervision grew harsher in the period of “credit crunch” by using a Logit model. They find that a bank in the same conditions seems to get a higher ratio of “classified” (problematic) assets and lower CAMEL rating in the “credit crunch” period. The opposite is also true in the period of boom. They then check the effects of changes in supervision toughness on bank lending behavior. To do this they regressed the changes of the ratio of several categories of assets to total bank assets on the ratio of “classified” assets and CAMEL rating as well as several other variables, their three-year lags and time dummies which is almost the same in the Logit model. They find that changes in supervisory toughness did negatively related to the bank loan growth. However, they find these effects are rather small.

David Woo (1999, 1) use a similar method to analyze the effects of bank restructuring on loan growth on the Japanese financial crisis. Woo use a panel data and run a series of cross sectional regression (loan growth regressed against CAR) for each year from 1991-1997. He find that from 1991-1994, there is a negative relationship (significant) between bank loan growth and the CAR, indicating that the Japanese bank did not pay attentions on their capital positions. However, after 1995, the coefficient of CAR turned to be positive and the R^2 ratio increase significantly, showing banks become increasingly aware of their capital positions.

These empirical researches mentioned above received wide attentions among economists and greatly extended the literature about the cause and effects of bank loan growth. However, these studies also suffered some weakness and received wide criticism. One of the major shortfalls of these researches is that they still failed to persuasively distinguish the demand side and supply causes of the decline of loan growth. Even if they have, they failed to show that the slowdown of bank lending has

caused or exaggerate the economic recession, since borrowers may find other channel of finances and the efficiency of the loan projects may be improved.

Joe Peek and Eric S. Rosengren (2000) have done an interesting empirical study about the effects of the Japanese bank crisis on the U.S real estate market to cover these shortfalls. Peek and Rosengren use a panel data model which is distinguished by different markets. Because the loan supply of Japanese branch is external for the U.S market this case study offered a good chance to isolate the supply and demand factors which affects the loan growth. Furthermore, because Japanese bank activities is concentrated in a few markets, they are able to calculate the effects of shrink of loan by Japanese branches on the U.S real estate growth. The research finds that the Japanese banks largely reduced their loan activities in the U.S. after 1995 due to their problems in Japan. Because the Japanese banks had deeply involved in the U.S. real estate loan market, the withdrawal of Japanese banks had significant effects on the growth of construction sector of the United States.

Though the bank problem and the “credit crunch” are often mentioned in the research about the cause of and strategy for dealing with financial crises in the developing countries, Surprisingly few similar research have been done about the effects of bank restructuring on the economy in these countries. I hope this paper may fulfill this gap in some degree.

2. Background of bank restructuring in China

In order to let outsiders to understand the effects of the bank restructuring on the economy of China an outline of the progress of bank reform in China is necessary at first.

2.1 An outline of the Chinese banking system before economic reform

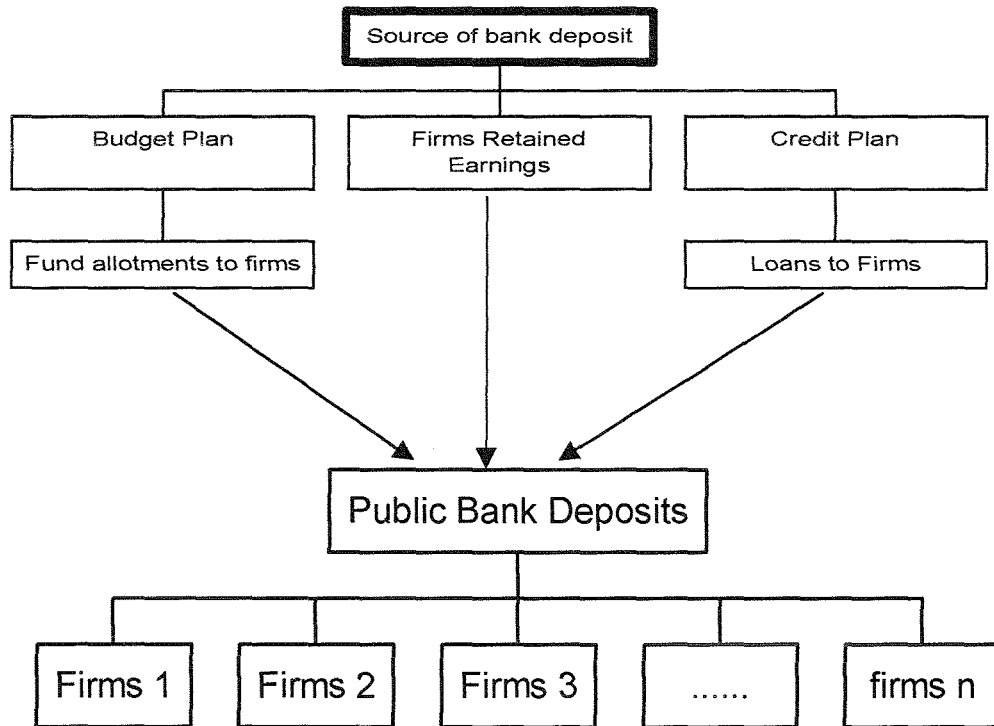
It is helpful to outline the banking system and the bank behaviors under it in China from 1949 to 1979 when the economic reform began. By doing so it is easier to understand the background of bank restructuring in China.

After the completion of the “Program of Socialist Transform” in 1954, a socialist (or the more neutral name: central planning) economic system was established in China. Accordingly a new banking system had been set up to suit the new economic system.

One of the essential characteristics of central planning economies is that almost all economic activities are tightly controlled by the central government. Neither commodity nor financial market existed. Banking system is only a tool of central planning. Before 1979, there was actually only one bank: the People’s Bank of China (PBC). The PBC played the role of the central bank as well as the commercial bank.

Figure 2-1 describes how the monetary needs of the firms were financed in China before 1979. The fixed investments of the firms were financed by government budget allotments. The need for working capital was satisfied through bank credit. However, all these transactions have to be carried out through bank account.

Figure 2-1 The flow of “Credit Plan”



The fixed investment decisions are not made by the managers of the firms, but by the central government according to the fixed investment plan. Bank loan decisions are also not made by the bank managers themselves, but by the central government according to a credit plan subordinate to the fixed investment plan. On the other hand, both firms and banks will not be responsible for the consequences of the investments. On these circumstance, it is not surprising that the mangers of the firms and the local authorities had a strong tendency to try to get more investment from the central government, since they would lose nothing if the investment went wrong, but will benefit a lot if the investments are successful. For the same reason bank managers also like to expand their loans as large as possible. This is the so-called “soft budget restrictions”. Thus in a central planning economy there exists a strong tendency of economic expansion. Overheating and inflation are always the key problems. However, since banks only provide working capitals and these loans were based on “real bill” doctrine, non-performing loans are not likely to be a serious problem.

2.2 The bank reform in China from 1979-1997.

In 1979, China began the economic reform. The government realized that the old banking system could not suit the new market oriented economic system any longer and had to be reformed. From 1979-1983, the reform focused on the separation of central bank operations and commercial banking business. Beginning in 1981, four “specialized banks” have been established or reestablished. The PBC shifted its commercial bank business to these “Big Four” and became a sole central bank. Table 2-1 shows the names and business focuses of the “big four”.

Table 2-1 The name and the business focus of the “big four”.

Name	Date of setup	Focus of Business
The Industrial and Commercial Bank of China (ICBC)	1984	Urban Areas
Bank of China (BOC)	1979	Foreign exchange and international Payments
Agricultural Bank of China (ABC)	1979*	Rural Areas
People’s Construction Bank of China (PCBC)	1954	Long-term Investment loans and government allot

*first setup in 1955, reestablished in 1979.

Table 2-2 showed the share of the “Big Four”

Table 2-2 The Share of the “Big Four” (end of the year)

(unit: %)

	Percentage of total Domestic Financial Assets			Percentage of total Profits of The Domestic Banks			Percentage of Total Domestic Deposits		Percentage of Total Domestic Loans	
	1994	1996	1997	1994	1996	1997	1996	1997	1996	1997
ICBC	34.18	34.59	34.13	19.4	12.73	11.04	27.37	27.32	28.03	26.63
ABC	16.26	13.98	13.69	2.41	10.25	2.84	13.11	13.47	13.34	13.09
BOC	23.85	20.08	19.04	24.82	25.36	21.25	18.02	16.7	16.54	15.05
PCBC	18.13	20.26	26.33	12.8	10.59	6.79	15.39	15.89	14.22	14.80
Total	92.42	88.92	93.19	59.43	58.93	41.92	73.89	73.38	72.13	69.57

Source: China Center for Economic Research

Apart from these four nation-wide state owned commercial banks, 11 new banks have been established since 1987 till 2001. These 11 new banks either have mixed investors or are established by the local governments. They account for 12% of total assets and 15% of total capitals of the national banks in 2001.

After the separation of central bank and commercial banks, the Chinese government began to gradually substitute budgetary allotments by bank loans. As the result of this policy, the proportion of fixed investment financed by government decreased rapidly (see table 4-1, page 52). Right now almost all fixed investments are financed by bank loans except for a few national “key” projects. This so-called “substitute budgetary allotments by bank loans” policy is aimed at making firm managers to be more conscious of the cost of investments since budget allotment is free but bank loans have to be repaid with interest. However, loan decisions are still not independently decided by bank managers on the basis of credibility but directed by the government. The loans directed by the central government are called “Policy loans”. Till 1993, it still accounts for about 20% of the ICBC’s loans, 30% of the ABC’s Loans, 45% of PCBC’s loans and 15% of the BOC’s loans (Xiaoping Xu, 1997). To let the “big four” get rid of the “policy loans” and make them to be true commercial banks, in 1993 three policy banks were established. They took over the policy loans from the “big four”. However, in practice many loans offered by the special banks are still directed by the government. In many case bank loan is still simply a replacement for the

budget allotment. Thus the “soft budget” problem still exists after the reform. The difference is that now most of these policy loans are mid-term credit for fixed investments. Thus the risk of default is very high. This is the main reason why NPLs are accumulated in China.

2.3 The Nature of NPLs in the Chinese banking system.

Several years ago data on the NPLs of the Chinese banks are very poor. It is not only inaccurate but also incomplete. Due to the lack of transparency, estimates about the scale of NPLs of the Chinese banks are widely different among analysts.

Dornbusch and Francesco (1998) have a milder estimate. They assumed that the proportion of NPLs of total loans is 20% (the official number at that time) to 30%. Then they calculated the upper and low end of the cost of NBL clearing by assuming two different ratio (50% and 75%) of NPLs which will actually not be recovered in the end. Table 2-4 showed the result:

Table 2-3 The estimates of the bank restructuring cost

In billions of RMB

Non-performing Loans (% of total loans)		Unrecoverable Loans (% of total NPLs)	
		50%	70%
	20%	800	1120
	30%	1200	1680

Source: Rudi Dornbusch and Francesco Giavazzi (1998): “Heading off China’s Financial Crisis”. IMF working paper.

By this method, they estimated the cost of cleaning the NPLs will be 10%-20% of GDP in 1998, with the upper end more likely.

With the growing attention of the government about the NPLs problems and with more and more banks listed or planning to be listed in domestic or oversea stock market, timely and more accurate data about NPLs of the Chinese banks become

available. The PBC has announced that the percent of NPLs of total bank loans of the state owned banks in 2001 is about 30%. This is consistent with the individual bank data. For example, the NPL / Total loan (NPL/TL) ratio of BOC in 2001 is 28%. The ratio of ICBC is 30%. The president of ABC said that the NPL/TL ratio of ABC is “higher than 30%”. In June 30, 2001, the cash call back rate of Huarong AMC, the AMC for ICBC, is 37.1% (Financial Times, 2001.6, 30). Using these data the estimated cost of clearing the NPLs of the Chinese financial system will be 21% of China’s GDP in 2000. This is consistent with the estimate of Dornbusch and Francesco. Table 2-5 shows the international comparison of the cost of systematic bank restructuring

Table 2-4 International comparison of the cost of systematic bank restructuring
As a percentage of GDP

Countries	Cost (%of GDP)	Countries	Cost (%of GDP)
Spain	15.0	Ghana	6.0
Sweden	4.3	Kuwait	45.0
Cote d’Ivoire	13.3	Mauritania	15.0
Chile	33.3	Tanzania	14.0
Finland	9.9	Mexico	12.0-15.0
Hungary	12.2	Venezuela	17.0
Poland	5.7	China	21%

Source: Dziobek and Pazarbasioglu, quoted from Rudi Dornbush and Francesco Giavazzi (1998): “Heading off China’s Financial Crisis”. IMF working paper

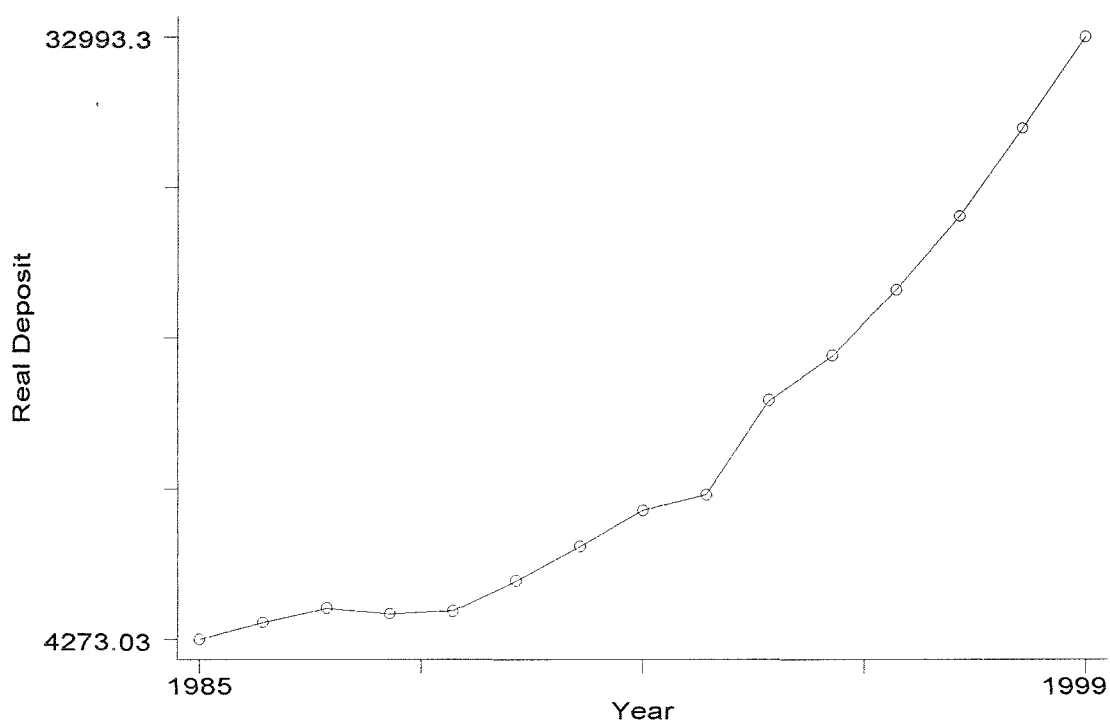
Theoretically if a bank’s capital ratio is 8%, its loan assets account for 80% of its total assets, its NPLs/Total loan assets ratio is 20%, and its recover rate of NPLs is less than 50%, then it will be bankrupt. For its loss will eat out all their capitals. According to this standard, technically almost all the “Big Fours” are bankrupted.

If the bank situation in China is so bad, why is there no bank crisis in China as in other Asian countries? First of all, although these banks technically have already been

insolvent, they are not illiquid. On the contrary banks are not short of fund because of the rapid increase in deposits (see figure 2-2). Due to the pessimistic expectation about the future, private savings in China increased sharply. Most of the increased savings flowed to the banks, because in China the choice of financial assets is still very limited. Furthermore bank deposits are still considered to be safer than other financial assets such as the stocks by most of the Chinese, because they still believe Chinese government will not let them lost their bank deposits. Second, the economic growth of China is still relatively high although it had slowed significantly and the domestic currency Rmb seems stable. There are no eminent threats of exchange rate or real economic crisis which have triggered the bank crises in so many other countries. The last reason is the apparent government tolerance, which allows the actually bankrupted banks to continue to operate.

As long as people do not lose their confidence in the government and the government continues to take a lenient attitude to the banks, the Chinese banks can still survive. However, that does not mean there is no danger of bank crisis in China, because public attitude can change. Besides, as the financial reform continues Chinese investors will have more choices. The foreign banks represent another threat. When the foreign banks are allowed to absorb deposit domestic inhabitant denominated in Rmb (five years later after China entered WTO), they may attract part of the deposit in the state owned banks because some of the banks have good international reputations.

Figure 2-2 The Trend of Deposit of the Chinese Banks in Real Term
(Unit: 100 million Rmb)



Source: Yearbooks of Statistics of China, National Bureau of Statistics of China.

(The data of the graph and table below is from the same source if the source is not specially mentioned)

2.4 The Cause of the NPLs in China

To construct a proper policy package for eliminating the NPLs in the banking system, we have to have a clear knowledge of the cause of the bank problems. Otherwise we can not stop the origin of the NPLs and any NPL eliminating program is doomed to failure no matter how much public and bank money have been spent on it. Although the Chinese economic system is very different from the Southeast Asian countries, the basic causes of NPL are very similar.

a) The most important factor is the conditions of the SOEs. Most NPLs are loans borrowed by SOEs. After 1979, although China has made great progress in economic reforms, the SOEs are still not true enterprises. The managers are still appointed by

the government and have no responsibility for their investment decisions. As the result the balance sheet position of SOEs deteriorated continuously, especially after 1995 when the economic environment deteriorated. It is estimated at least half of the accumulated NPLs is produced in this period (Lardy 1999).

b) On the other hand, the special banks are still not real commercial banks. The “Big four” is all solely owned by the central government. Their management structures are made according to administration organization, rather than a financial corporation and its management is inefficient. Because of these reasons loan decisions are still not independently decided by bank managers on the basis of credibility, but directed by the government.

c). Because of the fallacy of the enterprise and banking system bank loans are treated as free public money as a substitute for government allotment. No one cares about the possibility of repayment. Many loans are sure to be impossible to be returned even at the beginning of the lending. The borrowers have no intention to repay it when they borrowed it and the managers of the banks often also know it.

d). The local government played a very important role in the accumulation of the NPLs. Like SOEs, there exists “soft budget control” for the local government in the central planning system. Thus the local governments also have a strong tendency to expand investments. However, unlike the central government who can finance national key investment projects by budget allotment, they have to rely mainly on the bank loans. The branch structure of the “Big four” makes them vulnerable to the local government pressures. Their branches are not distributed according to economic consideration but administrative district. The same applied to the central bank PBC. It is only till 1988 that PBC has got the right to appoint and remove the presidents of its local branches and until 1993, the local governments still had veto to the appointment or removal of the branch presidents in their provinces.

e) Because of the incomplete market system, there was no severe punishment for default. SOEs who could not pay back the money usually would not go to bankruptcy

and the local governments often help these SOEs to get rid of their bank debts, especially when the creditors were banks outside their regions! The result was low credibility of the SOEs and large scale of bad loans of the banks.

2.6 Bank reform in China after 1998.

It is not until 1998 that central government began to notice the severe situation of the banks and launched a more fundamental bank-restructuring program. The major steps made by the government are:

2.5.1 Restructuring the branch structure of the PBC and the special banks.

In order to let the state owned special banks get rid of the local government influences, The Chinese central government reformed the central banking system in 1999. Following the example of the Federal Reserve System of the United States, the PBC re-arranged its branch systems. The former branches at each province will be merged to form nine new district branches. Each district branch will supervise banks in two or more provinces according to the relationship between these provinces. The state owned special banks also rearranged their branch structure following the example of the PBC.

2.5.2 Changing the method of classification of the quality of the bank loans

Before 1998, China uses a four-category division method to classify the quality of the bank loans. Except normal loans which are repaid on time loans that have no hope of recovering, as the debtors have been bankrupt, are called “dead loans”. Loans that have been overdue over 2 years are called “doubtful loans”. Loans that have been overdue for less than 2 years are called “overdue loans.”

The shortcoming of the “four category division” is that they are based on the status of payment, not the possibility of recovery. This make it possible for banks to conceal bad loans by providing new loans to the borrowers who actually have lost the ability

to repay the loans. Besides, many loans in china are so-called “bullet loans” which have no repayment of principal until the end of the term. Therefore if a borrower is bankrupt, loans offered to him will not immediately became a NPL until the end of loan term.

In 1998, by the help of United States the Chinese government adopted a new credit classification system which is based on the possibility of repayment. The new system classifies the bank loans into five categories: Normal, Need special attention, Abnormal, Doubt, and Loss.

2.5.3 The cancellation of quantity controls

In the early 1998, the PBC canceled the quantity control of the bank loans and substitute it with the asset-debit management. Since then the limit of a bank to supply loans is decided by its capital adequacy ratio.

2.5.4 the liberalization of interest rate

Interest rate liberalization is gradually carried out since 1996. In 1996, PBC decide to lift the control over the inter-bank offer rate. In 1997 the repo rate of inter-bank TB market is liberalized. In the same time, the float range of interest rate of the loans to enterprises is largely widened. In 1999, loans to Small and Medium Enterprises (SMEs) can be up to 30% of the official rate. Right now the interest rate of bank loans is almost market decided. However, the residential deposit rate is still decided by PBC. The PBC has declared a three-year plan of total liberalization of interest rate.

2.5.5 Solving the NPL problem of the banks.

From 1998, the Chinese government began to be aware the serious problems of the NPLs in the banking system. While putting more pressure on the banks to control the growth of NPLs, the government offered fiscal help for the banks. In 1998, the government injected Rmb 279 billion into the “Big Four”. The money made the core

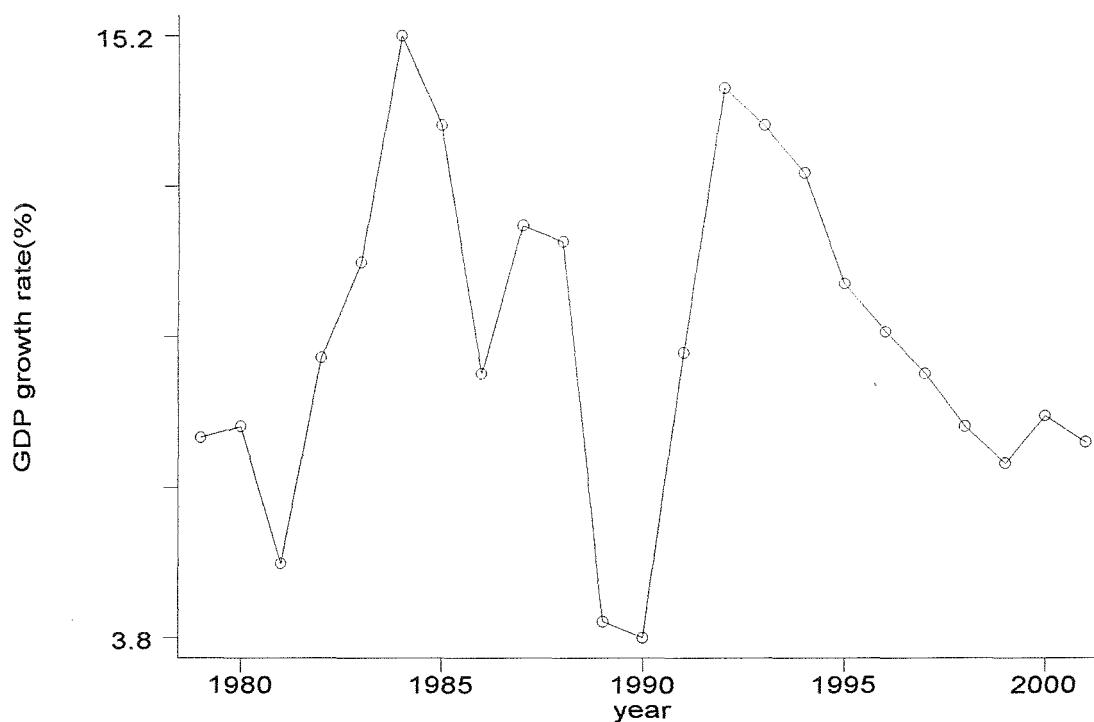
CAR ratio of the “Big four” rise to 4.7% on average, above the requirement at least in book value.

In 1999, in order to help the “Big four” the Chinese government set up four Asset Management Companies (AMCs) to deal with the NPLs. Each AMC take care of one bank respectively. By mid 2000, the transfer of NPLs was completed. A total NPL worth Rmb 1400 billion has been already transferred to these four AMCs.

2.6 The economic growth of China

After the beginning of economic reform in 1979, China has successfully maintained one of the fastest economic growth rates in the world. Figure 2-3 showed the economic growth of China since 1979.

Figure 2-3 GDP growth rate of China since 1979



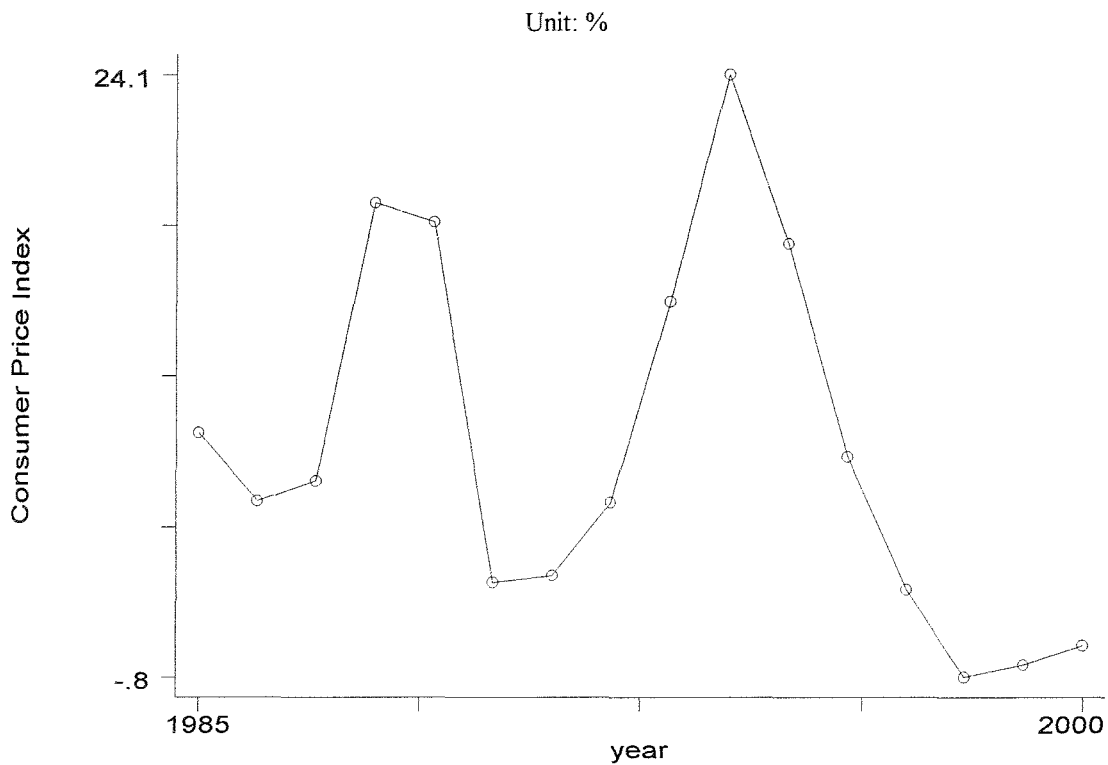
Notes: Data of 2001 is the official forecast of National Bureau of Statistics of China

However, since 1995, economic growth dropped sharply as the government launched an adjustment program to control the overheating economy and carried out more fundamental enterprise and financial reforms. Since 1997, the economic growth rate is below 8%, the least level considered to be acceptable by the government. Although in the first two quarters of 2001 the annual economic growth rate is 8.1%, the third quarter dropped down to 7.1%, the lowest since the Southeast Asian Crisis. The fourth quarter is expected to be below 7% due to the terrorist attack on the U.S.A. It is doubtful the growth rate for the whole year can be above 8%. The official forecast for 2001 is 7.5%.

For foreign economists, a 7% economic growth rate may be a very enviable achievement. Many of them do not understand why Chinese government is so keen to maintain the economic growth rate to be above it. This is because China is a populous country. Approximately 10 millions new workers enter the worker force each year (Lawrence J Lau, 1999). Besides, as the enterprise reform progress, more and more workers are laid out and need a new job. 8% is widely accepted minimum level of economic growth which will put the rate of unemployment under control.

As the economic growth slowed down, prices began to decline. Since 1998, the inflation rate has even been negative (see figure 2-4). If we define deflation as the continuing decline of price, then there is a deflation in China from 1998-1999. In 2000, the trend of deflation showed signs of diminishing. However, the situation is not stable. In June 2001, the consumer price index again declined by 1.2% compared to May.

Figure 2-4 The growth rate of Consumer Price Index (CPI)



Due to the sluggish world economic growth, it is unlikely that China can maintain its relatively fast economic growth by boosting exports as before. It is estimated that the growth rate of exports will decline to 5% in 2001, much less than that in 2000. Even this mild target is doubtful to be achieved.

Therefore China has to mainly rely on domestic demand to stimulate the economy. However bank problem is a major obstacle to the achievement of this object. Solving the bank problem while maintaining a relative high economic growth will be a very challenging target for the Chinese government.

3. The effects of bank restructuring on the loan supply in China

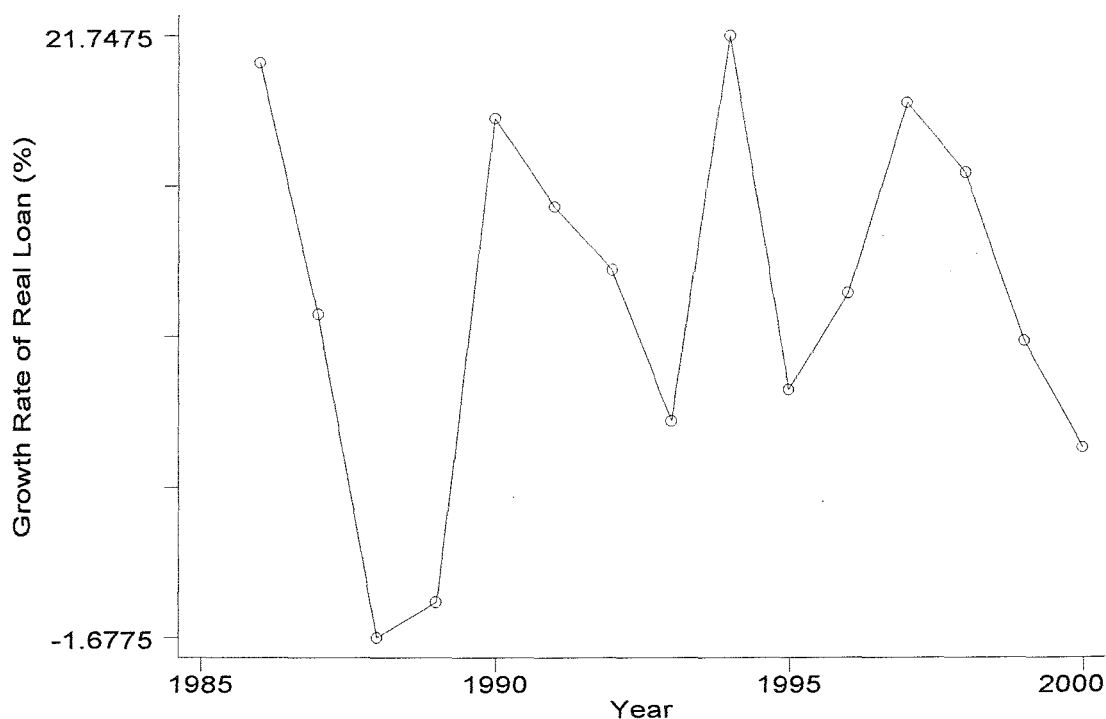
In this chapter, I will analyze whether the bank restructuring carried out right now has changed the trend of bank loan growth in China. The key point is to check whether bank restructuring has caused a “Credit crunch” in China as in other countries. That is:

does bank restructuring cause banks shrink loans to fixed borrower in a fixed macroeconomic situations (Bernanke, 1993). In section 3.1 I will analysis the trend of bank loans since 1979. In section 3.2 I will check the changing position of claims on government in the total bank asset to see if banks became more reluctant to offer loans after 1998. In section 3.3 I will examine the conditions of bank loans to find if there are some sign of supply shrink since the bank restructuring. In section 3.4 I will discuss if there are signs of credit rationing after 1998. Section 3.5 will run a cross-sectional regression to test if the bank capital adequacy became an important factor in deciding the loan supply of a bank since the bank restructuring.

3.1 The growth of total outstanding loans in China since 1979

At first let us examine the trend of bank loan growth in China after 1979. Figure 3-1 showed the real growth rate of bank loan assets in each year from 1979 to 2000.

Figure 3-1 the real growth rate of total bank loan assets



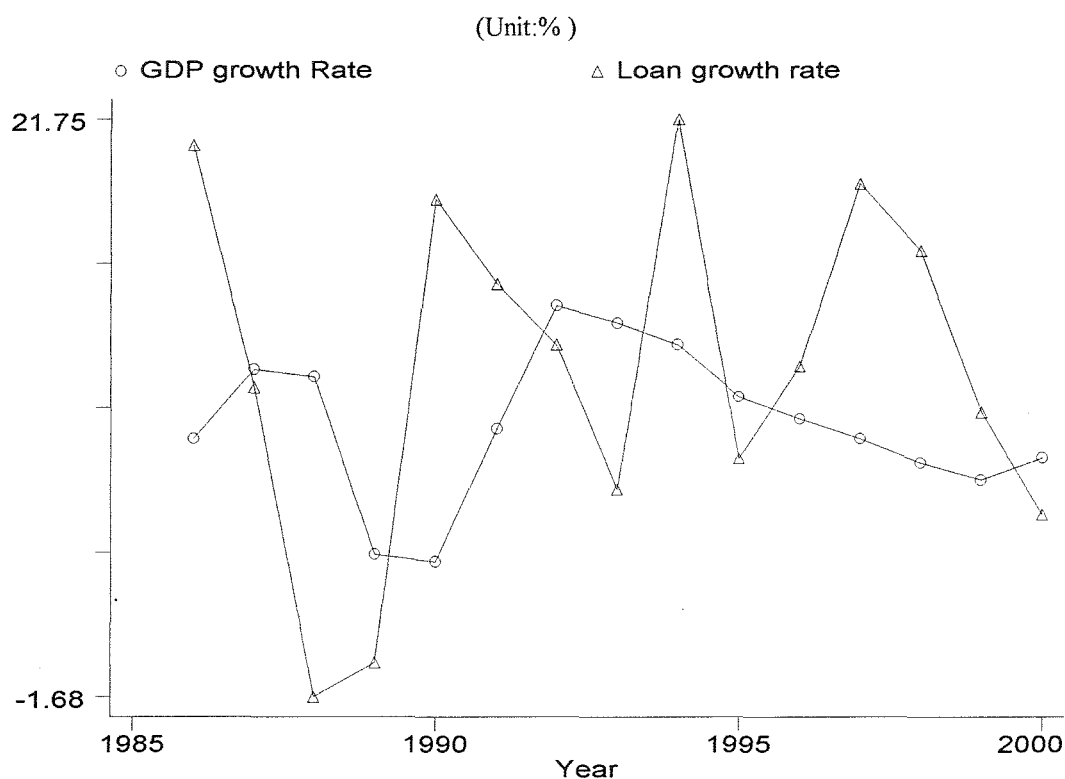
From figure 3-1 we can find that there does have a decline of the real growth rate of bank loans since 1998.

Historically this decline is not extraordinarily large. From figure 3-1 we can see that it is slower than the decline in the period of 1986-1988. It is also not much larger than the decline in 1991-1993. There seems to be a fluctuation pattern in the loan growth. However, one difference that must be emphasized here is that before 1998 the quantity of bank loan is decided by the quota system. The decline of bank loan growth is the result of the self-conscious reduction of the quota by the central government in order to cool down the economy. When the government thinks the economy has slow down enough it will increase the quota and the bank loan will immediately go up. This is the so called the policy cycle which is common in a central planning economy.

However, the decline of the loan growth after 1998 is very different. As mentioned above in 1998 the quota system is substituted by an asset-debit management system. Thus the decline of loan growth is the voluntary action of the banks. Actually after 1998 the Chinese government tried in vain to persuade banks to provide more loans. This factor is considered to be one of the main factors which prevent the government to successfully raise the economic growth rate as it did so before with much ease.

Comparing the business cycle with the fluctuation of real loan in figure 3-2 we can find that in 1986-89, in order to curb the higher inflation rate the government reduced the loan quota. This led to sharp drop in the loan growth rate and caused the GDP growth rate also went down. However, when the government loosed the quota the growth rate of bank loan and GDP restored immediately.

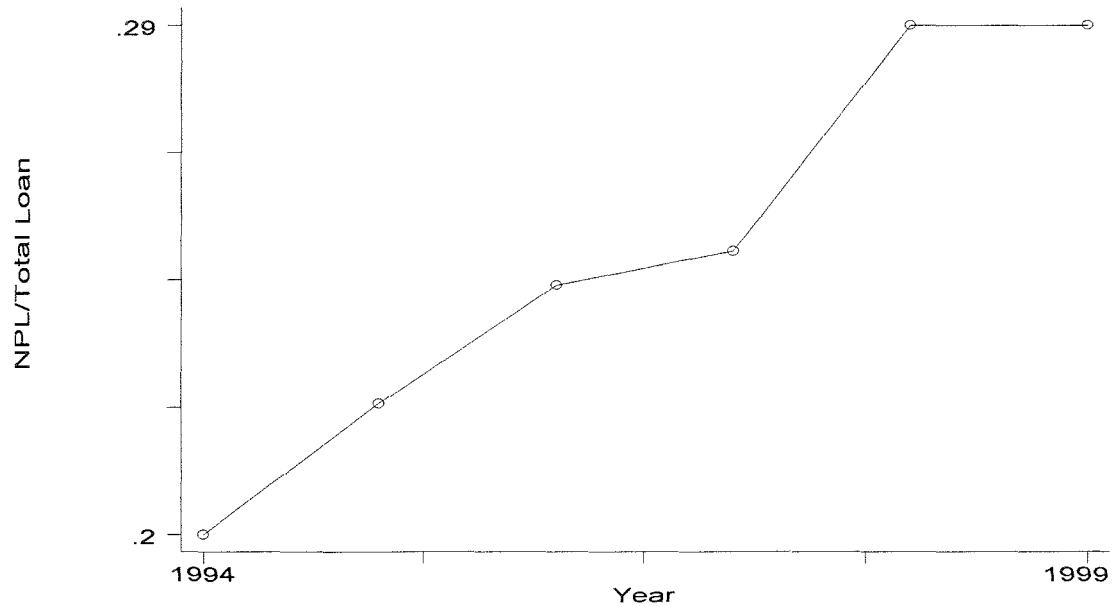
Figure 3-2 Comparison of the growth rate of Real GDP and Real Loan



Another thing which needs to be mentioned is that the decline of real bank loan growth after 1998 is started from a very high point (19.2% in 1997), the absolute growth rate of bank loan is still relatively high (5.7% in 2000). This makes an outright contrast to the case of Japan and Southeast Asian countries where the bank loan growth rate is negative in the period of bank crisis (see table 0-1 page 4).

Perhaps the main reason why China managed to maintain a relative higher loan growth rate is that Chinese banks still have not seriously begun to move out of their large volume of NPLs and there also lacks a sense of crisis among the banks. One indicator of this attitude is that the ratio of NPL of total loan asset remains very high since 1998 (see figure 3-3).

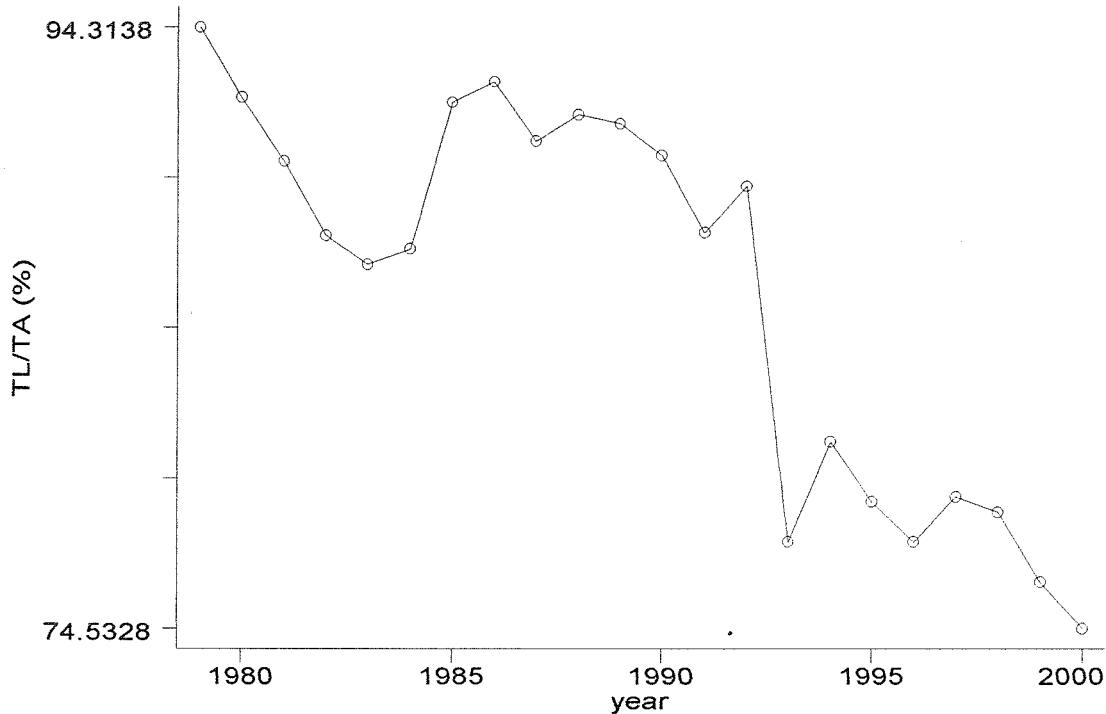
Figure 3-3 The NPL/ Total Loan Asset ratio of Chinese banks since 1994
(Unit: absolute value)



Source: Andrew Sheng, 1999. "The framework for financial supervision: macro and micro issues". BIS working paper.

Another reason may be that the Chinese banking system is not short of liquidity as we mentioned before. To testify this explanation we examine the ratio of bank loan to the total bank asset. The trend of Total loan/ Total asset (TL/TA) ratio is showed in figure 3-4.

Figure 3-4 The proportion of loans in the total bank assets



From figure 3-3 we can observe that TL/TA ratio declined dramatically in 1992, with some degree of increase in 1994, then again declined significantly since 1998. Because in accounting principles the total bank asset equals to the total bank debit, that means the growth of bank loans is much slower than the total source of bank income since 1993.

In the following part at first I try to use some indicators to get some impressive idea if the slowdown of loan growth in China is caused at least partly by the supply side factors. Then I will do some econometric work to see if the slowdown of the loan growth has something to do with the capital situation of the banks.

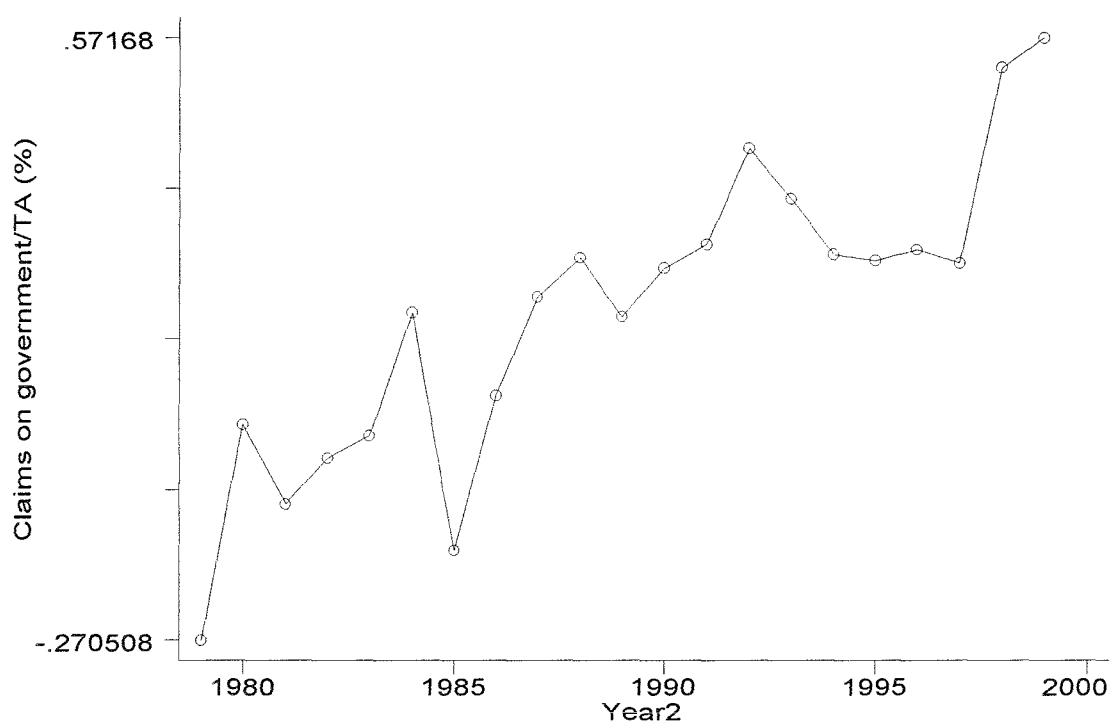
3.2 The proportion of government security holdings.

To check if banks are reluctant to provide loans the ratio of government claims (most of them treasury securities) held by banks to the total bank assets is a very useful indicator. It is widely agreed that when banks feel unsafe to lend bank loans they

usually will increase their holdings of government securities since government securities almost have no risk.

Figure 3-4 showed the ratio of claims on the government in the bank total assets.

Figure 3-5: The ratio of claims on the government in the bank total assets



Source: International Financial Statistics 2001, IMF

From figure 3-4 we can see that the proportion of claims on central government in the total bank assets increased rapidly since 1998, representing more than a recovery from the continuous decline of the ratio since 1992. This is strong evidence that banks are reluctant to supply loans since 1998.

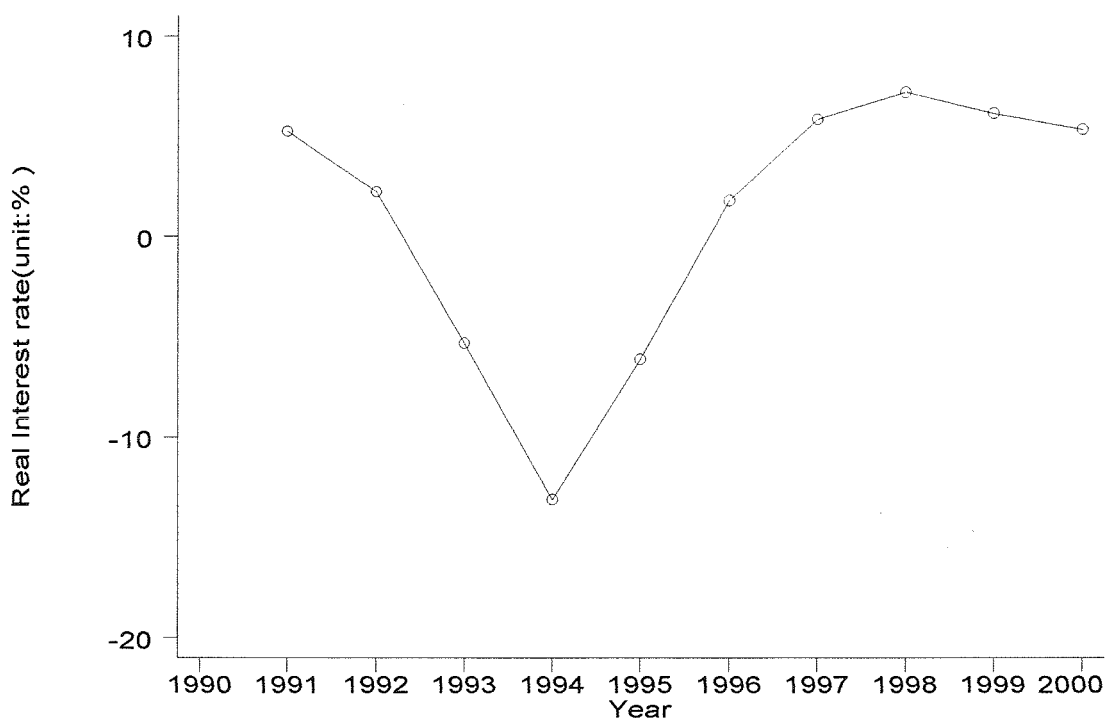
3.3 The trend of loan conditions

As mentioned above bank supply shrink can be reflected in two ways: the rise of interest rate or other conditions and the tightening of credit rationing. In order to find which way Chinese banks have chosen to slowdown their loan supply, in this part we examine the trend of two important loan conditions: interest rate and term length.

3.3.1 The trend of the interest rate

The trend of real interest rate for one year loan is shown in figure 3-5a. It is calculated using the equation: Real interest rate = nominal interest rate – CPI growth rate.

Figure 3-6a The trend of real interest rate since 1990



In order to stimulate the weakened economy the Chinese government push down the interest rate seven times after 1997. Right now the nominal interest rate is at a very low level (about 6% for one year loan in 2001). However, because the inflation rate is very low, the real interest rate is at a historically high level, though it shows some mild decline since 1998. More importantly, 80% loan's interest rate in 2000 does not

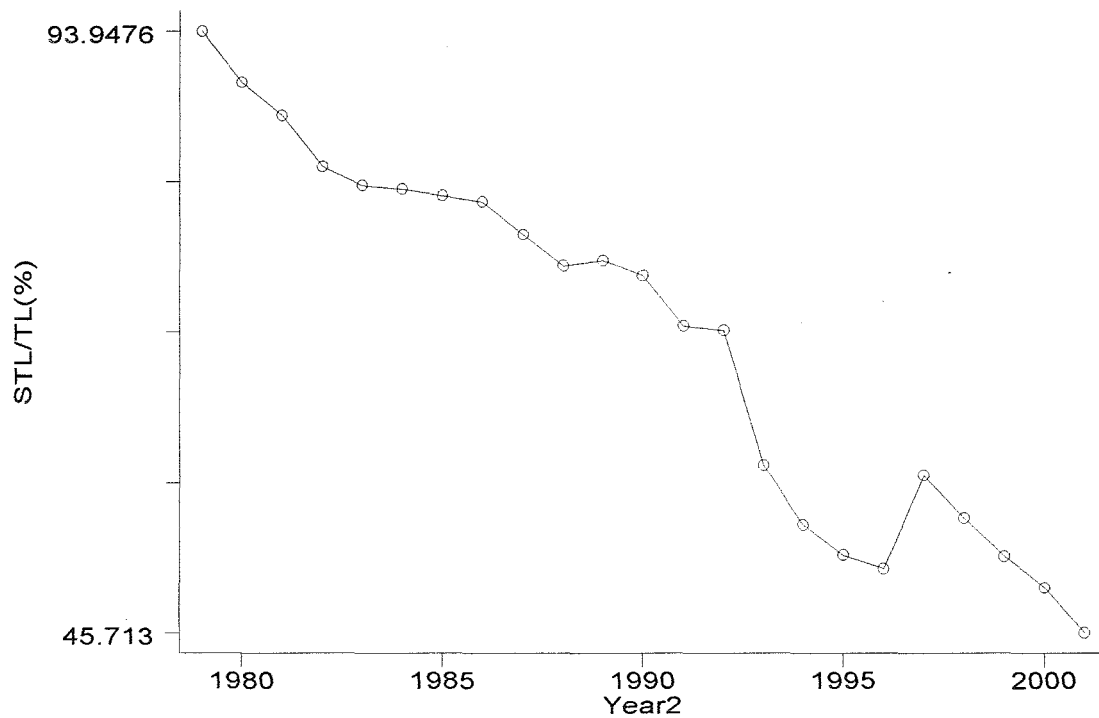
reached the upper limit set by PBC, indicating the prevailing interest rate is not far below the market decided level. Thus we can say the trend of interest rate after 1998 truly reflects the conditions of the market.

The trend of real interest rate does in some degree supports the assumption of loan supply shrink

3.3.2 The change of term structures of the bank loans.

As pointed out above, unlike the prices of ordinary commodity, interest rate is not the only condition of a loan. Fees, collateral demand and term structure construct other important parts of the loan condition which will affect the cost of borrowing. Here we only examine the term structure. There is no available data about the average length of loan terms, however, a decline of short-term loans as a percentage of total loans can be treated in some degree as a sign of shortening of loan terms. Figure 3-6b showed the trend of the ratio of short term loans of total bank loans.

Figure 3-6b the ratio of short term loans of total bank loans
(unit: %)



Source: Yearbooks of Statistics of China

From figure 3-5b we can find the proportion of short term loans of the total loan has a trend of decrease since 1979. It rose significantly in 1997. However, it went down again since then.

Thus from the proportion of short term loans there are no sign of loan supply shrink.

3.4 The sign of credit rationing

Next we check if there are signs of credit supply shrink in the form of credit rationing. Since credit rationing usually takes the form of decreasing loans to the less credible borrowers, the best way to test the existence of credit rationing is use survey data both from the investigation on bank credit managers and on the enterprises to see if the

bank policies have changed and if less credible enterprises feel more difficult to get loans. In China, some survey data are available and from these data we can have some glimpse of the choice of customers by the banks.

The PBC has kept a survey on a panel of 5000 large enterprises. Table 3-1 showed the growth rate of loans to large enterprises from 1997-2001 grouped by enterprises listed and not listed in stock market.

Table 3-1 The growth rate of loans to large enterprises

	1997	1998	1999	2000	2001.1-9
Short term loan	17.4	6.7	4.5	-8.2	-1.4
Long term Loan	20.5	7.5	4.3	-10.1	-8.4
Non-listed	22.8	6.9	1.7	-13.4	-17.4
Listed	16.5	11.6	6.1	-3.1	-1.2

Unit: %

Source: Department of statistics, PBC.

The first impression we get from the table is that the growth rate of loans to large enterprises is much less than the average level compared to the graph showed in the above part. From table 3-1 we can also find that the loan to large enterprises declined in 2000 and 2001, but the loan to enterprises not listed in the stock market declined much faster the listed enterprises. This is because the balance sheet conditions of listed enterprises are normally much better than the unlisted because the former has entrance to stock market and they are more market oriented.

Bank loans also tend to be more concentrated on large and medium cities. According to another survey done by the PBC, by the end of 2000, the capitals of provinces and other key provincial cities accounts for 40% of the total outstanding loans, but 46% of the new bank loans in 2000.

A survey on the Small and Medium enterprises (SMEs) also done by PBC in September 2001 showed that the average loan satisfactory rate (value of loan

approved / value of loan applied) of the SMEs is 68.5%. The reason of rejection and their proportion of the total number of application rejected are: lack of credibility (23.6%); lack of guaranty or mortgage, lack of loanable fund or authority right by the bank branches (19%).

Developed regions (the eastern region) tend to account more bank loans and have a higher loan satisfactory rate than the less developed regions (Middle and Western regions). This seems due to the factor that the enterprises in Eastern region are more credible: 60% of total enterprises in eastern region have a above A grade, 9 percent point higher than the average level of the sample; 58% of them also have a capital/total debit ratio that is below 65%, 5.1 percent point higher than the average level of the sample; The average profit/asset ratio of the eastern enterprises is 2.4%, 0.8 percent point higher than the average level of the sample;

Tale 3-2 The proportion and loan satisfactory rate of different regions

Unit:%

Regions	Proportion of Total Loan	Loan Satisfactory Rate
Eastern (developed)	49.5	74.0
Middle (less developed)	27.3	64.7
Western (least developed)	23.2	61.6

From these two survey data it is obvious that the Chinese banks became more cautious to choose their borrowers.

3.5 The connection of loan supply and bank positions-an econometric analysis

In this part I try to check if the slowdown of the bank loan growth is correlated with the bank position. That is: does the slowdown of bank loan growth at least partly due to the weakening ability of banks to lend money. To do this I will run some econometric regressions using bank panel data collected from the Internet and the “Almanac of Chinese banking and finance”.

3.5.1 The Cross-sectional model

At first I use a cross-sectional model similar to the models used by Peek and Rosengren (1992) and David Woo (1999, 1). To make the regression results comparable the sample has to be chosen carefully. The most important is that the sample banks chosen have to be continuously existed in the whole inspection period. This is a very tough work because the number of banks in China is not large and most of the new banks are only established after 1995. Some banks also have merged with other banks during the period. In order to include as long a period as possible only 11 banks are chosen in the end. Though the sample number is small, however it includes most of the above medium size banks and only the “big four” account for above 80% loan activities in China. Later I will try to use panel data analysis method to enlarge the sample number. One advantage of cross section analysis over the panel analysis is that we can check the change of significance of the coefficient of the explanatory valuables and the R-Square ratio of the model.

For each year t from 1996-1999 I will run a regression using the model specified as:

$$g_{it} = b_0 + b_1 CA_{it-1} + \mu_{ti}$$

Where g_{it} is the loan growth rate of bank i in year t . It is calculated using the equation:

$$g_{it} = \frac{L_{it} - L_{it-1}}{L_{it-1}}$$

Where L_{it} is the total outstanding loan of bank i in year t .

CA_{it-1} is capital/ total asset ratio of bank i in year $t-1$. The best indicator of capital adequacy of a bank is the risk weighted Capital Adequacy Ratio (CAR) calculated according to the rule specified by the Basle Accord. Unfortunately this ratio is not available in the balance sheet of the samples and the balance sheet is also not informative enough to calculate it by myself. So I use the capital/ total asset ratio

which has not been adjusted for risk. However, considering bond and other claims to the government only account for a minor proportion of total asset in Chinese banks, the two ratios is not much different. The capital used includes both first and second tier capital in Basle Accord's specification. I choose one year lagged $\dot{C}A$ (CA_{t-1}) as the explanatory variable. This is due to the consideration that the CA ratio is calculated at the end of each year, but the loan decision of a bank is most likely related to the CA ratio at the beginning of a year. Because of the smallness of the samples, only one explanatory variable is chosen.

We will check the coefficient of CA_{it-1} (b_1), to see if its value, the R^2 ratio of the total model and the value of b_1 itself increased in the period of 1998-1999. If so, then we can say that the loan supply of a bank is more significantly correlated with its capital capacities.

The result is showed below:

Table 3-3 The result of the cross sectional regression

Year	Constant				CAR				Adj R2
	coefficient	Std. Err	t value	p>t	coefficient	Std. Err	t value	p>t	
1999	-0.204	0.161	-1.269	0.236	5.765	2.460	2.343	0.044	0.310
1998	0.153	0.075	2.042	0.072	-0.019	1.166	-0.017	0.987	-0.111
1997	0.140	0.066	2.140	0.061	-0.221	1.277	-0.173	0.866	-0.107
1996	0.249	0.558	4.464	0.002	-0.035	0.985	-0.035	0.973	-0.111

From table 3-3 we can find that from 1996-1998, a bank's CA ratio does not seems to be highly related with its growth rate of loan (from the p value we can see the coefficient is insignificant at any reasonable level) However, in 1999, there is a drastic change. The coefficient of CA is positive and significant at 5% level. The adjusted R-square ratio of the whole model also increased significantly. One explanation is that in 1998 the central government substituted the loan quota system with the CAR management system.

For cross-sectional analysis the most important thing is to check if there is a heteroscedasticity problem. Since only one explanatory variable is used the check is very simple. We run a Park test using the model:

$$\ln \hat{\mu}_{it-1}^2 = \alpha + \beta \ln CA_{it-1} + v_i$$

The result are showed in table 3-5. From the test, we can see no heteroscedastic problem exist in the model.

3.5.2 The Panel model

The above model suffers from the weakness of small sample size. In panel data we can pool together the cross sectional data of several years to enlarge the number of samples.

There are several ways to estimate the panel models. The most common ones are the fixed effects model and random effects model. However, these two kinds of models all assume that only the constant term will change but the coefficients of the explanatory variables will not change across sample and times.

Here I choose an ANCOVA (Analysis of Covariance) model which includes dummy variables both in the constant term and explanatory variable. At first I set time dummies for each year other than 1996 and also a dummy X for the banks other than the “big fours”. The model is defined as:

$$g_{it} = a + \sum_{t=1}^3 b_t D_t + c CA_{t-1} + \sum_{t=1}^3 e_t D_t CA_{t-1} + dX + fX CA_{t-1} + u_{it}$$

Where $D_t=1$ if the year is t, otherwise $D_t=0$ ($t=1$ for the year of 1999, $t=2$ for the year of 1998, $t=3$ for the year of 1997). $X=1$ if the bank is the “big four”, otherwise $X=0$.

By using ANCOVA model we not only can capture the coefficient for each year, but also can check if there is a structure change in the model in different years by testing the significance of the dummy variables. The regression result is showed in table 3-4a:

Table 3-4a The pooling regression (all dummies)

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
tac	-4.771291	2.728942	-1.748	0.089	-10.31717	.7745858
d97	-.123129	.1190557	-1.034	0.308	-.3650794	.1188214
d98	-.101009	.1111614	-0.909	0.370	-.3269162	.1248982
d99	-.354878	.1577556	-2.250	0.031	-.675476	-.03428
dx	-.1640937	.1196869	-1.371	0.179	-.4073267	.0791394
D97T	-.0536503	2.199258	-0.024	0.981	-4.52308	4.41578
D98T	-.0596614	1.89797	-0.031	0.975	-3.9168	3.797477
D99T	4.812007	2.480803	1.940	0.061	-.2295917	9.853605
DXT	5.033182	2.701165	1.863	0.071	-.456245	10.52261
_cons	.3988655	.1147064	3.477	0.001	.1657541	.631977

Adj R-squared = 0.2568

The regression result showed that only the time dummies (both for the slope and the constant) for 1999 and the bank dummy for the coefficient (DXT) are significant. So I changed the model as:

$$g_{it} = b_0 + b_1D + b_2CA_{it-1} + b_3DCA_{it-1} + b_4XCA_{it-1} + \mu_{it}$$

The result is showed in table 3-4b:

Table 3-4b The pooling regression (with time dummies for 1999 and bank dummies for coefficient)

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
tac	-1.857685	1.648879	-1.127	0.267	-5.192857	1.477486
d99	-.3571331	.1329597	-2.686	0.011	-.6260695	-.0881968
D99T	5.67126	2.051714	2.764	0.009	1.521277	9.821243
DXT	1.332352	1.018906	1.308	0.199	-.728579	3.393284
_cons	.2184642	.0569505	3.836	0.000	.103271	.3336574

Adj R-squared = 0.1438

Where D=1 if t=1999, otherwise D=0. X is defined the same as the first model

The bank dummy for the coefficient also becomes insignificant. Thus we can pool together the data for 1998-1996, also delete the bank dummies and rearranged the model as:

$$g_{it} = b_0 + b_1D + b_2CA_{it-1} + b_3DCA_{it-1} + \mu_{it}$$

D is defined as the second model.

Thus in the year other than 1999, the model will be:

$$g_{it} = b_0 + b_2CA_{it-1} + \mu_{it}$$

Which is the same as the cross sectional model, but in year 1999, the model will become:

$$g_{it} = (b_0 + b_1) + (b_2 + b_3)CA_{it-1} + \mu_{it}$$

The regression result is showed below:

Table 3-4c The result of the pooling regression (only time dummies for 1999)

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
tac	.0277867	.8068951	0.034	0.973	-1.603009	1.658583
d99	-.3790034	.1330689	-2.848	0.007	-.6479456	-.1100611
D99T	5.737166	2.069216	2.773	0.008	1.555125	9.919207
_cons	.1747543	.046516	3.757	0.001	.080742	.2687666

Adj R-squared = 0.1286

Note that the coefficients for both D and D*CA_{t-1} and the constant term is significant at 1% level, but the CA_{t-1} is not. Therefore the model for 1999 and other year respectively is:

$$\begin{aligned} 1999: g_t &= (0.1747543 - 0.3790034) + (5.737166 + 0) CAR_{t-1} \\ &= -0.20425 + 5.737166 CAR_{t-1} \end{aligned}$$

$$1996-1997: g_t = 0.1747543$$

The result is consistent with the finding from the cross sectional model.

Test for heteroscedasticity using the same method as the one used in cross-sectional model shows that there is no heteroscedastic problem in the model (see table 3-5)

Table 3-5 The result of the test for heteroscedasticity

Year	Constant				LnX				Adj R2
	coefficient	Std. Err	t value	p>t	coefficient	Std. Err	t value	p>t	
1999	0.124187	0.0730083	1.701	0.123	0.038496	0.025967	1.482	0.172	0.1963
1998	-0.02058	0.035682	-0.577	0.578	-0.01041	0.011763	-0.885	0.399	-0.0222
1997	0.012716	0.0297432	0.428	0.679	0.002261	0.0094222	0.24	0.816	-0.1041
1996	0.002838	0.0138684	0.205	0.842	-0.00018	0.00457	-0.04	0.969	-0.1109
Pooling	-7.376686	2.1831	-3.379	0.002	-0.542523	0.724899	-0.748	0.458	-0.0103

3.6 Conclusion of part 3

From the above analysis we can conclude that after 1998, the growth rate of loan does show some decline in China. However this slowdown is mild compared to other countries which have experienced bank restructuring. The ratio of the claims on government of total bank assets shows that bank became more reluctant to lend loans. The econometric analysis also indicates the capital condition become a restriction on a bank's ability to supply loans. Signals from the loan conditions are more ambiguous, but there are robust evidences from the econometric analysis that banks become more cautious in their choice of borrowers. It seemed more likely that the Chinese banks choose to use credit rationing rather than increase the interest rate and shorten the term length of the loans.

4. The relationship between economic growth and bank restructuring

Having analyzed the slowdown of loan growth since 1998, in this chapter I will analyze what are the effects of this credit slowdown on the economic growth.

To analyze the effects of supply shrink, the Kapur's and Mathieson's model will be a very useful tool. According to the Kapur's and Mathieson's model, the scale of the

negative impact of loan decline on the economy will, first of all, be determined by the degree of the declining of the loans. The effects of loan declining will also depend on the importance of bank loans in the financing source of the total capital (K). That is, if borrowers can easily find other source of finance, then although the bank loan declined the total investment may not decline with the same degree. Finally the effects will depend on the efficiency of the investment (the output-capital ratio A). If the loans are distributed more efficiently than before the loan decline so that its productivity is increased, then the growth rate of output (Y) may not decline proportionately with the degree of bank loans decline.

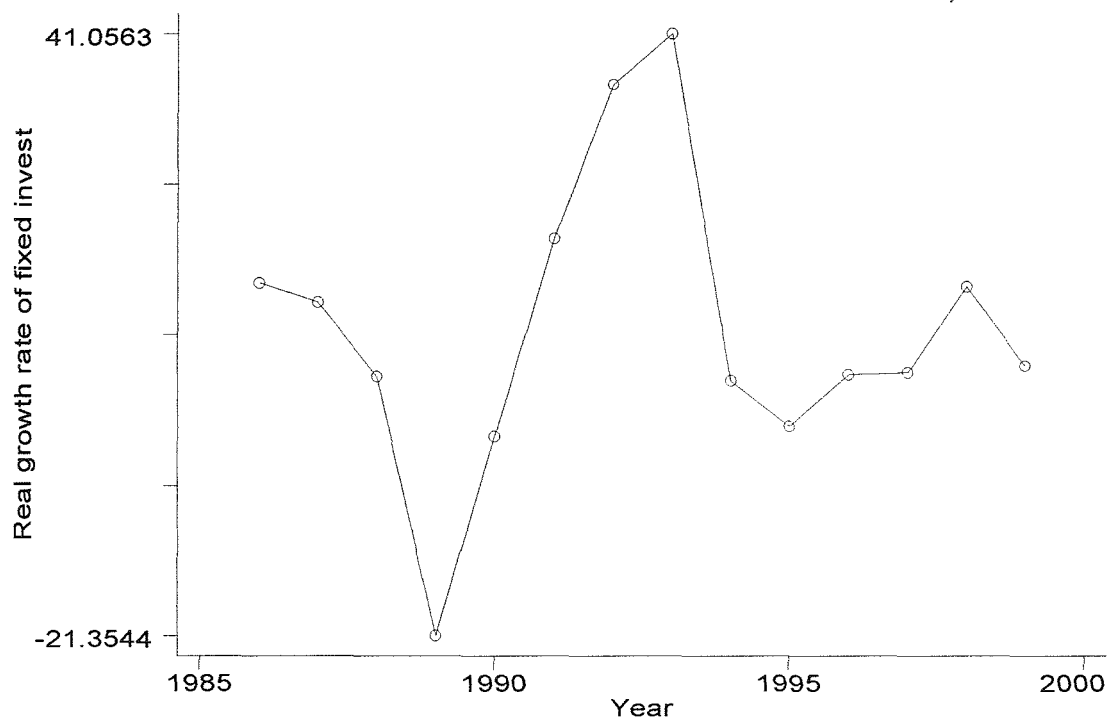
Based on this theoretical foundation, in this section we first check the trend of fixed investment in China since 1990, then we try to see what role bank loans have played in forming the trends of fixed investment. In the third part we will examine the trend of loan efficiency in China.

4.1 The bank loan and investment growth.

We begin with checking the trend of fixed investment and see what role bank loans have played in forming the trends of fixed investment. Figure 4.1 showed the Real growth rate of fixed investment since 1985.

Figure 4.1 The Real growth rate of fixed investment since 1985.

(Unit: %)



From figure 4.1 we can find that fixed investment showed a very higher growth rate from 1990-1993. However, the growth rate dropped sharply since 1994. It resumed in some degree in 1998. However, it declined again in 1999. In 1999, the real growth rate declined 8.3 percent from 14.81% in 1998 to 6.6% in 1999.

4.1.1 The position of bank loan in the source of fixed investment

What role is played by the bank loans in the trend of fixed investment? To answer this question we check the position of bank loans in total source of fixed investment. The reasoning is that if the decline of fixed investment is caused mainly by the decline of bank loans, we should find that the ratio of fixed investment financed by bank loans of the total fixed investment decline sharply. Table 4-1 showed the proportion of the major source in total fixed investment.

Table 4-1 the proportion of the major source in total fixed investment.

Year	Budget	Domestic Loans	Foreign Investment	Self Finance and others
1991	6.8	23.5	5.7	64.0
1992	4.3	27.4	5.8	62.5
1993	3.7	23.5	7.3	65.5
1994	3.0	22.4	9.9	64.7
1995	3.0	20.5	11.2	65.3
1996	2.7	19.6	11.8	66.0
1997	2.8	18.9	10.6	67.7
1998	4.2	19.3	9.1	67.4
1999	6.2	19.2	6.7	67.8

In Table 4-1 we can find that the ratio of bank loans in the total source of fixed investment is quite stable since 1995, indicating that bank loan did not played a greater role in the rise and fall of the fixed investment than other source of investment. On the contrary the ratio of other external sources of finance (budget and foreign investment) fluctuate more significantly. In 1998-1999 the ratio of bank loans showed only a slightly decline than before. However we can find the ratio of foreign capital dropped significantly (2.4% in 1999), indicating that decline of foreign capital inflow after the Asian crisis is the major cause of the decline of fixed investment in 1999. Note also that the proportion of budget in the total source of finance increased significantly in 1999 (2%), showing that government budget became the major substitute for the decline of private source of finance. Table 4-1 also showed that the ratio of self finance also remained stable since 1997. This is a proof that, although bank ability has played a role in the decline of bank loans, the major cause is the pessimistic expectation among banks and investors.

4.1.2 The loans to the non SOEs and their effects on fixed investments.

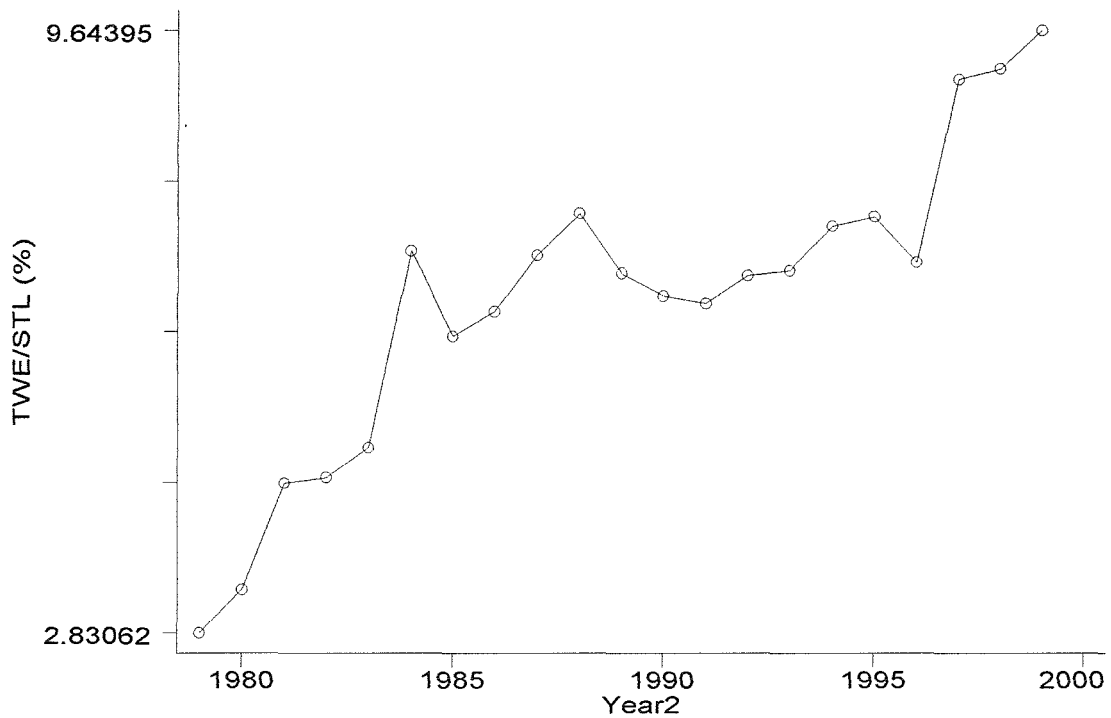
In this part we examine the growth of loans to borrowers with different form of ownership. In China domestic borrowers can be grouped into three categories according to their form of ownership: State owned enterprises (SOEs), Collectively

Owned Enterprises (Most of them are village and township enterprises, TWEs) and Private Enterprises (PEs). One important aspect of the economic reform in China is to lower the importance of SOEs and let the private enterprises play a more important role in the economy. For this reason it is natural that some concerns is raised among the Chinese economists about the possible negative effects of the slowdown of bank loan supply growth on the non-SOEs.

The reason why the non-SOEs will be a special concern in the period of loan supply slowdown is because most of them are small and medium enterprises (SMEs). It is assumed that, in a market economy, the SMEs will suffer most hard in a “credit crunch”. SMEs usually are less credible than the large enterprises. Their financial status is usually more difficult to evaluate (that is, there is a more unbalancing of information in the case of the SMEs from the bank’s point of view). They have fewer assets that can be used as loan mortgages and also more vulnerable to the external shocks. The unit cost of loan supply for the banks is also higher in the case of SMEs due to the economy of scale problem because of the normally smaller volume of their loans. Thus if banks decided to shrink loan supply through “credit rationing”, not through lifting the interest rate, the SMEs is very likely to be the first to be deleted from bank’s list of loan customers. Even if the chance of getting loans is the same for the SMEs as the large SOEs, a credit crunch probably will hit the former harder than the later because large enterprises is more easy to find an alternative source of finance.

We could check the proportion of total bank loans to Non-SOEs in the total bank loans to test whether the bank restructuring has larger negative effects on the loans to the non-SOEs. Unfortunately this data is not available, so I only use the data about short term loans. Figure 4-2a shows the proportion of short term bank loans to TVEs of total short term bank loans.

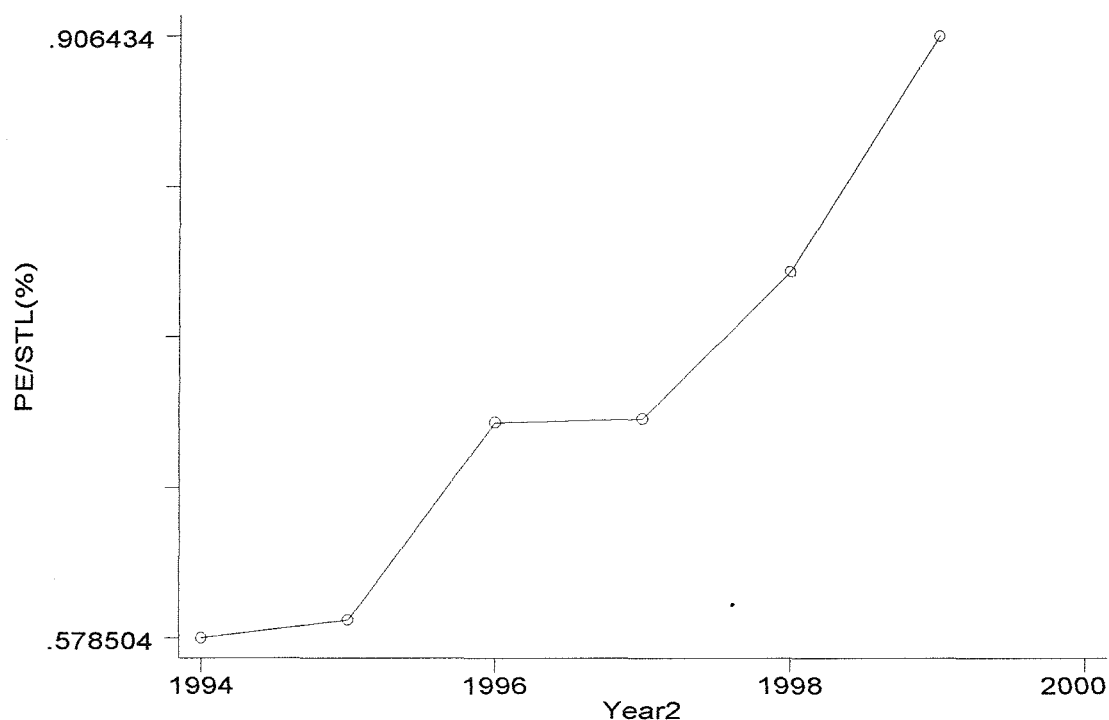
Figure 4-2a the proportion of short term loans to TVEs of total short term loans.



From 4-1a we can find that the proportion of loans to TWEs in total short term bank loans increased significantly in 1997, and remained stable in 1998-1999. This indicates that the decline of bank loan supply shows positive effects on the loan to TVEs.

Figure 4-4b showed the proportion of short term bank loans to private enterprises and personnel in total short loans. From it we can find that the ratio of loan to private enterprises and personnel also increased sharply.

Figure 4-2b Proportion of Short term bank loans to PEs and personnel



The finds from the short term loans are consistent with the findings from the survey data we discussed above (see section 3.4).

The findings about the loan to non SOEs are quite contrary to what the theory predicts as described above and is also contrary to the experiences in other countries. One explanation is that many SOEs's balance sheet position is so bad that there are no longer considered more credible than non SOEs form the eye of the bankers. On the contrary as the economic reform move forward there appeared many TWEs and PEs with healthy financial positions which make them attractive borrowers. The second reason is that the form of ownership may not be a good indicator of the size of the enterprises since many SOEs are SMEs and there also some big TWEs and PEs right now. Another thing we must keep in mind is that although there is some improvement, the absolute proportion of TWEs and PEs in total short loans are still very small.

To check the effects of bank loans on the fixed investment provided by the different investors we examine their investment behavior. Table 4-2 showed the data of the growth rate of fixed investment sorted by the investors.

Table 4-2 The growth rate of fixed investment sorted by the investors

Unit: %

Year	Total	State	Collective	Individual	Others
1990	2.4	6.3	-7.1	-3.0	
1991	23.9	24.4	31.7	18.1	
1992	44.4	48.1	94.8	3.3	
1993	61.8	44.1	70.5	20.8	
1994	30.4	21.3	19.1	33.5	99.4
1995	17.5	13.3	19.2	29.9	21.3
1996	14.8	10.6	11.3	25.4	23.7
1997	8.8	9.0	5.5	6.8	13.0
1998	13.9	17.4	8.9	9.2	11.6
1999	5.1	3.8	3.5	7.9	5.3

Note: others mainly include foreign invested enterprises.

Form table 4-2 we can find that the growth rates of investment of all kinds of investors have dropped drastically in 1999, however, investment by individuals declined is the least, and investment by collective investors also declined slower than the SOEs. This finding is consistent with the finding of the proportion of the loans to different investors.

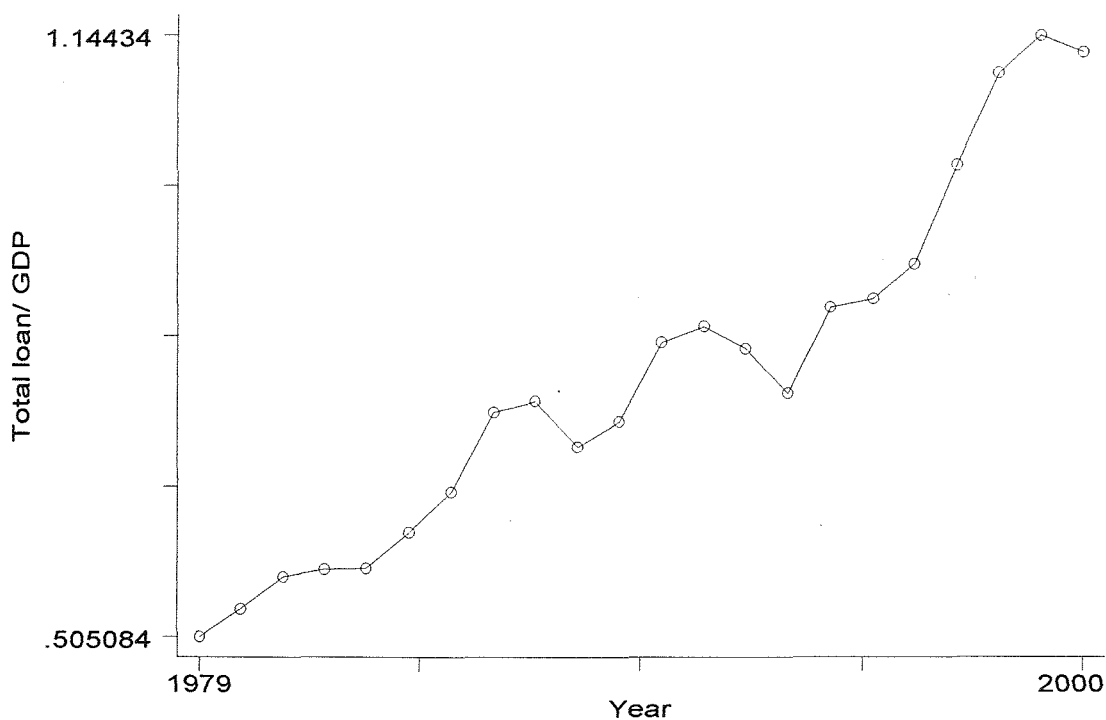
4.2 The efficiency of the bank loans

Having analyzed the effects of the slow down of the bank loan growth on the fixed investment. Now we check the efficiency of loans. As mentioned at the beginning of this chapter, the slowdown of loan growth does not necessarily mean the slow down of economic growth if the efficiency of loans has increased.

Recently more and more economists begin to be interested in the role played by banks in the cause of financial crisis. Normally before a bank crisis there is a very high growth rate of bank loans (see table 0-1, page 3) and a rapid increase in the TL/GDP ratio (Hawkins and Turner, 1999). However there also often a significant decline of the efficiency of the loan project and a corresponding rise of NPLs. It is this decline of efficiency that prompted Krugman to question the so-called “Eastern Asian miracles”.

From Figure 4-3 we can find in China the TL/GDP ratio increased rapidly in since 1996. It is also in this period that the NPLs in the Chinese banking system are produced. This is a rather similar phenomenon as those countries who have experiences bank crises. Checking figure 3-3 (page 36) we can find that the NPL/Total loan ratio shows no signs of improvement since 1998, which means there are no significant improvement in the efficiency of bank loans in this period.

Figure 4-3 the TL/GDP ratio of China since 1979
(Unit: absolute value)



Therefore the effects of bank loan slow down since 1998 on the economy does not seem to be significantly affected by the efficiency of loans.

4.3 conclusion of part 4

From the analysis of part 4 we can find that the effects of the slowdown of bank loan growth on the economic growth is at least not larger than other source of the finance for fixed investment. Efficiency also seems not to be affected by it.

However, we must keep in mind that the bank restructuring has only just begun. When China begin the toughest job of moving out the large volume of NPLs in the banking system, we should expect more significant negative effects on the economic growth.

5. How to deal with the negative effects of bank restructuring on the economic growth

The best advice is that you should act earlier and more decisively. The success of bank restructuring depends on the degree of the severity of the bank problems (most important the burden of NPLs). The less severe the bank problem, the lower the cost of bank restructuring, thus the less negative effects of bank restructuring on economic growth. In this situation there is less likely a vicious circle between economic growth and bank problems and finally the banks will “grow out” of the negative economic environments. One of the reasons why the bank restructuring of United States in 1989-1992 is successful is that the ratio of NPLs of the U.S banks is much less than that of the Japanese and Southeast Asian banks. The major reason why the problems of Japanese and Southeastern Asian banks are so worse is that their banks and governments take actions too late.

When the bank problem is already severe, the job of bank restructuring becomes very tough. Right now economists still have not prescribe a high effective solution for this awkward situations. However, some policy suggestions can still be made.

5.1 Developing security market

The stock market can mitigate the negative effects of bank restructuring in two ways: by substituting the role of banks in the economic growth and by enhancing the bank capitals.

Since it is almost inevitable that some degree of credit crunch will happen in the process of bank restructuring, then the less the importance of the banks in the economy, the less the effects of credit crunch on the economy will be. One of the key reasons why bank restructuring in the United States during the early 1990s is more successful than that of Japan and Southeast Asian is that banks play a much less important role in the U.S economy. In the United States, only 22% of the debt of the firms comes from banks. In Asia this ratio is 80%. This is why credit crunch only cause temporarily recession in the United States but in Asian countries it means collapse of the economy (Martin Mayer, 1999). The Over the Counter (OTC) market or the venture capital played a major role in the boom of the new high technology economy which dragged out the U.S. economy of the recession in the early 1990s. For this reason, developing the security and other direct financing market will given the government more room to restructure the banking system, thus increase the chance of a successful bank restructuring.

Like other East Asian countries, banks play an overwhelming role in the financial market of China, perhaps more important than the other East Asian countries. The security market developed very fast in China. The A-Share Market (domestic market) raised Rmb 150 bn (\$18 bn) for the Chinese firms in 2000, almost doubled from the Rmb 90 bn in 1999. However, compared to the total Rmb 1173.1 bn loans in 2000, Security market still played a relative small role in the Chinese financial system. According to Morgan Stanley, in the United States bank deposit accounts only 10% of household net wealth, and the ratio for equity is one third. The China's ratio is 50% and 15% respectively (financial times, 2001/8/20).

Nevertheless, one big problem is that a sound security market cannot be set up in a short time. Without the establishment of a proper supervision system over-fast development of security market will become another source of economic instability. Therefore, although security market may grow fast in China, it is unrealistic to mainly rely on the security market development to mitigate the negative effects of bank restructuring.

The quality of the listed enterprises should also be raised. Unlike the developed countries where every enterprise who meet certain conditions can be automatically listed, right now there is a quota system in the Chinese stock market. The quota is distributed among the provinces according to politically balances, not the quality of the enterprises. The result is the bad quality of the listed enterprises in Chinese stock exchanges. This fact not only increases the risk of Chinese stock market and reduces its attraction to Chinese households, but also limits its contribution to the economic growth. More equitable distribution of listing chance, especially for the private enterprises, has to be achieved.

Another role security market can play in the bank restructuring is that it can raise capitals for the banks. A listed bank can issue new capital in the stock market to enlarge its capital. However, the listing of banks can also have negative effects on the bank restructuring. If a bank is listed in the stock market, its capital value will be vulnerable to the fluctuation of its stock price. The revelation of a bank's NPLs can make the bank's stock price dropped rapidly. This will further weaken the bank's ability of lending. That is exactly what had happened in the bank crisis of Japan. On the other hand, letting technologically already bankrupted banks to be listed in the stock exchange will greatly increase the instability of the stock market. Due to these reasons the Chinese security supervisor is very cautious about the listing of the "Big fours", because of their bad qualities. However, there are several banks that their qualities meet the condition for listing. Letting them to be listed will increase their capitals, thus their ability of lending. This will partly make up the gap of credit left by the restructuring of the "Big Four".

In 1999, The Security Regulation Committee of China (CSRE) lifted an informal ban on listing financial institutions, since then three banks have been listed on domestic security exchanges. Other relatively new medium-sized banks are trying to be listed later. The Hong Kong branch of BOC is listed in Hong Kong exchange. It is also possible that the “big four” will be listed in the domestic exchange in the future if they can meet the CSRC’s requirements. In this area there are still a lot of works that can be done.

5.2 Government support

The Government can offer help to the banks when they are in trouble. The fiscal expenditure spent by government on helping the banks is called fiscal cost of the bank restructuring. It is distinguished from the economic cost, which is the loss of economic growth due to the decrease of bank loan supply caused by bank restructuring. The direct fiscal cost of bank restructuring includes the public funds needed to cancel NPLs from bank’s balance sheet. It also should include the money needed to re-capitalize the banks since in a bank crisis the CAR of many banks is far behind the requirement by the Basle accord, even not considering their higher NPL/total ratios.

There is a possible substitution between the economic cost and fiscal cost. That is: The fiscal cost of bank restructuring will restrict the ability of the government to expand its investment and expenditure, which is just in urgent need in a recession period. If the government spends less money on bank restructuring the government may have more money to stimulate the economy, but the banks have to spend more money themselves to improve their balance sheets. That means they may have to reduce more lending.

Which way is better? That depends on the severity of the bank problems. If the bank problem is not very serious, then in order to avoid the “moral hazard” it is better to let the banks to solve the problem by themselves. However, if the situation is very bad, then the government help is essential because in this situation banks will be unable to

solve the problem by themselves and there is also a much higher possibility that a vicious circle between economic growth and bank problems will occur, because the negative effects of bank restructuring will be very higher. That is the basic reasoning behind the argument for public help.

One of the reasons why the bank problems in Japan become so bad is that the Japanese government offer help on the banks very later. It is not until 1994 that the Japanese government began to seriously deal with the bank problems. However, due to the strong public hostile attitude of “not use public money to save the bankers,” little public money is put into the banking system. Even the U.S government had spent huge money to solve the S&L problems.

Another problem which has drawn much concern is the efficiency of the government support, which we will discuss in the next sections.

5.3 Increasing the efficiency of the enterprises

The public support is only a lump sum of money transferred to the banks. If the source of NPLs cannot be controlled to let the net NPLs decline, then no matter how much public money is spent on deleting the NPLs, the bank restructuring cannot succeed. Sooner or later the NPLs will rise up again. The worse situation is that government support may trigger a moral hazard problem. That is: if banks know government will pay for their bad loans they will be more reckless when they make loan decisions.

Therefore when governments offer support to banks, they have to make sure that the efficiency of the banking system will be increased. The most important is that the growth rate of new NPLs has to be decreased and controlled under a safe level.

To control the growth rate of new NPLs at first you have to understand the cause of the NPLs. Only by eliminating the factors which contributing to the creation of NPLs can you control the appearing of new NPLs.

In part 2, I have pointed out that most of the NPLs in China came from the loans to SOEs. Since SOEs still occupy an overwhelming role in China, without the improvement of the efficiency of the SOEs it is unlikely that the quality of bank loans will be upgraded. Therefore the key factor to slowdown the growth of NPLs in China is to further carry on the enterprise reform. The core of the enterprise reform is to let the SOEs to become real enterprises. To achieve this target the SOE managers should have the right to make operating decisions without the interference from central or local government. They should give enough compensation for their good decisions, but also should take the responsibility of bad decisions.

On the other hand, the government should also prevent the SOEs trying to get rid of their bank debt under the pretense of “enterprise reform”. This is a widespread phenomenon in the process of enterprise bankruptcy of China. Local governments and enterprises themselves all treat the bank loans as a “public good” and try as hard as possible to get rid of them. The commonest trick is the heavy indebted SOE move out the valuable assets from the old enterprise to a new enterprise and then announce the old enterprise to be bankrupted. This trick enormously increased the NPLs of the banks. The problem is so serious recently that the central government have to announce a temporarily suspend of the work of the SOE bankruptcy process in November 2001 in order to stop the loss of bank assets.

5.4 Increasing the efficiency of the banking system

Although the enterprise reform is fundamental for the control of new NPLs, the reform of banking system is also very important. First of all, the supervision on the banks should be improved along with the program of financial help. The most key jobs that need to be done recently are: (1) Setup a strict market entrance standard to control the quality of new established banks. Meanwhile an effective exit mechanism should also be built in order to let the banks with no hope of restoration to be cleared out of the market. (2) Build a suitable financial indicator system like the CAMEL system in the U.S. to evaluate the soundness of the banks. This evaluation system

should meet the international standards. The most important is to improve the new loan classification system to have a more accurate accounting of the NPLs in the banking system. A daily supervision system should also be established. Supervision techniques such as on-time electronic database should also be established. (3) The shortage of qualified supervision staffs is a major obstacle to establish a modern supervision system in China. Therefore it is an urgent need to train more supervision staffs to meet this need. (4) The central government should stimulate the enthusiasm of local governments to take part in the process of bank restructuring, because, as pointed out in part 2, local governments play a very important role in the formation of the bank problems.

The bank management should also be improved. Like SOEs bank managers should be free from government intervention. Meanwhile an effective micro-operation mechanism for the SOEs should also be set up to prevent reckless activities of the banks. An important item of this micro-mechanism is an efficient internal risk evaluation and control system. This internal risk control system should include: the responsibility identification system for the NPLs, a advanced account system for NPLs such as the classification, cancellation and reserve creation for NPLs, the loan decision process system. etc.

On the other hand, banks should also encourage their credit officials to search for good customers and good loan projects. Banks should understand that, like other enterprises, not doing business certainly is not the correct way of solving troubles. Only by making more profit could an enterprise be survived. The problem right now is that the stimulus mechanism of Chinese banks is unbalanced. While there are harsh punishment if a credit officer make a bad loan there are no enough compensation if he (she) make a good loan decision.

The government should also encourage the establishment of private external credit rating and consultant enterprises to improve the transparency of the bank situations and enhance the external market discipline.

Thus a trinity supervision system combining the government supervision, bank internal risk controlling system and external credit rating system will greatly reduce the risk of the banking system.

The good news is that both the government and the banks are began to aware the seriousness of the NPLs in the banking system. In the first part of 2001, after continuously increase, the net NPL of the “Big Fours” declined by 2.1%. In the mean time their profit rate showed a robust growth.

5.5 The attracting foreign capitals for the bank restructuring

Because the domestic banking system is in distress and the government resource is also limited it is necessary to attract foreign capitals, especially the foreign banks to take part in the bank restructuring when the bank problem is very serious.

Foreign capital can help a country to overcome bank problems basically in two ways: one is that a country can sell bad loans, especially the NPLs denominated in foreign exchanges. One of the big move of bank restructuring in China is that the four AMCs for the “Big Fours” all announced plans to sell the NPLs transferred under their names and have already made propaganda shows around the international market.

Another way is the entrance of foreign banks into the domestic market. Foreign banks not only can increase the supply of bank loan in the bank market, thus alleviate the “credit crunch,” they can also improve the management of the domestic banks by introducing advanced management technology and stimulating competitions.

Conclusions

The inter-reaction between the bank problem and economic growth is a major concern of the policymakers during the period of bank restructuring. This paper analyzed the relationship between bank restructuring and economic growth in China by using both

the descriptive and econometric analysis. The paper does find some evidences of negative effects of bank restructuring on the economic growth. But these effects are rather mild compared to other countries which also have experienced bank restructuring. The main reason for the mildness of effects in China's case may be that the Chinese banks still have not begun to move out NPLs in large scales. For this reason we should expect more significant negative effects of bank restructuring on the economic growth when the bank restructuring progress further deeper later. In the final part the paper makes some policy suggestions for dealing with the negative effects of bank restructurings.

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Appendix

1. The Panel Data of the Regression

1999:

Name	TA/CA _{t-1}	Growth rate
ICBC	0.056779215	0.068492331
BOC	0.043349508	0.039286177
ABC	0.066666337	0.131004208
BOCOM	0.04817502	0.051947351
PBC	0.052232063	-0.045310479
CITIC Bank	0.059734447	0.271300035
Shengzheng Development Bank	0.08399935	0.050997917
Merchant Bank	0.06039674	0.122323003
Everbright	0.081348357	0.532689619
Fujian Industry	0.09919695	0.3807773
Guandong Development	0.042052546	0.150229109

1998

Name	TA/CA _{t-1}	Growth rate
ICBC	0.032980294	0.13858408
BOC	0.028804022	0.130825671
ABC	0.025261333	0.380388463
BOCOM	0.051984667	-0.065155748
PBC	0.029481037	0.091967253
CITIC Bank	0.055317559	0.13597518
Shengzheng Development Bank	0.093052917	0.228258622
Merchant Bank	0.060959779	0.188402428
Everbright	0.091661195	0.09422418
Fujian Industry	0.116717401	0.193446338
Guandong Development	0.041494644	0.15129267

1997:

Name	TA/CA _{t-1}	Growth rate
ICBC	0.025940814	0.108342949
BOC	0.028637786	0.092750013
ABC	0.028738598	0.133228345
BOCOM	0.054357688	0.146519649
PBC	0.028851888	0.15603039
CITIC Bank	0.050584338	0.032099008
Shengzheng Development Bank	0.084431	0.074601609
Merchant Bank	0.063958634	0.170628532
Everbright	0.046521018	0.333177962
Fujian Industry	0.076444641	0.110006125
Guandong Development	0.034146877	0.071323891

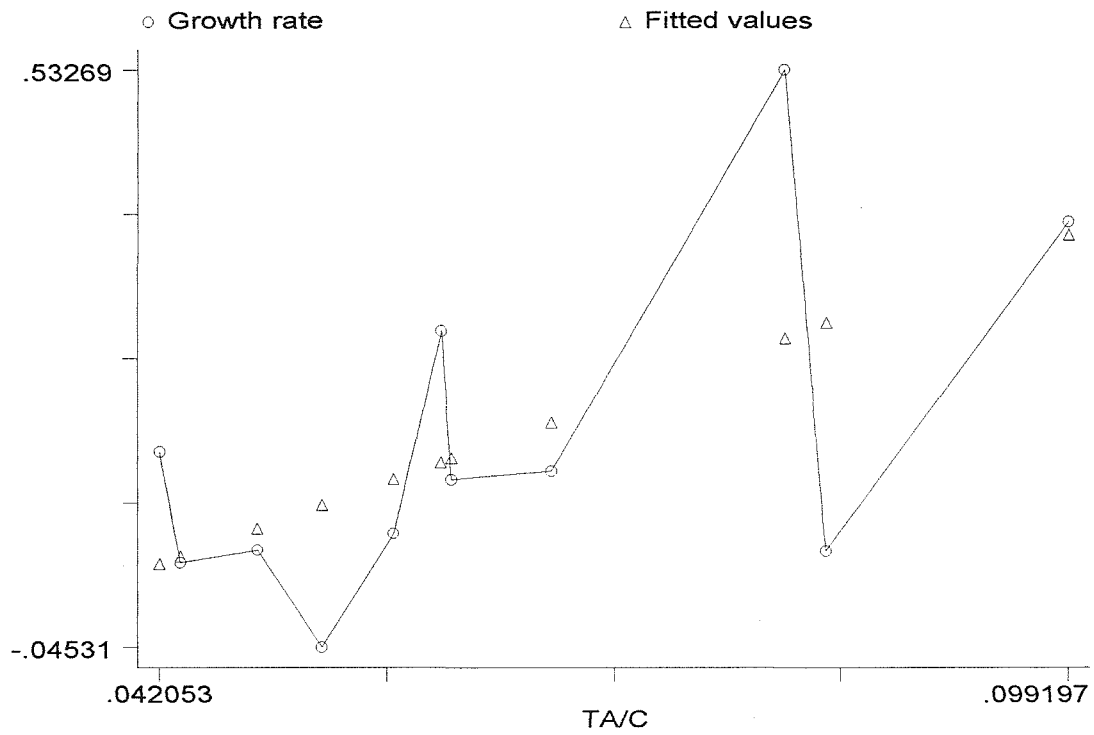
1996:

Name	TA/CA _{t-1}	Growth rate
ICBC	0.029834632	0.215357598
BOC	0.047661628	0.107887933
ABC	0.033127233	0.301895951
BOCOM	0.055714108	0.238868818
PBC	0.023225588	0.281195117
CITIC Bank	0.05371366	0.325836106
Shengzheng Development Bank	0.096268942	0.280749406
Merchant Bank	0.067080554	0.244373612
Everbright	0.047408688	0.269115257
Fujian Industry	0.068998101	0.181554394
Guandong Development	0.061145229	0.271336289

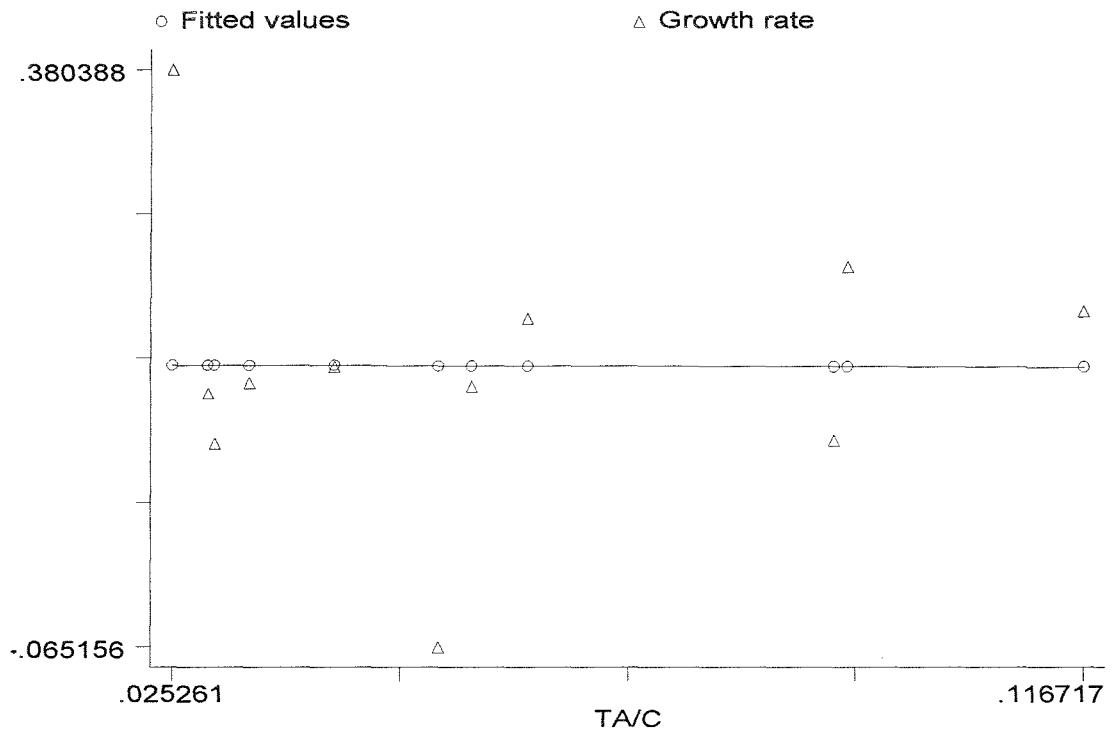
2. The Graph of the regression

a) The Graph for Cross-sectional regression analysis

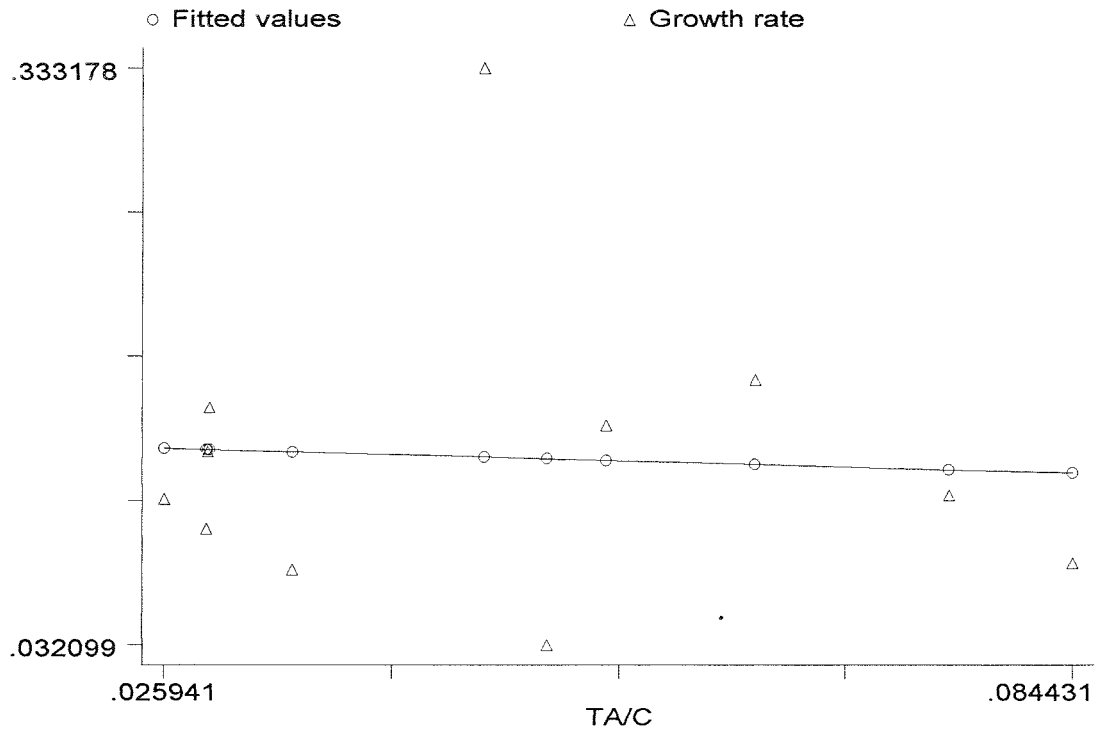
The Graph for the Cross-sectional regression analysis of 1999



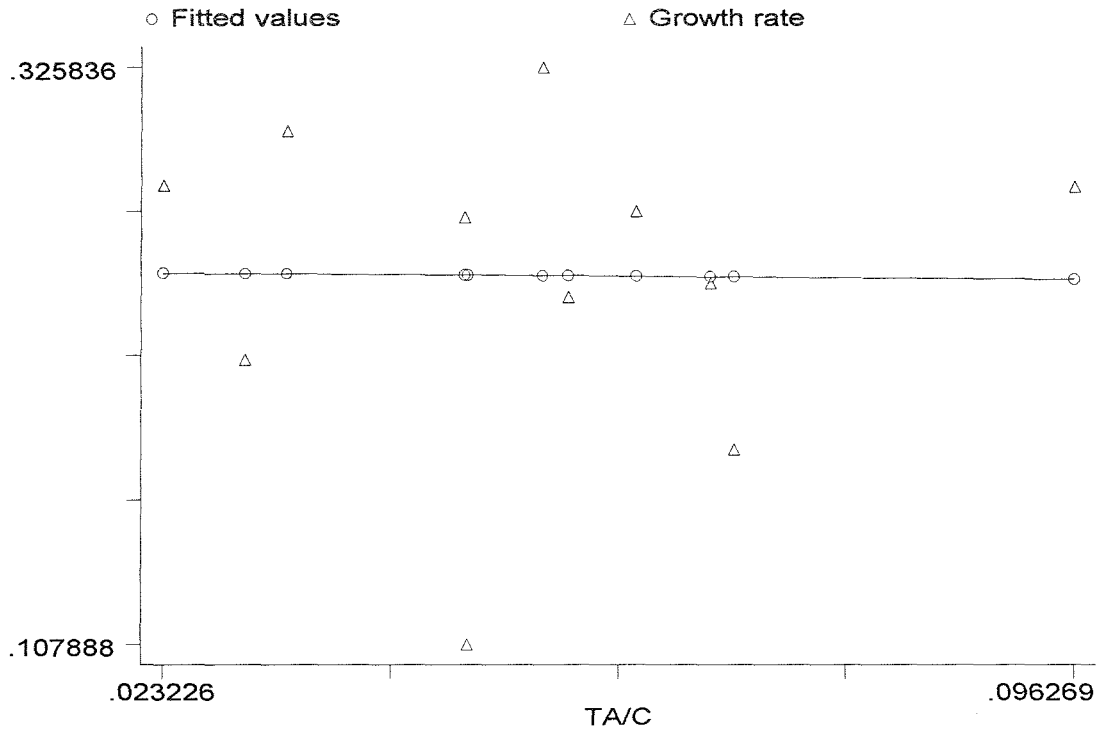
The Graph for the Cross-sectional regression analysis of 1998



The Graph for the Cross-sectional regression analysis of 1997



The Graph for the Cross-sectional regression analysis of 1996



b. The Graph for Regression analysis for Pooling Data

