

Preliminary draft. Please do not quote.

## Financial Reform in China: Progresses and Challenges<sup>#</sup>

Yiping Huang, Xun Wang, Bijun Wang and Nian Lin  
China Macroeconomic Research Center, Peking University, China

First Draft: 29 November 2010

**[Abstract]** Co-existence of repressive financial policies and strong economic growth in China raises an important question if financial liberalization is necessary or even desirable. In this paper we provide an extensive review of progresses of financial reforms and assessments of both achievements and challenges. We find that Chinese financial reforms have been generally long on quantity but short on quality of financial development. Quantitative assessment confirms that financial liberalization helped accelerate growth in China while remaining repression still holds down growth. We also try to explain the logic behind China's unique pattern of financial reform. Finally, we identify eight priority areas for financial reforms going forward.

**Key words:** Financial repression, financial liberalization, financial development, economic growth, China

JEL Codes: E44, G18, O53

---

<sup>#</sup> This paper is prepared for the conference on 'Financial Liberalization in China, Japan and Korea' to be held on December 2-3, 2010 in Seoul. A shorter version of the paper will also be presented at the PAFTAD conference on December 7-9, 2010 in Beijing.

## Table of Contents

I. Introduction.....	3
II. Review of the Literature .....	8
(1). Financial Intermediation and Economic Growth .....	8
(2). Impacts of Financial Liberalization.....	10
(3). Financial Reform in Post-Reform China .....	13
III. The Central Bank, Monetary Policy and Financial Supervision .....	14
(1). Objectives and Instruments of Monetary Policy.....	15
(2). Regulatory Framework for Banks and Financial Markets .....	21
IV. Development and Reform of the Banking Sector .....	27
(1). Reform of the ‘Big Four’ Banks .....	29
(2). Transformation of the Credit Cooperatives and Policy Banks .....	34
(3). Introduction of Foreign Banks.....	34
V. Developing the Financial Markets.....	37
(1). Stock Market Reform and Development .....	38
(2). Development and Reform of Other Capital Markets.....	42
(3). Introducing Foreign Investors .....	48
(4). Diversified Market Participators.....	50
VI. Opening of Financial Markets and the Capital Account.....	51
(1) Exchange Rate Reform .....	52
(2) Capital account controls .....	56
VII. Impacts of Financial Reform on Growth .....	62
(1). Constructing the Financial Repression Index.....	62
(2). Impacts of Financial Repression on Economic Growth.....	65
(3). Possible Mechanisms for the Negative Growth Effect .....	71
VIII. Logic of the Reform and Challenges Ahead .....	74
(1). Logics of China’s Financial Reforms .....	74
(2) An Assessment of Achievements and Risks .....	78
(3). Completing the Unfinished Revolution.....	80

## I. Introduction

China's economic reforms during the past three decades probably delivered as many puzzles as miracles. Despite the success of achieving extraordinary growth, the Chinese economy is different in many respects from the typical set of 'good economic institutions' prescribed by textbook economics, such as well-functioning free markets, clearly-defined property rights, sound legal system, liberalized financial sectors and independent monetary policy-making.

The central research question of this paper concerns roles played by financial reforms during the reform period. China's financial policies remain highly repressive, evidenced by the government's regulation on interest rates and intervention in capital allocation. Economic theory predicts that financial repression reduces efficiency and increases risks (McKinnon 1973). But why haven't Chinese repressive financial policies derailed its macroeconomic performance? More importantly, would it wreck the train in the future if China continues with repressed financial system?

Contribution of reform policies to economic growth in China has been well documented (see, for instance, Brandt and Rawski 2009; Naughton xxxx). Economic reforms not only changed the lives of millions of Chinese people, they also transformed the world economy by reversing a long-term declining trend of the Chinese economy. In a way, they helped shift the gravity of the world economy toward developing countries, especially those in Asia.

During much of the past two thousand years, China was constantly one of the largest economies, if not the largest economy, in the world. Its relative weight dropped sharply after the eighteenth century, probably because of both continuous wars at home and the industrial revolution started in Western Europe. Establishment of the People's Republic in 1949 did not stop that declining trend as the central planning further dampened productivity of the economy.

In the cold winter in 1978 in Beijing, Deng Xiaoping and his comrades from the Party's Central Committee decided that reform was the only way out of the economic and political difficulties facing China. At that time, China was a poor, closed agrarian economy on the verge of collapsing. Based on purchasing power parity (PPP) measures, the share of the Chinese economy in the world was at its historical low of close to 4 percent, sliding down from 32.9 percent in 1820 (Maddison 2001 and 2006).

Over the following 30 years, China achieved an average GDP growth of about 10 percent. By the end of 2010, the Chinese economy had already become the second largest economy in the world, measured in U.S. dollar using market exchange rate, and had increased more than 20 times since the beginning of the reform, measured in constant price local currency.

Strong economic growth generated significant impacts both at home and abroad. It lifted hundreds of millions of Chinese people out of poverty. It is already the world's largest market for many products, from cement to automobiles. Its economic impacts

are felt globally, from America to Europe and from Africa to Oceania. Some experts proposed to form Group of Two (G-2) for the U.S. and China to jointly manage important global affairs (Bergsten 2007; Zoellic and Lin 2009).

How China achieved this remarkable achievement is the subject of a large body of the literature. Economists have provided various interpretations of the Chinese reform approach and explanations for its success. Some of the key hypotheses presented in the literature include:

- Adoption of the comparative advantage-conforming development strategy (Lin, Cai and Li 1995): Replacement of the comparative advantage-defying development strategy immediately improved efficiency of resource allocation and promoted productivity growth;
- Growing out of the plans (Naughton 1995): Economic reforms focused on creating growing breathing space for the non-state sector outside the central planning framework, while keeping the plan system unchanged initially;
- Convergence to the East Asian market system (Sachs and Woo 2000): Chinese reform is essentially not so-called institutional innovation but a repeat of the successful experience of the East Asian market economies;
- The incremental dual-track reform approach (Fan 1994): The dual-track reform approach is effectively a process of Pareto improvement without losers, which quickly rallied political support around the reformers; and
- Reduction of transaction costs (Zhou 2009): Strong economic growth during the reform period is primarily not built on competitive production costs but rapid reduction of transaction costs and improvement in economic efficiency.
- Asymmetric liberalization of product and factor markets (Huang 2010a and 2010b): Remaining widespread distortions not only facilitated strong economic growth but also contributed to growing structural imbalances.

These are important interpretations for understanding the transformation experiences of not only the economy as a whole but also the financial industry during the past decades. We should point out that while those economists emphasized different mechanisms through which the reform worked, they were not necessarily contradictory to one another. Rather, they probably focused on different aspects of the same reform process. For instance, there was one central theme running through all these interpretations – to make the free market system work in a formerly centrally planned economy.

Meanwhile, it is widely accepted that the market-oriented reforms have not yet completed. While prices of almost all product prices are already determined by free markets, markets for production factors, including labor, capital, land and resources, remain heavily distorted. For instance, China's financial system still exhibits all typical features of what Ron McKinnon defined as financial repression (McKinnon 1973): heavy regulation of interest rates, frequent adjustments of reserve requirement, state intervention in credit allocation, and controls of the capital account. China's financial

liberalization is a lagger, compared to not only its own liberalization of product markets but also to financial reforms in many other developing countries.

True, the reform period witnessed rapid growth of financial activities. Thirty years ago, the financial industry was close to non-existence (Huang 2001). Today, China already has a wide range of financial institutions, from banks to securities companies. A simple but useful measure often used to illustrate financial deepening is the proportion of money supply to GDP, which rose from 32 percent in 1978 to 178 percent in 2009 (see Figure 1). Similarly, the proportion of financial assets to GDP increased from 51 percent to 200 percent during the same period. These latest readings were probably already among the highest in the world.

**Figure 1.** Proportions of Money Supply and Financial Assets to GDP, 1978-2009

<FIGURE 1 HERE>

Source: WIND

But the financial sector still exhibits almost all typical characteristics of financial repression (Huang and Wang 2010a). The commonly noticeable interest rate regulation is the People's Bank of China's (PBOC) setting of the base deposit and lending rates for commercial banks. Over the years, the commercial banks began to enjoy certain degree of freedom deviating away from the base rates. But the regulation ensures minimum interest spread, which prevents interest rate competition among commercial banks. It sometimes also results in negative real deposit rates given ceiling restrictions.

PBOC's monetary policy still relies more on quantity measures than on price instruments. As a way of liquidity management, PBOC frequently adjusts the reserve requirement ratios for commercial banks. It also sets loan growth target annually, although commercial banks' lending behavior is often more closely monitored and regulated by China Bank Regulatory Commission (CBRC). Large proportions of bank loans and funds raised in capital markets still go to the state sector.

'Window guidance' is a common practice for the authorities to influence credit growth. Government officials often call senior managers of the commercial banks to provide guidelines on loan practices. These guidelines may concern aggregate loan quantity or industry priorities or both. 'Window guidance' is a legacy of the central planning system. It is quite effective but often leads to 'stop-go' cycles.

Co-existence of repressive financial policies and strong economic growth during China's reform period is indeed a puzzle. It raises a fundamental question that has important implications for not only China but also the other developing countries: is financial liberalization necessary or even favorable for achieving strong economic growth?

Recent experiences of Asian economies during the global financial crisis added further doubts to this question. India, Indonesia and Korea are all much more advanced than China in financial liberalization. Yet stability of their economies and markets was seriously jeopardized by external shocks. Meanwhile, China once again escaped severe damages, thanks to its relatively closed capital markets.

Theoretically, there are a number of possible explanations for the unique combination of repressive financial policy and strong economic growth in China. One, financial repression is counter-productive, but reforms in other areas generated such strong growth momentum that dominated the negative impact of repressive financial policies. If this is true, then by implication China would have grown even faster were China to liberalize its financial system more rapidly (Huang and Wang 2010).

Two, economic institutions in developing countries including China are not well-developed to withstand external shocks coming along with financial liberalization. For instance, there is possibly an inverse U-shaped relationship between economic instability and income level in an open economy (Kose 1999?). The implication is that dramatic financial liberalization during the early stage of economic development may bring more troubles than benefits.

And, three, while liberalization is generally efficiency-improving and stability-enhancing, there is probably an optimal order for the reform (McKinnon 1973). For instance, opening up the capital account before improving quality of domestic financial institutions often leads to financial crisis. Therefore, financial liberalization should following an 'optimal' order, focusing on prerequisite conditions for each reform step (Fry 1997).

Which of the above hypotheses best explain the realities in China? We tackle the research question by reviewing the existing literature, summarizing changes in financial policies and financial systems in China during the reform period, quantifying the impact of financial liberalization on economic growth, assessing potential financial risks facing the Chinese economy and, finally, identifying the needed reforms going forward.

This study reveals some interesting findings. First, the mainstream literature points to positive effects of financial liberalization on economic efficiency, growth and stability. These effects were confirmed by both theoretical formulation and empirical examination. However, some studies also discovered inconclusive or negative results of financial liberalization. Most of these results, however, are related to particular stage of economic development, such as in case of emerging market economies, and unique pattern of liberalization, such as premature reform policies.

Second, this paper provides a comprehensive review of financial reforms during the past thirty years, summarizing policy changes in areas of central banking, banking sector, capital markets and the capital account. While the policy changes are wide-ranging, we may group these measures into four categories based on policy intention: (1) building financial industry frameworks (such as setting up of the central bank and establishment of stock exchanges); (2) promoting quantitative financial development (such as increases in numbers of commercial banks and listed companies); (3) changing financial institutions' governance and behavior (such as ownership reforms of the state-owned commercial banks); and (4) liberalizing financial markets (such as removal of restrictions on both credit and interest rates and introduction of market competition).

In general, the government has been more decisive on (1) and (2) but more conservative on (3) and (4). In other words, the Chinese financial reforms have been long on quantity but short on quality. There were probably many reasons behind this unique pattern of financial reform in China. This was certainly consistent with the government's general reform approach. While the broad direction of liberalization is always clear, the government often shows reluctance when giving up controls of key instruments and critical industries. However, when such controls bring about significant risks to the economy, the government becomes more willing to give up such controls. This provides hope that financial reforms will continue. The main problem is that at some stage risks may get hold of economy before the government could act aggressively.

Third, quantitative assessment in this study concludes that degree of financial repression already declined significantly, an evidence of financial liberalization. In other words, despite current repressive policies, China has already come a long way in liberalizing the financial industry. More importantly, quantitative analyses also confirm negative impacts of financial repression on economic growth. This result is consistent with the mainstream theoretical prediction that financial liberalization contributes positively to efficiency and growth.

These results, however, should not be interpreted as sufficient evidences supporting more drastic reforms in China. There were situations where repressive policies actually helped maintain financial and economic stability and, therefore, probably played positive roles in economic growth. One good example is interest rate regulation. Given the state-ownership and widespread governance problems in the banking sector, premature liberalization of interest rates might induce reckless interest rate competition and lead to banking crisis. Another example is capital account control. Without such controls, Chinese domestic financial systems would most likely experience some types of chaos during the Asian and global financial crisis.

And, finally, gradual reform supported economic growth while helping maintaining economic stability. But such approach also came at a cost, such as efficiency losses and non-performing assets caused by the state sector's dominance of financial resources. In fact, the remaining repressive financial policies already impose a significant cost on the economy, in terms of both economic efficiency and GDP growth. These policies also imply important risks going forward, including risks of ballooning non-performing financial assets as a result of state intervention, growing economic imbalances both at home and abroad, and potential asset bubbles.

Some of these risks have grown exponentially over the years. They have been kept at bay because of very strong economic growth. But this cannot continue forever. Without successful resolution in the coming years, these problems could potentially endanger China's macroeconomic stability. They would not only disrupt China's strong economic growth but could also result in serious financial and economic crises, at home and abroad. Continuation of the Chinese reform successes, especially sustainability of the rapid growth, depends critically on further financial reforms removing remaining distortions and growing risks.

This paper is organized as follows. Section II provides a critical review of the literature on the relationship between financial liberalization and economic growth. Section III summarizes changes in the central bank, monetary policy and financial supervision. Section IV discusses reform of the banking sector. Section V reviews development and transformation of capital markets. Section VI outlines evolution of exchange rate policy and capital account controls. Section VII provides a preliminary quantitative measure of financial repression and assessment of its impact on economic growth. Section V offers some thoughts on the logic and mechanism behind China's financial reform. And the final section concludes the paper.

## **II. Review of the Literature**

Before examining the Chinese case, we first review the existing studies on financial liberalization. The body of the literature in this area has grown significantly since the 1970s, alongside the worldwide wave of financial liberalization. We group the theoretical and empirical analyses into three categories: general relationship between finance and growth; roles of financial liberalization in transition and developing economies; and Chinese experiences of financial reform.

The conventional view shared by most economists is that finance contributes positively to economic growth through functions such as channeling funds to efficient uses and overcoming incomplete information problems. Thus, financial liberalization should be favorable for promoting economic growth. These consensus views were confirmed by most empirical studies. But several others studies also revealed either negligible or even negative impacts of finance or financial liberalization on growth.

### (1). Financial Intermediation and Economic Growth

The idea that functioning of financial systems affects economic development has a long history in the economics literature, dating back to Schumpeter (1911). Following Schumpeter, Gurley and Shaw (1955) provided a theoretical basis for the relationship between operation of the financial sector and economic development. Goldsmith (1969) was the first to empirically confirm the existence of such a relationship using international panel data.

In examining the causal relationship between financial development and economic growth, Patrick (1966) distinguished 'demand-following' and 'supply-leading' phenomena. In his conceptual framework, 'demand-following' referred to the phenomenon in which creation of modern financial institutions and related financial services is in response to the demand in the real economy. By contrast, 'supply-leading' referred to the phenomenon in which creation of financial institutions and related financial services in advance of demand for them.

Economists have recognized for long the important roles played by the financial sector in economic development (Shaw 1973; Bencivenga and Smith 1991; King and Levine 1993a, 1993b). According to conventional theory, well-functioning financial system stimulates economic growth by providing a number of important functions such as clearing and settling of payments, pooling of saving, facilitating the allocation of



resources across space and time, pooling risk, and reducing information costs (Merton and Bodie 1995).

Levine (1997) concluded that broad cross-country comparisons, individual country analyses, and firm-level investigations all point in the same direction: the functioning of financial systems is vitally linked to economic growth. He also set out a theoretical framework illustrating factors driving the formation of financial intermediaries and markets, and their impact on economic growth. The central hypothesis is that acquiring information and making transactions are costly. In reducing these costs, financial systems serve several functions including mobilizing savings, allocating resources and exerting corporate control. Therefore, the financial sector can contribute to capital formation and technological innovation, and thus economic growth.

And Levine(2005) summarized five of the main functions of financial systems: to produce information ex ante about possible investment and capital allocation; to monitor investment and exert corporate governance; to facilitate the trading, diversification, and management of risk; to mobilize and pool savings and to ease the exchange of goods and services.

Some recent studies on endogenous growth also conclude that financial development could lead to increase in the long run growth rate. For instance, using an endogenous growth model, Greenwood and Jovanovic (1990) demonstrated two essential functions of financial intermediaries in promoting growth. These included collecting and analyzing information of alternatives investment projects, and increasing investment efficiency through allocating the funds to the projects with higher expected returns.

Similarly, Bencivenga and Smith (1991) showed that by enhancing liquidity and mitigating idiosyncratic risk through risk diversification and pooling, development of financial intermediaries results in reduction of households' unproductive reserve of liquid assets, as such funds can be channeled toward illiquid but more productive activities.

Several recent studies also explore the importance of portfolio diversification and risk sharing via stock markets in inducing sustained growth (e.g., Levine 1991; Saint-Paul 1992). All these works provide strong evidence to support that financial development can affect long run growth through different channels and various aspects of innovation or productive activities.

Public policies can also affect financial development in many ways. Roubini and Sala-i-Martin (1995) set up an AK-type endogenous growth model to examine the effects of repressive financial policies on long-term growth. They argued that government might want to repress the financial sector because this sector is an "easy" source for financing the public budget. In order to increase the revenue from money creation, governments subject to large income-tax evasion might choose to increase seigniorage by repressing the financial sector and increasing inflation rates. Financial repression would thus be associated with high tax evasion, low growth, and high inflation.

The positive relationship between finance and growth predicted by the endogenous growth literature has received considerable support from a number of empirical studies.

Using data on 80 countries over the period 1960-1989, King and Levine (1993a) empirically investigated the finance-growth linkage. They found that higher levels of financial development are positively associated with faster current and future rates of economic growth, physical capital accumulation, and economic efficiency improvement.

Rajan and Zingales (1998), using industry level data in a large sample of countries over the 1980s, showed that financial development facilitates economic growth by reducing costs of external finance to firms and industrial sectors. Based on more recent data for 63 countries over the period 1960-1995, Beck et al. (2000) found that higher levels of financial intermediation produce faster economic as well as total factor productivity growth. Similar results were found in Levine et al. (2000) and Levine (2006). Furthermore, Beck et al (2008) found that financial development exerts a disproportionate positive effect on small firms.

However, this conventional view has also been challenged by some recent empirical studies. Demetriades and Hussein (1996) highlighted the dangers of statistical inference in cross-section studies on finance-growth nexus. They argue that countries with very different experiences in both economic growth and financial development probably have different institutional characteristics and thus should not be treated as homogeneous entities.

Based on a broad dataset covering 95 countries, Ram (1999) found that the predominant pattern indicates a negligible or weakly negative association between financial development and economic growth. In addition, when the data sample is split into three subgroups according to growth experience (i.e., low-growth, medium-growth, and high-growth countries), a huge parametric heterogeneity was observed for the finance-growth relationship.

Moreover, Andersen and Tarp (2003) also investigated the finance-growth nexus by using the identical data of Levine et al. (2000), and estimated with both the full sample and the regional sub-samples. They found that while a positive and significant relationship was found in the full sample cross-section studies, the correlation was negative in the poorest countries. In individual-country studies, they discovered different causal patterns between finance and growth. And they also revealed that conclusions are very sensitive to the type of estimator used, as slight changes in nuisance parameters often changed the results.

## (2). Impacts of Financial Liberalization

Given that the financial sector provides such basic services necessary for sustainable economic growth, many economists argue that financial reform has a particularly important role in economies in the transition to a market economy (Griffith-Jones 1995; World Bank 1996; Hermes and Lensink 2000). This branch of literature grew rapidly during the past two decades (Pagano 1993; Trew 2006). Recent increase in frequency of financial crises also prompted strong research interest in this area.

Before 1970s, financial markets in many developing countries and transitional economies were seriously repressed by the government. The concept of financial

repression was initially proposed by McKinnon (1973), who defined financial repression as financial policies strictly regulating interest rates, setting high reserve requirement on bank deposits, and compulsory allocating resources. Such repressive policies would impede financial deepening and hinder efficiency of the financial system. Therefore, they should impact economic growth negatively (McKinnon 1973; Shaw 1973).

This line of argument is widely accepted by many economists (see, for instance, Levine 2005). Pagano (1993) showed that financial policies such as interest rate controls and reserve requirement lower financial resources available for financial intermediating activities.

Similarly, Roubini and Sala-i-Martin (1992) presented theoretical and empirical analyses of the negative relationship between repressive financial policies and long-term economic growth. King and Levine (1993) developed an endogenous growth model to illustrate that financial sector distortions reduce rate of economic growth by lowering rate of innovation.

Mobilizing savings for investment, exerting effective corporate governance over reforming state-owned enterprises (SOEs) and selecting non-state firms to finance are all important elements of a successful transition. Financial reform in transitional economies is also more comprehensive than in most developing countries because it involves not only liberalization, but also constructing the structure and framework of the financial system (Long and Sagari 1991).

Caprio and Levine (1994) mentioned that financial reforms initiated in most transitional socialist economies did not yet adequately provide many of the financial services associated with market-oriented financial systems. They suggested four market oriented strategies to guide reforms of financial sector in these transitional countries.

The Asian financial crisis and the experience of banks in transition economies (Bonin and Szekely 1994), as well as historically poor bank performance in Latin America and Africa (Haggard and Lee, 1995; Nissanke, 1998), highlight the difficulty of establishing successful commercial banking systems that allocate financial resources efficiently. Policy lending, barriers to interregional lending, distorted pricing, poor managerial incentives, and lack of prudential financial regulation can undermine financial performance.

The theoretical foundation of the standard view regarding the effects of apparent lack of financial reform in transitional economies is the well known McKinnon-Shaw hypothesis (McKinnon, 1973; Shaw, 1973). They contended that common government interventions in the financial sector, such as repressing interest rates at below market determined levels and directing credit, are fundamental stumbling blocks to economic growth.

They argued that interest rate repression has two primary negative effects. First, it reduces the incentive of economic agents to hold surplus in the form of financial assets. Thus, the quantity of financial savings forthcoming will be restricted with negative implications for the rates of investment and economic growth. Second, if interest rates are fixed at below market levels, there would be an excess demand for credit and the

need for an administrative rationing process is created. As a result, McKinnon–Shaw proponents argue that low return investment may gain funding at the expense of high return investments.

But, again, there are also opposing views. Financial liberalization has increasingly been under attack because of many countries' disappointing or even perverse experiences with financial liberalization (Diaz-Alejandro 1985).

Fry (1997) stated that the primary reason many experiments with financial liberalization failed was due to the perverse reaction to higher interest rates by insolvent and/or non-profit motivated firms. By definition, an insolvent firm is unable to repay its existing loans and hence is not deterred by a higher borrowing cost. It simply continues, if it can, to borrow whatever it needs to finance its losses. Such firms bid up the interest rate until normally solvent, profit-motivated firms cannot access to credit or become insolvent due to the high cost of borrowing.

Therefore, there are probably prerequisite conditions that must first be met before successful financial liberalization can be implemented (Fry 1997). These include adequate prudential regulation and supervision of financial institutions and markets; a reasonable degree of price stability; fiscal discipline taking the form of a sustainable government borrowing; requirement that avoids inflationary expansion of reserve money by the central bank; profit maximizing, competitive behavior by financial institutions and a tax system that does not impose discriminatory taxes on financial intermediation.

As many countries, including China, have yet to satisfy the above prerequisite conditions, a growing body of literature argued that well designed government intervention can be preferable to a fully liberalized financial system in terms of promoting economic development (Stiglitz 1994; Hellman et al. 1997). Stiglitz (2000) argued that the recently increased frequency of financial crises was closely associated with financial market liberalization in developing countries.

Arestis and Demetriades (1999) also pointed out that the conventional financial liberalization hypothesis is based on a set of strong assumptions including perfect competition and complete information. These assumptions, however, often do not hold in many countries. And these countries may be more able to deal with problems of market failure under financial repression (Stiglitz 1994).

Empirical findings are equally controversial. Roubini and Sala-i-Martin (1992) demonstrated that a fraction of weak growth experience in Latin American countries could be explained by financially repressive policies. Using time series data for Malaysia, Ang and McKibbin (2007) also discovered that financial liberalization, through removal of repressive policies, had a favorable effect on stimulating financial development. On the contrary, Arestis and Demetriades (1997) and Demetriades and Luinte (2001) revealed that financial repression in South Korea had positive effects on its financial development.

### (3). Financial Reform in Post-Reform China

Many economists pointed out that China's financial sector remains 'essentially unreformed' (Cheng et al. 1997). In particular, the central government continues to exercise considerable control over the financial sector. This control can be seen primarily through two stylized facts. First, the activities of state-owned commercial banks (SOCBs) changed slowly in that most of their lending continues to be directed towards the state sector. Second, the interest rates that SOCBs levy on loans and offer on deposits are still controlled by the PBOC.

Some recent studies went on to argue that the apparent lack of financial reform in China represents a drain on an otherwise successful program of economic reform. Li (1994), for example, argued that China has kept a low interest rate ceiling for many years, and it has detrimental impacts. Typically, it encourages inefficient investment and distorts financial efficiency.

This view was echoed by Lardy (1998a) who suggested that setting lending rates at below market clearing levels ensures excess demand for loans. Political allocation of credit funds, including corruption inevitably results. Declining rates of profitability in SOCBs and SOEs were often presented as evidence of the inefficiency of China's financial system.

With only a few exceptions (such as Chai 1981; Byrd 1983; and Tam 1986), the study of China's financial sector was assigned a distinctly second-fiddle role to other engines of growth such as trade and foreign investment during the 1980s. Even in the mid-1990s, Fry (1995) concluded that one major hole in his literature review on financial development and reform in Asia was the absence of any material on financial reform in China and this fascinating subject warranted a review article in its own right.

The Asian financial crisis has heightened scrutiny of China's state banking system, whose fragility stems from the continued use of the financial system to support urban-based, state-owned enterprises (Brandt and Zhu 2000; Bonin and Huang 2001; Huang 2002). Lardy (1998) estimated that during the Asian financial crisis more than one quarter of the loans of China's four major state-owned banks were nonperforming, which implied that these banks were technically insolvent.

Provincial data of 1997 reveals a striking inverse relationship between financial intermediation and GDP per capita that is at odds with the empirical regularity of positive correlation found in cross-country studies. This pattern suggests that the allocation of financial resources across provinces may be highly inefficient, with richer provinces being taxed relative to poorer provinces (Sehrt 1999; Lardy 1998).

Following this line and using Chinese provincial data from 1991 to 1997, Park and Sehrt (2001) tested whether financial reforms in the mid-1990s increased efficient intermediation by different financial institutions. They found that the importance of policy lending by state banks did not fall during the sample period and that lending by financial institutions did not respond to economic fundamentals.

Maswana (2008) suggested that, although repressive financial policies during the

reform period were bad for allocative efficiency, they probably created what he described as 'adaptive efficiency', an ability for the government to quickly adapt to the changing environment. Li (2001) also argued that mild financial repression helped China maintain financial stability needed for reform. But over time financial repression inflicted increasing costs in terms of lowering economic efficiency. Moreover, it tends to be self-propelling and self-sustaining, creating a low-efficiency trap that prevents financial sector liberalization.

Lardy (2008) estimated that financial repression, mainly through negative real interest rates, cost Chinese households about 255 billion yuan (US\$36 billion) or 4 percent of GDP, in addition to lowering overall economic efficiency. According to Lardy, the corporate, the banks and the government, respectively, captured one-quarter, one quarter and half of the implicit net tax imposed on households by financial repression. Liu and Li (2001) also confirmed positive contributions of financial liberalization to economic growth during China's reform period. Furthermore, the link between financial reform and economic development continues to be poorly understood.

### **III. The Central Bank, Monetary Policy and Financial Supervision**

PBOC was founded on December 1, 1948. But it never functioned as a central bank during the pre-reform period. Although PBOC did issue renminbi on behalf of the government, its main function was to distribute funds according to government directives. Even this function is supplementary since collection and distribution of funds were mainly determined and handled by the central plans.

In the 1950s, the government also established some specialized banks, such as the Agricultural Bank of China (ABC) and the Bank of China (BOC). But ABC was later absorbed into PBOC, while BOC was only a different name for PBOC when it handled external economy-related activities. There was also the China Construction Bank (CCB), which operated like a subsidiary of the Ministry of Finance.

After economic reforms began, the financial sectors grew rapidly both in terms of number of financial institutions and size of financial assets. In 1979, the government reestablished ABC in order to promote economic development in rural area and BOC in order to facilitate the open door policy. These gave rise to greater need for a specialized central bank to perform functions of monetary policy and financial supervision.

Calls for transformation of the PBOC into a proper central bank emerged as early as during the Third Plenum of the Eleventh National Congress of the Communist Party, the historical meeting deciding on economic reform. The State Council made a decision on this in 1983. And at the beginning of 1984, a central bank was separated out from the old PBOC (still retaining the name PBOC) while relinquishing its commercial functions to a newly established bank, the Industrial and Commercial Bank of China (ICBC).

During the years after 1984, the authorities made important efforts to create a proper modern central bank. However, PBOC relied mainly on quantitative measures such as reserve requirement and credit quota to manage liquidity conditions. And, surprisingly, some local branches of PBOC still owned certain financial companies and even made

loans directly.

After Deng Xiaoping's famous tour to the South in 1992, the government sped up its reform towards market economy. But a comprehensive reform did not start until March 1995 when the National People's Congress (NPC) passed the first Law of PBOC. The Law granted the PBOC legal authority in making and implementing the country's monetary policy. It also underscored the central bank's independence, especially from the Ministry of Finance and local governments.

Eventually, the PBOC was transformed into a vertical system with nine branches across the country, independent of provincial administration. It began to reduce direct interventions commercial banks' operation. For instance, the credit quota was abolished in 1998. PBOC also started to focus more on its own balance sheets, rather than balance sheets of the commercial banks. Over the years, the functions of financial supervision for banking, security and insurance industries were also separated out from the PBOC.

#### (1). Objectives and Instruments of Monetary Policy

Many economists now attribute China's reform successes to its gradualism approach (Fan 1994). Gradualism is also seen in evolution of the monetary policy. During the central planning period, monetary policy was almost non-existent. However, this situation changed from 1983 when the government started to reform the quota system for both monetary policies and currency issuance. With enlarged power of PBOC, proposals for transforming both objectives and instruments of monetary policy began to emerge.

Experiences of monetary policy reform since 1983 may be divided into three phases: 1984-96, 1997-2002 and 2003-now (Yi 2009).

##### *Phase 1: 1984-1996*

During the period 1984-96, the main objective of monetary policy was to fight against inflation. And PBOC relied mainly on administrative measures to achieve that goal. In 1986, the government issued the Regulation on Administration of Banks. This document defined the roles of financial institutions as "developing the economy, stabilizing the currency and promoting socioeconomic performance". Later, the government refined these roles to "stabilizing the currency and developing the economy".

Since the central bank did not really conduct proper monetary policies, it was almost impossible to maintain stable currency value. In the 1980s, the economy showed a strong toward rapid credit expansion. Such expansion led to serious inflation problems, particularly in 1985 and 1988.

In 1993, the State Council first defined monetary policy objectives as maintaining stable monetary environment and promoting economic growth. The Law of PBOC passed in 1995 listed four important objectives for monetary policy: promoting growth, supporting full employment, maintaining currency stability and, finally, achieving balanced external accounts. Though monetary policy had multiple objectives, at times these could not be retained simultaneously.

Inflation became serious problems in 1984-1985, 1988 and 1993-1994. In order to control inflation, PBOC focused on total credit and cash issuance as the intermediate objectives of monetary policy. Specifically, it tightened up money supply and enforced credit quotas. These administrative instruments were effective at those times as inflation rates were brought down following the authorities' policy actions.

However, alongside financial development and deepening, such intermediate goals became increasingly inappropriate. For instance, the non-state financial institutions grew rapidly over the years and their behavior was different from those of the SOCBs. SOCBs' share in the country's newly extended loans dropped from 78 percent in 1990 to 51 percent in 1996. Growing portion of the loans extended by non-SOCBs implied that direct controls over total credit became less effective over time.

Development of direct financing channels such as stock and bond markets also generated difficulties for PBOC to retain its intermediate policy goals focusing only on financial credit and cash issuance. Furthermore, growing foreign exchange reserves opened a new channel of liquidity creation. All these meant that simply controlling the credit was increasingly insufficient for management of the country's monetary policy environment.

In 1996, PBOC shifted its policy to focus on base money as a key policy target. It also started to monitor more closely various measures of money supply,  $M_0$ ,  $M_1$  and  $M_2$  (Figure 2). Meanwhile, in order to influence the commercial banks' lending, the PBOC began to adjust the reserve requirement ratios regularly, giving up its past practice of directly setting credit quotas. The China Inter-Bank Offered Rate (CHIBOR) and later Shanghai Inter-Bank Offered Rate (SHIBOR) became an important regulation target in conducting monetary policies.

**Figure 2.** Growth Rate of Money Supply:  $M_0$ ,  $M_1$  and  $M_2$ , 1985-2009 (%)

<FIGURE 2 HERE>

Source: Wind.

Another important development was that the central bank started to apply some indirect monetary policy instruments such as deposit reserve ratio, open market operation and interest rate were.

The deposit reserve system started in 1984, when the reserve requirement ratios were determined by different types of deposits. At that time, the ratio was 20 percent for corporate deposits, 40 percent for household deposits and 25 percent for agricultural deposits. In 1985, PBOC unified all different ratios into one, at 10 percent. In fact, most commercial banks kept extra reserves with the central banks during the entire reform period for the required reserve could not be used to pay settlements. PBOC pays interest rates for both required and excess reserves held by commercial banks, although the rate was lower for the former than for the latter.

Open market operation was first started in foreign exchange market in 1994. In April 1996, PBOC began to transact in the bond market. By way of reverse purchases, PBOC realized the increase or decrease of money supply. Although open market operation was



limited with total amount less than 5 billion yuan in 1996, the tentative trial promoted widespread application of this instrument in the following years.

PBOC utilized the instrument of interest rate prudently. At the beginning of the reform, some regions experimented with completely freeing the deposit rates. But this caused high risks as some financial institutions engaged in interest rate competition without considering financial consequences. Therefore, PBOC prohibited floating of deposit rates in 1990.

Although interest rate reforms lagged generally, some progresses also took place. In 1993, the State Council drew its first plan for interest rate liberalization. This plan proposed to first liberalize money market rates and bond yields and then free deposit and lending rates. CHIBOR was established in 1996 as an important step of introducing market-based interest rate.

In addition to the above three instruments, 'central bank credit' was also a critical policy tool during the period of 1984-1996. It was estimated that almost 70% of the annual base money was injected into the market through this instrument (Yi 2009).

The introduction of this instrument started from the reform in credit quota system. Credit quota used to be the most important monetary policy instrument for PBOC (or the authorities) to manage the country's liquidity conditions. During the early years of the reform period, the authorities decided on not only total amount of credit but also credit structure for individual banks or financial institutions. The banks had little autonomy in their lending decisions. But gradual reform to this traditional practice started from the very beginning of economic reform.

In 1979, the authorities devised a new mechanism of 'linking the loan volumes to its total deposits' (*cun dai gua gou, cha e bao gan*) for ABC in order to promote rural development. This policy was then extended to all other banks in 1981. Under this new system, specialized banks had to rely on their abilities of attracting deposits to expand their loan businesses. The central bank no longer directly provided funds to commercial banks. This created the basis for PBOC to eventually shift its policy focus from credit quota to base money.

The banks also gained some autonomy in credit allocation. For instance, commercial banks were able to relocate funds within regions as long as the total credit ceilings were not exceeded. Although, these changes were pretty limited as administrative management was still in place, they did separate funds between the commercial banks and the central bank. Therefore, 'central bank credit' was created to channel funds from the central bank to the economy.

Foreign exchange reserve began to accumulate in the 1990s, following the exchange rate policy reform at the beginning of 1994. Often unsterilized foreign exchange market intervention injected large volume of liquidity to the system. Consequently, the once crucial instrument, 'central bank credit' lost its previous status in supply money and the relative importance of the instrument also dropped dramatically from 1994.

*Phase 2: 1997-2002*

Between 1997 and 2002, resolving deflation and promoting economic growth became very important monetary policy objectives. During this period, PBOC used more of indirect policy instruments. After the eruption of Asian Financial Crisis, China faced deflation and the possibility of the slowdown of her economic growth. PBOC actively adjusted its policy to overcome the negative factors. One of the key measures taken by PBOC was abolition of credit quota.

Credit quota was a product of planned economy. Under the leadership of market economy reform, it is no doubt that this kind of instrument would be deserted one day. But as always, like other reforms, reform of the credit quota was never a clear-cut action.

Abolition of credit quota was implemented step by step. Sometimes during this process, the authority even strengthened the credit controls. For example, during the 1987-88 period, when loan growth lost control and the inflation rate soared, PBOC re-installed its control over credit ceilings for financial institutions. The PBOC headquarter essentially retrieved the decision power previously granted to its branches. For better or for worse, this approach worked at least temporarily.

In 1994, PBOC abolished credit quotas for cooperative financial institutions, joint-stock commercial banks and other loan-making institutions. After that, only the big four SOCBs (the Big Four) and three policy banks were still subject to credit quotas. By 1998, the practice of assigning credit quota had become history. However, this does not mean that PBOC no longer manages loan volume. It just tries to exercise influences more indirectly.

Unlike credit quota, 'central bank credit' was used by PBOC as a temporary important instrument to inject base money into the economy when the growth of foreign reserves decelerated. In 1998, PBOC offered 78 billion yuan to SOCBs and 20 more billion yuan to small and medium sized financial institutions.

But over time, PBOC's monetary policy shifted increasingly toward those market-based policy tools, such as rediscount business, deposit reserve, open market operation, and the interest rate.

Rediscount business was introduced alongside development of commercial papers and it officially became one of the policy tools at the end of 1995. PBOC moved forward in this area gradually. In 1998, the authorities experimented with the mechanism of the rediscount rate being determined by the market, de-pegging from the central bank lending rate.

Deposit reserve system saw its reform in 1998 when the previous required reserve and excess reserve were unified into one account. Meanwhile, the reserve ratio decreased from 13% to 8%. To further cope with the deflation in 1999, deposit reserve ratio fell by 2% to the level of 6%. It was obvious that deposit reserve began to be an important policy instrument gradually. It should be noted that, unlike the normal practices in market economies, PBOC pays interest on both required and excess reserves, although these rates are much lower than rates paid by commercial banks to their depositors.

After a temporary disruption between end of 1996 and early 1998, open market

operation regained its power as one monetary policy instrument. The reverse purchase and purchase did by PBOC in the bond market helped the central bank control the base money and the money supply. Besides the development of national bond market was encouraged, which built up a sound foundation for the implementation of open market operation.

One clear trend during this period was increasing use of interest rates as an important tool of monetary policy. After the set-up of CHIBOR in 1996, in 1997, PBOC set up interbank bond market and liberalized the repurchase rates (repo rate) and cash bond rates. In September 1998, PBOC gave up controls over issuance rate for policy financial bonds and treasury bonds in interbank market. And in 1999, the Treasury bonds were first issued in the interbank market through a public bidding system. All these contributed to the interest rate liberalization in the future significantly.

Perhaps the most visible interest rates in the Chinese economy today are the deposit and lending rates. In the early years during the reform period, commercial banks had to strictly follow the base rates set by the central bank. This was problematic because it did not give any room for adjustment based on risks and returns associated with different types of businesses and institutions.

The order of liberalization adopted for reforming the deposit and lending rates is as follows: “foreign currency rates before local currency rates, lending rates before deposit rates, and long term, large quantity credit rates before short term, small quantity credit rates.” Between 1996 and 2007, about 120 types of interest rates underwent reforms in forms of relaxed controls, merged with others or completely removal.

In 2000, PBOC liberalized the lending rates for foreign currency loans and deposit rates for large deposits. In March 2002, it further unified policies on foreign currency interest rates between domestic and foreign financial institutions to create a level playing field for all banks.

In the meantime, renminbi rates also went through a gradual process of liberalization. PBOC introduced the first step liberalization of lending rates in as early as 1987. Commercial banks were allowed to float the lending rates upward by a maximum of 20 percent. This band was adjusted from time to time in the following years.

On the other, reforms of the renminbi deposit rates proceeded relatively slowly with limited improvement. In 1999, PBOC re-started the efforts of reforming the deposit rates, by first liberalizing the large long-term agreement deposit rates.

#### *Phase3: 2003-now*

During this period, PBOC conducts monetary policy in order to pursue currency value stability while carefully monitoring inflation. Besides, promoting growth, supporting full employment and achieving balanced external accounts are also key concerns of the authority. To achieve these objectives, PBOC adopts a wide range of policy tools including loan volume management, deposit reserve requirement, open market operation, window guidance and interest rate.

PBOC still manages total loan volume. Every year, the central bank sets a target for new

loans. It then uses policy tools such as reserve requirement, 'window guidance', and base interest rates to affect loan growth. At times, likely in late 2007, when the economy showed signs of overheating, the authorities re-instated credit quotas for individual banks.

Currently, reserve requirement ratios are probably one of the most frequently applied monetary policy tools in China. When the global crisis hit China in late 2008, for instance, PBOC lowered the reserve requirement ratios for six times in the following year in order to loosen liquidity conditions. Ever since the deposit reserve was brought about, it has been used to regulate the money supply in the country. At times, reserve requirement was also applied to offset liquidity injected by intervention in foreign exchange market (see Figure 3).

**Figure 3.** Foreign Exchange Reserves and Reserve Requirement Ratios, 2001-2010

<FIGURE 3 HERE>

Source: The PBOC and the SAFE

Open market operation is further developed and diversified. From 2003, PBOC issued central bank papers to affect base money (see Figure 4). The maturities of these papers include 3 months, 6 months, 1 year and 3 years. In 2007, PBOC also introduced repurchase agreement based on special T bonds. These gradual progresses enhance the authority's ability to control base money.

**Figure 4.** Liquidity Withdrawn by the Central Bank Paper Issuance, 2004-2010 (Billion Yuan).

<FIGURE 4 HERE>

Source: Wind

'Window guidance' is a very effective policy tool for controlling loan growth, although frequency of its application declined significantly during the past decade. Even though the commercial banks have undergone significant transformation, including introducing foreign strategic investors and public listing, most banks remain majority-owned by the state and their top managers appointed by the Party. Hence, the main problem of 'window guidance' is its 'stop-go' policy consequences.

Finally, the interest rate has experienced some liberalization though not that much. On January 4, 2007, PBOC set up SHIBOR, hoping to eventually replace CHIBOR. In terms of deposit and loan rates, they are reformed step by step. In November 2003, interest rate floors for small amount foreign currency deposits were removed. And one year later, interest rates for the small amount deposits were completely freed.

As to the renminbi rates, in August 2003, the rural credit-cooperatives in pilot districts could raise the lending rates up to twice of the base rates. In 2004, PBOC allowed the commercial banks and urban credit cooperatives to deviate their lending rates to 0.9-1.7 of the base rates. And that range was 0.9-2.0 for rural credit cooperatives. On October 29, 2004, PBOC abolished the ceilings of the lending rates for all commercial banks, except urban and rural credit cooperatives. The upper boundary for urban and rural credit

cooperatives was also raised to 2.3 times of the base rates. Meanwhile, the lower limit for loan rate remained unchanged, being 0.9 of the base rate.

On October 29, 2004, PBOC removed the floors for deposit rates alongside abolition of ceilings for deposit rates. But it retained ceilings for deposit rates, normally at 1.2 times of base deposit rates (see Figure 5).

**Figure 5.** Base Deposit and Lending Rates, 1980-2008 (%)

<FIGURE 5 HERE>

Source: DRCNET statistical database

At present, overall interest rates remain highly regulated in China, although the authorities have already made considerable progresses in the interest rate reform. The remaining regulations on deposit and lending rates generate at least two types of consequences. One, ceilings for deposit rates and floors for lending rates essentially ensure minimum interest spreads for commercial banks. This enables the commercial banks to capture high returns, which is helpful for absorbing the bad assets created in previous decades. Two, real interest rates, especially deposit rates, fall to the negative territory from time to time (see Figure 6). This is what McKinnon described as a symptom of financial repression.

**Figure 6.** Real Deposit Rates in China, 1978-2010 (%)

<FIGURE 6 HERE>

Source: Wind and Calculations by the author

In sum, the gradualism and market-based philosophy ensured the success of the reform on monetary policy, though the reform is far from finished. For instance, for 17 years since the interest rate liberalization was proposed, the rates are still regulated in the hands of the authority. While policy instruments have almost changed from direct controls to indirect ones, the price instruments are still lagging behind.

## (2). Regulatory Framework for Banks and Financial Markets

As reforms continue and financial sectors grow, the need for a specialized financial supervision framework became an urgent task. Previously, almost all supervisory responsibilities fell onto the shoulders of PBOC. In 1994, the State Council made a decision on the model of segregated financial operation. This eventually led to separation of financial operations among insurance business, the trust business, banking, and securities businesses in the following years.

During the early period of reform, some Chinese financial institutions followed the model of comprehensive institutions. Many banks, for instance, set up financial trust, finance companies and security companies. Even PBOC ran several financial institutions. Some local governments also participated in operation of financial businesses.

But this was problematic. Banks engaging in diverse financial businesses did not install Chinese walls to separate risks from individual businesses. Like anywhere in the world,

this often led to magnified financial risks. More importantly, as the only supervisor of the financial industry, PBOC lacked the experience of supervision. Its limited power also prevented it from exercising effective controls over banks, insurance companies, trust firms, and securities companies.

On December 25, 1993, the State Council decided that these businesses needed to be separated out from one another. Following this policy change, PBOC established separate departments within its structure, including Department of Banking, Department of Non-Banking Institutions, etc. Later these departments moved out of PBOC to become independent regulators.

The first specialized financial regulator to be set up was the China Securities Regulatory Commission (CSRC), two years after establishment of the Shanghai and Shenzhen stock exchanges. The China Insurance Regulatory Commission (CIRC) was established in November 1998. And the China Banking Regulatory Commission (CBRC) was set up in April 2003, whose responsibilities were underscored by the Law on Banking Regulation and Supervision, enacted in 2004.

While the segregated financial system probably enhanced financial stability and reduced financial risks, it also came at the expenses of efficiency. This became an important issue as China moved closer to its WTO-accession around the turn of the century. As inevitably the Chinese institutions would have to face competitions from global comprehensive financial institutions like Citigroup, HSBC and UBS, demand for allowing some cross-sector businesses grew louder.

The State Council later granted Binhai New Area in Tianjin and Pudong New Area in Shanghai to carry out experiment with comprehensive financial business model. In 2009, Pingan Insurance merged the Shenzhen Development Bank and Shenzhen Commercial Bank. A number of commercial banks are allowed to set up fund management companies, bank leasing companies or trust and investment corporations. (see Table 1).

**Table 1.** Cross-Industry Investments by Banks in China

<b>Name list<sup>1</sup></b>	<b>The cross-industry investments such as fund management corporations, financial leasing companies and trust Firms</b>
<b>ICBC</b>	ICBC Credit Suisse Asset Management Co. Ltd. (Apr. 2005) ICBC Financial Leasing Co. Ltd. (Nov. 2001)
<b>CCB</b>	CCB Principle Asset Management Co. Ltd. (Sep. 2005) CCB Financial Leasing Co. Ltd. (Dec. 2007)
<b>ABC</b>	ABC-CA Fund Management Co., Ltd. (Mar. 2007) ABC Financial Leasing Co. Ltd. (Sep. 2010)
<b>BOCOMM</b>	Bank of Communions Schrodgers Fund Management Co. Ltd. (Aug. 2005) Bank of Communions Financial Leasing Co. Ltd. (Dec.2007) Bank of Communions International Trust (Dec.2007)

<sup>1</sup> BOCOMM is short for Bank of Communions; CMB is short for China Merchants Bank; CMBC is short for China Mingsheng Banking Co. Ltd.

<b>CMB</b>	CMB Financial Leasing Co. Ltd. (Oct.2007)
<b>CMBC</b>	Mingsheng Financial Leasing Co. Ltd. (Oct.2007)

Source: Compiled by authors

However, it is not yet clear which business model Chinese financial sectors will follow in the future, segregated or comprehensive. The latest global financial crisis revealed difficulties in monitoring and controlling financial risks in a comprehensive institution. It is therefore reasonable to expect the current segregated model to continue to dominate China's financial landscape, at least in the perceivable future.

### *Supervision of the Security Industry*

CSRC is probably one of the government entities most frequently and harshly criticized by the public. This was because widespread irregular behavior of market participants such as false information and insider trading are a common feature of the stock markets. It was probably also because most individual investors lost money.

Surprisingly, initially after set up of the stock exchanges in Shanghai and Shenzhen, there was no national regulatory organization. It was the local governments that mainly carried out regulations and supervisions of the securities industry. For instance, local governments of Shanghai and Shenzhen were once entitled to manage their own stock markets. In the first few years of the experiment, the development of securities markets was accompanied by lack of specific supervisors and compliant laws. Some local governments even set up their own stock exchanges (Wu 2008).

Market failure and blind competitions among local governments in attracting financial resources left great room for occurrences of misbehaviors from investors and firms. Local governments' function of supervision was also vulnerable to their economic and political concerns. Biased regulations negatively affected the economic and social stability, leading to a disordered financial situation.

These developments forced the central government to form a uniform market and establish a unified supervisory system. CSRC came into existence in 1992, when it took over the regulatory responsibilities from PBOC and local governments. In 1995, the authorities decided that top managers of stock exchanges had to be nominated by CSRC. CSRC's responsibility was clearly defined by the State Council in 1997. In 1998, CSRC also took over supervisory responsibilities for securities companies from PBOC. To strengthen the effectiveness and independence of supervision, CSRC started to reinforce its vertical leadership. And by 1999, CSRC already had 36 branches in major cities in China.

The establishment of CSRC did unify the supervisory system; however, in the initial years, its supervision had the wrong focus. It seemed that CSRC cared more on administrative approvals than on punishing illegal behaviors. While insider trading and market manipulation are two common phenomena in China's stock market, it was ironic that the crime cases of insider trading and market manipulation only account respectively for 2.6% and 5.5% of the total cases penalized openly by CSRC by 2002 (Hu 2008).

Even so, there is no doubt that CSRC has made tremendous efforts in improving the quality of listed companies and market infrastructure over a period of nearly two decades. The most noticeable progresses include introduction of the independent director system, mandatory information disclosure requirement, improvement in initial public listing (IPO) selection process, cracking down on insider trading practice and implementation of the qualified foreign institutional investor system (QFII). All these serve for the marketization of the security industry and help enhance the companies' competitiveness and market awareness.

Besides, CSRC also reinforces the supervision of security companies. Initial security companies more or less had the government's backgrounds. The absence of owner and inappropriate regulations made some companies frequently ventured to seek large amount of profits illegally. In 2003, China found the chaos in security companies became an obstacle for further reform of the capital market. Thus, an all-around inspection and reorganization of these firms were initiated.

In the following 3 years, the overall quality of China's security companies scaled up. Between 2003 and 2006, the authorities dealt high risk companies and restructured a total of 27 securities companies through measures such as capital injection and merger. They forced 19 firms out of business and 4 companies' business permissions were withdrawn (see Table 2).

**Table 2.** The name list of companies that were shut down during the comprehensive inspection

Company	Company	Company
China Eagle Securities	South Securities	Guangdong Securities
Han Tang Securities	North Securities	Northwest Securities
Asian Securities	Wu Zhou Securities	De Heng Securities
Min An Securities	Min Fa Securities	Wuhan Securities
Yunnan Securities	Tian Tong Securities	Heng Xin Securities
Gansu Securities		

Source: Hu (2008)

Meanwhile, market conditions also started to improve. Firstly, to prevent companies from appropriating clients' deposits and assets, CSRC implemented the "Third-Party Deposit" system, installed corresponding firewalls and enforced penalties harshly. Secondly, China Securities Investor Protection Fund Corporation (SIPF) was established to better protect investors' interest. Thirdly, CSRC started the qualified domestic institutional investor system (QDII) for domestic investors to access to international capital markets. And, finally, the authorities also experimented and adopted a scientific risk control and monitoring system based on net assets for security companies.

At present, CSRC continued to enhance its regulations, hoping to create and maintain "fair, open and just" environment for development of securities markets. However, this supervisory system still lacks prior planning and systemization. Self-discipline in the industry is not widely practiced and public surveillances are still lacking. Above all, the market is still affected by policies and interventions by various levels of governments,



although degree of these problems declined over time.

### *Supervision of the Insurance Industry*

In the insurance market, the state owned insurance companies dominated during the early years of reform. Naturally, regulation was much easier when the authorities simply sent directives to those state-owned companies. But this is no longer the case, although the main players of the industry are still state-owned insurance companies like the People's Insurance Company (Group) of China Limited (PICC) in the insurance market.

With development of the insurance market, the supervisory framework has evolved from one concentrating only on market behavior to one containing “three pillars”, which include market behavior regulation, solvency regulation and corporate governance structure regulation.

Market behavior regulation is especially welcome in the early stage of insurance market development for its relative simplicity. It brings about relatively low implementation costs because the regulation focuses mainly on whether behaviors comply with laws and provisions, whether the insureds' benefit was hurt, and whether the behaviors hinder the development of insurance industry.

In 1995 promulgation of the Insurance Law provided legal foundation for regulation. At present, the regulation has changed from passive monitoring to active monitoring, while it is no longer restricted to compliance-based supervision but turn to compliance-based and risk-based supervision.

Solvency regulation is the core of insurance market supervision, because it closely related to whether the insureds' benefits could be protected. The idea of solvency regulation was expressed in 1995's Insurance Law<sup>2</sup>. From 2000 on, CIRC has made accurate and specific standards for the regulation and international practices in this field are introduced as well.

Interests of the insured are primarily cared. All endeavors made in solvency regulation are to ensure a healthy insurance market. The insurance protection fund system was set up to safeguard the insured from company bankruptcy or liquidation. Moreover, CIRC is building institutional mechanisms to monitor solvency problems.

Corporate governance structure regulation is underscored in CIRC's supervision. Certain measures are tried such as keeping internal auditing system independent, etc. Without doubt, an improved corporate governance structure can prevent and eliminate risks, but the answers to how to enhance the governance structure still require practicing and absorption of foreign experience.

Generally, the regulation in insurance industry is a process of learning. Different stages of the insurance market development have different supervision focuses. How to efficiently improve risk controls and monitoring of domestic insurance companies is always a problem for CIRC.

---

<sup>2</sup> As is stated, “Insurance companies should have minimum solvency that is suitable to their business operation scales ...”

## *Supervision of the Banking Industry*

Banking regulation plays an indispensable role in China's financial regulatory framework since banks still dominate the country's financial sector. In 1985, the State Council issued a directive which assigned responsibilities of supervision of any activities related to money and banking to PBOC. In the following years, PBOC unveiled a series of regulations and rules to reinforce healthy development of banking industry. It introduced a formal auditing system to monitor financial risks and policy implementations.

In the period after 1994, PBOC took a number of measures to improve bank supervision. It defined procedures and requirement for setting up commercial bank branches. It strengthened off-site surveillance of the banks. And it also demanded that commercial banks to improve their abilities of risk controls.

After the eruption of Asian financial crisis, PBOC focused more on risk monitoring and controls. It first experimented with the change of the old four-tier loan classification system into international standard five-tier loan classification system in Guangdong in 1998. In 2002, PBOC required that all commercial banks to adopt the five-tier classification system, which was realized by 2006.

The replacement of the old four-tier classification with the five-tier system is far from a quantitative, say, "five minus four" improvement. Within the old classification system, qualities of loans are judged mainly by their terms rather than intrinsic risks. This kind of simplification, not hard to imagine, could not help banks control risks effectively but hurt banks' efficiencies and increase potential dangers. The replacement finished is, thus, a must and a great advancement in terms of qualitative supervision. It brings about new ideas in risk controls and monitoring for banks and also benefits the raise of Chinese banks' market awareness.

Besides, China also reflected deeply on her supervision approaches. For a long period, PBOC exerted its power on banking regulation through administrative controls. However, this method had operations of banks greatly intervened by governments. As a result, the allocation of financial resources was distorted, the real commercialization of the SOCBs was hindered, and the budget constraint faced by SOEs would be softened. In view of this, a more prudent supervision system with market-oriented regulation measures is high-lightened, a more independent supervisor is required and a more law-based supervision environment is demanded as well.

In 2003, CBRC was separated out from PBOC. In the following year, NPC passed the Banking Regulatory Law and the revised Commercial Bank Law. CBRC's authority was strengthened. In fact, in recent years, CBRC became more powerful than PBOC in influencing some of the monetary variables, such as money supply. CBRC's regulation often has direct effects on loan and deposit growth.

Presently, CBRC regulates the commercial banks by enforcing requirements in a number of key areas, including capital adequacy, loan provision, risk control and internal management.

From 1994, China began to implement the requirement of capital adequacy ratio according to the 1988 Basel agreement. The Commercial Bank Law in 1995 explicitly stated that the capital adequacy ratio of commercial banks should not fall below 8 percent. Before global financial crisis, CBRC was actively preparing implementation of Basel II. But with introduction of Basel III after the crisis, China is likely to move swiftly in implementing this new regulatory system for banking capital.

Generally, the philosophy of banking supervision improves gradually. From the initial ex-post regulation, CBRC has gradually shifted its focus onto ex ante risk detections. For instance, CBRC emphasizes frequently reinforcements of internal risk controls and monitoring of banks. It also made serious efforts to improve corporate governance of the banks. In addition, CBRC pays close attention to the international standards and is devoted to strengthening the supervisory relationship with the world.

To sum up, China's financial supervision still has a long way to go. The recent crisis has given the existing financial supervision in the United States a great punch. Thanks to separation from the global capital market, China did not suffer much compared with other financial liberalized economies. However, this does not mean China's supervisory system is sound enough, since the system did not even have a chance to be tested.

Under a segregated supervisory system, financial stability is easier to pursue for but at the expenses of financial efficiency. For one thing, coordination problems arose. Cooperation and information sharing among CSRC, CIRC and CBRC are not sufficient (Wang 2009). A number of other questions remain today. For instances, How to solve the boundary problem<sup>3</sup> in regulation? How to make supervisors positively and promptly respond to financial risks or crisis? How to balance between financial innovations or efficiency and financial stability? All these questions require careful considerations when planning new reforms steps in the coming years.

#### **IV. Development and Reform of the Banking Sector**

When economic reforms began, Deng Xiaoping pointed out that "banks should perform all the functions of banks. Banks are not real banks. They are accountants and cashiers. They are currency issuers".<sup>4</sup> This was the reality of the banking sector. Before 1978, there was only one national bank, PBOC, which performed both as a central bank and as a commercial bank. It controlled 93 percent of the country's total financial assets.

The first development in the banking sector during the reform period was establishment of a large number of commercial banks. In 1979, ABC was re-established, specializing in rural business and leading the rural credit cooperatives. In the same year, BOC and CCB were separated out from PBOC and Ministry of Finance, specializing in international economic transactions and in the large investment projects, respectively.

---

<sup>3</sup> In Gerard (2009), the boundary problem means where regulated activities are constrained within a boundary, they tend to move outside that boundary, whether geographical or sectoral.

<sup>4</sup> Speech by Deng Xiaoping at the meeting of the First Secretaries of provinces on October 4, 1979.

In 1984, ICBC was separated from PBOC and took over its commercial transactions.

However, restoring and establishing the specialized banks couldn't satisfy all the financial needs of national economic development. To promote competition in the banking system and to meet the funding needs of different sectors and areas, other banks, non-bank financial intermediaries and cooperatives began to emerge:

- 1980, the first Urban Credit Cooperatives was established in Hebei Province;
- 1981, China Orient Leasing Co., Ltd was set up;
- 1984, People's Insurance Company departed PBOC;
- 1986, the first joint-stock commercial bank<sup>5</sup> was restored;
- 1987, the first commercial bank sponsored by the enterprise group<sup>6</sup> established;
- 1994, three policy banks<sup>7</sup> set up to take over policy-related loan of the Big Four.
- .....

By the end of 2008, there had been 5,600 banking financial institutions, including: three policy banks, the Big Four, Bank of Communications, 13 joint-stock commercial banks, 136 City Commercial Banks, 4,965 Rural Credit Cooperatives and other institutions like rural commercial bank, trust company, financial leasing companies and so on.

Despite the nearly six thousand banking financial institutions created since the beginning of reform, the Big Four continued to dominate the banking landscape, due to their obvious advantages of extensive network of branching structure and their long-term relationship with enterprises. In the 1996-2008 period, the Big Four constantly account for more than 60 percent of the whole banking industry, whether measured by assets, deposits or loans. Their dominant position is more striking during 1978-1995 (see Table 3). What is important, however, is to notice that these banks importance has been on the decline since 1978 (see Figure 7).

**Table 3.** 1978-2008 Average Share (%)

	1978-1995		Assets	1996-2008	
	Deposits	Loans		Deposits	Loans
<b>Big Four</b>	81.98	91.07	65.11	64.64	64.22
<b>12 Joint-Stock Commercial Banks</b>	1.47	1.22	14.88	15.37	15.80
<b>City Commercial Banks</b>	1.93	0.95	6.57	6.60	6.63
<b>Rural Banks and Cooperatives</b>	18.12	6.34	11.73	11.66	11.6
<b>Foreign Banks</b>	0.18	0.43	1.71	1.74	1.76

Source: China's financial Yearbook.

<sup>5</sup> Bank of Communications

<sup>6</sup> CITIC Industrial Bank

<sup>7</sup> National Development Bank, Export-Import Bank of China, China Agricultural Development Bank

## Figure 8. Big Four Share, 1978-2008 (%)

<FIGURE 8 HERE>

Source: China's financial Yearbook

### (1). Reform of the 'Big Four' Banks

From the single banking system before the reform and the two-tier banking system by 1984, to the multiple financial institutions afterwards, the reform resulted in increasing types of financial institutions. But it also led to improvement in a number of performance indicators.

The Big Four have made important contribution to reform of the state-owned enterprises (SOEs) and to stability of China's financial system in China. At the same time, they have also accumulated huge risks and historical burdens. At times, especially around the time of Asian financial crisis, they were perplexed with high ratios of non-performing loans (NPLs), low capital adequacy ratios, lack of sound corporate governance and inability of risk control. The Big Four were judged to be technically insolvent by some international scholars (Lardy 1998).

Reform of the Big Four couldn't perform without reform of the SOEs since more than ninety per cent of the bank loans went to the SOEs. After all, the banks couldn't choose the loan enterprises or projects because it's the banks' political task to ensure operation of the SOEs. Therefore, improvement in SOEs provided favorable conditions for the banking reform.

And then, the government decided to concentrate on reform the Big Four. But unfortunately, it was found then the reform was too difficult, because problems left over by history were a very hard nut to crack, and at the same time, the actual requirements for policy loans couldn't be avoided.

Given the difficulties face by reform of the Big Four, the authorities then turned their attention to growing new financial institutions by setting up a number of joint-stock banks. It was also hoped that the newly established banks could act as a model to push forward the reform of the Big Four (Liu 2009a). In 1986, the first joint-stock commercial bank, Bank of Communications, was re-established. And in 1987, the first commercial bank sponsored by an enterprise group, CITIC Industrial Bank, was set up. There are now a total of thirteen joint-stock commercial banks, eight of which have been listed in stock markets.

Those newly established joint-stock commercial banks have clearly defined property rights, diversified businesses, and more strict risk management and internal control systems. But it seems that they didn't play an exemplary role, or have enough influence for the reform of the swaggering Big Four. The government had to find some other way. One measure was to separate the policy loan business from the Big Four to reduce their burdens and lay foundation for further reform. So, three policy banks were established in 1994.

The Asian financial crisis in 1997 and 1998 made the stumbling reform of the Big Four

become more compelling. The international economic environment was grim at that time, which forced China's foreign exchange reform and interest rate liberalization process to slow down. The potential financial risks inherent in the long-existing huge NPLs of the Big Four propelled the government to tackle these problems. In 1998, the government issued 270 billion yuan of special treasury bonds to supplement the capital of the four state-owned commercial banks.

In 1999, drawing on the U.S.' experience of the Resolution Trust Corporation (RTC), the government established assets management companies (AMCs) to manage and dispose those non-performing assets in the Big Four. Hence, China Cinda Asset Management Corporation, China Huarong Asset Management Corporation, China Orient Asset Management Corporation and China Great Wall Asset Management Corporation were established in charge of taking over and disposing the non-performing assets from CCB, ICBC, BOC and ABC, respectively. The four AMCs took over 1.4 trillions yuan non-performing assets from the Big Four in 1999.

However, such stripping didn't fundamentally change the situation of the NPL problem. The old burden was completely relieved while the new risks were still being accumulated. By the first quarter of 2004, the Big Four's NPLs reached 19.15%. Although the NPLs of the Big Four was decreasing from 1995 to 2007, the average ratio still stood at 12.9%, compared with the 3.95% that of the joint-stock commercial banks (see Figure 8). The NPLs was also related with the corporate governance (see Figure 9).

**Figure 9.** Ratios of Non-Performing Loans of the Chinese Banks, 2004-2008 (%)

<FIGURE 9 HERE>

Source: China's financial Yearbook.

**Figure 10.** NPLs of Commercial Banks by Categories, 2005 and 2006 (%)

<FIGURE 10 HERE>

Source: China's financial Yearbook.

Along with NPL resolution, the government required commercial banks to change their loan-classification system from one based on four categories into one based on five categories. The new loan-classification system was widely adopted by more-developed countries. And it is forward looking, reflects risk assessment of loans and focused on the ability of the borrowers to repay the principal and interest, while the previous four-category loan classification system was actually backward looking and didn't reflect the risk of borrowers.

According to the guideline issued in December 2001, the new loan-classification system was first introduced in the major branches of the Big Four and was formally adopted for all banks from 2002. The new loan-classification system probably more accurately reflects quality of bank loans and further improves transparency and soundness of the banks.

The accounting system was also changed to further improve transparency of banks' operation and promote the more accurate classification of the loans. In January 2002,

“Accounting System for Financial Institutions” was published by MOF. The new accounting system specified that the number of days overdue after which loans could be classified as accruing interest or not was reduced to 90, the international standard.<sup>8</sup>

China’s accession to the WTO, in particular the opening up of the financial industry, called for some urgent and more fundamental reforms of the banking sector. What the government did earlier to move bad assets off the banks’ balance sheets only dealt with the symptoms, not root causes, of the problem. By 2003, the government had realized that it could no longer bypass the ownership reform.

At the end of 2003, BOC and ICBC were chosen as a pilot for the transformation into a joint-stock commercial bank. They received 22.5 billion yuan each to supplement their capital. Foreign strategic investors were also introduced. In 2006, BOC took the lead in becoming both the domestic (Shanghai) and oversea (Hong Kong) listed company. It was followed by ICBC also in 2006, CCB in 2007, and ABC in 2010. Now, all of the Big Four have already been dual-listed in both Shanghai and Hong Kong markets.

In preparing for the IPOs, the government adopted four measures to improve efficiencies of the banks: capital injection, granting the banks approval to issue subordinated bonds to supplement their capital, disposal of NPLs through Assets Management Corporations, and introduction of foreign strategic investors (Okazaki, 2007).

**Table 4.** Restructuring Measures

<b>Bank</b>	<b>ICBC</b>	<b>BOC</b>	<b>CCB</b>
<b>Date of reorganization</b>	Oct. 28, 2005	Aug. 26, 2004	Sept. 17, 2004
<b>Capital injection<sup>a</sup>: Amount (RMB billion)</b>	124.0	186.4	186.2
<b>Capital injection: Date</b>	Apr 2005	Dec 2003	Dec 2003
<b>Insurance of Subordinated Bonds (RMB billion [date]<sup>b</sup>)</b>	35.0 [2005]	26.0 [2004], 34.0 [2005]	40.0 [2004]
<b>Disposal of NPLs (RMB billion)<sup>c</sup></b>	705.0	308.1	185.8
<b>Investment by Foreign Strategic investors (RMB billion)</b>	30.5	43.0	32.8
<b>Foreign Investors' Share in Capital as of June 30, 2006 (%)</b>	8.4	14.1	14.4
<b>IPOs: Capital Increase (%)</b>	44	46	36
<b>IPOs: Amount (RMB billion)</b>	173.2	110.0	74.6

Source: Okazaki, 2007

a Funding sources: Foreign exchange reserves (RMB 496.6 billion) and other public findings (RMB 18.0 billion). b Issued in the interbank market. c The MOF gave receivables to ICBC (RMB 246.0 billion) and CCB (RMB 65.5 billion) and waled the paid-capital of BOC (RMB 141.1 billion) and CCB (to doubtful NPLs).

<sup>8</sup> Before 1998, interest had to accrue to loans whether they were sound or impaired, except when the government agreed to suspend the accrual interest on particular impaired loans. From 1998 to 2001, the interest on loans 180 or more days overdue should cease to accrue on the business accounts of financial institutions.

Simultaneously, it sold bills to the four banks in amount of RMB 616.4 billion to offset the impact of the disposal.

During the process of reorganization, strategic foreign investment has been introduced, and the partial privatization has also spread to the state-owned commercial banks. Such examples include: on June 17, 2005, Bank of America finalized its transaction to buy a 9% stake in CCB; also in June the same year, Temasek reach a deal to pay US \$1.5 billion for a 5.1% stake; In September 2005, Royal Bank of Scotland and Temasek each signed a deal with BOC to buy its 10% stakes.

The foreign strategic investors were required to lock up their shares for three years. What they have brought to the 'Big Four' is far more than mere capital. Moreover, they provide staff training, risk-management assistance and guidance on internal control and corporate governance (Berger et al. 2005b).

One beneficial effect of public listing was the great change in the ownership structure, though the state ownership is still dominant one. Another favorable effect was the improvement of information disclosure. Foreign accounting companies were introduced to review the financial reports and the information was disclosed clearer and faster.

After the reorganization and being listed, the governance structure of the state-owned commercial banks has improved dramatically. Given the tumbling of the overseas stock markets, ICBC, CCB and BOC were ranked the top three in the world in 2009 in terms of market value. But it is way too early to claim these banks as among the best financial institutions in the world. They indeed have been more competitive with top world banks with regards to total assets and capital. But in terms of assets quality and profitability, China's banks still need further improvement.

The two profitability indicators, ROA (Return on Assets) and ROE (Return on Equity), have generally been improving since 2005 (see table 5). But the structure of profit source is still highly unbalanced. The profit of the banks rely heavily on interest from lending, in contrast, their fee business are under developed (see Table 6).



**Table 5.** Indicators for Profitability, 2005-2009.

	<b>ROAA</b>				
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>ICBC</b>	0.66	0.71	1.02	1.21	1.20
<b>ABC</b>	0.02	0.10	0.82	0.84	0.82
<b>BOC</b>	0.70	0.96	1.10	1.02	1.09
<b>CCB</b>	1.11	0.92	1.15	1.31	1.24
<b>HSBC</b>	1.56	1.62	1.99	1.34	1.18
	<b>ROAE</b>				
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>ICBC</b>	-27.92	13.65	16.21	19.34	20.13
<b>ABC</b>	1.32	6.40	-13.60	-23.55	20.52
<b>BOC</b>	13.06	14.44	14.37	14.01	16.60
<b>CCB</b>	19.49	14.99	18.38	20.82	20.81
<b>HSBC</b>	23.82	22.58	25.00	17.51	15.32

Source: BankScope.

**Table 6.** Share of Net Interest Profit and Net Fee and Commission to Net Operating Profit, 2004-2009

	<b>Net Interest Profit</b>					
	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>ICBC</b>	0.91	0.90	0.90	0.88	0.85	0.80
<b>ABC</b>	0.89	0.57	0.63	0.88	0.92	0.82
<b>BOC</b>	0.80	0.82	0.87	0.83	0.74	0.71
<b>CCB</b>	0.89	0.91	0.93	0.88	0.84	0.79
<b>HSBC</b>	0.54	0.57	0.58	0.52	0.53	0.47
	<b>Net Fee and Commission Profit</b>					
	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>ICBC</b>	0.06	0.06	0.09	0.15	0.14	0.18
<b>ABC</b>	0.09	0.12	0.12	0.13	0.11	0.16
<b>BOC</b>	0.08	0.07	0.15	0.19	0.18	0.21
<b>CCB</b>	0.06	0.07	0.09	0.14	0.14	0.18
<b>HSBC</b>	0.23	0.22	0.23	0.26	0.23	0.24

Source: BankScope

Basel Committee issued the International Convergence of Capital Measurement and Capital Standards: a Revised Framework (Basel II) in 2004. Just like the Basel I, the new framework is still to promote the adequate capitalization and improve risk management of banks, thereby strengthening the financial stability.

In response, Chinese large commercial banks, which have overseas operational entities, were required to implement Basel II by the end of 2010, with a three-year grace period. Small and medium-sized commercial banks were also encouraged to implement it on a volunteer basis.

## (2). Transformation of the Credit Cooperatives and Policy Banks

The first Urban Credit Cooperatives was established in Hebei Province in 1980. The establishment of such a type of institution was mainly to satisfy the funding requirements of those rapidly developing small- and medium-sized private enterprises. However, these cooperatives were not properly run due to lack of expertise and interference of interest groups. Massive risks accumulated: poorly regulated management, inefficient business operation, high non-performing asset ratio and weak risk management capability.

PBOC decided to carry out a purge of the urban credit cooperatives by merging them into city commercial banks before 1997. The number of urban credit cooperatives reached its height of 5000 in 1994-1995. The newly established 111 city commercial banks absorbed more than 2000 urban credit cooperatives within five years from 1998. At the end of 2008, there are only 22 urban credit cooperatives left in the country.

The merger of urban credit cooperatives into city commercial banks improved the management and reduced the risks. But unfortunately more banks credits went to large projects, while small-scale credit decreased sharply. Therefore, such reform made the small and medium-sized enterprises more difficult to obtain finance. This probably explained also the surge of informal financing.

Over time, demand for policy loans decreased as the government reduced its direct intervention in economic activities. The three policy banks were given new mission and face the transformation. The largest policy bank, the China Development Bank (CDB), is the first to be required to devise a modernized financial system and to convert into commercial bank, with special focus on mid- to long-term business. The reorganization has completed by the end of 2008.

The other policy bank, the Export-Import Bank of China (EIBC), faces new tasks of not only supporting China's export but also promoting the import to achieve the balance of international payments. EIBC also has an important mission of supporting the country's "go global" strategy by financing outward direct investment, overseas projects contract and economic and technological cooperation.

## (3). Introduction of Foreign Banks

Reform and development of China's financial system are associated and mutually promoted with the opening up to foreign financial institutions. In fact, foreign banks have been in China for more than a century. Since New China came into being, four foreign banks -HSBC, Bank of East Asia, OCBC Bank and Standard Chartered Bank-were kept operating in Shanghai.

With China's economic development and its banking industry reform, progressive steps were conducted to liberalize domestic financial markets towards foreign banks: from the coast to inland, from particular areas to the whole country, from foreign currency business to RMB business and from serving mainly for foreign residents to assisting domestic residents.

In comparison, the opening up to foreign non-bank financial institutions is more

prudent. It is not until China's entry to WTO that the country really started to put those financial institutions in the map of its national-wide reform. The Sino-foreign fund management joint venture and securities joint venture didn't witness its first establishment until 2003.

The development of foreign banks in China from 1980 to 2006, when the five years' transition period<sup>9</sup> ended and foreign banks entered into China in an all-round way, could be well-understood by dividing the period into three phrases. During the first period 1980-93, the predominant motivation of introducing foreign banks was to improve financial services provided for foreign invested enterprises and to create better investment environment.

The first foreign bank came to China after the reform began was the Export-Import Bank of Japan when it set up a representative office in Beijing in 1979. By the end of 1981, there had been 31 financial institutions with their representative offices in the country. While representative offices were useful, they were not commercially operational. In 1981, Nanyang Commercial Bank became the first foreign bank to establish a branch in mainland China.

Foreign banks were initially allowed to conduct business only in the four special economic zones-Shenzhen, Xiamen, Zhuhai, and Shantou. Later on, the qualified areas were gradually extended to coastal cities and central cities. By the end of 1993, foreign banks had established 76 operation-type financial institutions in 13 cities. Their total assets reached \$8.9 billion. In addition, the business scope was also enlarged to certain degree. Foreign banks operated foreign currency business mainly for foreign enterprises and foreign residents. Meanwhile, these institutions as well helped intensify the financial relationship between China and foreign countries by serving as consultants for foreign enterprises that might be interested in the Chinese market.

In the second period 1994-2001, China's opening-up pattern basically took shape. China enacted the first regulation on foreign banks-PRC foreign financial institution regulations- specifying the requirements for market access and regulatory standards. Hereto, foreign banks were operated in China in a more standardized and law-based manner.

China also further expanded the spheres of opening up from the coastal cities and central cities to the whole country. In other words, foreign banks could establish a branch in any city of China in name. Besides the foreign currency business, China opened RMB business to foreign banks in Shanghai, but the clients were still limited to foreign enterprises and foreign residents. By the end of 1997, compared with that in 1993, the number of operation-type financial institutions established by foreign banks doubled, amounting to 173, and the total assets of these institutions also tripled.

Affected by Asian Financial Crisis, from 1998 to 2001, the branch establishment and

---

<sup>9</sup> China entered the WTO in 11<sup>th</sup> December 2001. Since the opening up of the banking industry is progressive, the five years from 11<sup>th</sup> December 2001 to 11<sup>th</sup> December 2006 is called five years' transition period.

business expansion of foreign banks in China slowed down. The total assets of foreign banks in China accounted for 1.86% of the assets belonging to all financial institutions all over the country in 1998, while this number was 2.7% in 1997. To promote the development of foreign financial institutions, Chinese authority approved Shenzhen as the second city following Shanghai where foreign banks conducting RMB business was permitted. Besides, to solve the fund source of RMB business for foreign banks, foreign banks were also allowed to enter the national inter-bank lending market.

December 11<sup>th</sup> of 2001 was definitely a memorable date in the history of Chinese financial reform when China entered WTO. A series of steps and measures were taken by the government to fulfill the commitments made. For example, foreign banks were allowed to operate foreign currency business to all domestic or foreign clients in China which took effect right after the entry day, while the restrictions on their RMB business clients would be released gradually during the 5 years' transition period; foreign banks were no longer limited to conduct RMB business only in four cities-Shanghai, Shenzhen, Tianjin, Dalian, but were approved to do business throughout the country in a progressive manner; moreover, the national treatment was granted to foreign banks gradually.

The five years' transition period ended on 11<sup>th</sup> December 2006 when foreign banks could enter Chinese financial market in an all-round way. By the end of 2006, the number of operation-type financial institutions established by foreign banks has increased to 312, including: 14 wholly foreign owned and joint venture banking institutions registered in China and their associated 19 branches and subsidiaries; 200 branches and 79 sub-branches established by 74 foreign banks from 22 countries and regions in 25 cities of China. In addition, 186 foreign banks from 42 countries and regions had set up 242 representative offices in 24 cities of China.

By the end of 2009, foreign banks from 13 countries and regions had set up 33 wholly foreign owned and 2 joint venture banks, while banks from 24 countries and regions had set up 71 branches. Besides, 194 foreign banks from 46 countries and regions had set up 229 representative offices in China.

Despite the expansion of foreign banks, in comparison with the "Cry Wolf" in 2006, Chinese banks now are more confident in competing with foreign banks. According to the WTO agreement, China has opened up RMB retail banking market to foreign banks. But it seems that foreign banks don't have much competitiveness in the traditional credit business in China.

On one hand, it is difficult for foreign banks to obtain those large and high-quality clients, especially the SOEs. At present, the largest part of profit earned by commercial banks is still from the differences between the interest rates of loans and those of deposits. According to the revealed annual reports of the Big Four, more than 75 per cent of their net revenues should be attributable to from the net interest income. In comparison, the amount of loans offered by all foreign banks in China is only 720.4 billion Yuan at the end of 2009, accounting for merely 1.7% of total loans in various forms by all financial institutions.

On the other, foreign banks' hands and feet are bounded in collecting funds or absorbing deposits. To gain more deposits, foreign banks have to expand their branch network, which needs large-scale investment, so it is implausible for them to take this action especially when the current global financial crisis has starved their parent companies. Thus, so far foreign banks mainly rely on inter-bank market to satisfy their liquidity requirements.

The comparative disadvantages in credit businesses force foreign banks to attach more importance to intermediary businesses and investment banking businesses.

Usually, they convince customers to transform deposits to financial products and they gain profits from the intermediary businesses rather than net interests from the difference between loans and deposits. Such operations have once attracted a lot of China's individual high-end clients and various structural financial products pour in. However, the current financial crisis makes large quantity of those financial products suffer great loss, which further devastates the reputations of the foreign banks in China.

Hence, the foreign banks have to grab at a straw for investment banking business. Inspired by the "Go abroad" policy and the internal demand, more and more Chinese companies are full of enthusiasm about overseas mergers and acquisitions. During this process, substantive oversea financial services are in great need. In this regard, foreign banks have more resources and experiences compared with China's domestic banks. It is reported that investment banking fees reaches \$731 million in the first quarter of 2010 generated by Chinese enterprises going abroad. Thus, investment banking business has been the strategic high ground for those foreign banks.

Besides, foreign banks begin to cooperate with their China's counterparts in business, seeking for the win-win effect. They make use of the networks of domestic banks, while they support Chinese banks with management and R & D strengths in return.

In addition to the business cooperation, foreign banks and China's domestic financial institutions also conduct equity cooperation. By the end of 2008, Industrial and Commercial Bank of China, Bank of China, China Construction Bank and Bank of Communications have introduced 9 strategic investors; 24 small and medium-sized commercial banks have introduced 33 foreign strategic investors; 3 rural cooperative financial institutions have introduced 3 foreign strategic investors. The total attracted capital runs up to \$32.8 billion.

## **V. Developing the Financial Markets**

Influenced by ideology and constrained by low level of economic development, there was almost no financial market before the reform. In the early 1980s, some small state-owned and collectively-owned enterprises started to experiment with joint-stock system. Stock issuance and trading began to emerge. The government also started to issue government bonds in 1981. In the early stage of economic reform, China's financial markets took an extremely decentralized and disordered form. In the years followed, the central government tried to standardize and centralize the capital markets.

## (1). Stock Market Reform and Development

### *Evolution of the Stock Market*

The first stock was issued in 1983 in Shenzhen, followed by a mass of other small state-owned and collectively-owned enterprises. Stock issued in this period was more like the bond: issued at par, guaranteed principle and dividends, repaid when due.

During the second half of the 1980s, various financing and fund-raising activities emerged as fiscal and bank funds resources were not sufficient to meet all the financing needs. Small-medium sized state-owned and collectively-owned enterprises, in particular, were in constant thirty for funding. In 1986, Trust and Investment Corporation of Shenyang began to act as an agency of trading stocks and bonds. The trading market was very small, but it reflected the cry for setting up the secondary market.

In response, the government started pilot experiment of securities transfer and distribution in the 1986-1988 period. After that, Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) were established successively in 1990 and 1991.

The market, however, was particularly premature. The “8.10” incident shook the whole country in 1992.<sup>10</sup> Stock investors all over China went onto action as soon as they heard news that Shenzhen was to issue stocks. They rushed to the countryside to borrow identity cards because one identity card was entitled to buying only one stock warrant. But there was a mistake when the city government issued the IPO lottery table. The impatient people in long lines suspected that the stock warrants had been illegally possessed and distributed. Some attacked the city government, causing serious political and social instability.

Perhaps such event was not an isolated accident. After Deng Xiaoping's southern tour, spontaneous issuance of stocks and bonds spread the whole country both in small- and medium-sized enterprises and in large enterprises. There was an illusion that as long as adopting the joint-stock system, an enterprise could be invigorated; as long as issuing stocks, the construction funds would be secured; as long as buying stocks, people could make a fortune.

Such illusion and associated passion were widespread, but accordingly regulation and guide did not keep up the pace, leading to a cluttered market. CSRC was not established until November 1992, which was the beginning of unified supervision, uniform laws and regulations throughout the country.

The government from the very beginning exercised strict controls over the stock market, especially the IPO process, including selection of the companies, setting their prices and allocation. However, with development of the market and deepening of reforms, almost all of the initially designed, administrative and restrictive arrangements were replaced or reformed.

---

<sup>10</sup> On the 8<sup>th</sup> August 1992, some stock market investors attacked the Shenzhen municipal government, causing serious political and social instability.

The stock markets developed rapidly. The number of company listed in the stock market increased from only 10 in 1990 to 1781 in 2009. From 1993 to 2009, the total stock market capitalization increased from the less than 500 billion yuan to 32.7 trillion yuan at the peak in 2007. Trading value also went up even faster: after brief decrease in 2008, it reached a new high in 2009 at 53.3 trillion yuan (see Figure 10). Despite the rapid development, the potential is still huge, because China's total market capitalization, at 75 percent of GDP in 2009, is still relative low.

**Figure 11.** Market Capitalization of the Stock Markets: Total, Tradable and Share of GDP, 1993-2009

<FIGURE 11 HERE>

Source: Wind Info

Evolution of the stock market refers to not only growth of size of the market but also increase of different levels of markets and types of stocks. The listed companies in the main boards of SHSE and SZSE are mainly mature and large enterprises. In 2009, there were a total of 1700 firms listed. The small and medium enterprises (SMEs) board was opened in June 2004 within the main board SZSE to lower the entry barriers for SMEs. In early 2010, there were altogether 370 firms listed.

In 2008, the growth enterprise board (GEB) was officially launched, mainly for the newly established firms in the high-tech industries. Again, in early 2010, there were 28 listed companies.

A "third-tier market" ("Agency Share Transfer System") was established in 2001 to deal primarily with delisted firms and other over-the-counter (OTC) transactions. Since 2001, some publicly listed firms on both SHSE and SZSE that do not meet the listing standards have been delisted and the trading of their shares shifted to this market.

#### *Reform of the IPO Issuance System*

At the beginning, the government adopted a stock issuance mechanism with a strong "planning economy" feature. The central government controlled the total size of issuance while the local governments recommended companies for listing. The securities regulatory authorities examined quality and future prospect of the recommended companies and made detailed arrangements for issue sizes, prices and forms of issuance.

This approach reflected in part the social and economic reality at that time. Companies wanting to be listed rushed in crowd, and local governments all pushed in favor of their own companies. CSRC faced an excess demand for listing. But CSRS wasn't able to screen and examine all the companies. Therefore the authority was passed onto the local governments. This examination and approval system was in place for 10 years, beginning from 1991.

In March 2000, CSRC promulgated the new policy "Verification and Approval of Share Issue Procedures". As a result, the quota system was abolished. "Lead underwriter

recommendation system” and verification and approval system of stock issuing were put into place. The central idea was to increase responsibilities of intermediary institutions, to enforce information disclosure, to exert the independent verification role of the Issue Review Committee (IRC), and to determine the issuing price according to the negotiation result of the issuer and underwriter.

#### *Other Reforms*

Market access and withdrawal mechanisms are two wheels to keep the stock market in order. Both of them are essential. Through the withdrawal mechanism, managers of listed companies can feel the pressure from the market, which helps to eliminate opportunism behavior.

But there has been no withdrawal since the establishment of stock market in China until 1998. The regulatory departments started to make special treatment to listed companies who have suffered losses for successive 2 years by add “ST” to the stock name. But ST stocks are still tradable. The only difference is that the maximum rises and losses in one day are limited from 10% to 5%.

In 2001, CSRC issued “Suspending and Terminating the Listings of Loss-making Listed Companies Implementing Procedures”, which marked the official establishment of withdrawal institutions in China’s stock market. On April 4, “PT Shuixian” became the first terminated stock.

But the procedures relate only to those companies with losses for successive 3 years. It also does not definitely regulate that insolvent companies and companies who bear serious violations must withdraw.

The financial fraudulence of listed companies often came up in the past, and that Large shareholders taking the advantage of their control rights to encroach on the rights of small shareholders was even more common (Chen and Wang, 2005) .

Therefore, in order to improve the governance structure of listed companies, CSRC introduced the independent director system in August 2001, which required that listed companies should give full play to independent directors and emphasized there should be at least one professional accountant in the independent directors.

Theoretically directors of a company play a role mainly in decision-making management and decision-making control. Due to their independency from the company management, the independent directors can supervise company management more effectively relative to inside directors, and can also protect minority shareholders from being invaded by managerial opportunism (Fama and Jensen, 1983).

However, the independent director system doesn’t perform well in China. The protective effect of independent director system is weak (Zhang, 2006). And the effect of independent director proportion on the auditing quality is insignificant (Xiao, 2006).

One reason is that CSRC didn’t introduce independence in judgment of independent directors in terms of strategic decision making. So the experts’ and professionals’ knowledge and techniques aren’t made use of.



Another reason may be the functions of independent directors and supervisory boards are overlapped with regard to supervising. This causes the two institutions fighting each other for power or throwing the blame on each other.

One unique feature of the Chinese issuance was that the shares were divided into different types: state-owned shares, legal person shares, employee shares and common (traded) shares. The state-owned shares and corporate shares cannot be traded “temporarily”, in order to ensure the state control of joint stock companies. This led to the situation where equal shares enjoyed unequal rights. It also reduced available shares in the markets, which provided the opportunity for price manipulation.

In 1999 and, again, in 2001, the authorities attempted to reform the equity division problem by making the state shares and legal person shares tradable. Initially, such efforts seriously damped the stock prices since it meant possibly doubling or even tripling the volume of available shares in the markets.

At the end of 2004, the total market capitalization amounted to 371 billion Yuan, of which non-tradable shares accounted for as high as 68 per cent, and state-owned (legal person) shares accounted for 74 percent of the non-tradable shares (see Figure 10).

On April 29, 2005, the experiment of equity division started. On December 31, 2006, the number of listed companies that completed reform or started reform process was 1303, and aggregate values were about 6050.41 billion yuan, which accounted for 98.55 percent of total value of Shenzhen and Shanghai exchange markets. At that point the equity division reform has achieved the decisive accomplishment.

#### *Information Disclosure of Listed Companies*

The quality of information disclosure by listed companies has a direct bearing on many important issues, such as the efficiency of securities market and investor protection. Companies with normative information disclosure and high grade of transparency are more likely to be recognized by external investors (Madhavan 1995).

By increasing numbers of information disclosure, companies can lower the degree of information asymmetry, which makes potential investors more willing to invest, or reduces transaction cost in stock trading, and thereby increases liquidity of stocks and decreases companies' financing cost (Diamond and Verrecchia 1991; Kim and Verrecchia 1994).

However, the information disclosure quality of listed companies in our country was very low early in the development of capital market.

When capital market was in its infancy, the supply of stocks was limited, and so stocks as a scarce investment resource were in fierce contention. After buying stocks from the primary market, investors could get a higher capital gain from the secondary market: there is a premium in the secondary market due to scarcity. So even if this kind of investment was accompanied by relatively higher risk, the premium in the secondary market could still reach or even exceed the return rate that investors called for. Therefore, the quality of information disclosure was not the focus of investors' concern at that time.

On the other hand, when opportunities of equity financing were scarce, even though the degree of information asymmetry between listed companies and investors was very high, the willing to invest in listed companies was still strong, so high liquidity lowered the cost of equity financing. Thus, listed companies had no incentive to enhance information disclosure to reduce the cost of equity financing.

As the capital market developed, especially after the equity-division reform, increasing the quality of information disclosure, severely punishing those who violated the regulation, from the view of regulators, became an important way of protecting investors, improving corporate governance of listed companies, raising the quality of listed companies and creating a fair, just and open market of investment and financing.

So CSRC started a special activity of improving corporate governance of listed companies in 2007. On February 1, 2007, CSRC issued “Administrative Measures on Information Disclosure by Listed Companies”, which aimed at enhancing information disclosure, protecting investors’ legitimate rights and interests, raising the quality of listed companies and promoted the development of stock market in a sound way.

In 2008, to further improve corporate governance of listed companies, CSRC deepened the activities started in 2007, which focused on three key aspects: (1) regulate substantial shareholders and the actions of their real controllers to enhance the independence of listed companies; (2) consolidate the achievement on pay-off debt, set up a mechanism to prevent large shareholders to impropriate the funds of listed companies, and increase the extent of investigating and dealing with large shareholders impropriating the company’s funds on purpose; (3) strengthen the mechanism of internally investigating, collecting and revealing information to further regulate the actions of listed companies.<sup>11</sup>

## (2). Development and Reform of Other Capital Markets

### *Money Market*

China’s money market mainly includes note market, repo market and interbank lending market. The repo market is the main part of the money market, and the interbank lending market is a key for the form of China’s Benchmark interest rate. Hence, we will talk about these two markets more.

The interbank lending market was the first of these three to be established. In 1984, with the PBOC began to specialize in central bank function, it encouraged the financial institutions to take advantage of different fund cost in various institutions, places and time and to conduct inter-bank lending. After that, a formal regulation was formulated in 1986, and inter-bank market began to develop. From 1992 to 1993, arbitrary interbank lending phenomenon was serious. Large funds were speculated in real estate, fix assets, development zone project and stocks. Some intermediary institutions raised interest rate unauthorized and some commercial banks severely overloaded in inter-lending

---

<sup>11</sup> Source: the website of CSRC, CSRC Notice: Regulate information disclosure of listed companies and reduce insider dealing, June 25, 2008

passing by the control of PBOC.

In order to fundamentally eliminate disorder in the interbank lending markets, the national unified inter-bank lending market was set up in 1996, and the inter-bank offered rate was liberalized at the same year. So, China inter-bank offered rate (CHIBOR) was formed.

The repo business started in 1991, when Shanghai Stock Exchange and National Securities Trading Automated Quotation System (STAQ system) launched. Then, the first repo transaction was conducted between the two members of STAQ system in September that year. SHSE introduced repo transactions in 1993, and then the market scale started to expand rapidly. The trading volume reached 300 billion Yuan in 1994. The short buying and selling was widespread after 1993 and the repo business became the way to inter-lend, absorb deposits, extend loans and escape from size control of the PBOC. Hence, “8.8 notice”<sup>12</sup> was announced that all the buy-back side must possess 100% their own bonds. To further regulate the repo business, in 1997, PBOC required all the repo transactions should be conducted in the national unified inter-bank lending market, and all the commercial banks should stop repo business in SHSE and SZSE.

To build formal channels and mechanisms of financial flows between money market and capital market, qualified securities companies and fund management companies were allowed to enter the inter-lending market since 2000. Thus, the money market gets onto the normal track of development. From 1996 to 2009, trading volume the interbank lending market has increased by about a hundred times (see Figure 11). Most of the repo transactions take place in the interbank market, the trading volume of which reaching seven trillion Yuan.

**Figure 12.** Trading Volume of Interbank Lending Market

<FIGURE 12 HERE>

Source: Wind Info.

The interbank lending market is the most important money market, of which the breadth and depth directly influence the quality of China’s benchmark interest rate. With the set up of the national unified inter-bank lending market in 1996, the inter-bank offered rate was liberalized, and China inter-bank offered rate (CHIBOR) was formed.

But its calculation method was born congenitally deficient– it was calculated based on the real interest rate of inter-bank financing trade, but in fact inter-bank trades were quite few, so Chibor naturally was not able to represent the interest rate of the whole market.

Thus then, Shanghai Interbank Offered Rate (SHIBOR) was introduced on January 4, 2007. Shibor was the average of all banks’ quotations, which was precisely the same with

---

<sup>12</sup> PBOC, Ministry of Finance and China Securities Regulatory Commission jointly announced “Reaffirming further regulate on the related problems of securities repo business” in 8<sup>th</sup> August in 1995.

the internationally-accepted Libor, and was then the real indicator of the China's market.

Shibor was an arithmetic mean interest rate calculated on the basis of the interbank offer rate quoted by quoting group consisting of many high credit rating banks, which was a kind of simple interest rate, unsecured rate and wholesale rate. Currently, the varieties of Shibor publicly offered were overnight, one week, two weeks, one month, three months, 6 months, 9 months and one year rate. The quoting banks of Shibor are primary dealers in the open market or market makers in the foreign exchange market, who were relatively more active in RMB trading market and the information of whom were revealed more sufficiently. On every trading day, based on quotations of banks, after the highest and lowest quotations were eliminated, each term variety of Shibor was calculated as the arithmetic mean of the rest of the quotations, and issued to the public at 11:30 am.

But Shibor has the same defect as Chibor: it doesn't reflect market interest rate, in other words, people trading government bonds would use it as reference, but pricing system is totally different in folk society. As a matter of fact, the correlation between Chibor and Shibor reaches as high as 0.9986 (see Figure 12).

**Figure 13.** Over Night Offered Rate of Chibor and Shibor, 2006-2009 (%)

<FIGURE 13 HERE>

Source: Wind Info

#### *Bond Market*

Since the issuance of treasury bonds was restarted in 1981, China's bond market has developed into a united and hierarchical market structure, including: inter-bank bond market, exchange market and over the counter market.

The inter-bank bond market is the main body of the bond market, accounting for 90% (see Figure 10) market shares in terms of both trading volume and stock value, in which the transaction is implemented by bilateral negotiations and settled trade by trade. The inter-bank bond market was set up in 1997 when all the commercial banks under the requirement of PBOC exited from the exchange market.

The varieties of bond in China include: Treasury bonds issued by Ministry of Finance guaranteed by the state, financial bonds issued by banks or other non-bank financial institutions, Central bank bills, Short-term financing bills issued by firms in inter-bank bond market with term of no more than one year, Firm bonds issued by firms (mainly state-owned), Corporate bonds issued by joint stock corporations, Mid-term bills issued by firms or corporations with term of 3-5 years and other (like Asset-backed Bonds, Foreign Bonds and Convertible Bonds).

Among all the varieties of bonds, Treasury bonds, financial bonds and central bank bills are the largest three, accounting for 96% of all the bonds in average from 1991 to 2009. Treasury bonds have been the earliest and main form of China's bonds before 1995. Financial bonds then developed gradually. But starting from 2004, the successor excels

the predecessor: Central bank bills become the predominant bond, surpassing Treasury bonds, and account for more than half of the total bonds (see Figure 13). The extremely rapid development of Central bank bills is associated with the substantial inflow of foreign exchange since 2004.

**Figure 14.** Share of Different Types of Bonds in Total Issuance, 1991-2009

<FIGURE 14 HERE>

Source: Wind Info

The dominant share of the government bonds or bonds with government background<sup>13</sup> means that Firm bonds are under-developed and financing channel by issuing firms bonds isn't smooth. In spite of the increasing issuance of firm bonds, the share in total is still small: the average from 1991 to 2009 is less than 2%; the peak doesn't exceed 5%.

The underdevelopment of Firm bond market is not peculiar to China. Actually, it's a common phenomenon and problem in the whole Asia. It's certainly associated with the significant role played by Asian government. Besides, as for China, the lack of a sound accounting/auditing system and high-quality bond-rating agencies, in addition to low creditor protection resulted in the insufficient demand for Firm bonds. Also, as have mentioned above, the absence of market-based, non-governmental benchmark interest rate is another reason.

#### *Derivative Market*

Risk associated with returns exists objectively in the financial market. Derivative market exhibits excellent advantages in price discovery and risk transfer. It is an ideal and advanced risk management tool. The beginning of commodity futures in China was earlier than that of the financial derivatives, which started actually in 2005. Although some of the commodity futures exchanges have been comparable to their leading world counterparts, the whole derivative market, especially the financial derivatives, is under-developed.

Derivative mechanism was introduced in commodity transactions earlier than in financial products. On October 12, 1990, China Zhengzhou Grain Wholesale Market introduced futures trading based on spot trading, and became the first commodities spot trading market in China.

After that, local governments and departments started various kinds of futures trading market one after another without unified and uniform management driven by huge interests. Up to the second half of 1993, there are more than 50 futures trading market and nearly 1000 futures brokerage institutions in all parts of the country: the construction of futures market rushed into mass action and pell-mell development at one time.

Thus, at the end of 1993, The State Council started a clean-up and rectification movement in futures trading markets. At last, 15 futures trading markets was

---

<sup>13</sup> More than half of financial bonds are Policy Financial Bonds.

determined as experimental trading markets and many varieties of futures trading was ceased as well.

In 1998, the second clean-up and rectification movement was started, the 15 futures trading market were compressed and merged into 3 markets - Shanghai Futures Exchange (SHFE), Zhengzhou and Dalian commodity Exchange (ZCE and DCE) - and varieties of futures trading were reduced from 35 to 12.

Trading volume of the three commodity futures exchange enjoy rapid growth since China's entry to WTO (see Figure 14). Trading volume in 2003 was three times of that in 2002 on average. SHFE is the largest one, followed by DCE and ZCE, and it is one of the three world's price centers of copper futures. DCE has become the world's second largest agricultural products futures market by the end of 2009 (second to CME of U.S)

**Figure 15.** Trading Volume of Three Commodity Futures Exchange, 1998-2009

<FIGURE 15 HERE>

Note: EXPLAIN ZCE DCE SHFE

Source: Wind Info

Generally, there are three varieties of financial derivatives in China, they are: interest rate derivatives, exchange rate derivatives and stock derivatives, in which, the former two are in inter-bank market, the last is in exchanges. All of them are launched since 2005.

The introduction of exchange rate derivatives in China is actually in response to the request of foreign exchange reform in 2005.

Thus, in August that year, PBOC formally introduced RMB foreign exchange forward transactions to develop foreign exchange derivatives and thereby satisfy the needs from economic agents in the country to avoid foreign exchange risk. It is the first foreign exchange derivative in the inter-bank foreign exchange market.

A year later, On April 24, 2006, RMB foreign exchange swap transactions were formally introduced by China Foreign Exchange Trade System (also known as the National Inter-bank Funding Center). The first order was signed between Bank of China and the Export-import Bank of China.

As for the interest rate derivatives, on October 8, 2007, PBOC issued a public notice, which decided to introduce FRA (Forward Rate Agreement) in inter-bank bond market. Subsequent to the experiments of bond forward trading in June 2005 and RMB swap trading in February 2006, this is another important measure to develop inter-bank bond market, improve the risk-sharing function of the market, and speed up the process of interest rate liberalization.

There financial derivatives start late but enjoys rapid growth. In 2008, the trading volume of RMB foreign exchange swap transactions increased by nearly 40% compared to last year. The total value of the year was as much as 443 billion US dollars, increasing 37.3% compared to last year. Four varieties were traded: USD/CHY, HKD/CHY, JPY/CHY and EURO/CHY, and the trade term were concentrated on those less than 3 months

(including overnight), among which the turnover of overnight US dollars swap was 190.8 billion, accounting for 43.3 of the total value, increasing by 3 percentage point compared to last year.

The volumes of interest rate swap increased significantly in 2008: the notional amounts of all RMB interest rate swap transactions in this year reached 412.2 billion, increasing by 90.1% compared to last year. The one-year and less than one-year transactions were relatively more active: the notional amounts were 225.6 billion, accounting for 54.7%. The reference rates at the floating end of RMB interest rate swap included Shibor, 7-day repo rate, and one-year term deposit rate, the volumes related to which were 89.9 billion, 295.5 billion and 26.8 billion Yuan, accounting for 21.8%, 71.7% and 6.5% respectively.

The turnover of bond forward all over the year was 500.3 billion in 2008, increasing by 98.8% compared to last year. The transaction of 7-day bond future product was most active with a turnover of 374.8 billion, accounting for 74.9% of the total turnover value. Central bank bills and policy financial bonds dominated in the bond forward market, and their turnover accounted for 93.5 of the total value.

The only variety, of which trading volume was in decline in 2008, was RMB foreign exchange forward transaction. Its turnover decreased by 20% compared to last year. The total value was 17.4 billion US dollars, decreasing by 23.7% compared to last year.

The initial stock derivative is warrant, which was introduced in 1999. But at the end of June 1996, warrant trading was ceased since the government couldn't put up with the enthusiasm of speculators. No new warrants were issued in next 9 years. Until 2005, the warrant market was reopened, and the issuance of Bao Steel warrant marked a new beginning.

The introduction of warrant is favorable toward improving the structure and function of the market. A mature securities market should have not only basic financial products, such as stocks and bonds, but also structural products, such as LOF (Listed Open-Ended Fund) and ETF (Exchange Traded Fund), and derivatives, such as stock index options and futures.

China's securities market is in lack of financial derivatives, so in fact it is a one-sided market, which is detrimental to satisfy the various needs of investors, enhance the efficiency of capital market and improve the resource allocation.

The introduction of warrant thus provided opportunities for creating new financial derivatives market, supplying diversified investment tools, facilitating price discovery and optimizing resource allocation.

However, Warrant has been notorious in China. Due to low issuance and imperfect systems, warrant was speculated on by the speculative investors one after another with great passion. After the rush in 2006 and 2007, the number of warrant issued decreased from nearly thirty in 2006 to no more than five in 2010, and the market cap is also shrinking (see Figure 16).

**Figure 16.** Size of Warrant Market, 2005-2009

<FIGURE 16 HERE>

Source: Wind Info

In comparison with the diminishing warrant size, Stock Index futures are on the rise. SHSE and SZSE 300 Stock Index was published in 2005. Following the establishment of China Financial Futures Exchange (CFFE) in 2006 at Shanghai, the simulation trading in SHSE and SZSE 300 Stock Index was started. Subsequently, the first financial futures IB business qualification was released to Galaxy Security Company in 2007, and 111 member of CFFE was approved by the end of 2009.

After the revised stock index futures' contracts and implementation details were published in February 2010, CFFE began to accept the account application for stock index futures trading. SHSE and SZSE 300 Stock Index Futures finally started trading in April 2010. Its trading volume in April reached 1373 Billion Yuan and increased three times in the next month, amounting to 4710 Billion Yuan (see Figure 17).

**Figure 17.** Trading Volume of Stock Index Futures, April-September, 2010

<FIGURE 17 HERE>

Source: CFFE Website

### (3). Introducing Foreign Investors

To attract more international capital, China launched Renminbi Special Shares (B shares, also called domestically listed foreign investment shares) pilot at the end of 1991. B share was designated par value in RMB, subscribed and traded in USD or HKD, and its investor was foreign legal or natural person.

B share was listed in mainland which actually brought inconvenience for overseas investors. Afterwards, the pace of inside enterprises going to overseas listing accelerated. In 1993, the first mainland entity became listed in Hong Kong and H share formed. In 1994, the first mainland entity went listed in New York and N share formed. In 1997, the first mainland entity listed in London and L share formed.

The overseas listing of mainland entities largely reduced the function of B share. The regulator suspended the issuance of B share in 2000. The market was restored in 2001 when domestic residents were allowed to open B share accounts using their legal holdings of foreign exchange. For a time, large quantities of money flocked into the B-share market. But after a while, the B share market went low.

**Figure 18.** Number and Capital Raised of B Share and H Share

<FIGURE 18 HERE>

Source: China's financial Yearbook

When China entered the WTO, the commitments made in opening up the securities industry included: foreign securities institutions could conduct B share transactions directly; resident offices in China of foreign securities institutions could become special



member<sup>14</sup> of all the Chinese stock exchanges; foreign financial institutions was allowed to set up joint venture fund management company, but the proportion of foreign investment should not exceed 33 per cent and 49 per cent in three years after the entry; foreign financial institutions was allowed to set up joint venture security company, but the proportion of foreign investment should not exceed one-third within three years; the joint venture companies could, not through Chinese intermediaries, engaged in the underwriting of A shares, underwriting and trading of B shares and H shares, and promoting fund. By the end of 2006, China has fulfilled all the commitments.

The first Sino-foreign fund management joint venture, China Merchants Fund Management, was founded on 12<sup>th</sup> January 2003 in Shenzhen. And the first Sino-foreign securities joint venture, China Euro Securities, was established on 25<sup>th</sup> April the same year in Beijing.

By the end of 2009, there are 9 Sino-foreign securities joint ventures, 34 Sino-foreign fund management joint ventures, in which foreign ownership of 16 foreign Sino-foreign fund management joint ventures has reached 49 per cent. SHSE and SZSE have 3 special members each, and have 38 and 22 foreign securities institutions conducting B share transactions directly, respectively. In addition, 8 foreign exchanges have set up representative offices in China, 160 foreign securities institutions are allowed to set up representative offices in China.

To achieve an orderly, secure opening up of the security market, China decided to introduce Qualified Foreign Institutional Investors (QFII) since 1st December 2002. The QFII should entrust domestic commercial banks to keep custody of their assets, entrust domestic securities companies to carry out securities trading operations in China, and invest in approved quota. To become QFII, they also have to meet certain standards (see Table 7).

**Table 7: Requirement of Becoming QFII**

<b>Foreign Investor</b>	<b>Requirement</b>
<b>Commercial Banks</b>	Total Assets within top 100 in the world in the most recent fiscal year The security assets managed not less than 10 billion USD More than five years experience in asset management business.
<b>Mutual Funds</b>	The security assets managed not less than 5 billion USD in the most recent fiscal year.
<b>Insurance Companies</b>	Established more than 5 years The security assets held not less than 5 billion USD in the most recent fiscal year.
<b>Security Companies</b>	More than five years experience in security business. Paid-up capital not less than 10 billion USD

<sup>14</sup> China's stock exchanges takes up the membership system and all the securities companies qualified to engage in securities brokering must be the member of the exchanges. Foreign securities companies could apply to become the special member of the exchanges. But the authority has some limitations compared to the ordinary member.

The security assets managed not less than 10 billion USD in the most recent fiscal year.

Established more than 5 years.

**Other**

The security assets held or managed not less than 5 billion USD in the most recent fiscal year.

---

UBS, Nomura Securities became the first QFII on 27<sup>th</sup> May 2003. UBS took the lead to place an order on 9<sup>th</sup> July 2003, indicating the formal entry into the market of QFII. By the end of that year, 10 QFII and 1.9 billion USD have been approved.

By the end of 2009, 94 QFII has been approved, including 49 fund management institutions, 21 commercial banks, 11 securities companies, 2 insurance companies and 11 other institutional investors. Their total assets amount to 289.9 billion Yuan, of which 237 billion Yuan is in the form of securities assets, accounting for about 82 per cent. QFII float capitalization accounts for 1.4 per cent in total A share capitalization.

At the time of bringing in foreign investors, the regulator also began to conduct the domestic financial institutions going out to seek for development. In April 2006, PBOC announced to allow Qualified Domestic Institutional Investors (QFII) to pool capital in foreign exchange from domestic institutions and individuals for overseas investment under an unspecified quota system.

The first QDII products for individual investors, Hua An International Balanced Fund, was formal launched in September 2006, raising funds up to 197 million USD. By the end of 2009, China Securities Regulatory Commission has approved 31 fund management companies and 9 security companies to become QDII. 10 QDII funds and one asset management plan has set up, of which the net assets reach 73.8 billion Yuan. By the end of 2009, China Insurance Regulatory Commission has approved 23 insurance institutions to become QDII, and the approved investment quota add up to 15.5 billion US dollars.

(4). Diversified Market Participators

One important indicator of the maturity of a country's security market is the dominance of institutional investors in comparison with individual investors. There were almost no institutional investors in China until 1998, when two closed-end funds with size 2 billion RMB each, Guo Tai and Nan Fang were established. The market was so speculative at the beginning that China Securities Regulatory Committee (CSRC) investigated and rectified the fund industry thereafter.

From 2000 on, CSRC put forward the "supernormal development of institutional investors", and took it as an important measure to improve the investor structure of the capital market. And then, insurance company, social security fund, Qualified Foreign Institutional Investors (QFII) and other institutional investors<sup>15</sup> were also allowed to enter the security market.

---

<sup>15</sup> Including: Banking financial institutions, Trust and investment companies, enterprise group finance companies, enterprisers and corporate legal person

With the support from policy and the advantages of their own, institutional investors have experienced a rapid development since the new century. By the end of 2009, there are 61 fund management companies and 502 funds with about 3 trillion fund shares. The ratio of funds in floatable market capitalization reaches 29% in comparison with 1.81% in 1998. The number of security companies also increases from the initial 3 to 107 in 2009 and their total assets amount to 2 trillion Yuan compared with 3 billion Yuan at the beginning. There are 230 insurance companies now in China. Their total assets come up to 3.4 trillion Yuan, of which 20% is allowed to invest in security market. The ratio is 5% at the beginning. With the first QFII launched in 2005, there are 89 QFII approved by the end of June 2010, total accumulated quota reaching 17.72 billion USD.

Therefore, institutional investors have gradually replaced individuals to become the main investors in the market. In 1999, the market scale of all institutional investors in total floatable stock market capitalization was only roughly 30%. The figure increased to 49% in 2007, and further expanded to 64% in 2009. The rapid development of institutional investors is favorable to stabilize the market, induce middle and small investors toward mature and rational, promote financial innovation and improve market efficiency.

## **VI. Opening of Financial Markets and the Capital Account**

The previous chapters have dealt with issues relating to domestic financial reform in China. However, financial reform also has an external element. External financial liberalization or financial openness can be defined as the removal of barriers to the free flow of capital between countries (Eichengreen et al., 1998). At least in theory, economists have traditionally regarded financial openness as a means to promote economic development and maximize national wealth (Makin 1994).

Financial opening impacts development and wealth for two primary reasons. First, access to foreign capital can promote domestic growth by allowing a country to invest more than it saves, or import more than it exports. Second, it can increase the efficiency of investment by allowing funds to reach those promising projects that yield the highest rate of expected return on an international scale.

However, the experience in many developing countries has shown that these benefits do not come automatically. As evidenced by the East Asian crisis, financial openness has frequently coincided with an unsustainable increase in foreign debt and domestic consumption, a rash of unproductive investment and sharp fluctuations in exchange rates, equity indices and asset prices (Diaz-Alenjandro 1985; McKinnon and Pill 1996).

A modeling exercise by McKibbin and Tang (2000) tried to gauge the consequences of China undertaking rapid external financial liberalization. They shows that when financial openness coincided with investment confidence in the Chinese economy, large capital inflows resulted and investment and real GDP were left permanently higher. However, even in this optimistic scenario, the real and nominal exchange rate appreciated close to 50 percent, crowding out net exports and leading to deterioration in the current account position of nearly 4 percent. In the alternative scenario where

financial openness was followed by a loss of confidence in Chinese financial reforms, the predicted capital outflow was severe, causing consumption and investment to be below the level that would have been achieved if no financial openness had been undertaken.

Taking into account these potential dangers, the process of financial openness in China as a means to promote economic development must be evaluated carefully. The impact on the exchange rate of overly exuberant investors following financial openness in successful developing economies has already been discussed at length by McKinnon (1993). A large and rapid increase in the real exchange rate can in itself trigger a reversal of confidence as the current account position worsens and the sustainability of economic growth begins to be questioned.

### (1) Exchange Rate Reform

#### *A Brief Review of Exchange Rate Reform*

Since the reform period began in 1978, the exchange rate has become increasingly relevant as China's trade, investment, and general integration with the global economy has steadily increased. Now with China firmly in a post-WTO accession era, the exchange rate as an economic variable, indicator, and tool stands to become even more important and critical to China's growth and stability. The following outlines the major events and characteristics of the evolution of China's exchange rate system since 1981.

**Table 8.** The Process of Exchange Rate Policy Reforms in China

<b>1/1981</b>	<b>A multiple rate structure is created with different exchange rates for different trade-related foreign transactions. The Foreign Trade Rate is fixed at 2.8</b>
<b>1/1985</b>	The multiple rate structure is unified into a single Effective Rate. Firms are allowed to retain a portion of their FX earnings based on a retention quota.
<b>1/1986</b>	The Effective Rate for trade is put under a "controlled float" based on balance of payments and costs and rates of competitors, but it was effectively fixed at 3.72 from 1986-1989, and devalued twice in 1989 and 1990 followed by a period of frequent adjustments.
<b>11/1986</b>	A market driven Foreign Exchange Swap Rate is created, forming a second tier exchange rate allowing foreign investment corporations and SEZs to trade currencies
<b>1988</b>	All firms with retention rights are allowed to participate in the FX swap markets

Between 1988 and 1993, a dual exchange rate system emerged, whereby the official fixed exchange rate coexisted with a market determined rate in special foreign exchange markets called swap center. With the sharp depreciation of the market-determined rate in the early 1990s, the fixed official rate became increasingly overvalued. Thus, in 1994, the official rate was devalued and unified with the market rate in the swap centre. At the same time, the exchange rate policy was officially changed into a managed floating, although the RMB has been de facto pegged to the US dollar since 1995.

The unification of dual exchange rates in 1994 marked the official beginning of the managed floating exchange rate regime. The unification of dual exchange rates into a

single exchange rate regime is worth mentioning because it put an end to the coexistence of official exchange rate and the swap market exchange rate which traded foreign exchange in the retention system.

When the dual exchange rates were unified, the RMB to dollar exchange rate adopted the swap market exchange rate of 8.7. This reflected market fundamentals and the need of supporting exports to mitigate the shortage of foreign exchange reserve. The nominal RMB to dollar exchange rate appreciated to 8.3 yuan per dollar, or by about 5 percent between the beginning of 1994 and 1997 when the financial crisis was at its worst in Asia. This proves that RMB exchange rate was fluctuating and floating, reflecting the characteristics of a managed floating exchange rate regime.

The Asian financial crisis in 1997 caused a slowdown in the improvement of managed floating exchange rate regime. After June 1997, as the crisis deepened, some Asian currencies depreciated by a large margins. With Chinese export seriously affected, there were strong domestic opinions calling for RMB's depreciation. If it took place, it would be understood by various parties. Yet, almost all countries and international organizations worried that a weaker RMB would be followed by a new round of competitive depreciation. In order to prevent the further contagion of the crisis, and preserve economic and financial stability in Asia, China made the announcement that the RMB would be not be depreciated, its floating range would be narrowed, and its exchange rate would be kept stable around 8.28 yuan to one dollar.

As the Asian Financial Crisis ended, China has been more active on resuming and improving the managed floating exchange rate regime at an opportune time. Facing new situations after China's accession into the WTO and sluggish global economic growth after the 9/11 attack, the range for RMB exchange rate narrowed for a fairly long time to reduce uncertainties and maintain the continuity of RMB exchange rate policy. This measure, however, is ad hoc rather than a long-term institutional arrangement.

The exchange rate regime reform in 2005 was the continuation of the reform in 1994. The essential role of a stable and healthy financial system in preventing and addressing crisis was fully recognized in the wake of the Asian financial crisis. Due to large amount of non-performing loans, the four state owned commercial banks have accumulated large operational risks. In this context, the stock reform was first started in large state-owned banks in the summer of 2003, which would improve their ability to adapt to the floating exchange rate regime and to provide companies with better risk management services. As a result, the deployment of reform in large financial institutions, which is the foundation for exchange rate regime reform, was completed by July 2005.

Meanwhile, the domestic pricing mechanism of resources was gradually reformed; reform in enterprises, particularly in state-owned enterprises (SOEs) proceeded smoothly; a group of large enterprises were listed in domestic and overseas markets; restructuring efforts aiming at better resources allocation was strengthened; and corporate governance and finance management were enhanced. Progresses in these areas reinforced the foundation for exchange rate regime reform on the micro level.

Because of all these developments, it was believed that it was the right time to further reform the exchange rate regime. On July 21, 2005, China improved the managed floating exchange rate regime by moving into a managed floating exchange rate regime based on market supply and demand with reference to a basket of currencies.

#### *Consequences and Progress of exchange rate regime*

A stable exchange rate via pegging to the US dollar has been an important element of China's development strategy in the past decades. In principle, an exchange rate peg can provide an essential monetary anchor for price stability by linking domestic monetary policy to the rate of inflation of a large, non-inflationary economy. Obstfeld (2006) argues that, historically, this has been an important benefit of the RMB's peg to the US dollar in China, where the link between monetary instruments and targets is weak and unstable, the reliability of economic and financial indicators for policy-making is questionable and financial markets are relatively thin. China has had a de facto fixed exchange rate regime since the 1980s. However, until the mid-1990s, monetary policy remained largely independent of the exchange rate and the RMB had to adjust frequently to accommodate relatively high domestic inflation and absorb competitiveness losses (see Figure 19)

#### **Figure 19.** Exchange Rate, CPI and GDP Growth during the Reform Period

<FIGURE 19 HERE>

**Data source:** CEIC

Whether it has also promoted external trade in the context of China's so-called "export-led" growth model is still open to debate. According to one argument, the peg has not led to trade creation as it has not brought about exchange rate stability in effective terms. For example, the large swings have been observed in both the nominal and the real effective exchange rate (see Figure 20). Between 1994 and 1997, the real effective exchange rate of the RMB appreciated sharply because of the implementation of exchange rate reform and monetary policy. With the taming of inflation in the late 1990s, the REER of the RMB changed mostly on account of movements of the US dollar against the currencies of major trading partners, such as the euro and the Japanese yen.

#### **Figure 20.** Nominal Exchange Rate and NEER and REER

<FIGURE 20 HERE>

**Data source:** CEIC

However, it is already acceptable that the large amount of accumulated current account surplus implies the undervaluation of RMB (see Figure 21). The distorted exchange rate reduces the cost of domestic goods and in turn, raises the competitive power in the international market. Goldstein and Lardy (2006) applied the "underlying balance" approach to evaluate the misalignment of RMB and concluded that China's undervalued currency had contributed to growing trade surplus and, at least in some years, to very large portfolio capital inflows, which appeared motivated by an expectation of appreciation.

**Chart 21.** China's Current Account Balances, 1986-2009 (% GDP)

<FIGURE 21 HERE>

Source: CEIC Data Company.

Huang and Tao (2010) propose an alternative hypothesis: asymmetric market liberalization and associated cost distortion. This unique reform approach was the fundamental cause of both extraordinary growth performance and growing structural imbalances during the reform period. They argue that effective policies dealing with external imbalance should be a comprehensive package, centered on further liberalization of factor markets. Exchange rate policy should be an important part, but exclusive focus on the currency could be counter-productive.

*Formation of Market Mechanism*

Market supply and demand has an increasingly important role in determining the exchange rate. Following the liberalization of the RMB current account in late 1996, and with increasing channels for capital flows such as direct investment, portfolio investment and cross-border financing since 2001, foreign exchange supply and demand has improved, facilitating trade and investment, and making the holding and use of foreign currency more convenient. The role of supply and demand is becoming increasingly important in the foreign exchange market.

The foreign exchange market mechanism has improved. Before 1994, the RMB exchange rate was determined both by the authority and the swap market. Now it is determined in the interbank foreign exchange market through OTC transactions and supported by market makers. As the foreign exchange market grows rapidly, the role of market participants in determining the exchange rate central parity has been increasing. In response to the diversified trade and investment structure, the exchange rate regime is with reference to a basket of currencies, rather than pegging to the US dollar.

*Exchange Regime reform to be Continued*

Adopting a managed floating exchange rate regime is an inevitable choice for China to deepen reform and opening-up, and adapt to the new pattern of development and opening-up after China's accession into the WTO. In line with the scientific approach to development, this is a choice consistent with China's economic development level, improvement in market-based institutional arrangements and financial regulation and enhanced resilience of the corporate sector. Continued efforts will be made to implement the regime.

The regime is essential for economic restructuring and the optimization of resource allocation. A managed floating exchange rate regime will enhance the efficiency of resource allocation, adjust the relation between domestic and foreign prices in a flexible manner, channel resources to the sectors that are driven by domestic demand such as the services sector, promote industrial upgrading, transform the pattern of economic development, reduce trade imbalances and over-reliance on export, enable domestic demand to play a more important role in economic development and thus

promote sustainable and balanced economic growth.

We need such a regime to strengthen and improve macroeconomic policy-making. Current economy is running with problems such as large BOP surplus, rapid growth of foreign reserves, excess liquidity, inflation and heightened pressures from asset bubbles. Meanwhile, growing magnitude of capital flows has posed challenges to the independence and flexibility of monetary policies. Given the impossible trinity of achieving monetary policy independence, fixed exchange rate and free capital flow in an open economy, a managed floating exchange rate regime will help enhance the protectiveness and capability of macroeconomic management and the effectiveness of monetary policy.

A rigid exchange rate regime is not responsive to crisis and may even trigger monetary and financial crises. According to international experiences, prolonged BOP imbalances and peg to a single currency by a medium- or large-sized economy can hardly sustain, and may increase its vulnerabilities to crises. A rigid exchange rate has been an important contributing factor to the Mexican financial crisis in 1994, Asian financial crisis in 1997, Brazilian financial crisis in 1999 and Argentine financial crisis in 2001. In addition, a fixed exchange rate is an easy excuse for trade friction and protectionism. Thus, it is necessary for large countries to have flexible exchange rate policy. China should continue to improve the managed floating exchange rate regime.

On June 19, 2010, the PBC announced to further reform the RMB exchange rate regime based on measures taken in 2005. According to the announcement, continued emphasis will be placed to reflecting market supply and demand with reference to a basket of currencies and the exchange rate floating bands will remain the same as previously announced in the inter-bank foreign exchange market. This is an important move in reforming the managed floating exchange rate regime and will help maintain RMB exchange rate basically stable at an adaptive and equilibrium level, promote a balanced BOP account and financial market stability and realize quality and rapid growth of the economy.

## (2) Capital account controls

### *A Brief Review of Evolution of Capital Controls*

In sequencing the liberalization of the capital account, China has followed an “FDI first” policy. After 1994, significant progress was made in opening up to FDI. More regions were opened to foreign investment, and ownership requirements for FDI in most industries were relaxed. The authority to approve FDI projects was assigned to local governments. From 1995, foreign-funded enterprises could engage in state-owned enterprise (SOE) reform by purchasing equity or injecting capital.

**Figure 22.** Utilized FDI during the Reform Period (billion USD)

<FIGURE 22 HERE>

Data Source: CEIC Data Company.

Except for FDI, all capital account transactions were to be approved by the People’s



Bank of China (PBC). The receipts from capital account transactions, including external borrowing, IPO and bond issuance, had to be deposited in a specified account and used for specified expenditures. Conversion of receipts into RMB was generally not allowed.

In December 2001, China joined the World Trade Organization (WTO). This event marked a new era for China's external sector liberalization. In addition to tariff cuts, China promised to eliminate over the next few years most restrictions on foreign entry and ownership, as well as most forms of discrimination against foreign firms. A large number of key services were to be opened up to foreign competition. In many other services, substantial foreign entry was to be allowed, including in insurance, banking, securities, and maritime transport etc. Since China's entry to the WTO, significant progress has been made. In the banking sector, more cities have been opened to foreign banks to conduct business in RMB.

China has also made a breakthrough in capital market liberalization. Since 2001, domestic investors, including individual residents, have been allowed to invest their own foreign exchange in B-shares. Afterwards, the pace of inside enterprises going to overseas listing accelerated. In 1993, the first mainland entity became listed in Hong Kong and H share formed. In 1994, the first mainland entity went listed in New York and N share formed. In 1997, the first mainland entity listed in London and L share formed.

The overseas listing of mainland entities largely reduced the function of B share. The regulator suspended the issuance of B share in 2000. The market was restored in 2001 when domestic residents were allowed to open B share accounts using their legal holdings of foreign exchange. For a time, large quantities of money flocked into the B-share market.

### **Figure 23. Number and Capital Raised of B Share and H Share**

<FIGURE 23 HERE>

**Source:** China's financial Yearbook

Starting from 2002, qualified foreign institutional investors (QFII) have been allowed to invest in the domestic capital market. Since 2004, insurance companies have been allowed to use their own foreign exchange to invest in the international capital market. In 2005, the first foreign company was listed on the Shanghai Stock Exchange, and in the same year, domestic firms were allowed to set up special purpose corporations abroad to facilitate overseas listing, mergers and acquisitions.

Since joined the WTO, especially after 2003, China has experienced a sharp increase in both current account surplus and capital inflows. By end-2009, the foreign exchange reserves had increased to USD 2399.2 billion. The rapid build-up of foreign exchange reserves has complicated monetary policy and increased pressure for RMB appreciation.

*Remaining Restrictions on the Capital Account*

Despite a limited and gradual liberalization has been initiated in capital account management since 1979, capital account remains to be restrictive in several transaction terms. Current restrictions on the capital account are mainly reflected in the following three aspects:

Restrictions on foreign investors and domestic investors: In opening the securities market to foreign investors, the Chinese government is pursuing a strategy of “fragmenting the market with separate investors”, which means foreign investors are only allowed to buy foreign currency denominated shares and debt instruments in either the domestic or the overseas market, including B shares onshore, as well as H shares and Red Chips offshore, and overseas foreign currency bonds, but not RMB-denominated A shares, bonds or other money market instruments. Meanwhile, Chinese residents are largely prohibited from buying, selling or issuing capital or money market instruments in the overseas market.

Restrictions on external borrowing: While foreign-funded enterprises are free from any restrictions on raising short- or long-term debts in the overseas market, other domestic entities need to obtain the required qualifications as the main borrowers and to have the proposed borrowing amount certified by the relevant authorities, with the terms of the borrowing reviewed and approved by the SAFE. In addition, domestic financial institutions can only issue external loans in line with certain provisions set in the rules on foreign exchange liability/asset ratio management upon prior approval by the relevant authorities while domestic non-financial enterprises are strictly prohibited from extending any external loans.

Restrictions on direct investment: For foreign investors, no restrictions are imposed on their direct investment in China except that they are required to follow the industrial policy guidance given by the Chinese government. However, outward direct investment by domestic entities needs to be approved by the relevant government departments; the necessary foreign exchange sources and the associated risks of such outward direct investment need to be assessed and verified by the SAFE. Government restrictions on the capital account in China mainly involve the following two forms of management: Controls imposed on cross-border capital transactions by relevant government departments. Controls imposed on certain phases of foreign exchange transactions related to cross-border capital transactions by the SAFE, including restrictions on cross-border fund remittance and repatriation and RMB/foreign currency exchange related to capital account transactions.

#### *The Effectiveness of capital controls*

A popular method to measure the capital control is to use the 0-1 variable, where 0 represents there is no control in the relevant transaction (Klein and Olivei, 1999). However, application of this method on China cannot effectively reflect the gradual change of regulative policies on capital account transactions. As a matter of fact, almost every item, to some extent, exhibits control of capital flows.

Therefore, we follow the method adopted by Jin (2004), Xiao and Kimball (2006),

respectively. Applying classifications by OECD and China's State Administration of Foreign Exchange (SAFE), we estimate degrees of restrictions for all 11 categories of capital account transactions. We first set each category to 1 for the years before 1978, meaning strict control. Likewise an index of 0.75 refers to strong control, 0.5 moderate control, 0.25 less control and 0 liberalized. CAC is the average score of all categories. A higher score represents stricter capital account control. Table shows the capital controls in China in the reform period.

**Table 10:** Measurement of Capital Account Control in China: 1978-2009

Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	0.875	0	0	-0.125	0	-0.125	0	0	0	0	0
2	1	0	0	-0.25	0	0	0	-0.25	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0	0	0	0	0
5	0.625	0	-0.125	0	0	0	-0.125	0	0	0	0
6	0.5	0	0	0	0	0	0	-0.125	0.125	0	-0.125
7	0.75	0	0	-0.125	-0.125	0	-0.125	-0.125	0	0	0
8	0.375	0	0	-0.125	0	0	0	0	0	0.125	0
9	0	0	0	0	0	0	0	0	0	0	0
10	0.5	0	0	0	0	0	0	0.125	0.125	0	0
11	1	0	0	0	0	0	0	0	0	0	0
score	7.63	7.63	7.50	6.88	6.75	6.63	6.28	5.90	6.20	6.33	6.15
index	0.69	0.69	0.68	0.63	0.61	0.60	0.57	0.54	0.57	0.58	0.56

Note : these eleven categories of capital account transactions are as follows : 1,capital Market Securities; 2,money market instruments; 3,collective investment securities; 4,Derivatives and other instruments; 5,commercial and financial credits; 6,Guarantee,sureties and financial backup facilities; 7,outwards direct investment; 8,foreign direct investment; 9,Liquidation of direct investment; 10,real estate transactions and 11 , personal capital movement. Data in 1999is the accumulated score since1977. And data in the years after 1999 reflect policy changes in that year.

Data Source: Jin (2004); SAFE.

The capital control index evidences the gradual tendency of capital account liberalization (see Figure 24). At the beginning of the reform, the Chinese government loosened the control on commercial and financial credits, foreign direct investment and liquidation of direct investment. However, the emphasis of reform was put on domestic agriculture and SOES in the following ten years. Therefore there was little change in capital controls and the index kept around 0.8 steadily. Exchange rate reform in 1994 and current account convertibility promote the pace of capital account liberalization. The government tightened the capital control to maintain macroeconomic stability during the East Asian financial crisis. After the entry into WTO, the pace of capital

liberalization accelerated. Unfortunately, the American subprime crisis inhibited the pace again. Once the crisis ended, the tendency of reducing capital control should continue again.

**Figure 24.** Capital Control Index in China: 1978-2009

<FIGURE 24 HERE>

Data Source: Jin(2004); SAFE.

Another way to measure capital control is to examine the amount of irregular capital movement (Li, 1998). For instance, larger amount of the “hot money” will bring big challenges on the independency of monetary policy. Under the system of pegging to the US dollar, capital inflows force the central bank to purchase the foreign exchange and increase the base money. To control the liquidity, the central bank has to employ sterilization operations, which squeeze the independency of monetary policy.

We examine a simple but widely used method to estimate the amount of hot money, that is, the sum of trade surplus (or deficit) and FDI deducted from the changes of foreign reserve<sup>16</sup> (see Figures 25 and 26). The fluctuation of hot money is significant and shows an increasing tendency, especially the large movement during the financial crisis period. The large amount of hot money movement leads to significant challenges and difficulties to macroeconomic policy and financial stability, which provides evidence of weakening effect of capital controls.

**Figure 25.** Changes of Foreign Exchange, FDI and Trade Balance (billion USD)

<FIGURE 25 HERE>

Data Source: CEIC Data Company.

**Figure 26.** The Likely Scale and Direction of “Hot Money” Flow (billion USD)

<FIGURE 26 HERE>

Note: The indicator used for this chart is only indicative but not an accurate measure of hot money. It deduct trade balance and utilized FDI from monthly accumulation of foreign exchange reserves.

Source: CEIC Data Company.

Capital inflow contributes to the rapid accumulation of foreign reserve. Under the pegging system of exchange rate, central bank is force to increase money base. Hence the significant raise of RMB equivalent of official foreign exchange holdings. Capacity of liquidity control of the central bank is largely weakened, accordingly, which is evident when the money supply is considered since 2001.(See Figure 27) the ratio of RMB equivalent of official foreign exchange holdings to M2 is rising from 12.2 on Jan, 2001 to 31.8% on Dec, 2009. Due to the impact of global financial crisis, this ratio declined slightly. As the recovery of world economy, this ratio is rising again at the third quarter of 2009.

---

<sup>16</sup> Obviously, this is not a accurate measure of hot money. But we can use it as a reference.

**Figure 27.** RMB Equivalent of Official Foreign Exchange Holdings, M2 (trillion) and Their Ratio

<FIGURE 27 HERE>

Source: CEIC Data Company.

The direct measure of the effectiveness of capital control is the method of covered interest parity. The basic principle is simple: under perfect capital movement, the onshore yield rate equates the offshore yield rate. In this case, there is no arbitrage. Existing relevant literatures try to examine the effectiveness by comparing the difference between onshore and offshore rates (Frankel, 1992).

However, we should note that the assumptions ensuring the establishment of cover interest parity are too strong in the real economic world. On account of imperfect information, transaction cost and the non-stationarity of the yield rate data, the probability that offshore yield rate coincides with the offshore yield rate should be zero. Even so, when there is no capital control, or perfect capital liberalization, the mechanism of arbitrage will ensure that the offshore rate and the onshore rate will achieve a stable equilibrium relationship in the long run, and changes in one yield rate will lead the subsequent change in the other one.

Then, although there exists capital controls, if the effectiveness of capital control is partially invalid, then arbitrage mechanism will work. If the offshore rate and the onshore rate will achieve a stable equilibrium relationship in the long run, then we could conclude that, capital controls is invalid in the long run. And if changes in one yield rate will lead the subsequent change in the other one, we then could conclude that capital controls is partly invalid even in the short run.

We assembled daily data of Chibor , Shibor and PBOC bill rate as the proxies for domestic onshore yield rates. We use USD Libor and Treasury bond return to calculate the offshore yield rates that ensure the establishment of covered interest rate parity. Since all yield rates data are non stationary, we apply Vector Error Correction Mechanism (VECM) to explore the relationships between the onshore yield rate and offshore yield rate. Specifically, we use co-integration test to explore the long run equilibrium relationship between the onshore yield rate and offshore yield rate. Based on VECM model, we use Granger Causality test to explore the short run dynamics between the onshore yield rate and offshore yield rate. We summarize our main results in the following chart:

**Table 11.** Estimation Results From Covered Interest Parity

	Offshore	Onshore	Frequency	Long run	Short Run
1	Libor	Chibor	daily	Yes	No
2	Libor	Shibor	daily	Yes	Yes
3	Libor	Chibor	monthly	Yes	No
4	<b>US Treasury</b>	<b>PBC Bill rate</b>	monthly	YEs	Yes

Note: the offshore yield rates have been adjusted by exchange risk.

We found that there exists co-integration relationship between onshore yield rate and offshore yield rate. This implies that arbitrage mechanism works in the long run, and the speculative capital movement invalidates capital control in China. In the short run, we found that if we use Shibor as the proxy of domestic onshore yield rate, offshore yield rate served as the Granger cause of onshore rate. Therefore, capital control is invalid or partially ineffective in the short run.

Ineffectiveness of capital control indicates that it is quite difficult for China to pursue fixed exchange rate regime. At the same time, Chinese Enterprises and financial intermediaries have already been faced to relatively frequent capital mobility. Consequently, the impact duo to capital account liberalization might not be quite large as we imagined. Further liberalization cannot only reduce risks and more importantly, it is also the necessary condition for RMB internationalization.

## **VII. Impacts of Financial Reform on Growth<sup>17</sup>**

How did Chinese financial reform affect its economic performance? To gain insights into this important question we make several attempts by applying quantitative methods. First, we try to construct a financial repression index (FREPI). This provides a picture of progresses made by financial reforms during the reform period. Second, we attempt to analyze statistical importance of FREPI for economic growth, using both time series and provincial panel data. And, finally, we estimate the net costs of financial repression, in terms of percentage points of GDP growth, for the entire reform period.

### (1). Constructing the Financial Repression Index

The aggregate measure of financial repression, by definition, covers a list of policy variables (McKinnon 1973). In this study, we follow Ang and McKibbin (2007) by applying the principal component analysis (PCA) approach, which was originally adopted by Demetriades and Luintel (1997; 2001). The advantage of the PCA approach is that it deals with problems of both multicollinearity and over-parameterization. Later on, we also apply alternative measures of financial repression, such as negative real interest rates and simple average of the individual variables, to check robustness of the estimation results.

We adopt a relatively broad definition of financial repression, which includes indicators in six areas: (1) negative real interest rate; (2) interest rate controls; (3) capital account regulations; (4) statutory reserve requirement; (5) public sector share of bank deposits; and (6) public sector share of bank loans. We first collect information for these six variables and then derive a uniform index through statistical analysis.

The first variable is real deposit interest rate (RID). Following Agarwala (1983) and Roubini and Sala-i-Martin (1992), we set RID to 0 if real interest rate is positive and to 1/2 if real interest rate is negative but higher than minus 5% and to 1 if real interest rate is lower than minus 5%.

The second variable is interest rate control (ICI), which is the proportion of types of

---

<sup>17</sup> This section draws extensively from a previous paper by Huang and Wang (2010).

interest rates subject to government controls. At the start of the reform, there were a total of 63 types of interest rates under controls. These included 14 types of deposit rates, 14 types of lending rates, 19 types of preferred lending rates, 10 types of foreign currency deposit rates and 6 types of foreign currency lending rates. Each category is set to 1 if there was control and to 0 otherwise. Since foreign currency rates are relatively less significant, we assign to them only half the weight of local currency rates.<sup>18</sup>

The third variable is capital account control (CAC), which is built on the method adopted by Jin (2004). Applying classifications by OECD and China's State Administration of Foreign Exchange (SAFE), we estimate degrees of restrictions for all 11 categories of capital account transactions. We first set each category to 1 for the years before 1978, meaning strict control. Likewise an index of 0.75 refers to strong control, 0.5 moderate control, 0.25 less control and 0 liberalized. CAC is the average score of all categories. A higher score represents stricter capital account control.

The fourth variable is statutory reserve requirement ratio (SRR). Before 1984, there was no reserve requirement policy. By definition, statutory reserve is the financial resources that commercial banks cannot lend out by discretion. For the years before 1984, we set SRR to the ratio of the deposit that the central bank cannot allocate itself, such as fiscal deposit, basic construction deposit and deposit of non-profit institutions.<sup>19</sup> After that, SRR was the actual ratio set by the People's Bank of China (PBOC).<sup>20</sup>

The fifth variable is the share of the state sector in total outstanding deposits (PDR), while the sixth variable is share of the state sector in total outstanding loans (PCR). High readings of these variables imply heavier influences of the state in allocation of financial resources.

To construct a single FREP, we first estimate correlation matrix for all six variables (see Table 12). The correlation coefficients are indeed quite high for most pairs of variables. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.767 and the statistic of Bartlett's sphericity test is 201.6, both of which are much greater than their respective critical values. These suggest that the principal component analysis approach is appropriate.

**Table 12.** Correlation Matrix: Financial Repression Variables

	RID	ICI	CAC	SRR	PDR	PCR
RID	1.000					

<sup>18</sup> There are 47 types of local currency interest rates and 16 types of foreign currency interest rates. 16 foreign currency rates are regarded as 8 as we only assign half of the weight of a local currency rate. So the total calculated number of types of interest rates is 55.

<sup>19</sup> The People's Bank of China (PBOC) served as both of the central bank and a commercial bank and did not set statutory reserve requirement until 1984.

<sup>20</sup> This treatment may be problematic since before 1984 the government directly controlled credit. Hopefully such controls might be reflected indirectly in some other variables such as interest rate controls and public sector shares of deposits and loans.

ICI	0.654	1.000				
CAC	0.859	0.658	1.000			
SRR	0.423	0.908	0.563	1.000		
PDR	-0.193	-0.012	-0.089	0.147	1.000	
PCR	0.522	0.959	0.562	0.927	0.042	1.000

**Source:** Authors' estimation applying principle component analysis extraction method.

We then examine the total variance explained by the principal components (see Table 13). Since the third eigenvalue is less than 1, we only extract the two principal components, which explain 84 percent of total variance contained in all variables. Based on the initial eigenvalues associated with relevant components, we can calculate FREP as the composite component using the following formulae:

$$\text{FREP} = 0.76 * \text{component 1} + 0.24 * \text{component 2} \quad (1)$$

**Table 13.** Total Variance Explained: Financial Repression Variables

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.834	63.907	63.907	3.834	63.907	63.907
2	1.207	20.120	84.028	1.207	20.120	84.028
3	0.722	12.026	96.054			
4	0.169	2.810	98.863			
5	0.044	0.735	99.599			
6	0.024	0.401	100.000			

**Source:** Authors' estimation results applying principle component analysis extraction method.

To make it easier to read, we normalize the FREP series by first setting the reading for completely liberalized financial system to 0 and also setting the reading at the start of the sample period (year 1978) to 1 (see Chart 1).<sup>21</sup> FREP fell from 1 in 1978 to 0.586 in 2008. In fact, the lowest reading was 0.516 in 2006. The index rebounded in the following years, probably a result of responses to the global financial crisis. The readings of FREP reveal at least two important policy messages. One, the reform period did witness significant reduction in the degree of financial repression. And, two, financial liberalization is only less than half-way through.

**Figure 28.** Financial Repression Index for China, 1978-2008 (1978=1.0)

<FIGURE 28 HERE>

**Source:** Authors' estimation results.

<sup>21</sup> According to the derived raw data series of FREP, the number -7.4 represents the state of no financial repression.



## (2). Impacts of Financial Repression on Economic Growth

We examine the impacts of FREP on economic growth in three steps. The first step involves time series data for the period 1979-2008. The second step addresses a panel data set of 25 provinces during the same period. And in the final step we conduct robustness checks in order to validate the findings.

### *National Time Series Data Analyses*

As Nelson and Plosser (1982) pointed out, most macroeconomic series are non-stationary. We first use unit root test to each series to avoid the problem of spurious regression. The results suggest that all variables have unit root but their first-order differences are stationary. We then conduct the Johansen co-integration test to identify the long-run equilibrium relations between the key variables by applying the following model:

$$\Delta X_t = c + \sum_{j=1}^{p-1} \Gamma_j \Delta X_{t-j} + \beta \cdot \alpha' X_{t-1} + Z_t + v_t \quad (2)$$

where  $X$  is a vector of variables, including per capita real GDP in logarithmic form, FREP, INV (investment share of GDP), TRADE (trade share of GDP), EDU (share of university students in total population), GOV (government expenditure share of GDP), SOE (state sector share of GDP) etc;  $Z_t$  is a vector of exogenous variables.  $\alpha$  is the co-integration vector, which implies the long run equilibrium relationship among the variables; and  $\beta$  is the matrix of adjusting coefficients which indicates the convergence speed of a variable to its equilibrium state when suffered from an outside shock.

In order to identify long run relationship, we adopt FREP, INV, TRADE, EDU, GOV, and SOE as explanatory variables for LnRGDP. To determine the lag orders, we first estimate level VAR which uses the original series (not the differenced series). Then the lag orders used in Johansen co-integration procedure are chosen by minimizing the information criterion, SIC as before.

Given the potential missing variable problem, we take into account the effects of political incident and financial crisis by introducing three dummy variables: the Tiananmen incident, D1 (1989), Asia financial crises, D2 (1997-1999) and US subprime crisis, D3 (2007-2009). Trace statistic and maximum eigenvalue statistic again show that there is one co-integration relationship between financial repression and economic growth. The diagnostic checks for serial correlation and normal distribution of residuals confirm that the model is well fitted (Table 14).

**Table 14.** Johansen Cointegration Test and Diagnostic Check

$H_0$	$\lambda_{\text{trace}}$ Statistic test			$H_0$	$\lambda_{\text{max}}$ Statistic test		
	$H_1$	statistic	critical value		$H_1$	Statistic	critical value
$r=0$	$r>0$	96.60***	69.82	$r=0$	$r=1$	43.83***	33.88
$r\leq 1$	$r>1$	42.78	47.86	$r=1$	$r=2$	23.41	27.58
$r\leq 2$	$r>2$	29.37	29.80	$r=2$	$r=3$	17.87	21.13
$r\leq 3$	$r>3$	11.50	15.49	$r=3$	$r=4$	9.35	14.26
$r\leq 4$	$r>4$	2.15	3.84	$r=4$	$r=5$	2.15	3.84

**Residual diagnostic check**

**LM test for AR(1): P-value of Chi-square statistic=0.485**

**JB test for Normality: P-value Chi-square statistic=0.174**

**Notes:** “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

FREP, INV, GOV and SOE are significant at 1% significance level and all signs are consistent with predictions by economic theory (Table 4). The co-integration equation is defined by the following equation:

$$\ln \text{RGDP}_t = 8.201 - 3.495 * \text{FREP}_t + 3.956 * \text{INV}_t - 2.296 * \text{GOV}_t - 1.429 * \text{SOE}_t \quad (3)$$

Since the adjustment coefficient of FREP is insignificant, financial repression is weakly exogenous relative to economic growth. The results imply that repressive financial policies probably held down per capita GDP growth by 3.5 percentage points in 1978 or 2.1 percentage points in 2008. But the actual potential gains from further financial liberalization are probably smaller than those numbers since the equilibrium in a real world is probably not zero financial repression.

**Table 15.** Co-integration Equation and Adjustment Coefficient estimation

LnRGDP	FREP	INVT	GOV	SOE	C
<b>Cointegration Equation</b>					
1	3.495***	-3.956***	2.296***	1.429***	8.201***
<b>Ajustment Coefficient</b>					
-0.076**	-0.18	0.042	0.062***	-0.008	
(0.037)	(0.356)	(0.046)	(0.023)	(0.073)	

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

### *Provincial Panel Data Analyses*

To validate the findings of time series data analyses, we now examine the impacts of financial repression on economic growth using a panel data set of 25 provinces covering the same period. Following Dowrick and Nguyen (1989) and Drysdale and Huang (1997), among others, we specify the following two-way static model for empirical estimation:

$$\text{LnRGDP}_{it} = \beta_0 + \beta_1 \text{INV}_{it} + \beta_2 \text{TRADE}_{it} + \beta_3 \text{EDU}_{it} + \beta_4 \text{GOV}_{it} + \beta_5 \text{SOE}_{it} + \alpha_i + \lambda_t + u_{it} \quad (4)$$

Where, again, LnRGDP is per capita real GDP in logarithmic form, INV is investment share of GDP, TRADE is trade share of GDP, **EDU** is the share of university students in total population, GOV is government expenditure share of GDP, and SOE is share of the state sector in GDP;  $\alpha_i$  and  $\lambda_t$  are the (unobserved) individual and time- specific

effect;  $u_{it}$  represents the effects of those unobserved variables that vary over  $i$  and  $t$ .

The Data Appendix at the end of the paper offers some descriptions of variable definitions and data sources.

We start from the basic growth regression on determinants of economic growth in provincial levels and add the measure of financial repression to the basic equations. This enables us to control the usual determinants of economic growth before examining the exact impact of financial repression. The regression results, using fixed effect (FE), random effect (RE), pooling regression (Pooling) and GEE population average estimation, are generally consistent with conventional expectations: positive contributions of investment, trade openness and education and negative contributions of the government expenditure and state sector to per capita GDP growth (Table 16). Furthermore, Hausman test suggests that fixed effect estimation is more appropriate than random effect estimation.

**Table 16.** Growth Equations: The Basic Model

Dependent Variable	FE	RE	Pooling	GEE
LnRGDP	1	2	3	4
INV	2.158*** (0.173)	2.404*** (0.17)	3.064*** (0.181)	2.287*** (0.169)
TRADE	0.138* (0.071)	0.218*** (0.069)	0.506*** (0.058)	0.178*** (0.069)
EDU	70.84*** (3.98)	72.712*** (3.907)	76.414*** (3.565)	71.828*** (3.9)
GOV	-5.135*** (0.415)	-4.773*** (0.402)	-4.062*** (0.359)	-4.945*** (0.404)
SOE	-1.843*** (0.176)	-1.415*** (0.162)	-0.336*** (0.117)	-1.618*** (0.167)
Hausman(P-Value)	0.000	-	-	-
Observations	750	750	750	750
R-Square	0.742	0.779	0.824	-

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

The ideal approach for this examination using provincial panel data is to construct

FREP for individual provinces like what we did for the whole country. But that is not possible given data limitation. Fortunately, most repressive financial policies were the same across the country during that period. We first expand the basic growth model by directly adding FREP as an additional explanatory variable (Table 6). Column (1) and (3) report the results of fixed effect and GEE population average estimation when province specific effect is taken into account. Again, the coefficients of FREP are negative and significant and both suggest that bringing down FREP from 1 to 0 could boost per capita GDP growth by roughly 3.3 percentage points. After adding year-specific dummies to control the omitted variable problem, column (2) and (4), all results remain largely the same but the coefficient estimates for FREP range increased from 3.3 to 3.5.<sup>22</sup>

**Table 17.** Growth Equations: Impacts of Financial Repression

Dependent Variable	FE		GEE	
	1	2	3	4
LnRGDP				
FREP	-3.304*** (0.072)	-3.545*** (0.073)	-3.289*** (0.072)	-3.529*** (0.072)
INV	0.959*** (0.091)	0.754*** (0.088)	0.979*** (0.091)	0.773*** (0.088)
TRADE	0.119*** (0.036)	0.131*** (0.034)	0.129*** (0.036)	0.139*** (0.034)
EDU	13.835*** (2.373)	5.566*** (2.364)	14.503*** (2.354)	6.236*** (2.336)
GOV	-2.687*** (0.217)	-2.577*** (0.215)	-2.717*** (0.215)	-2.605*** (0.212)
SOE	-1.173*** (0.091)	-1.114*** (0.089)	-1.141*** (0.089)	-1.087*** (0.088)
Year-specific effect	NO	YES	NO	YES
Province-specific effect	YES	YES	YES	YES
Observations	750	750	750	750
R-Square	0.762	0.741	-	-

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*”: indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

### *Robustness Checks*

To check robustness of these panel data results, we run three additional sets of regressions. First, we apply dynamic ordinary least square (OLS) estimation approach to

<sup>22</sup> Note that since FREP do not change across province, we cannot add all the year dummies into our model because of the problem of perfect linearity. Therefore, we use partial year dummies instead. Specifically, Year dummies include the Tiananmen incident, D1 (1989), South Tour of Deng Xiaoping, D2 (1992), Commercial bank reform, D3 (1994), Asia financial crises, D4 (1997-1999), entry into WTO, D5 (2001) and US subprime crisis, D6 (2007-2009). Time trend is also included.

eliminate autocorrelation in the residual terms of static OLS estimation and to improve efficiency of the estimated coefficients. Second, we employ the common factor estimation method to deal with potential heterogeneous effects across provinces. And, finally, we also adopt some alternative measures of financial repression in the estimation, including real interest rates and simple average of the six indicators used for constructing FREP.

As Stock and Watson (1993) pointed out that mentioned, dynamic OLS (DOLS) is a more appropriate estimation approach if the variables are non-stationary and co-integrated, since it takes care of problems such as autocorrelation. This judgment was later supported by Kao and Chiang (1999). Therefore, as the first step of robustness check, we apply panel DOLS to reexamine the empirical relations by adding the first-order lag and lead terms of every differenced explanatory variable to our model. The estimation results are broadly in line with those based on static estimation (Table 18). The coefficients for FREP are, however, slightly higher, at -3.7.

**Table 18.** Growth Equations: Dynamic Ordinary Least Square Estimation Method

Dependent Variable	FE		GEE	
	1	2	3	4
LnRGDP				
FREP	-3.706*** (0.085)	-3.736*** (0.089)	-3.684*** (0.084)	-3.714*** (0.087)
INV	0.815*** (0.101)	0.790*** (0.101)	0.842*** (0.100)	0.818*** (0.099)
TRADE	0.129*** (0.035)	0.123*** (0.036)	0.138*** (0.035)	0.131*** (0.036)
EDU	12.782*** (2.604)	9.989*** (2.836)	13.554*** (2.572)	10.869*** (2.785)
GOV	-2.703*** (0.234)	-2.689*** (0.253)	-2.740*** (0.231)	-2.729*** (0.248)
SOE	-1.045*** (0.091)	-1.008*** (0.094)	-1.017*** (0.089)	-0.980*** (0.092)
Year-specific effect	NO	YES	NO	YES
Province-specific effect	YES	YES	YES	YES
Observations	650	650	650	650
R-Square	0.747	0.741	-	-

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

One potential problem of all the regressions above is that FREP and its estimated coefficients do not vary across provinces. The homogeneity assumption is probably acceptable if the research focus is on aggregate economic growth. But it is obvious that the impacts of repressive financial policies varied considerably across provinces. In order to take into account this heterogeneous effect, we apply the common correlated effects (CCE) in empirical estimation.

The basic idea of CCE is to filter the province-specific regressors by means of cross-section average (Pesaran 2006). As the number of provinces becomes larger, the differential effects of unobserved common factors converge to zero asymptotically. Following Eberhardt and Teal (2009), the CCE estimator is obtained in two steps. First, we perform 25 OLS estimations by each province  $i$  and obtain coefficient  $\hat{b}_i$ . Second, the CCE estimators are those averaged across sectors:  $b_{CCE} = \sum_i \hat{b}_i / 25$ . The empirical results are also similar to those obtained from static or dynamic estimation. But the coefficients for FREP are lower, at about -3.0 (Table 19).

**Table 19.** Growth Equations: Common Factor Estimations

Dependent Variable	Common Factor Estimation	
	1	2
LnRGDP		
FREP	-3.021*** (0.068)	-2.966*** (0.051)
INV	0.891*** (0.076)	0.877*** (0.067)
EDU	5.823*** (2.107)	5.712*** (2.389)
SOE	-1.108*** (0.093)	-1.063*** (0.074)
GOV	-2.078*** (0.045)	-2.072*** (0.038)
TRADE	0.132*** (0.012)	0.113*** (0.011)
Time Trend		0.071*** (0.016)
Observations	750	750

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

Finally, we employ some alternative measures of financial repression to check the results of FREP based on PCA. Following Agarwala (1983), FREP<sub>1</sub> is a dummy variable for real deposit rates, equaling to 0 if real interest rate is positive, ½ if real interest rate is negative but higher than -5%, and 1 if real interest rate is lower than 5%. Following Gelb (1988) and Easterly (1990), FREP<sub>2</sub> is also a dummy variable, equaling to 0 if the real interest rate is positive and 1 if it is negative. And, FREP<sub>3</sub> is a simple average of the six indicators used to construct FREP. Again, the estimation results applying the fixed effect estimation approach but alternative measures of financial repression all confirm negative contributions of repressive financial policies to economic growth (Table 20).

**Table 20.** Growth Equations: Alternative Measures of Financial Repression

Dependent Variable	FE		
	1	2	3
LnRGDP			
FREP1	-0.099*** (0.036)		
FREP2		-0.075*** (0.028)	
FREP3			-3.321*** (0.141)
INV	2.236*** (0.172)	2.224*** (0.172)	1.682*** (0.13)
TRADE	0.135* (0.071)	0.13* (0.071)	0.161*** (0.053)
EDU	67.288*** (4.116)	69.366*** (4.08)	35.157*** (3.382)
GOV	-5.192*** (0.437)	-5.064*** (0.432)	-4.213*** (0.326)
SOE	-1.928*** (0.183)	-1.911*** (0.182)	-1.642*** (0.136)
Year-specific effect	YES	YES	YES
Province-specific effect	YES	YES	YES
Observations	750	750	750
R-Square	0.741	0.746	0.767

Notes: numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*” indicate 10%, 5% and 1% level of significance, respectively.

Source: Authors’ estimation results.

All the robustness checks, using different estimation methods and different measurement approaches, confirm that financial repression did have a significant and negative impact on economic growth during China’s reform period. The coefficient estimates of the repression variables in these equations roughly range between -3.0 and -3.7.

### (3). Possible Mechanisms for the Negative Growth Effect

Why are repressive financial policies negative for economic growth? When the policymakers devised those policies, such as interest rate restrictions, credit allocation regulations and capital account controls, their aim was certainly to achieve faster, not slower, economic growth (Lin, Cai and Li 1995). But in the end these policies turned out to inhibit growth. In this section we will explore several important mechanisms for the negative growth effect. These, however, do not form an exhaustive list of the potential candidates.

The most widely discussed mechanism in the literature is through the impact of financial repression on financial development (Arestis and Demetriades 1997, 1999; Levine, Loayza and Beck 2000; Ang and McKibbin 2007). In a market-oriented economy,

financial intermediation is a factor facilitating expansion of economic activities. Repressive financial policies, however, directly restrict development of the financial sector, which, in turn, affects negatively economic growth.

This mechanism was explicitly examined for the Chinese case during the reform period. Huang and Wang (2010) constructed a financial development index (FDEV), which, like the FREP devised in this paper, was an aggregate measure applying PCA approach. The principal components were derived from three variables: proportion of broad money supply to GDP; share of private sector in total outstanding bank loans; and proportion of cash in circulation to total broad money supply. They found that if they set the initial reading of FDEV at 1 in 1979, the corresponding reading would be 2.1 in 2008. Co-integration analyses of FREP and FDEV confirmed that repressive financial policies had significantly negative effects on financial development during China's reform period.<sup>23</sup>

We may also examine impacts of the individual variables used for constructing FREP on economic growth. Such exercises may offer additional insights. Although we believe the negative impacts of FREP discovered in this study are robust and reliable, examination of individual policy variables may shed lights on which specific policies imposed more stringent restrictions on economic growth. They may also provide important policy implications on priorities of future reforms.

Given the multicollinearity problems among these variables, we could not include all six variables in one equation. As an alternative, we add these variables one by one to the basic growth equation (Table 16). Estimation results confirm significant and negative impacts of these policy variables on economic growth (Columns 1-6 in Table 21). We should keep in mind that these estimated effects of individual policy variables may not add up since they are obtained from separate regressions. Yet, they still shed some lights on the possible magnitudes of the impacts, multiplying the estimated coefficients by the actual readings of the variables in 2008. And these policy variables can be ranked, from greater to smaller growth effects, in the following order: state sector's share in outstanding bank loans, capital account controls, state sector's share in total bank deposits, interest rate regulations, reserve requirement management and real interest rates.

---

<sup>23</sup> In the following exercise, Huang and Wang (2010) also discovered that financial development (FDEV) had positive impacts on economic growth during China's reform period.



**Table 21.** Growth Equations: Impacts of Individual Repressive Policies

Dependent Variable	FE					
	1	2	3	4	5	6
LnRGDP						
Public deposit ratio	-3.102*** (0.127)					
Public loan ratio		-8.756*** (0.206)				
Reserve Rate			-3.658*** (0.167)			
Interest Control				-2.669*** (0.082)		
Real Interest Dummy					-0.514*** (0.005)	
Capital Control						-7.009*** (0.203)
INV	1.143*** (0.134)	0.732*** (0.097)	1.246*** (0.139)	1.074*** (0.114)	2.325*** (0.155)	0.885*** (0.112)
TRADE	0.126*** (0.054)	0.154*** (0.038)	0.027 (0.055)	0.228*** (0.045)	0.124** (0.064)	0.281*** (0.044)
EDU	74.51*** (3.033)	2.162 (2.749)	63.296*** (3.174)	1.343 (3.321)	66.89*** (3.694)	15.5*** (3.506)
GOV	-0.397*** (0.371)	-2.761*** (0.236)	-2.616*** (0.352)	-4.415*** (0.275)	-5.542*** (0.393)	-3.931*** (0.267)
SOE	-1.055*** (0.138)	-1.101*** (0.098)	-1.26*** (0.143)	-1.599*** (0.116)	-1.879*** (0.164)	-1.076*** (0.114)
Year-specific effect	YES	YES	YES	YES	YES	YES
Province-specific effect	YES	YES	YES	YES	YES	YES
Observations	750	750	750	750	750	750
R-Square	0.838	0.715	0.823	0.698	0.758	0.683

**Notes:** numbers in parenthesis are standard errors. “\*\*\*”, “\*\*” and “\*”: indicate 10%, 5% and 1% level of significance, respectively.

**Source:** Authors’ estimation results.

These findings indeed provide some information about mechanisms through which financial repression affects growth in China. The state sector’s dominance of financial resources, especially bank loans, has a major negative impact on economic growth. Whenever economic growth slowed, the Chinese government relied on the state sector as well as fiscal and monetary policy to support economic activity. Such policy approach, however, effectively suppressed private investment and probably reduced overall efficiency of economic activities in China.

Capital account controls are another important negative factor for growth. The controls probably helped the government to maintain certain degree of financial stability at times of external financial crises. But this came at a very high cost to growth.

Restrictions on capital mobility probably prevented investors from achieving higher returns and possibly also distorted costs of capital, both in terms of exchange rates and interest rates.

Interestingly, compared with effects of state sector dominance and capital account controls, the impacts of interest rate regulations and negative real deposit rates appeared to be more modest, although they were still very important. And the magnitude of the impact of reserve requirement was similar to that of real negative deposit rates.

### **VIII. Logic of the Reform and Challenges Ahead**

When economic reforms started thirty years ago, there was almost no financial industry in China. Today, the Chinese financial system is already one of the largest in the world, in terms of variety of financial institutions, number of clientele and size of financial assets. The top commercial banks in China are also ranked among the largest in the world. This, of course, is not to say that the Chinese financial system is already advanced and sound. On the contrary, these financial institutions need to make significant improvement in their risk controls, asset allocation and client services.

There were times during the reform period when financial risks were so large that they might derail China's strong growth. During the 1997-98 period when Asian financial crisis hit the country, the average non-performing loan ratio was estimated to be between 25 and 40 percent (Lardy 1998; Bonin and Huang 2001). Again, in the period 2004-05, some industry experts speculated that more than half of the securities companies were insolvent. Those problems posed serious challenges to stability of the Chinese economy as well as its financial system.

#### (1). Logics of China's Financial Reforms

In retrospect, however, China successfully maintained macroeconomic and financial stability during the entire reform period. More importantly, it achieved extraordinary economic growth. Within a period of a little over three decades, China emerged from a poor closed economy to the second largest economy in the world. The Chinese reform is regarded by some experts as an economic miracle (Lin et al 1995).

But important questions remain concerning Chinese experiences in financial liberalization and economic growth. Despite its strong economic growth and dramatic financial development, China's financial policies are still highly repressive. At least looking from the surface, these appear to contradict the conventional view that financial repression hurts economic growth. What roles did repressive financial policies play in China? More fundamentally, is financial repression really and always bad for everybody, including developing countries? And, finally, did China's financial reform follow optimal order and sequencing?

In this paper, we reviewed policy reforms and financial development in four broad areas: central bank and financial supervision, banking sector, financial markets, and exchange rate and external accounts. In general, we made significant progresses in developing both the banking sector and financial markets. And central banking and capital account

are the main lagging areas.

We may also group changes in China's financial industry during the reform period into four types. The first is construction of financial framework. As China decided to move toward a market economy, development of a modern financial industry became necessary. This effort includes efforts making PBOC an independent central bank. Almost all aspects of the monetary policy were devised during the past thirty years. It also includes establishment of the stock exchanges in Shanghai and Shenzhen. The purpose of all these policy efforts was to build a financial industry that at least looks similar to those in advanced market economies.

The second is promotion of quantitative financial development. Financial development can be defined according to both quantitative and qualitative measures. So, for instances, it can refer to growth of total outstanding loans and total banking assets. Meanwhile, it can also refer to growing importance of capital markets in the country's total financing. China's financial development has been very rapid. In mid 2010, total outstanding loans and stock market capitalization were, respectively, 150 and 80 percent of GDP. These numbers were high compared with those for most advanced economies.

The third is reform of financial institutions' governance structure and change of their behavior. A typical example is ownership reform of the banking sector. Once a large and comprehensive banking industry was built in the mid-1990s, China faced serious challenges of financial risks because many banks did not allocate funds efficiently and control risks effectively. In part this was backward practices. But more importantly it was related to nature of the public ownership of many banks. From the beginning of the 21<sup>st</sup> century, the authorities started to change the governance structure of the banks, through introduction of foreign strategic investors and public listing in stock markets. The banks also adopted new accounting system and risk controlling mechanism.

And the fourth is liberalization of financial industry and markets. Liberalization here may refer to increase in market competition, such as introduction of private and foreign financial institutions. It may also refer to freeing up of prices in financial markets, such as interest rates, bond yields, stock prices and exchange rates. Finally, liberalization could imply lifting of controls over domestic markets and the capital account. Over the years, for instance, the authorities opened up channels for cross-border capital flows in areas of inward direct investment.

Comparatively speaking, China made remarkable progresses in putting into place the basic framework of the financial system and growing sizes of financial assets. The Chinese financial system already resembles a modern financial sector in advanced economies, although important quality differences remain. China still lagged significantly freeing up key financial market prices, especially interest rates and exchange rates. It also made important improvement in both the behavior of financial institutions and allocation of financial resources. Yet further improvement is urgent and necessary.

Why is the Chinese financial reform long on framework and quantity but short on price and quality?

To understand this, we need to revisit China's overall reform approach. When economic reforms began, the leaders did not have a blueprint. Their initial motivation was to improve efficiency and increase output within the existing structure. This led to changes in social economic structure, moving gradually from peripheral to the core. The first major reform step was introduction of the household responsibility system (HRS) in the countryside. This was possible because agricultural output increased significantly wherever farmers experimented with this system. It was also because of greater difficulties in changing the state ownership of the urban industry.

Eventually, however, reforms moved into the heartland of socialist economy: central plans and state ownership. For instances, at the beginning of 1992, the authorities abolished all the plans for agricultural products, implemented through the unified purchase and marketing system. And from the mid-1990s, the authorities adopted a strategy for reform of the state-owned enterprises: "grasping the big and letting go the small". In retrospect, the Chinese government has been quite successful in terms of gradually building the market economy.

But the Chinese reform approach exhibits at least four unique features. And these features are all reflected in financial reforms one way or another. First, with or without a blueprint from the beginning, the entire process of Chinese reform was dominated by the central theme of eventually building a market system. In essence this involves transfer of the power of resource allocation from the government to the market (Lin et al 1995). The same occurred in financial reforms. By setting up the central bank and financial regulatory systems, reforming the banking sector, developing the financial markets and liberalizing the current and capital accounts, the Chinese reformers steadily moved the country toward a modern financial system.

This explains, while the financial policies remain highly repressive, the Chinese reform period witnessed an important process of financial liberalization. As expected, this liberalization, or reduction in financial repression, made positive contributions to economic growth. The remaining financial repression continues to tax the economy. The government already has plans for the financial sector to complete the transition to a market system. Some of the critical steps include introduction of market-based interest rates, increases in exchange rate flexibility and complete liberalization of the capital account. The timetable for such reform agenda, however, is highly uncertain.

Second, an important characteristic of the Chinese reform is the gradualism. This is in sharp contrast to the 'shock therapy' approach adopted by the former Soviet Union and Eastern European transitional economies (Sachs and Woo 2000). By implication, the reformers often made changes where they saw needs and felt ready. So for instance, at the beginning of the reform, there was an urgent need for a banking sector to handle fund distribution outside the plan system. A gradual approach often reduces volatilities brought about by the transition. But at times it often is also left with some hard nuts difficult to crack. One good example was the overhang of the non-tradable shares, state shares and legal person shares, once haunted the stock markets until 2005.

Gradualism approach also means reformers are cautious, illustrated by the phrase

“crossing the river by groping the stones”. At the end of 1996, China realized current account convertibility. It planned to realize capital account convertibility in 2000. Luckily, Asian financial crisis took place before China giving up all capital account controls. Since then, China has been very cautious in capital account liberalization. This probably helped China to escape major damages by the global financial crisis in 2008-09. At times gradualism could also lead to deadlocks. For instance, the government already unveiled exchange rate policy reform several times, but letting market forces play a greater role in exchange rate determination proved to be extremely difficult because of strong oppositions by various interest groups.

Third, the Chinese reform also adopted a dual-track strategy (Fan 1994; Naughton 1995). This strategy provided incentives for the new elements of the economy to develop, without necessarily hurting the old elements. By so doing, the government quickly rallied broad political supports around the reform programs. This strategy had important implications for the financial systems. The ‘Big Four’ banks, for instances, enjoyed more supports, such as capital injection from the government, while many of the joint-stock banks were left to the markets. At the same time, however, the authorities were willing to introduce private and foreign financial institutions to provide market competition and improve financial efficiency.

Meanwhile, in order to ensure continued operation of the state-owned enterprises, the commercial banks were required to continue to provide funding to these enterprises even if they were not profitable. These ‘policy loans’ were behind the unusually high non-performing loan ratios of the Chinese banks in the late 1990s. During the 2008-09 global financial crisis, the commercial banks, especially the “Big Four”, were called upon to accelerate loan extension to support economic growth. The banks complied, with new loans totaling 9.6 trillion yuan in 2009, almost double of the annual target set by PBOC at the beginning of the year. However, such dramatic loan expansion will likely result in rapid growth of non-performing loans in the coming years.

And, finally, the Chinese reform also exhibits a clear asymmetry of liberalization between product and factor markets (Huang 2010a and 2010b). Factor market distortions seriously repressed production costs and provided subsidy equivalent to producers, exporters and investors. Such distortions, while promoting economic growth, also contributed to growing structural imbalances, including very low consumption share of GDP, very high investment share of GDP and very large current account surplus. These were consistent with the government’s exclusive focus on the GDP indicator. But they posed serious challenges for sustainability of the rapid growth.

Like factor price distortions in other areas, interest rates and exchange rates are significantly underestimated in financial markets. While China’s nominal GDP growth potential is above 10 percent, the five-year government bond yield is only marginally above 3 percent. These point to substantial under-pricing of capital. At times real interest rates, especially real deposit rates, were negative. Currency undervaluation has become more widely known for the past years, although economists disagree on the degree of undervaluation. While there is a consensus view that China should now push forward liberalization of both interest rates and exchange rates, actual policy actions are

always much more slow and cautious.

## (2) An Assessment of Achievements and Risks

Judging from the macroeconomic performance during the reform period, China's financial reform was probably largely successful. According to our quantitative estimation in this study, financial liberalization already reduced degree of financial repression by more than 40 percent during the reform period. This change added about 1.5 percentage point to GDP growth during the reform period. Therefore, financial liberalization was an important force behind China's strong economic growth. But the remaining repressive policies still hold down Chinese growth by about 2 percentage points. In order to sustain the rapid growth, China will need to continue its financial liberalization.

To understand the unique combination of repressive financial policies and strong economic growth in China, we refer to the three hypothetical explanations we provided at the beginning of the paper: (1) other positive momentums dominating the negative impacts of repressive policies (Huang and Wang 2010); (2) at low levels of economic and institutional development financial liberalization could be destructive (Kose xxx); and while financial liberalization is favorable there should be an optimal order for the reform (McKinnon).

Our analyses already provided evidence for point (1) above. As the repressive policies held down GDP growth by several percentage points, other liberalization forces such as opening up of free markets for products and unlimited supply of surplus labor contributed to strong economic growth. We are not able to verify point (2) in a single country study. But China successfully averted financial chaos during the Asian and global financial crises, while many of its neighbors were dragged into the messes. Perhaps there was some merit in China's remaining capital account controls? Point (3) sounds reasonable. There are numerous examples of financial crises in developing countries, which opened their capital accounts before cleaning up domestic financial institutions.

It is difficult to conclude whether or not the Chinese financial reforms followed an optimal path. But certainly they have been successful so far on two important criteria: economic growth and financial stability. Over the past three decades, China's GDP growth achieved an average of 10 percent. With exceptions of a few years in 1988 and 1993, inflation was largely stable, with CPI mostly staying below 5 percent.

The financial system has also been remarkably stable. There were a number of isolated cases of bank runs in the late 1990s. In general, depositors kept their faith in the banks even when these banks were 'technically insolvent'. At times, stock market prices were extremely volatile. For instance, Shanghai A-share index dropped from 6,300 to 1,800 within a year in 2007-08. Surprisingly, such extraordinary price movement had little impact on social and economic stability.

But financial stability does not necessarily reflect soundness or maturity of the Chinese financial system. Rather, it was a result of a combination of government policies. For instance, the reason why depositors remain confident in the Chinese banks is the

implicit blanket guarantee the government offered on all bank deposits. As long as the depositors keep faith in the government's fiscal capability, there is no need for depositors to differentiate good banks from bad banks.

Again, the government's capital account control measures, especially those on short-term capital flows, played important roles in avoiding financial meltdowns when facing external shocks. In 1997-98, many Asian economies experienced serious financial crises. China not only successfully escaped crisis at home, it also provided important support to regional financial stability by pegging its currency to the US dollar in order to avoid competitive devaluation in the region. Again in 2008-09, when the US subprime crisis hit the world, China maintained economic and financial stability. Its quick recovery also provided an important impetus to global economic recovery, especially those of the Asian economies and the global commodity markets.

There is perhaps some merits in maintaining repressive financial policies (Stiglitz xxx; Li 2004). For instances, before successful reform of the state-owned commercial banks, it is probably best to maintain certain types of interest rate regulation. Otherwise, vicious interest rate competition could seriously risk stability of the banking sector. And, again, when domestic financial institutions are weak, capital account controls may help shelter the domestic economy from external shocks. In general, these repressive policies, while costly in terms of economic efficiency, were favorable for maintaining macroeconomic stability during China's reform period.

Therefore, the remarkable economic and financial performance may be attributable to the good luck as well as careful design of the policy reform. It also reflected the government's overall capability, including its fiscal resources and administrative power. Since the reforms did not have a blueprint, the financial reforms started with an aim of creating some institutions for financial intermediation outside the central plans. Initially, the financial system was viewed as supplementary to the planning system. Over the years, the government gradually added new organs to the financial machine and liberalized controls wherever they became necessary and favorable.

The advantage of such reform approach is that the government would not move if it is not entirely confident. The disadvantage, however, is also that the government could become indecisive in pushing forward the reforms. Sometimes it is simply captured by interest groups.

The exchange rate policy reform provides a good example. The currency peg introduced in 1997 eventually led to undervaluation of renminbi as other regional currencies recovered in the following years. Although renminbi appreciated mostly from mid-2005 to mid-2008, the currency continued to be undervalued. There were important calls both at home and abroad for faster currency appreciation in order to get rid of the distortions and to reduce risks of trade conflict. The government, however, has been very reluctant to move. Ministry of Commerce and Ministry of Labor have been very powerful in blocking any plans for more drastic exchange rate policy reform for fear of negative impact on exports and job market.

This reform strategy also contributed to growing risks in the financial system. The first

type of risks concerns corporate governance of the financial institutions. Although the Chinese financial system already looks big and modern, much of it is still effectively controlled by the government or subject to government intervention. The Chairmen and Presidents of the large listed commercial banks, for instance, are directly appointed by the Organization Department of the Party's Central Committee. Many important decisions are often made at the Party Committees, not the Boards of Directors of the listed banks. This is why government policies are often effective in China, but the outcomes may not be efficient.

The second type of risks is related to efficiency of capital allocation by the financial system. Currently China's SOEs account for less than one third of the economy. However, they still took away more than half of the funds raised from both indirect (banks) and direct (capital markets) financing channels. Given that the small- and medium-sized private enterprises have become the driving force of Chinese growth, such pattern of financing poses challenges to both growth sustainability and asset quality. During the global financial crisis, all local governments set up various financial platforms which raised about 7.6 trillion yuan for investment projects, mostly from the banks. Some preliminary assessment already confirms that at least 2 trillion yuan is likely to turn bad quickly. They are likely to show as non-performing loans of the commercial banks eventually.

And the third type of risks involves distortions in interest rates and exchange rates. These distortions directly reduce economic efficiency. More importantly, they pose serious threat to macroeconomic stability. The real negative deposit rates, for instance, were behind speculative activities in asset markets in 2010. When potentials for stock and housing prices diminished, investors rushed to speculate on specific products such as cotton, garlic, beans, apple and sugar. Prices of these products skyrocketed one after another. Again, the undervalued currency has been the main cause of massive 'hot money' inflows. This added significant liquidity to the domestic system and at the same time undermined independence of the monetary policy.

And the final type of risks is associated with weakening capital account controls and the likely consequences. Although the authorities still maintain strict controls over capital flows in a number of areas. Casual observations suggest that effectiveness of such controls has been weakening steadily. Hot money inflows are one good example. But given current problems with domestic financial institutions, capital allocation, interest rates and exchange rates, a quick fall of the wall on the border could spell disaster for China. For instance, total deposits of the Chinese banking sector are already about 200 percent of GDP. Sudden fading of restrictions on capital outflows could lead to devastating changes in both banks and exchange rates.

### (3). Completing the Unfinished Revolution

Twelve years, Nick Lardy (1998) described the Chinese banking reform as 'unfinished revolution'. Today, the task of financial reform remains unfinished. In fact, lack of more dramatic reform efforts have become important sources of potential financial and economic risks and instability. Further reform is both necessary and urgent in order to



continue China's economic successes of the past thirty years.

For instances, at the end of 2010, many economists, investors and government officials often discussed several key risks facing the Chinese economy. One is associated with funds raised by the local government during the global financial crisis. Such funding, mostly borrowed from financial institutions, was useful in supporting economic growth at the time of global recession. But it is highly unlikely that all these borrowing would be repaid. Another is potential risks of high inflation and asset bubbles. Investors with large amounts of funds speculated on all sorts of products, including garlic, cotton, corn, sugar, beans, etc. China used to have a number of banks specialized in specific business areas, such as ABC for rural development, CCB for large infrastructure projects, BOC for international transactions and ICBC for urban industry and commerce. Over the year these divisions were eliminated to foster competition and development. In recent years, however, almost all banks became disproportionately biased toward large infrastructure projects. If a large number of recently built infrastructure projects become financial stressed, then it could risk solvency of the entire banking sector.

All these risks are related to the problems of the financial sector. A properly run and regulated financial industry would not have lent so much to the local government financing platforms. Many financial institutions provided so much funds to the local governments and large infrastructure following explicit or implicit state directives. Clearly, they did not conduct any credit analysis for these lending. Speculative activities in product markets were direct results of repressive financial policies, such as unchecked monetary policy and negative real interest rates. Therefore, resolution of future such risks requires more swift financial reforms in the coming years.

After the global financial crisis, there has been growing complacency and confidence with the Chinese financial industry. Some experts even started to discuss about successfulness of the 'China model'. This is unfortunate. China escaped major crisis because of the capital account controls, not because of sound domestic financial institutions. The fact that many Chinese financial institutions now rank among the top in the world was not due to their own quality but because of collapse of the stock markets overseas. The global financial crisis may have proven that the western system has its deficiencies. But the Chinese financial industry still has a long way to catch in term of reform and liberalization.

Despite thirty years' of financial reforms, China's financial industry still awaits wide-ranging and significant transformation. Here we identify eight priority areas for financial reform.

First, China needs an independent central bank. PBOC has always been an integral part of the State Council. And all important monetary policy decisions are made by the Executive Committee of the State Council. This worked in most years since a large part of the economy was still directly managed by the government. Traditional monetary policy instruments such as interest rates were not as effective as administrative measures such as window guidance. But now the product markets have almost been completely liberalized and the private sector already contributes more than two-thirds

of the economy. There are enough evidences that the State Council attach greater importance to near-term growth momentum at the expense of financial health. An independent PBOC, ideally reporting to the National People's Congress, is necessary to safeguard monetary and financial stability.

Second, it is critical now to introduce market-based interest rates. Currently, the government's key interest rate tools are still the officially-determined base lending and deposit rates. And these rates do not necessarily reflect market conditions. Negative real interest rates, for instances, contributed to persistent overinvestment problem and price bubbles. If capital is not properly priced, then efficiency of capital use is not impossible. In particular, China needs to establish two types of market-based interest rates: interbank rates and risk-free bond yield. A well functioning interbank market is a precondition for indirect regulation by the monetary authority. PBOC could then shift to direct participation in the interbank markets, with a clear rate target, and give up direct regulations on of bank rates. A well developed yield curve from the government bond market provides benchmark information of cost of capital to the private sector.

Third, the government must completely give up its intervention in credit allocation. Such intervention affects financial institutions ability to optimize fund use and control financial risks. It also reduces overall efficiency of capital use in the economy. After all, it is illogical for the state sector, which accounts for less than one-third of the economy, to continue to take away more than half of bank credit and other funds. This problem is even more serious at times of economic difficulty. Survey data confirm that only about 20 percent of the small- and medium-sized enterprises (SMEs) obtain bank credits. SMEs are, however, already major engines of economic growth in China.

Fourth, banking reforms need to be completed. Chinese banks made important progresses during past decades. However, much of the improvements were more in forms than in substance. For instance, boards of directors were established in many banks after public listing. But key decisions are still made the Party Committee meetings, not in boardrooms. Again, procedures of newly established risk assessment system are not strictly followed in many banks. NPL ratios came down drastically during the past ten years. But this was the result of combination of good times, guaranteed interest spreads and stripping of bad assets of the banks' books. Unfortunately we could not expect all these lucky factors to continue forever.

Fifth, China should achieve more balanced financial structure between banks, stocks and bonds. The Chinese financial industry is still dominated by the banking industry. In 2010, banking assets accounted for more than 200 percent of GDP. Stock market capitalization was equivalent to 80 percent of GDP. The bond markets were even less developed. While banks are useful for economic development, direct financing plays different roles in return and risk sharing between borrowers and investors. It is probably helpful to achieve a more balanced structure between banks and financial markets, particularly through rapid development of corporate bond markets.

Sixth, capital market institutions need to be improved significantly. The stock markets, in particular, still exhibit strong symptoms of immature markets. Investors remain

highly speculative and show very strong herding behavior. Incorrect information, insider trading, rumors and market manipulation are still common. Market movements are often influenced more by government policies than by macroeconomic momentums. And stock prices are excessively volatile. The regulators made important efforts to diversify investor groups. The QFII scheme, however, plays very limited roles in improving market mechanisms due to its size and restrictions.

Seventh, China has to increase flexibility of the exchange rate quickly. From 1994, China adopted a managed float for its exchange rate. But exchange rate flexibility has been generally limited, let alone during the periods of Asian and global financial crises when renminbi was more or less pegged to the dollar. Limited appreciation, despite strong economic growth, already caused serious problems for its domestic economy, such as inefficient investment allocation between tradable and nontradable sectors, loss of monetary policy independence and excessive accumulation of foreign exchange reserves. More importantly, the exchange rate policy has recently become a major source of conflict between China and the rest of the world. Rigorous implementation of the managed float, with increasing roles of market forces, is important to not only reduce risks of external conflict but also improve domestic economic efficiency.

And, eighth, China should probably also accelerate its capital account liberalization. Capital account controls helped to protect the Chinese economy from external shocks in the past. But the economy is already so open, it is increasingly difficult to maintain such controls. At the same times, such controls start to impose serious costs on economic efficiency. The remaining capital account controls exist in three main areas: outward direct investment, debt financing and portfolio investment. With gradual improvement of domestic financial institutions, it is time for China to gradually lift restrictions in the first two areas. Restrictions in the third area, portfolio investment, may continue for a while, but the authorities could gradually increase the total quota and, at the same time, relax the restrictions.

Although reforms in the above eight areas should be treated as priority. Reforms are also needed in many other areas. One such example is the regulatory framework. Should China eventually pursue a segregated model or comprehensive model of financial supervision? How should China deal with important regulatory issues such as 'too big to fail', financial innovation, pro-cyclical market mechanisms and international cooperation.

While Chinese financial reforms need to accelerate, it doesn't mean all these recommended changes should happen overnight. In fact, a proper order of liberalization is still necessary for smooth transition. For instance, market-based interest rate should be established before the exchange rate is made floating. And transformation of domestic financial institutions and abolition of state intervention in credit allocation should happen before capital account liberalization.

## References

- Agarwala, R., 1983. *Price Distortions and Growth in Developing Countries*. World Bank, Washington, DC.
- Ang, J. B. and W.J. McKibbin. 2007. 'Financial Liberalization, Financial Sector Development and Growth: Evidence from Malaysia'. *Journal of Development Economics*, 84: 215-233.
- Arestis, P. and P. O. Demetriades. 1997. 'Financial development and economic growth: assessing the evidence'. *Economic Journal*, 107: 783-799.
- Arestis, P., and P. O. Demetraides. 1999. 'Finance Liberalization: the Experience of Development Countries'. *Eastern Economic Journal*, 25: 441-457.
- Beck, T., R. Levine, and N. Loayza (2000), "Finance and The Sources of Growth," *Journal of Financial Economics*, 58: 261-310.
- Bencivenga, V.R. and B. D. Smith (1991), "Financial Intermediation and Endogenous Growth," *Review of Economic Studies*, 58(2): 195-209.
- Bonin, John and Yiping Huang, 2001, 'Dealing with the bad loans of the Chinese banks', with John P. Bonin, *Journal of Asian Economics*, 12(2): 197-214.
- Bonin, John, and Szekely, Eds., 1994, *The Development and Reform of Financial Systems in Central and Eastern Europe*. Aldershot, UK: Elgar.
- Brandt, Loren, and Zhu, Xiaodong, "Redistribution in a Decentralizing Economy: Growth and Inflation in China under Reform." *J. Polit. Economy* 108, 2:422-439, April 2000.
- Caprio, Gerard, Jr and Levine Ross. (1994) *Reforming Finance in Transitional Socialist Economies*. The World Bank Research Observer, Vol.9, No.1:1-24
- China Banking Regulatory Commission (2007), "Report on China's Banking Sector Opening-up", <http://www.cbrc.gov.cn/03/22/2007>.
- China Securities Regulatory Commission (2008), "China Capital Markets Development Report", China Finance Publishing House, 2008
- Demetriades, P.O. and K. B. Luintel. 2001. 'Financial Restraints in the South Korean Miracle'. *Journal of Development Economics*, 64: 459-479.
- Diaz-Alejandro, C. (1985), 'Good-bye Financial Repression, Hello Financial Crash', *Journal of Development Economics*, 19 (1-2), 1-24.
- Dowrick, Steve and D. T. Nguyen. 1989. 'OECD Comparative Economic Growth 1950-85: Catch-up and Convergence'. *American Economic Review*, 9(3): 341-71.
- Drysdale, P. and Y. Huang. 1997. 'Technological Catch-Up and Economic Growth in East Asia and the Pacific'. *The Economic Record*, 73 (222): 201-211.
- Eberhardt, Markus and Francis Teal (2009), "A Common Factor Approach to Spatial Heterogeneity in Agricultural Productivity Analysis," University of Oxford, CSAE WPS/2009-05.
- Easterly, W., 1990. *Endogenous growth in developing countries with government-induced distortions*, Mimeo. (World Bank, Washington, DC)
- Fry, M. (1997a), 'In Favour of Financial Liberalisation', *Economic Journal*, 107, 754-770.
- Fry, M. (1997b), 'Interest Rate Liberalization and Monetary Control in China', in K.

- Gupta (ed.), *Experiences with Financial Liberalization*, Boston: Kluwer Academic Publishers, pp. 69–100.
- Gelb, A., 1988, *Financial policies, efficiency, and growth: An analysis of broad cross-section relationships* (World Bank, Washington, DC)
- Goldsmith, R. (1969), *Financial Structure and Development*, New Haven, CT: Yale University Press.
- Greenwood, J. and B. Jovanovic (1990), 'Financial Development, Growth, and the Distribution of Income', *Journal of Political Economy*, 98 (5), 1076–1107.
- Griffith-Jones, S. (1995), 'Introductory Framework', in S. Griffith-Jones and Z. Drabek (eds), *Financial Reform in Central and Eastern Europe*, New York: St. Martin's Press, pp. 3–16.
- Gurley, J. and E. Shaw (1955), 'Financial Aspects of Economic Development', *American Economic Review*, 45 (4), 515–538.
- Haggard, Stephan, and Lee, Chung H., 1995, *Financial Systems and Economic Policy in Developing Countries*. Ithaca: Cornell University Press.
- Hermes, N. and R. Lensink (2000), 'Financial System Development in Transition Economies', *Journal of Banking and Finance*, 24 (4), 507–524.
- Hu Rongping (2010), "The Weakening Power of Foreign Banks in China", *Economic Observer*, 2010.4.26.
- Huang, Yiping, 2002, 'Is Meltdown of the Chinese Banks Inevitable?', *China Economic Review*, 13(4, December), pages 382–387.
- Huang, Y. and Wang, X. 2010. 'Does Financial Repression Inhibit Economic Growth? Empirical Examination of China's Reform Experience', CGC Discussion Paper No. 5, China Growth Centre at Edmund Hall, University of Oxford.
- Ito, H. 2006. "Financial Development and Financial Liberalization in Asia: Thresholds, Institutions and the Sequences of Liberalization", *The North American Journal of Economics and Finance*, 17(3): 303–327.
- Jin, L. 2004. 'Research on the intensity of Capital Control in China'. (in Chinese). *Journal of Financial Research (Jin Rong Yan Jiu)*. 294: 9–23.
- Kao, C. and M. Chiang. 2000. "On the Estimation and Inference of a Cointegrated Regression in Panel Data". *Advances in Econometrics*, 15: 179 - 222.
- King, R.G., and R. Levine. (1993a), "Finance and Growth: Schumpeter Might Be Right." *Quarterly Journal of Economics*, Vol(108), pp717-737
- King, R.G., and R. Levine. (1993b), "Finance, Entrepreneurship, and Growth: Theory and Evidence." *Journal of Monetary Economics*, Vol(32), pp513-542.
- Lardy, N. R., 2008, 'Financial Repression in China', Policy Brief, Peterson Institute of International Economics, Washington D.C.
- Lardy, Nicholas, 1998, *China's Unfinished Economic Revolution*. Washington, DC: Brookings Institution Press.
- Levine, R. (1991), "Stock Markets, Growth, and Tax Policy", *Journal of Finance*, September, Vol(46), 1445–1465.

- Levine, R. (1997), "Financial Development and Economic Growth: View and Agenda", *Journal of Economic Literature*, Vol(35): 688-726.
- Levine, R. 2005. "Finance and Growth: Theory, Mechanisms and evidence," in Aghion, P. and S. N. Durlauf (eds.) *Handbook of Economic Growth*, Elsevier.
- Levine, R. and S. Zervos (1998), "Stock markets, banks, and economic growth", *American Economic Review*, 88: 537-558.
- Levine, R., N. Loayza and T. Beck. 2000. "Financial Intermediation and Growth: Causality and Causes," *Journal of Monetary Economics*, 46(1): 31-77.
- Li Yang, 2009. *60 years Financial Development of People's Republic of China*. China Financial and Economic Publishing House.
- Li Yang and Wang Guogang, 2008. *Research on the 30 years of China's Financial Reform and Opening-up*. Economy & Management Publishing House.
- Li, D., 2001, 'Beating the trap of financial repression in China', *Cato Journal*, 21(1): 77-90.
- Lin, J. Y., F. Cai and Z. Li. 1995. *The China Miracle: Development Strategy and Economic Reform*, The Chinese University of Hong Kong Press, Hong Kong.
- Liu Hongru (2009), "Breakthrough-China's Capital Market Development", China Finance Publishing House, 2009.
- Liu Hongru (2009), "Chang-the Sixty Years Development of China's Financial System", China Finance Publishing House, 2009.
- Liu Mingkang, 2009. *Reform on the 30 years of China's Banking Industry*. China Financial Publishing House.
- Liu, T. and K.W. Li. 2001. "Impact of Liberalization of Financial Resources in China's Economic Growth: evidence from provinces", *Journal of Asian Economics*, 12: 245-262.
- Long, M. and S. Sagari (1991), 'Financial Reform in European Economies in Transition', in P. Marer and S. Zecchini (eds), *The Transition to a Market Economy*, Vol. 2, Paris: OECD, pp. 430-442.
- Maswana, J. 2008. "China's Financial Development and Economic Growth: Exploring the Contradictions". *International Research Journal of Finance and Economics*, 19(2008): 89-101.
- McKinnon, R. I. 1973. *The Order of Economic Liberalization: Financial Control in the Transition to a Market Economy*. Baltimore: Johns Hopkins University Press.
- Merton, R. C. and Z. Bodie (1995), "A Conceptual Framework for Analyzing the Financial Environment," In D.B. Crane et al., eds., *The Global Financial System, a Functional Perspective*. Cambridge, Mass: Harvard Business School Press, 12-16.
- Nelson, C. and C. Plosser. 1982. 'Trends and Random Walks in Macroeconomics Time Series: Some Evidence and Implications.' *Journal of Monetary Economics*, 10: 139-162.
- Nissanke, Machiko, and Aryeetey, Ernest, *Financial Integration and Development—Liberalization and Reform in Sub-Saharan Africa*. London and New York: Routledge, 1998.
- Pagano, M. 1993. 'Financial Markets and Growth: An Overview'. *European Economic Review*, 37: 613-622.

- Patrick, Hugh T. 1966. 'Financial Development and Economic Growth in Undeveloped Countries'. *Economic Development and Cultural Change*, 14: 174-189.
- PBOC Shanghai Head Office (2010), "International Financial Markets Report: 2009", <http://shanghai.pbc.gov.cn>.
- Pesaran, M. Hashem (2006), "Estimation and Inference in Large Heterogeneous Panels with a Multifactor Error Structure," *Econometrica* 74(4), pp.967-1012.
- Prasad, E., Rogoff, K., Wei, S. and A. Köse. (2003), "Effects of Financial Globalization on Developing Countries: Some empirical Evidence," *Occasional Paper*, IMF No: 220. Washington D.C.
- Robinson, J, 1952. *The Generalization of the General Theory and Other Essays*. The 2<sup>nd</sup> Edition, London: Macmillan, 1979.
- Roubini, N and X. Sala-i-Martin. 1992. 'Financial Repression and Economic Growth'. *Journal of Development Economics*. 39: 5-30.
- Saint-Paul, G. (1992), "Technological Choice, Financial Markets and Economic Development," *European Economic Review*, 36(4): 763-781.
- Schumpeter, Joseph A. 1911. *A Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Sehrt, Kaja, "Banks Versus Budgets: Credit Allocation in the People's Republic of China, 1984-1997." Ph.D. dissertation, Department of Political Science, University of Michigan, Ann Arbor, MI, 1999.
- Shanghai Securities News (2009), "Supernormal Development-Institutional Investors Become the Leading Force of China's Security Market", *ShangHai Securities News* 2009.9.5.
- Shaw, A.S. 1973. *Financial Deepening in Economic Development*. New York: Oxford University Press.
- Stiglitz, J. E., 1994. 'The Role of the State in Financial Markets'. In M. Bruno and B. Pleskovic (eds.), *Proceeding of the World Bank Annual Conference on Development Economics, 1993: Supplement to the World Bank Economic Review and the World Bank Research Observer*. World Bank, Washington, D.C., 19-52.
- Stiglitz, J. E., 2000. 'Capital Market Liberalization, Economic Growth and Instability'. *World Development*, 28: 1075-1086.
- Stock, J. H. and N. W. Watson. 1993. "A simple estimator of co-integrating vectors in higher order integrated systems", *Econometrica*, 61 (4): 783-820.
- Trew, A. W. (2006), "Finance and Growth: A critical Survey," *Economic Record*, 82(259): 481-490.
- Wang Guangqian (2009), "China's Financial Reform and Monetary Policy", *Economic Science Press*, 2009.
- Wu Xiaoling, 2008. 30 years' Retrospect and Prospect on the Financial Institution Reform in China. People's Publishing House.
- Yark, Albert, and Sehrt Kaja, 2001. Testing of financial Intermediation and Banking Reform in China. *Journal of Comparative Economics*, 29: 608-644
- Zhou Daoxu, 2010. China's Insurance and its Regulation. China Financial Publishing

House.

Gerard Caprio, 2009. Financial Regulation in a Changing World: Lessons from the Recent Crisis. Working papers.

Yi Gang, 2009. On the Financial Reform of China. The Commercial Press.

Hu Ruyin, 2008. The Development and Transition of Chinese Capital Market. Shanghai Renmin Press.