

BANKING REFORMS IN THE TRANSITIONAL ECONOMY OF CHINA

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A THESIS SUBMITTED
FOR THE DEGREE OF PH. D. (ECONOMICS)
DEPARTMENT OF ECONOMICS
NATIONAL UNIVERSITY OF SINGAPORE
2005

To my beloved parents

ACKNOWLEDGMENTS

I would like to express my sincere appreciation to my supervisor, Associate Professor Jose L. Tongzon, for his invaluable advice, encouragement and enthusiasm. He demonstrates empathy and guidance skills through his ongoing enthusiasm in my work. Professor Tongzon avails himself readily whenever I need to consult him on issues relating to my areas of research, despite his busy working schedule. His patience and tenacity are noteworthy. His good listening skills has helped me to move forward positively in my academic pursuit. We have an excellent working relationship.

Other positive support came from Associate Professor Tilak Abeysinghe, Associate Professor Gavin Peebles, Dr. Yu Qiao, fellow peers OG and Enrico, Diana, the administration staff of the Department of Economics, and the library personnel of the National University of Singapore and the East Asia Institute. My inner strength comes from family members and friends, including those from afar, who believe in the “paradigm shift” that I am embarking on in my life. I am thankful to them for their outpourings of good wishes and bountiful blessings. I am, ultimately, eternally grateful to the Most High for His unfailing love, mercy and grace.

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SUMMARY

The banking reforms in China have played an instrumental role in the country's overall effort to transform a centrally-planned economy into a market-driven economy. The thesis examines the changes that took place in the banking system from 1979 to 2003. It attempts to address four main areas when analyzing the banking industry during this period.

Firstly, the thesis finds answers to some important policy-related questions concerning the impact of banking industry development on China's overall economic growth. The Granger-causality empirical outcomes reveal that banking industry development helps explain its economic growth in the reform era. There is a "supply-leading" causality relationship between two financial deepening indicators, that is, real M1 to real GDP growth, and real M2 to real GDP growth, and the economic growth indicator, that is, real GDP growth. With the exception of real quasi-money to real GDP growth, the empirical test also demonstrates a similar "supply-leading" causal relationship between all the other financial deepening indicators and real fixed assets investments growth. The study concludes that the more productive non-state sector should not be overlooked in the financial deepening process as it will be the new engine of growth for China in the foreseeable future. It recognizes, however, that the primary shortcoming of this empirical test is that it completely ignores the role of curb market financing in non-state sector development.

Secondly, the relative technical and scale efficiencies of a sample of Chinese banks are analyzed using a non-parametric technique, called Data Envelopment Analysis (DEA). This technique allows the identification of both the “relatively” efficient and inefficient banks. Recommendations are made to all the inefficient banks to implement percentage reductions of their various input usage areas so as to attain full efficiency or move to the “efficient frontier”. The results also allow management to revisit the way resources are currently utilized and better plan for their organizations’ future.

Thirdly, in analyzing the effectiveness of the central bank, the People’s Bank of China (PBC), as a monetary policy manager, financial supervisor and regulator, the thesis concludes that it has only gained some operational independence and not complete independence as China’s central banker. As China progressively opens to the rest of the world, it is timely that the PBC revisits its roles and functions and makes a quantum leap to genuine central bank management, as practiced in market economies.

Finally, in assessing the implications of China’s accession to the World Trade Organization (WTO) on domestic banking, the thesis highlights that the banks need to embark on six major strategies to counter the increasing competition amongst themselves as well as from their foreign counterparts. The new banking landscape ultimately will still be shaped by China’s trade and investment liberalization and overall economic reform program.

It is apt that the thesis concludes with a pragmatic analysis of the many challenges that a post-WTO environment would bring about, with China's banking industry moving on to a higher plane, and the banking reforms starting on a new journey in this new millennium.

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LIST OF ACRONYMS

ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
ATM	Automated-teller-machine
BCC	Banker, Charnes and Cooper
BOCHK	Bank of China (Hong Kong) Ltd.
CCP	Chinese Communist Party
CCR	Charnes, Cooper and Rhodes
CFWC	Central Financial Work Committee
Citibank	Citibank NA
CRS	Constant returns-to-scale
DEA	Data Envelopment Analysis
DMUs	Decision-making units
FDI	Foreign direct investment
GDP	Gross domestic product
GNP	Gross national product
HKD	Hong Kong dollars
HSBC	Hong Kong and Shanghai Banking Corporation
M&A	Merger and acquisition
MPC	Monetary Policy Committee
M1	Sum of currency and demand deposits
M2	Broad money supply
PBC	People's Bank of China

PTE	Pure technical efficiency
RMB	Renminbi
SE	Scale efficiency
SEZ	Special Economic Zone
Standchart	Standard Chartered Bank
SPC	State Planning Commission
SFA	Stochastic frontier approach
TE	Overall technical efficiency
USD	United States of America dollars
VRS	Variable returns-to-scale
WTO	World Trade Organization

CHAPTER ONE

Banking reforms: policy changes, implementation issues and implications

1.1 Introduction and motivation of the thesis

China has had a varied and “progressive” experience in the banking arena from the time of the Qing Dynasty (1644-1911); to the founding of the Republic of China (ROC), by Dr. Sun Yat-Sen on 1st January 1912; the Communist takeover and founding of the People’s Republic of China (PRC) in 1949, led by Chairman Mao Ze-Dong; the Cultural Revolution era (1966-1976); the Deng Xiao-Ping era with major economic reforms implemented from 1978; and to the present day when it faces challenges that comes with globalization and the advent of the New Economy (Samansky, 1981; Byrd, 1983; World Bank, 1990; Dipchand et al., 1994; Gang, 1994; Tam, 1995; Wan, 1999; Cheng, 2003).

Banking reforms have played an important role in China’s overall effort to transform a centrally-planned economy into a market-based economy. The banking system, however, faces many challenges as it is being transformed into a modern system, emulating those in a capitalistic world. While it boasts of state banks that are huge even by international standards, that is, by assets, the banking system’s fragility has led to many debates among the academia, and the private and public sectors alike, on the possibility of it triggering off a financial crisis. Its

transformation has been much hampered by the weaknesses and inertia reforms of the enterprise, social security, and the budgetary systems (Lardy, 1998b; Xu, 1998; Dornbusch and Giavazzi, 1999).

The thesis has four main objectives. It seeks to do the following:

1. address some important policy-related questions concerning the impact of banking industry development on China's overall economic growth during the reform era,
2. analyze the relative efficiencies of the financial intermediaries,
3. analyze the effectiveness of the central bank, that is, the People's Bank of China (PBC) as a monetary policy manager, financial supervisor and regulator, and
4. assess the implications of China's accession to the World Trade Organization (WTO) on domestic banking, and analyze the major strategies that these banks could embark on to counter the problems that may impair their competitiveness in a post-WTO setting.

CHAPTER TWO of the thesis, entitled "Whither the impact of financial deepening on China's economic growth 25 years on?" seeks to address the following questions regarding the development of the banking industry. These include the following:

- how was the state of financial intermediation in the initial 25 years of reform?

- does the development of the banking industry help to explain China's economic growth during the reform era and vice versa?
- have both the state and non-state sectors benefited equally from the development of the banking industry?, and
- does financial intermediation include the role of informal finance or curb market financing in private sector development?

In CHAPTER THREE, a non-parametric technique called the Data Envelopment Analysis (DEA) is used to analyze the relative efficiencies of the Chinese financial intermediaries. The study compares a sample of major banks and attempts to answer the following questions:

- what are the relative technical and scale efficiencies of these banks?
- how do the banking segments perform, such as the state-owned commercial banks, other national commercial banks, regional banks, and city commercial banks?
- what account for their inefficiencies?, and
- what areas of operations can they improve upon?

CHAPTER FOUR, entitled "A paradigm shift for China's central banking system" seeks to provide answers to the following questions regarding the role of the central bank:

- what leadership role does the PBC play in China's central banking?
- how effective is the PBC in executing its roles as a monetary policy manager, financial supervisor and regulator?
- how does the PBC manage its relationship with the central government, the party, the local governments, state-owned enterprises and the financial institutions?, and
- how do the current organizational and operational mechanisms play a positive role in the banking industry? do they exacerbate the problems already faced by the industry?

The implications of China's accession to WTO on domestic banking are analyzed in CHAPTER FIVE, which is entitled "Confronting the new Chinese banking environment post-WTO: implications and strategies". The following key questions are discussed:

- what are the strategies that the domestic banks need to work on to counter the increasing competition amongst themselves as well as from their foreign counterparts?
- will the intense competition from the foreign banks result in reduced profitability, market shares and "brain drain" of business and critical staff? or will the new climate also offers new revenue-generating business opportunities, and innovative and quality products and services?

- how will the new Chinese banking marketplace look like in a post-WTO era?, and
- will the new banking landscape ultimately still be shaped by China's trade and investment liberalization and overall economic reform program?

The concluding chapter, that is, CHAPTER SIX, revisits the approach undertaken by the government in reforming the banking industry so as to get a clearer picture of where it is heading to, in the near future. This is especially so when the industry is now at a “new” crossroads after having experienced two and a half decades of transformation.

While major banking reforms in China were not implemented until early 1990s (Ariff and Khalid, 2005), this introductory chapter examines the changes that took place in the banking system since 1979. The period for analysis is further divided into two phases, namely, 1979-1993, and 1994-2003. In each phase, policy changes were scrutinized and their implementation issues highlighted. Although the reforms that took place during the 1979-1993 period were significant, as the Chinese economy emerged from the recent “Cultural Revolution” setting to a market economy, their implementations had some impact but were too slow. However, they were part of the broader financial reforms which aimed to mobilize savings, facilitate a more efficient allocation of credit and promote macroeconomic stability. Ultimately the objective was to raise China's economic

performance. The restoration of the independence of the central bank, the PBC, was an important reform that took place. This claim of the PBC's "independence" stature was, however, widely criticized as it was seen manifesting operational independence and not complete independence. A discussion on its lack of independence is found in CHAPTER FOUR of this thesis, "A paradigm shift for China's central banking system" (pp. 146-182). Other banking developments included the creation of a formal banking structure and state banks with their own economic niche roles; the increase in savings or investment channels for the individuals and enterprises; the development of a wide variety of financial instruments, and the establishment of money and capital markets.

The period 1994-2003 saw the pressing need for urgent economic reforms as the country faced pressing battles with slowing economic growth figures. The growth rate of GDP declined from 12.6 per cent in 1994 to 7.1 per cent in 1999 before it rose to 8.0 per cent in 2000, 8.3 per cent in 2002, and 9.3 per cent in 2003 (see Table 1.1). As part of the government's comprehensive economic program announced in 1994, the banking industry was to be developed further to facilitate both the development of the overall financial sector as well as effective monetary policy operations. In the later years much of the government's focus were devoted to recapitalizing the pillar state banks which faced high non-performing loans and were insolvent, the empowering of the central bank in its supervisory and regulatory roles, and the accession of China into the WTO.

This chapter provides adequate background knowledge on China's endeavors in reforming its banking industry, so as to allow better understanding of the other areas of analysis in the subsequent chapters of the thesis. In all, the thesis meets its objectives of effectively scrutinizing the layers below the "ice-berg" of banking reforms in China through its boldness in making a "gradualistic" leap from a "command-driven" banking system to a "market-driven" one, embedded with "Chinese characteristics", and in the process changing the face of the Chinese financial landscape.

This chapter is organized as follows. Section 1.2 discusses China's economic performance, while the policy changes, issues and implications of the banking reforms during the two periods are explored in Sections 1.3 and 1.4 respectively. Section 1.5 concludes.

1.2 Economic performance

The Chinese economy has achieved spectacular performance since 1979, with its GDP growing at an average rate of 10.3 per cent during 1980-1990 and 9.6 per cent during 1990-2003 (World Development Indicators, 2005). In 1978, China's total GDP was only USD44 billion. However, by mid-2000 its total nominal GNP had reached USD1 trillion (Wong, 2003). China's GDP per capita had also steadily moved up from USD167.6 in 1980 (Dutta, 2006) to USD963 in 2002 (World Development Indicators, 2005).

Table 1.1 and Table 1.5 highlight the economic and social performance of the Chinese economy during the period 1979-2004. In the last five years, its GDP has consistently achieved growth rates of between 7.5 per cent and 9.5 per cent. While its agricultural sector's share of GDP has declined from 31.17 per cent in 1979 to 13.11 per cent in 2004, the services sector's share of GDP has increased from 21.44 per cent in 1979 to 40.67 in 2004. The industry sector's share of GDP has been consistent since 1979, averaging 45 per cent. In fact the growth rate of this sector fell to 11.1 per cent in 2004 from 12.7 per cent in 2003 (Asian Development Outlook, 2005).

There was an increase in the growth rate of domestic savings to GDP in particular after 1994, averaging 40 per cent. Ariff and Khalid (2005) reiterated that this was largely due to the reforms that were initiated during the 1991-95 period. Fixed

capital formation to GDP has shown a gradual increase between 1979 and 2004, although there was an approximate 10 per cent increment over this period.

Between 1979 and 2004 China has experienced both inflationary and deflationary pressures. There were two episodes of high inflation which exceeded 10 per cent. These occurred in 1988-1989 and 1993-1995 (Woo, 2003). The change in consumer prices was 18.33 per cent in 1989 and 24.1 per cent in 1994. Beginning in 1995, the inflationary pressure started to decline and meanwhile the growth rate of GDP declined from 9.6 per cent in 1996 to 8.8 per cent in 1997, 7.8 per cent in 1998, and 7.1 per cent in 1999 before it rose to 8.0 per cent in 2000. The PBC has experimented with both direct and indirect controls to manage money supply during these inflationary and deflationary periods. The share of money supply to GDP has grown tremendously from 27.46 per cent in 1979 to 150.14 per cent in 2004. Its growth rate in 2004, however, fell to 14.6 per cent from 19.6 per cent in 2003 (Asian Development Outlook, 2005).

Table 1.1: Economic performance (per cent)

Economic indicators	1979	1984	1989	1994	1999	2000	2001	2002	2003	2004
GDP growth	7.6	15.2	4.1	12.6	7.1	8.0	7.5	8.3	9.3	9.5
Sectoral shares of GDP, Value Added (%)										
- Agriculture	31.17	32.01	25.0	19.65	16.22	14.83	14.14	13.49	12.56	13.11
- Industry	47.38	43.31	43.04	46.57	45.76	45.91	45.15	44.79	45.97	46.22
- Services	21.44	24.68	31.95	33.78	38.02	39.25	40.69	41.72	41.46	40.67
Gross domestic savings/GDP	35.58	34.37	35.02	42.2	39.4	38	38.6	38.7	47.00	47.00
Gross fixed capital formation/GDP	28.51	29.64	25.66	34.97	32.87	32.88	33.57	34.84	37.73	38.38
Inflation	-	-	18.33	24.1	-1.4	0.4	0.7	-0.8	1.2	3.9
M2/GDP	27.46	44.01	62.08	85.69	126.34	129.52	133.31	142.61	151.06	150.14
Trade/GDP	18.07	22.73	34.42	47.31	37.97	44.24	43.08	47.70	56.91	65.35
Current account balance/GDP	-	0.79	-1.26	1.30	1.60	1.9	1.5	2.8	3.2	3.3
Foreign direct investments, net inflows /GDP	0.0	0.49	0.99	6.23	3.91	3.55	3.76	3.89	3.26	2.84

Sources: Asian Development Outlook (various issues), World Development Indicators (various issues)

China's international trade has expanded steadily with its overall share in world trade rising from less than 1 per cent in 1979 to about 6 per cent in 2003 (Prasad and Rumbaugh, 2004). With the relaxation of import and export controls in the 1980s and the implementation of broader trade reforms in the 1990s, China's trade contribution to GDP has increased 3.6 times, that is, from 18.07 per cent in 1979 to 65.35 per cent in 2004. Both imports and exports have increased rapidly. It attained a current account surplus of 3.3 per cent of GDP in 2004.

China now serves as the final processing and assembly platform for a large quantity of imports from other Asian countries, in particular, which are to be exported to western countries. Table 1.2 shows its growing market shares in major export markets in the developed nations such as Japan, the United States of America and the European Union. In 1980 it held a 3.1 per cent, 0.5 per cent and 0.7 per cent market shares in Japan, the United States of America and the European Union, respectively. However, by 2003 this has increased to 18.5 per cent, 12.5 per cent and 8.9 per cent in these countries, respectively. At the same time, the Chinese economy's role in Asian regional trade has also become increasingly important. It is now among the most important export destinations for other Asian countries such as the ASEAN (Association of South East Asian Nations), Japan, South Korea, and Taiwan, as illustrated in Table 1.3. The Asian countries' share of imports increased from 15.0 per cent in 1980 to 52.8 per cent in 2003, slightly more than half of all China's total imports.

Table 1.2: Market share in major export markets (imports from China divided by total imports, in per cent)

	1980	1990	1995	2000	2002	2003
Japan	3.1	5.1	10.7	14.5	18.3	18.5
United States of America	0.5	3.2	6.3	8.6	11.1	12.5
European Union¹	0.7	2.0	3.8	6.2	7.5	8.9

Source: Rumbaugh and Blancher (2004)

Table 1.3: Sources of imports (as a percent of China's total imports)

	1980	1990	1995	2000	2002	2003
Asia	15.0	41.0	47.1	53.5	53.1	52.8
ASEAN	3.4	5.6	7.4	9.3	10.4	11.3
Japan	26.5	14.2	21.9	17.8	18.1	18.0
South Korea	-	0.4	7.8	10.0	9.7	10.4
Taiwan	-	-	11.2	11.3	12.9	12.9
European Union	15.8	17.0	16.1	13.3	13.1	12.9
United States of America	19.6	12.2	12.2	9.6	9.2	8.2

Source: Rumbaugh and Blancher (2004)

¹ Excluding intra-European Union trade

China is also very successful in attracting foreign direct investment (FDI). In recent years, it has become the most favored destination of all developing economies for FDI. This registered almost 4 per cent of the GDP between 1999 and 2003. In 2004 China's FDI was valued at USD60.6 billion, 3.32 per cent higher than 2003 (China Knowledge Press, 2005). As both exports and FDI grow, her foreign exchange reserves grow and help contribute to her international credit rating. By the end of 2003, China's foreign exchange reserves reached USD416,199 millions, becoming one of the ten largest holders for foreign exchange reserves (see Table 1.4).

Table 1.4: The ten largest holders of foreign exchange reserves in 2003 (USD million)

Country	Total reserves
Japan	673,554
China	416,199
Taiwan	212,315
USA	184,024
South Korea	155,472
Hong Kong	118,388
India	103,737
Germany	96,835
Singapore	95,746
Russia Federation	78,409

Source: World Development Indicators (2005)

Table 1.5 highlights the social performance of the Chinese economy. The unemployment rate has ranged between 2-4 per cent for the last two and a half decades. Unemployment fell marginally to 4.2 per cent in 2004 from 4.3 per cent in 2003. However, this does not include laid-off state-owned enterprises' workers or those who migrate to the cities looking for employment (Asian Development Outlook, 2005). The continuing downward trend of China's population growth rate, which fell from 1.33 per cent in 1979 to 0.6 per cent in 2004, is largely due to its "one-child" policy.

Table 1.5: Social indicators (per cent)

Social indicators	1979	1984	1989	1994	1999	2000	2001	2002	2003	2004
Unemployment rate	-	1.9	2.6	2.8	3.1	3.1	3.6	4.0	4.3	4.2
Population growth	1.33	1.31	1.53	1.13	0.95	0.71	0.73	0.67	0.62	0.6

Sources: Asian Development Outlook, World Development Indicators (various issues)

In general, China's economic performance in the past two and a half decades has indeed been remarkable. Its membership to the WTO in 2001 and the current dynamic growth in almost every major sector of the economy would help ensure China's prospects of sustained economic growth in the future. This would also have far-reaching implications for the Asia Pacific region and the rest of the world.

1.3 1979-1993

The key reforms during this period involved mainly institutional developments to strengthen the banking system, and it was clear that financial intermediaries, such as the banks, started to play dominant roles in resource allocation. The pre-1979's financial system was characterized by a Soviet-style "monobanking" system with only three main players, namely, the central bank, PBC, the Bank of China and the People's Construction Bank of China.² While the Bank of China took care of the international business and the People's Construction Bank of China provided the funding for the construction of infrastructure, the PBC also held a second portfolio of running the industrial, commercial and savings banking businesses. Their functions were mainly to accommodate the central planning mechanism so as to allow it to realize its physical output plan for the economy (Xu, 1998).

Since 1979, with economic "openness" being hyped as a strategic move by the elite echelons, the banking system was restructured along with overall macroeconomic reforms, in particular after every macroeconomic fluctuation experienced by the country. The PBC's general banking businesses were taken over by the Industrial and Commercial Bank of China on 1st January 1984, while it focused specifically on monetary affairs and acted as a lender of last resort. Together with the Bank of China and the People's Construction Bank of China,

² It was later renamed as China Construction Bank.

the Agricultural Bank of China³ and the Industrial and Commercial Bank of China, were positioned strategically as “specialized banks”, each serving a niche sector, such as foreign exchange, capital construction, agriculture, and urban and industrial, respectively. Thus a two-tiered banking structure soon evolved, consisting of the central bank and the specialized banks.

Banks only began to play a dominant role in the country’s resource allocation process when the government converted its budgetary grants, mainly to state-owned enterprises, to loans which were subjected to interest charges. The central bank also changed its ways of doing business with the banks. Unlike under the “monobanking” system, credit from the PBC had to be repaid. Since 1986, the two-tiered banking structure was replaced by a three-category “Specialized Banking System”. This included a new player, that is, the “other financial institutions”, namely, the non-bank financial institutions. This new structure formed the cornerstone of a new financial system in China during this period. It laid the stage for the many major reforms that took place to lift the country out of its “closed-communist” economy and enter the international financial arena. The “other financial institutions” included new players such as the trust and investment companies, negotiable securities companies and financial companies funded by the local governments and enterprises, the rural and urban credit cooperatives societies, other commercial banks, regional banks and housing

³ The Agricultural Bank of China’s operations were previously subsumed within the Rural Bank Management of the central bank, particularly since 1965; and was reestablished in February 1979 as a separate bank.

savings banks. It was also during this period that the reformed system also called for a decentralization of the existing credit management system. The banks were given the discretion to make loans, as long as the total sum still equaled the planned target figure, where previously the central bank called the shots. They were allowed to retain profits, although these were insignificant as the difference between the loan and deposits interest rates was small. As illustrated by Table 1.6, the 5-year average spreads for 1981-85 and 1986-90 were 0.9 per cent and 0.36 per cent, respectively (Ariff and Khalid, 2000). These were low compared to the 3.3 per cent spread for 2003 (World Development Indicators, 2005). Table 1.7 shows a comparison of China's interest rate spread with other countries' for 1990 and 2003. Its spread is relatively smaller than many of the other countries', except for Japan in 2003. The Chinese banks were allowed to make working capital available to individuals at rates of up to 20 per cent greater than the central bank's posted rate (Lardy, 2004) and since 1996 they were allowed to set their own interest rates "within a 30 per cent around a base rate set by the authorities" (Ariff and Khalid, 2005, pp. 82). The banks were also to make loans based on borrowers' credit worthiness and not according to what their physical plans demanded, as was done previously (Dipchand et al., 1994; Gang, 1994).

Table 1.6: Interest rates (5-year average)

Deposit and lending rates	5-year average (per cent)	
	1981-85	1986-90
Deposit rate	5.98	8.6
Lending rate	6.88	8.96
Spread	0.9	0.36

Source: Ariff and Khalid (2000), pp. 247

Table 1.7: Comparisons of interest rate spreads

Country	Interest rate spread (percentage points)⁴	
	1990	2003
Australia	4.4	5.1
Bangladesh	4.0	8.2
China	0.7	3.3
Germany	4.5	7.0
Hong Kong	3.3	4.9
Indonesia	3.3	6.3
Japan	3.4	1.8
New Zealand	4.4	4.7
Singapore	2.7	4.8
Thailand	2.2	4.6

Source: World Development Indicators (2005)

⁴ The calculation derived is based on the interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits (World Development Indicators, 2005).

Two other implementations also changed the banking landscape of China, namely, the creation of the inter-bank market in 1986 (Dipchand et al., 1994; Chang et al., 1999), and the re-entrant of foreign banks (Reynolds, 1982; Zhang and Zheng, 1993). These institutions, considered “capitalistic” with embedded-western ideologies, were closed down since communism took over the country in 1949. The inter-bank market not only provided a good source of credit for the many banks and regions whose needs were omitted from the state credit plan, it also facilitated the most efficient use of funds. Since its inception, China’s inter-bank market developed very rapidly. From a modest business volume of RMB30 billion in 1986 (Delfs, 1986), it grew to RMB230 billion in 1987 and RMB520 billion in 1988. The latter is a more than 17-fold increase over the 1986’s business volume. However it declined to RMB260 billion in 1990 (Zhao, 1991; Shi and Yan, 1992), a result of the austerity measures undertaken by the government to combat inflation and an overheated economy (Dipchand et al., 1994, pp 129).

The foreign banks, on the other hand, began to play an instrumental role in channeling foreign funds to China and transferring banking technical and management know-how, these being critical ingredients in the reforms of the financial sector. These were necessary for the overall development of the country’s real sector. Moreover, the government understood that the ability to access other countries’ financial markets had to be reciprocated with the opening up of China’s market to the foreign banks. By the end of June 1993, foreign banks had 56 operational institutions (which included branches, wholly-owned foreign

bank subsidiaries or Sino-foreign joint venture banks) and 260 representative offices (Zhang and Zheng, 1993, pp.1). A chronology of foreign banking reforms in China from 1979 to 2006 is provided in the “APPENDIX” section of the thesis.

1.3.1 Assessments and implementation issues

While key institutional changes did lay the stage for a new post-1979 Chinese financial era, their implementations were not without difficulties. The legacy of central planning in the pre-1979 period prevented the successful implementation of these banking reforms. The main players, that is, the central bank, the specialized state banks, the state-owned enterprises and the local governments, were not capable of functioning in this new banking environment during this period. This was because they were either continuing to operate under the rules of the old regime, or they were resisting operating under the new regime. The following assessments of the banking reforms help create awareness of the implementation issues encountered during the 1979-1993 reform process.

Firstly, the PBC was given the mandate to function as the country’s designated central banker. It was a right policy move to separate the central bank from its commercial businesses as this would allow the PBC to focus only on central banking affairs and also helped to minimize any conflict of interest. However, in practice, the functions of the PBC were blurred and its power as a central bank was restrained, in particular it being put under the steering influence of the

“Cabinet-equivalent” State Council, which was the ultimate decision-maker of monetary policy.

Secondly, the decentralization of the credit management system was a positive move. The banks and financial institutions could now compete for customers, and be held accountable for their business performances, that is, being responsible for their own profits and losses. The creation of the specialized state banks allowed for focus attention to niche sectors, thereby contributing to their economic development. However, many of them continued to act as mere agents for the PBC, although they were expected to operate autonomously and independently. They were obliged to fulfill fiscal objectives by lending to the state-owned enterprises, and at preferential rates. So ironically the termination of budgetary grants, from the PBC to the state-owned enterprises, had resulted in the central bank passing the job over to the banks to serve fiscal needs, an area that conflicted with their performance-oriented business goals. Besides, although there were some changes made to the structure of interest rates, these were still under the control of the PBC. They were not market-driven.

Thirdly, the addition of “other financial institutions”, that is, the non-banking financial institutions, to the three-category “Specialized Banking System”, created opportunities for some of their owner organizations to operate outside the government’s credit plan. This resulted in the violations of government regulations and disruptions in the financial system. This was particularly so for

the trust and investment companies which were set up mainly as non-retail deposit-taking finance companies and some of them were granted discretion to borrow from abroad. These companies were often backed by the state banks, regional governments or sector specific ministerial organizations, and hence there was strong political influence on the operations of the trust and investment companies. Many of them served as vehicles for funding unregulated and high-risk ventures such as real estate investments and stock trading, and were blamed for the financial disorder and runaway inflation in 1988 and the wave of financial speculation and irregularities in 1992-1993 (Pei, 1998). The implementation of the financial reform package in 1994, however, put the conflicting relationships between the non-bank financial institutions and their founding companies under close government's scrutiny, where banks had to divest their security, trust and investment businesses.

Fourthly, there was inefficiency in the allocation of capital in the banking system, with the continued use of the three-pronged approach, namely, policy lending being the largest share of total lending; the central bank's allocation of loanable funds from regions of high growth to low growth as demonstrated by their loan-to-deposit ratios (Lardy, 1998b; Tsai, 2002); and the continued reliance on administered interest rates. Much of the dissemination of funds was directed through the implementation of policy lending. Funds flowed from the central bank to the financial institutions, primarily the specialized banks, and finally to the borrowers, the state enterprises. At the end of 1993, these banks received more

than 97 per cent of the total central bank loan outstanding of RMB989.85 billion (Almanac of China's Finance and Banking, 1994; People's Bank of China, 1994).

Moreover, the effect of the lending quotas imposed by the State Planning Commission (SPC) and the PBC was to reallocate loan funds away from regions of relatively high economic growth, such as Guangdong, Zhejiang and Fujian, to regions of relatively low economic growth, such as Heilongjiang. The main beneficiaries of the financial resources were the loss-making state-owned enterprises which were responsible for supporting "pillar industries", hence "crowding out" the growing non-state enterprises. Although the non-state sector accounted for 51.9 per cent of the total industrial output by 1992, it accounted for only 20.7 per cent of the total credits being utilized by the whole economy (Chen, et al., 1999). The "overlooked" non-state sector had to rely on either the regional banks and non-bank financial institutions, such as the urban credit cooperatives (Girardin, 1997; Girardin and Bazen, 1998), the reinvestment of profits, curb market financing (Tsai, 2002), or the state-owned firms with which they have close economic ties (Lardy, 1998b), to finance their growth. These firms were, however, not forthcoming in extending credit to the non-state enterprises to prevent them from providing competition, particularly in the capital-intensive manufacturing sector. Such limited competition from the non-state sector was one reason that accounted for the dismal economic performances of many of the state enterprises.

Lastly, the specialized banks were insulated from competition. The introduction of competition was one of the significant developments in the mid-1980s, particularly when the authorities allowed the entry of new financial institutions into the marketplace. However, their sheer numbers were overwhelmed by the specialized banks' number of branches, thousands of sub-branches, and the organizational structure below each sub-branch. It was also a fallacy that the presence of foreign banks would help inject competition in the banking industry, hence increasing the financial stature of the Chinese economy. Instead these foreign players faced many operational restrictions, such as the limited scope in business and maintaining geographical reach (Zhang and Zheng, 1993).

1.4 1994-2003

The authorities, having experienced the initial challenges of banking reforms during the 1979-1993 period, were now able to develop new measures to overcome these challenges and to better manage the banking industry. The new financial developments included the establishment of policy banks to handle fiscal related affairs, the commercialization of the specialized state banks, the enactment of the rule of law for central bank management and overall financial governance, the abolition of the credit-quota plan in late 1997, a major restructuring at the central bank along the line of the United States of America's Federal Reserve System, and measures to strengthen supervision in 1998 when financial risks

accumulated over the years surfaced, particularly since 1992 when financial speculation started to occur in China (Pei, 1998).

The establishment of three policy or development banks⁵ in 1994 was a positive move to eliminate the conflict of interests in the roles of the specialized state banks between serving the marketplace as well as fulfilling their fiscal obligations. This would allow them to focus more on commercial banking. This also led to the justification of transforming these specialized banks into authentic state-owned commercial banks as the economy progressed along a market-oriented path.

The state-owned commercial banks had to undergo a paradigm shift when they were transformed to commercial entities. The new business measurements included running the banking operations on commercial bases (sharing the profit and taking the responsibility of losses), adhering to risk management, and assets and liabilities ratio management. The banks also ventured into “uncharted” businesses previously not allowed. While the niche sector of the Bank of China had previously been in the foreign exchange area, the other three state-owned commercial banks could now also compete for the same business as the Bank of China.

⁵ These are the Agricultural Development Bank, the Export and Import Bank of China, and the State Development Bank which was later renamed as China Development Bank.

To further emphasize on the need to create a sound and intact financial sector environment, which also entailed a strong and powerful central bank and a level playing field for all competing financial institutions, a financial legislative framework became necessary. This led to the formalization of two important laws in 1995, and these were the “Law of the People’s Republic of China on the People’s Bank of China” and the “Commercial Banking Law”. This was landmark recognition by the authorities that the rule of law or having a legal framework is critical in financial supervision and regulation (Tokley and Ravn, 1997; Wan, 1999).

While the “Commercial Banking Law” protects the lawful interests of the key players in the banking industry, namely, the commercial banks, the depositors and other customers, the “Law of the People’s Bank of China” was issued to “confirm” the PBC as the country’s central bank. The law formalizes its monetary policy management role, strengthens its supervisory administration of the financial sector, and legalizes non-interferences from any local governments. The strengthening of these roles of the central bank was deemed necessary, particularly as a financial supervisor and regulator, and also especially after a spate of bankruptcies that occurred as a result of increasing non-performing loans and unhealthy banking practices (Lardy, 1998b; Xu, 1998).

With the development of the policy banks and the commercialization of the state-owned banks, China’s “Comprehensive Banking System” (see Figure 1.1) now

consists of the central bank, the “big four” state-owned commercial banks, other national commercial banks, regional commercial banks, city commercial banks, policy banks, foreign banks and the non-bank financial institutions. A discussion on the commercial banks’ differences in their organizational structures and the sectors they service is found in CHAPTER THREE. Many of these banks are effectively controlled by government bodies or by enterprises and organizations that are themselves government-controlled. The non-bank financial institutions include the trust and investment companies, insurance companies, finance companies, financial leasing companies, securities companies, rural credit cooperatives and urban credit cooperatives. As for the foreign banks, the advantages of setting a footprint in the huge Chinese marketplace convince the foreign financial institutions that they should not forgo getting a slice of the lucrative pie, particularly after China gained membership into the WTO in December 2001. This subject will be discussed in Section 1.4.1 on “Issues and implications.



Figure 1.1: Comprehensive Banking System

Source: Adapted from the People's Bank of China (2000)

The mandatory credit-quota plan, where the central bank set the lower limit for new loans allocated annually to specific sectors, mostly to loss-making state-owned enterprises, was abolished in late 1997. Banks were now allowed to lend according to commercial considerations, provided that their lending was in line with the asset/ liability ratios and monetary policy targets of the central bank. Hence with a relatively more efficient allocation of credits, loan default and non-performing loans were expected to be reduced.

A series of measurements were undertaken in 1998 and 1999 to maintain the soundness of the financial sector. These included the PBC taking an active role in recapitalizing the troubled state-owned commercial banks through the issuance of RMB270 billion special treasury bonds by the Ministry of Finance. It also coordinated some restructuring, merger deals and closing down of some of the banks and non-bank financial institutions that experienced substantial financial risks, as illustrated by Table 1.8.

There was also a major restructuring at the PBC, along the line of the United States of America's Federal Reserve System. In November 1998, a nine-regional branch network replaced the 31-provincial branch framework. These branches perform defined central bank functions of the PBC in their respective regions. This change was expected to empower the PBC, and free it from administrative interferences, particularly from the local governments, and strengthen its independence in financial supervision (Almanac of China's Finance and Banking,

1999). Four asset management companies⁶ were established, between April and October 1999, to take over more than RMB1 trillion of non-performing loans from the state-owned commercial banks and helped them restructure. Finally, the promulgation of the “Provisional Regulations on Prevention and Dissolution of Financial Institution Payment Risks” to guide the process of market exit for the financial institutions was a significant step forward in the development of financial regulation in China (Almanac of China’s Finance and Banking, 1999; Lardy, 1999; Mo, 1999).

⁶ The asset management companies taking over the non-performing loans of the state-owned commercial banks were the Great Wall for the Agricultural Bank of China, Orient for the Bank of China, Cinda for the China Construction Bank, and Huarong for the Industrial and Commercial Bank of China. Currently they play multiple roles such as loan recovery agencies, asset holding companies and also venture capitalists as they get involved in the restructuring of the state-owned enterprises.

Table 1.8: Summary of closure of financial institutions in China

Closed institutions	Closing date	Face value on closing date (RMB billion)	
		Assets	Liabilities
5 UCCs in Hainan	06/12/97	5.4	5.9
Hainan Development Bank	21/06/98	16.9	16.6
UCC in Luchuan, Guangxi	16/06/98	0.2	0.2
Hongye UCC in Qinghai	12/07/98	0.0	0.0
12 UCCs in Beihai, Guangxi	26/10/98	1.5	1.8
20 UCCs in Pingan, Guangdong	07/12/98	8.5	8.3
CATIC	04/01/97	30.1	31.4
CVIC	06/98	10.3	10.4
GITIC	06/10/98	35.9	34.1
Total		108.8	108.8

Source: Liu, S. (1999)

1.4.1 Issues and implications

During this period, the implementation of the banking reforms hit more glitches even when the new financial measures were announced. The major banks, in particular the state-owned commercial banks, not only lacked good credit allocation skills, but were required to continue funding the unproductive and loss-

making state enterprises for social and political reasons. They were functioning on a non-commercial basis, while being expected to be commercially-run, having to bear the responsibility of financing the state-owned enterprises for developmental purposes; and thus became unprofitable. The banks and the non-bank financial institutions' unsound financial status could easily trigger a financial crisis in the foreseeable future if the government does not intervene to eradicate the root problems. These problems point to the workings of the enterprise, social security and budgetary systems under the old regime, which prove difficult to revamp; and the central bank's incapability in managing the financial sector due to a lack of independence in its decision-making process. The issues and implications of the implementation of banking reforms during the 1994-2003 period are as follows:

Firstly, the state-owned commercial banks were "stifled" on all fronts by two main areas, namely, by the need to fulfill fiscal obligations and by the strong influence of the local party and governments in funding their local developmental projects. While the reasons behind the creation of the policy banks were well-intended to fulfill developmental objectives, they seemed not effective as the state-owned commercial banks continued to bear the fiscal responsibilities while at the same time, were expected to perform as commercial entities. In reality, they were used to facilitate any macroeconomic adjustments needed to drive the economy. The loss-making and inefficient state-owned enterprises were primarily the benefactors. These enterprises were obligated to provide a broad range of social services that should be financed from the government budget, and were to

avoid creating high levels of unemployment and social unrests. There was a dramatic decline in fiscal subsidies to the state-owned enterprises, from about RMB58 billion in 1990 to RMB22 billion in 2004 (as illustrated in Table 1.9). The subsidies decreased from 25.29 per cent of fiscal revenue in 1985, to 2.08 per cent in 2000, 1.04 per cent in 2003, and 0.83 per cent in 2004. Likewise, they decreased from 5.66 per cent of GDP in 1985 to 0.16 per cent in 2004. Many of the state-owned enterprises had to borrow from the state-owned banks instead. However, many of them were unable to service their debts and this, in turn, was a major contributor to the insolvency of large parts of the banking system.

Table 1.9: Subsidies to loss-making state-owned enterprises

Year	Subsidies (RM100 million)	Subsidies/Fiscal revenue (per cent)	Subsidies/GDP (per cent)
1985	507.02	25.29	5.66
1990	578.88	19.71	3.12
1995	327.77	5.25	0.56
2000	278.78	2.08	0.31
2001	300.04	1.83	0.31
2002	259.60	1.37	0.25
2003	226.38	1.04	0.19
2004	217.93	0.83	0.16

Source: State Statistical Bureau of the People's Republic of China (2005)

Indeed the state-owned commercial banks had difficulties in allocating the efficient use of capital. The local party and governments had more influences over

these banks than the central authorities. Their interests often superceded the state-owned commercial banks' business interests. Moreover, the staff of these banks was "beholden" to the local governments in the Chinese "rice-bowl" environment, depending on the governments for their welfare needs, which included housing, medical and children's education. This eventually led to adverse selections, that is, biased excessive lending to unproductive local projects, with their accompanied moral hazard issues.

Secondly, the state-owned commercial banks were poor business performers, due to their incompetent financial intermediary skills and being under the government's close guidance in the allocation of funds, mainly to fulfill its high growth policy. Table 1.10 shows that by September 2003 they had combined market shares in assets, loans and deposits of 62.3 per cent, 61.2 per cent and 64.9 per cent, respectively (Barnett, 2004). However, their incompetence and inefficiency in intermediation led to their worsening financial performances. Lending was excessive and for unproductive purposes, with domestic loans outstanding relative to GDP rising from 19 per cent in 1993 to 25 per cent in 2003 (Lardy, 2004). A significant portion of the resources were being misallocated. The financial resources were being channeled into unproductive real estate and property development in cities such as Beijing, Shanghai and Shenzhen. There were also excess production capacity across a broad range of industries. Hence these resulted in low levels of capacity utilization and a massive buildup of inventories (Lardy, 2003).

Table 1.10: Market Shares of Financial Institutions, September 2003 (in percent of total)

Banking segments	Total Assets	Loans⁷	Deposits
State-owned commercial banks	62.3	61.2	64.9
Joint-stock commercial banks	15.0	14.9	14.7
Rural credit cooperatives	10.4	11.3	11.8
Foreign-funded banks	1.3	1.0	0.4
Other	10.9	11.6	8.1

Source: CEIC database (Barnett, 2004)

The root causes of the state-owned commercial banks' reckless and excessive lending could also be traced to weak bank regulation and supervision. Banking supervision was mostly administrative and random. Many of the borrowers, mainly the state-owned enterprises, were unable to repay the loans, contributing to the banks' high non-performing loans ratios. The four pillar banks had a combined RMB1.8 trillion of bad loans or 26 per cent of the total loans of RMB6.8 trillion as of end October 2001⁸, and this was slightly reduced to RMB1.77 trillion as of September 2002⁹, according to the central bank (Barnett, 2004; China Knowledge Press, 2005). Table 1.11 shows that the state-owned

⁷ Defined as claims on the non-financial sector, claims on other sectors, or domestic credit.

⁸ Straits Times, 4th December 2001. "WTO puts China at risk of major financial crisis." Singapore Press Holdings Ltd., Singapore.

⁹ Bloomberg, 11th November 2002. "China's top 3 banks plan share sales by 2005." Business Times, Singapore Press Holdings Ltd., Singapore.

commercial banks' non-performing loans ratio continued to decline from 26 per cent in 2002 to 20 per cent in 2003. The non-performing loans as a percentage of GDP have also declined from 20 per cent in 2002 to 16 per cent in 2003. However, these figures are still high compared to the joint-stock commercial banks' having a non-performing loans ratio of 8 per cent and non-performing loans as a percentage of GDP at 2 per cent in 2003. These calculations are based on the banks' adhering to the new five-tier loan classification system which reflects accurately the level of real risk for the bank loans.¹⁰ The growth in the stock of loans – that is, the denominator of the non-performing loans ratio, could be a factor contributing to the decline of the state-owned commercial banks' non-performing loans ratio. The current new loan classification system and the requirement for the state-owned commercial banks to publish the balance sheets and the ratio of non-performing loans on a quarterly basis are clearly steps taken to improve bank management and supervision practices.

¹⁰ The five-tier classification system classifies loans as performing (including pass, special mention) and non-performing (including standard, doubtful and loss) based on the risks involved. It classifies the entire amount of overdue loan as a non-performing loan whereas the four-tier classification system only considered the overdue portion (that is, the missed principal payments) as a non-performing loan.

Table 1.11: Non-performing loans based on the five-tier classification system

	In percent of total loans		In percent of GDP	
	2002	2003	2002	2003
State-owned commercial banks	26	20	20	16
Joint-stock commercial banks	12	8	2	2
Policy banks	20	17	3	3

Source: China Banking Regulatory Commission (Barnett, 2004)

There is an ongoing recognition that the establishment of the four asset management companies to take-over the non-performing loans of the state-owned commercial banks, so as to give these banks a clean slate to start functioning again as commercial banks, is not a “solve all” solution. The probability of achieving high rates of recovery from the liquidation of assets purchased by the asset management companies is low due to institutional constraints such as the “flawed” bankruptcy procedures giving priority to meeting pension and social welfare obligations of employees in state enterprises that are liquidated. This asset management companies-approach does not also help prevent the creation of more bad loans. Rather it is the lack of effective mechanisms to stop producing bad loans. Hence the relative efficiency of the banks are compromised, an area that we will further explore in CHAPTER THREE.

Thirdly, growth in China has actually been driven by savings in the banking system. As highlighted in Table 1.12, China has one of the highest savings rate in the world compared to other countries. Its gross domestic savings in 1990 and 2003 are higher than most of the developed countries' such as Canada, France, Germany, and the United States of America as well as the other emerging economies such as India and the Russia Federation. However, they are comparable to Hong Kong and Japan in 1990, and Singapore in 2003. In their studies on the twenty-first century challenges faced by the Asian economies, Ariff and Khalid (2005) reiterated that the reforms initiated during the 1991-1995 period helped raise China's domestic savings to GDP ratio from 34 per cent in 1981-1990 to an average of 40 per cent since then.

Table 1.12: Comparison of China's gross domestic savings with other countries'

Country	Gross domestic savings (per cent of GDP)	
	1990	2003
Canada	22	25
China	38	47
France	22	21
Germany	24	22
Hong Kong	35	32
India	23	22
Japan	34	26
Russia Federation	30	31
Singapore	43	47
United States of America	16	14

Source: World Development Indicators (2005)

Moreover, as in the 1979-1993 period, the central government in Beijing had a strong hand in mobilizing deposits of state banks in wealthier provinces and reallocating them to provinces that required greater subsidization. This was reflected in the loan-to-deposit ratios of banks in the affected regions. Tsai (2002) quoted Henan in northern China as the recipient of bank credits while Fujian and Zhejiang from the wealthier southern part of China have been net suppliers of state capital since 1991. This was also highlighted in the earlier section on

“Assessments and implementation issues” of the reforms during the 1979-1993 period.

Thus it also becomes clear that the authorities have adopted a bank-dominated financing strategy to propel economic development. The high growths that the country has experienced for many years may not be sustainable if the current fragile banking system continues to be the financial driver of the Chinese economy. Several of the major banks are already considered insolvent by Western accounting standards’ due to their low level of capital adequacy, small loan-loss reserves and huge magnitude of non-performing loans. The households’ depositing of funds to their savings accounts has helped these banks to remain liquid and hence a financial crisis has been avoided. In the future, the bank-dominated-financed economy is unlikely to be sustainable and hence the authorities have been paying attention, in recent years, to developing the capital markets as an important alternative financing vehicle.

Fourthly, despite the organizational restructuring and replacing the previous 31-provincial branch framework with a nine-regional branch network, the central bank is still incapable of monitoring and controlling its local branches and financial intermediaries in the allocation of credit to productive uses. The PBC lacks independence and is perceived to function as a “hollow” institution. The root cause of its poor supervision and regulation over the banking industry lies with the relationship between the government, at both the central and local levels,

and the Chinese Communist Party (CCP). The government is entrenched with party politics involving party coalitions and communist elites representing various interest groups. Thus the infiltration of party politics of the one-party state has challenged the relationships between the PBC and the other players, such as the banking industry, the local governments, and the state-owned enterprises. The crucial ingredient to effective central banking is true independence, whether politically, legally, or financially. The analysis in CHAPTER FOUR endorses nonparty intervention in the workings of the PBC and all other government institutions, where party sentiments often juxtapose the policy-making decisions of these institutions with that of the central bank's for vested interests. The PBC needs to be independent, enabled, and empowered to make radical changes. This not only requires the will and clout of the upper echelons to push the recommended resolutions through, but also transparency in governance and disclosure. That means both the legal system and enforcement agencies need to be well developed to handle the checks and balances of "nonconformists," which also include the local governments and financial institutions. Otherwise, the central bank may not be able to withstand the weight of a complex and challenging post-WTO China environment where there will be increased monetization and financial depth (Chung and Tongzon, 2004).

Finally, the growth of both the domestic and foreign banks would propel with the accession of China to the WTO. The restrictions in the scope of business, such as the marketing of local currency product and service offerings; and other

operational issues, such as entry, number of branches, capital requirements and credit exposure limits; prevented the foreign banks from participating competitively with their domestic counterparts. Accession of China to the WTO had to be the solution to the foreign banks' dilemma. There were few doubts that both the domestic and foreign banks would benefit tremendously from China's entry into the WTO. The benefits to the foreign banks include access to the high savings of an estimated combined USD1.6 trillion¹¹ stashed away in domestic banks by retail and institutional customers; changes in the scope of business, relaxation of rules and procedures, marketing of local currency products and service offerings; and participation in local banks, either in joint partnerships or equity forms. The expected increase in foreign direct investments (FDI), about USD50 billion per year¹², with WTO accession help to reaffirm the need for more foreign financial and banking services in China. The domestic banking would gain from the transfer of banking, investment and management skills, the new sources of foreign funds, the breadth of competitive products and services, and the wide international network connections. The allocation of scarce funds could also be allocated to the most productive use, particularly to small and medium-sized firms in the non-state sectors, which have often been denied the funds.

¹¹ Straits Times, 11th December 2001. "China in WTO: China lifts curbs on foreign banks in two cities." Singapore Press Holdings Ltd., Singapore.

¹² The country is expected to attract some USD50 billion in FDI per year after its entry into the WTO. This was an assessment by Supachai Panitchpakdi, WTO Director General Designate. Straits Times, 6th November 2001. "China seen attracting US\$50b FDI/yr after joining WTO: Supachai." Singapore Press Holdings Ltd., Singapore.

A new environment is expected with the WTO membership. It is inevitable that the authorities have to build up a modern financial architecture to enjoy the benefits of WTO membership. The Chinese financial sector, or the banking industry in particular, will now experience a higher level of banking. There will be improved quality and quantity of product and service offerings; customer-driven competition not only between both the domestic and foreign banks but also among the domestic banks. The domestic banks are also expected to implement performance-driven management techniques. The discussion in CHAPTER FIVE assesses the implications of China's accession to WTO on domestic banking, and also the major strategies that the banks could embark on to counter the problems that might impair their competitiveness in a post-WTO setting. An attempt is also made to give a crystal ball picture of the new Chinese post-WTO banking environment in the immediate future.

China hopes to reduce bad debts in its financial system before the country is fully opened to foreign banks under the WTO agreement. It has already taken steps to solve the problem, such as setting up of the asset management companies to handle bad debts, strengthening bank supervision, and imposing reforms in state-owned commercial banks. However, these measures barely match the scale of the problem as the profitability of these banks is not enough to allow them to write off bad debts. Thus the central bank has announced plans to implement a public

listing of the state-owned commercial banks by 2005¹³, in particular the Bank of China, China Construction Bank and the Industrial and Commercial Bank of China which are the three top banks in China (with combined deposits of more than RMB5.5 trillion), to raise money to cover the bad loans, which stood at RMB1.9 trillion in 2003 (Barnett, 2004; China Knowledge Press, 2005). These banks, together with fourth-ranked Agricultural Bank of China, are required to reduce their ratio of bad loans from 25 per cent to 15 per cent by 2005, with all bad debt fully provisioned for by reserves. The shares will be sold both domestically and overseas.

1.5 Conclusion

The structure of the banking system has changed from a Soviet-style “monobanking” system to that of a “western-style” structure, embedded with “Chinese Characteristics”, as the country evolved from a command economy to that of a market-based one. This chapter explores the institutional changes and developments that took place in the banking system from the late 1970s and right through the 1990s and early 2000s when China experienced high economic growth rates. The changes involved included, amongst other areas, the introduction of new financial intermediaries and institutions, and new banking laws and regulations for a country that wants to “catch-up” with time and the rest of the world so as to partake its share of the global economic growth. While it is

¹³ Bloomberg, 11th November 2002. “China's top 3 banks plan share sales by 2005.” Business Times, Singapore Press Holdings Ltd., Singapore.

recognized that the banking system has undergone remarkable changes over the period, deep-seated structural problems still exist which will continue to pose a challenge to the industry. This, in particular, pertains to asset quality, capital adequacy and profitability of the financial intermediaries. The banking system still suffers from a huge volume of bad loans, since many lending decisions are not made on a commercially sound basis in an attempt to pursue macroeconomic stabilization.

During these two periods under analysis, the financial system was visibly bank-dominated as the capital market was still not well developed. Banks and other financial institutions, and in particular the four state-owned commercial banks, were the driving force in meeting the financial needs of the real economy. The workings of the enterprise, budgetary and social security systems under the old regime put brakes to the effective implementation of the reform measures. Until they are restructured to fit the new China economic environment, the banking reforms would continue to face obstacles in their implementation.

The key question now is what if China fails to complete the transformation of the banking system it has started since the beginning of the reform period? Its failure would result in the continued inefficiencies in the financial institutions' intermediation of funds between savers and borrowers, and inadequate financial resources in industry and commerce to overcome physical constraints to growth (such as environmental deterioration, sustaining an adequate rate of growth of

agricultural output, and infrastructure shortages, Lardy (1998b, pp.186-193)), hence leading to a slowing economy. Even if the PBC is being given true central bank independence, its empowerment to manage the fluctuations in economic activity would be limited by a weak banking system. Likewise, the development of the capital market to play a supplementary role in financing economic development would be impeded. More importantly, the instrumental role that household savings play in China's impressive growth rates would be undermined. In addition, a sound banking system is necessary for China to achieve full convertibility of the domestic currency.

In retrospect, the process of the reform in the financial sector in general and the banking industry in particular, along with the dynamic growth of the economy and strong foreign trade, have allowed China's financial sector to experience a remarkable growth during the 1990s. CHAPTER TWO will help to affirm the impact of financial deepening, made possible through banking reforms, on China's overall economic growth. The financial sector reform process has helped to facilitate reforms in the real sector although the progress of the state-owned enterprises' reform program still falls short of its target. The strong government intervention and "closeness" of the financial sector have helped to shelter the economy from the full impact of the Asian financial crisis in 1997. The crisis has also made it even more critical that the Chinese banking industry takes further steps to fine-tune its reform program. Despite China's success story in the development of the banking industry, there are still valid criticisms of its lethargic

handling of major issues, such as the separation of commercial lending and policy lending, corruption cases, mismanagement of funds, low productivity, poor assets quality, poor allocation of scarce financial resources, and high non-performing loans. Still as the industry liberalizes, it needs to continue to improve upon its operational and management capabilities to take on the challenges posed by China's accession to the WTO. Manageable and progressive steps must be taken to steer the industry to fruition, instead of a "Big Bang" approach which may be unmanageable and lead to unpredictable results affecting the overall stability of the economy.

CHAPTER TWO

Whither the impact of financial deepening on China's economic growth 25 years on?

2.1 Introduction and motivation

This chapter recognizes the importance of the banking industry in China's economic growth process since the country embarks on a modernization program in 1979. Among a series of important banking reform measures were the restoration of the independence of the central bank, the People's Bank of China (PBC)¹, the establishment of a comprehensive banking structure with four pillar state-owned commercial banks, the creation of new financial intermediaries, the decentralization of the credit management system, increase in savings or investments channels for the individuals and enterprises (Dipchand et al., 1994; Gang, 1994; Lardy, 1998b; Xu, 1998; Lau, 1999; Lou, 2001), and the liberalization of the banking industry with China's accession into the WTO on 11th December 2001 (Wong and Liu, 2000; Bonin and Huang, 2002).

¹ The issue of the PBC's gaining independence is being challenged by critics such as the academia, and the public and private sectors. An in-depth discussion on the PBC's lack of independence is found in CHAPTER FOUR of the thesis, "A paradigm shift for China's central banking system" (pp. 146-182), where I acknowledge that the PBC has gained operational independence rather than complete independence.

In recent years, however, much scrutiny has been directed at the country's major banks due to their high non-performing loans (estimated by various quarters to be between 15 per cent and 50 per cent of the total bank loans), and the costly government-driven recapitalization of the country's pillar banks to avoid a possible financial distress (Dornbusch and Giavazzi, 1999; Lardy, 1999; Mo, 1999). It is therefore timely and appropriate to revisit and do an assessment of the impact of financial deepening, through the development of the banking industry, on the Chinese economy 25 years on, since 1979. Financial intermediation in China will continue to play an important role in the near future, aiding the process of rapid economic development in this transitional market economy.

A retrospective analysis approach is taken to address the question posed by the title of this chapter, that is, "Whither the impact of financial deepening on China's economic growth 25 years on?". This study seeks to find answers to some important policy-related questions concerning the impact of financial intermediation on China's overall economic development. These questions include the following:

- Does banking industry development help explain China's economic growth in the reform era or vice versa?
- What was the state of financial intermediation in the first two and a half decades of reform? Was it inefficient? What account for the inefficiencies?

- Who have been the main beneficiaries or rather, who continue to benefit from the banking industry for the past 25 years? Is it the state sector or the non-state sector, or both? Are they most deserving during the initial years of economic “openness”, and 25 years on?
- How level is the playing field for all the state enterprises and non-state enterprises as they both compete for financial resources? Or has the playing field “tilted” against the non-state enterprises during the reform era, with due recognition that the non-state sector has progressively become the most important engine of growth of the Chinese economy?
- Does financial intermediation include the role of informal finance or curb market financing in private sector development (Tsai, 2002; Bai, et al., 2003)?

The study also evaluates the role played by the central bank in minimizing or eliminating the negative effects of financial deepening. Do its current organizational and operational mechanisms help play a positive role or do they exacerbate the problems already faced by the banking industry? The analysis concludes that while the PBC faces many challenges in its central banking endeavor, the efforts it makes in changing the rules of operation for effective central bank management are only cosmetic in nature. The chief obstacle to the PBC serving its roles effectively as a monetary policy manager, financial regulator and supervisor is its lack of independence. It needs to undergo a “paradigm shift” in its overall undertaking so as to call the “shots” in all central

banking decisions, in particular in the supervision and regulation of the financial institutions. The PBC needs to back down on local parties' and local governments' demands to extend loans to unviable projects and ensure that any subsidies for policy lending are financed through the budget rather than borne by the banking system.

The study highlights that the authorities need to re-assess if the banking industry should continue to be the one of the important financial driver of the Chinese economy. Should they also focus on the financial markets as these would add a new dimension to the financial deepening process and help steer strong economic growth for the country in the twentieth-first century?

Finally, the study concludes that the more productive non-state sector should not be overlooked in the financial deepening process as it will be the new engine of growth for China in the foreseeable future. In addition, future research could include the informal financing or curb market in the financial deepening equation as this would allow for a more realistic understanding of the situation in China.

To address the questions posed above, the chapter is organized as follows: Section 2.2 highlights the literature review on the relationship between financial deepening and economic growth, while Section 2.3 and Section 2.4 address the relationship between China's banking industry development and economic growth

in the reform era. Section 2.5 addresses the other important policy-related questions posed in the introductory section, and Section 2.6 concludes.

2.2 Financial deepening and economic growth

The relationship between the financial system and economic growth has received considerable attention in a large number of studies, such as those that focus on the roles as well as the channels of the effects of financial intermediation on economic growth. Many economists have explicitly expressed the role of financial development as a means of accelerating economic growth, in particular, of developing countries. Levine (1997) reiterates that the financial system helps to facilitate the pooling of risks, allocate resources, monitor managers, mobilize savings and facilitate the exchange of goods and services; while Schumpeter (1934) highlights that it induces technological innovation by financing entrepreneurs in bringing new and innovative products to the market as the supply of funds has favorable expectations and psychological effects on entrepreneurs enabling them to “think big” (Patrick, 1966, pp. 176).

Although many economists have also attempted to analyze the relationship between financial deepening and economic growth using either cross-section studies (Jao, 1976; King and Levine, 1993a, 1993b; Demetriades and Hussein, 1996; Singh and Weisse, 1998) or time-series studies (Fritz, 1984; Jung, 1986; Odedokun, 1996; Rousseau and Wachtel, 1998; Sinha and Macri, 1999), there is

still arguably room for improvements either in the conceptual or model framework; or new studies are needed for “untapped” transitional market economies such as China, which is an emerging player in the global financial arena. In recent studies such as Ariff and Khalid (2005), the authors emphasized the twin and inter-connected themes of liberalization and growth” (ibid, pp. xiii), including financial liberalization, in their informative country studies of eight Asian countries, including China. This study makes use of an appropriate empirical model befitting China’s current financial intermediary marketplace.

A large and diverse body of theoretical and empirical literature has investigated the importance of the financial sector for economic growth. Theoretical studies on this subject included the recognition of real money balances as a vital ingredient in the production process (Friedman, 1959), as it “release labour and capital from exchange and distribution efforts, and save costs of information”, and hence “consistent growth in real balances should contribute to higher real output” (Jao, 1976, pp. 49). The “McKinnon-Shaw” hypothesis, supported by the “financial repressionists” led by McKinnon (1973) and Shaw (1973), posits that a more liberalized financial system will not only stimulate savings but also discriminate more efficiently between alternative investments, thereby promote economic growth. Here, the vehicle for promoting economic growth is an appropriate rate of return on real cash balances. Studies done in this area included those of Ahmed and Ansari (1995, 1998) for Bangladesh, and Khan and Hasan (1998) for Pakistan.

The “financial structuralists”, on the other hand, believe that the creation of financial institutions and development of a diversified array of financial instruments will have positive effects on the saving-investment processes and hence, on growth. Recent literature incorporates the stock market and capital flows as measures of financial development (Levine and Zervos, 1998; Singh and Weisse, 1998). Lately, economists have employed the endogenous growth models to analyze the relationship between financial intermediation and economic growth, such as the general equilibrium model and an overlapping generations model. The findings affirm the important role of financial intermediaries in the growth process. While savers place an increasing proportion of their savings with them (Greenwood and Jovanovic, 1990), intermediaries help to reduce savings held in unproductive liquid assets and channel them to productive use via capital stock, thereby inducing economic growth (Bencivenga and Smith, 1991); and they have the ability to fund innovative products and processes due to prior undisclosed knowledge on the quality of individual projects, and thereby inducing economic growth (King and Levine, 1993b).

Some empirical studies suggest a positive association between financial deepening and growth and others tend to focus on the casual nexus between them, indicating either a bi-directional causality relationship between these two variables or a uni-directional one. While Patrick’s (1966) theory focuses on the “supply-leading” and “demand-following” phenomena, Goldsmith (1969) poses a debatable thought as to whether financial development is truly an engine of

growth or just a sign of the evolution of the whole economy due to other independent factors. Jung (1986) even attested to Patrick's (1966) qualification that the direction of causality may change over the course of development, postulating a supply-leading–demand-following sequence.

Studies supporting a finance-led economic development include those of King and Levine (1993a, 1993b), Wachtel and Rousseau (1995), Kwan et al. (1998) and Choe and Moosa (1999). In addition, Rousseau and Wachtel (1998) reaffirm that “output does not Granger-cause intermediation” (ibid, pp. 658) in their study, while the intermediation variables played a leading role in real sector activity, and Ram (1999) does not subscribe to the theory that “where enterprise leads, finance follows” (Robinson, 1952, pp. 86). One key reason for this is that causality patterns do vary across countries, which also highlights an important weakness of cross-section country studies. The statistical inference based on such studies tends to implicitly treat different countries as homogenous entities (Demetriades and Hussein, 1996). Neusser and Kugler (1998) note the importance of different countries' historical and institutional factors, and the interaction between the industrial and the financial sectors while Levine et al.'s (2000) study affirms that “cross-country differences in legal and accounting systems help account for differences in financial development” (ibid, pp. 31).

2.3 Data analysis

To address the critical first question of whether banking industry development helps explain China's economic growth in the reform era, or vice versa, a Granger (1969) causality econometric test is employed. This section first highlights the bank-dominated system of the Chinese financial sector, the main indicators of financial deepening and economic growth that are used in many of the current theoretical and empirical literature, and finally the choice of indicators applicable to this study of the Chinese environment. The next section, Section 2.4, explains the empirical test and results.

2.3.1 The Chinese financial sector is dominated by the banking system

Since the Chinese government has finally opted for economic "openness" in 1979, the banking system has played a key role in facilitating the country's market-driven transitional process. During this reform era, the state monopolizes the banking operations to meet its various objectives for economic development, with instructions to partake bank financial resources given either at the central government or local government level. The financial statistics are revealing. The main vehicles for the dissemination of funds for developmental purposes and budget deficits are the four main state-owned commercial banks, even though this responsibility was later transferred to the three policy banks set up in 1994. The latter policy implementation has not proven totally effective as the banking

system is not able to mask its role as a fiscal agent of the state (Chung and Tongzon, 2004). Other financial institutions involved in the financial intermediation businesses include other smaller commercial national, regional and city banks, non-bank financial institutions, and the agricultural and urban credit cooperatives.

The increasing number and expanding scale of financial intermediaries have provided plentiful funds for economic development. Since the early 1980s, banks have supported enterprise investments with a low interest rate policy, which is being pursued by the state in order to satisfy the needs of rapid economic development. Despite the development of the stock and bond markets more than a decade ago, their roles in resource allocation remains almost insignificant. Table 2.1 illustrates that in 2003, the increase in domestic and foreign currency loans made by financial institutions was 26 percent of GDP. The funds raised through the stock markets and corporate bond issuance stood at 1 per cent and 0.3 per cent of GDP, respectively. At the end of 2003, the stock of bank loans stood at 145 percent of GDP, while the total stock market capitalization of the stock markets was only 37 percent of GDP (Barnett, 2004).

Table 2.1: Sources of funds in 2003

Sources of funds	Value (RMB trillion)	Percent of GDP
Financial Institutions	3	26
Stock markets	0.136	1
Bond issuance	0.036	0.3

Source: Barnett (2004)

Financial intermediaries thus became the new sources of funds for economic development. Bank-dominated financing has also been made easier due to the country having one of the highest savings rate in the world. As highlighted earlier in Section 1.4.1 of CHAPTER ONE, that is, on “Issues and implications”, reforms initiated during the 1991-1995 period helped raise the China’s domestic savings to GDP ratio from 34 per cent in 1981-1990 to an average of 40 per cent since then (Ariff and Khalid, 2005). Banks, in particular the state-owned commercial banks, being “safe havens” under the umbrella of the government’s protection in the event of any financial crisis, become depository grounds as alternative savings and investments channels are either not readily available or are still in their infancy “unsafe” stages. By September 2003 the state-owned commercial banks had combined market shares in deposits of 64.9 per cent (Barnett, 2004). Indeed the financial intermediaries have also faithfully remained the main sources of finance, as direct financing has been repressed for a long period. It is only in recent years that the rules governing direct financing become less controlled, and hence a heightened interest in direct financing appears.

2.3.2 Indicators of financial deepening and economic growth

The growing literature on the relationship between financial deepening and economic growth has highlighted many indicators of financial deepening which are generally accepted as reflecting the development in the size of the financial system, which could be instrumental in facilitating economic growth. The two financial intermediation variables used as proxies in Jao's (1976) examination of the relationship between financial intermediation and economic growth were the growth rate of real balances per capita and the ratio of monetary liabilities to GDP, while Jung's (1986) two explanatory variables were the currency ratio (defined as the ratio of currency to the sum of currency and demand deposits) and the monetization variable (that is, the ratio of broad money to nominal gross national product (GNP) or GDP).

Cheng (1980) proposes that the study of the degree of financial intermediation in Pacific Basin countries be measured by the ratio of total assets held by the nations' financial intermediaries to national output. Thornton (1996), on the other hand, uses the ratio of total bank deposits to nominal GDP to measure the degree of financial deepening in 22 Asian, Latin American and Caribbean developing economies.

Ariff and Khalid (2005) use the ratio of M3 to GDP (measuring monetary depth) to confirm that financial reforms have helped to improve the securitization in and

the depth of the money and capital markets of eight Asian countries. Table 2.2 shows that the monetary depth has almost doubled in the early reformers (such as Indonesia, South Korea, Malaysia, Singapore and Thailand) from 54 per cent in the 1960s to 95 per cent in 1996-2000. Late reformers such as India and Pakistan also experienced a significant increase of around 53 per cent by 2000. China's monetary depth doubled from 69 per cent in 1981-1990 to 123 per cent in 1996-2000. This was especially due to the high savings in the domestic sector and the inflow of foreign capital.

Table 2.2: Monetary Depth and Financial Intermediation Ratio

Outcomes	Early reformers	Late reformers	
		India and Pakistan	China
Money depth **			
1961-70	53.45	32.84	-
1971-80	50.82	41.26	-
1981-90	64.34	50.47	68.55
1991-95	78.75	56.39	95.09
1996-2000	94.92	52.68	122.81
Intermediation ratio			
1961-70	14.96***	14.72	-
1971-80	31.84	20.69	-
1981-90	51.58	27.25	-
1991-95	69.32	27.86	-
1996-2000	85.85	26.65	-

Source: Ariff and Khalid (2005)

Note: ** Figures not available for Malaysia; 1961-70 figure is average for South Korea and Thailand only; 1971-1980 figure is an average for South Korea, Singapore and Thailand only.

*** Average for South Korea, Malaysia and Thailand only.

Ariff and Khalid (2005) also use the financial intermediation ratios (private) (FIRs)² to measure how much of the assets of an economy are held in the form of securities in the financial institutions (see Table 2.2). The FIRs have also improved in all these countries with the rate increasing almost six-fold in early reformers and two-fold in India and Pakistan. The authors highlighted that China only started reporting private FIRs in 2002, and its private sector FIR was 155 per cent, surpassing all countries in the early reformers group. They concluded that “financial liberalization in all these countries appears to have improved capacity in the financial sector to handle the greater volume of economic activities, and with it, greater financial activities” (ibid, pp. 20).

With regards to analyzing economic growth, the measurements commonly used include real GNP or GDP, or the rate of growth of per capita real GNP or GDP (Jao, 1976; Jung, 1986; Thornton, 1996; Sinha and Macri, 1999). Gupta (1984) uses the industrial output data to study the issue of causality between financial deepening and economic growth. However, this indicator for economic development is questionable as industrial output represents only a small portion of total output in most developing countries.

The next section highlights the statistical methodology and techniques employed to facilitate the empirical analysis. A scrutiny of the impact of banking industry

² Goldsmith's (1969) broad definition of financial deepening using the FIR refers to the ratio of total financial assets to that of national wealth, that is, an indicator of the degree of institutional maturity in the financial market.

development on China's economic growth is done in Section 2.5, and where the questions posed earlier in Section 2.1 are also addressed.

2.4 Empirical test and results

Unlike most empirical studies, alternative financial and growth variables, and hence test alternative hypotheses, are used to demonstrate the direct influences of the banking industry on the development of the Chinese economy. The time series data refer to two Chinese economic growth indicators and four financial deepening indicators for the period 1978 to 2003.³ The data is derived from the China Statistical Yearbook (State Statistical Bureau of the People's Republic of China, 1978-2004) and the International Financial Statistics Yearbook (International Monetary Fund, 1979-2004). As China experiences erratic price fluctuations particularly in the 1980s and early 1990s, all data selected are expressed in "real" rather than "nominal" terms, with 1995 being the base year. These financial and growth variables are also expressed in "growth" terms, rather than "absolute" values, as they give a more accurate picture of the situation in this transitional market economy. As highlighted by Abeysinghe and Rajaguru (2004) there are serious concerns about the accuracy and veracity of China's annual GDP figures especially since the mid-1990s. While Rawski (2001) pointed out the "highly exaggerated and unreliable" GDP growth figures since 1998, Wang and

³ Chinese quarterly data for all the variables (for the 25 years) were either unavailable, incomplete or unreliable. This was especially so from 1978 to the late 1980s. As such the study has to make use of annual data, which may have an impact on the results due to small sample bias.

Meng's (2001) argued that such large exaggerations have occurred since 1992. They argue that this is largely due to insufficient deflation of nominal figures. The empirical study makes use of the Granger (1969) technique to assess any causal relationship between each of the economic growth variable with each of the financial deepening variable.

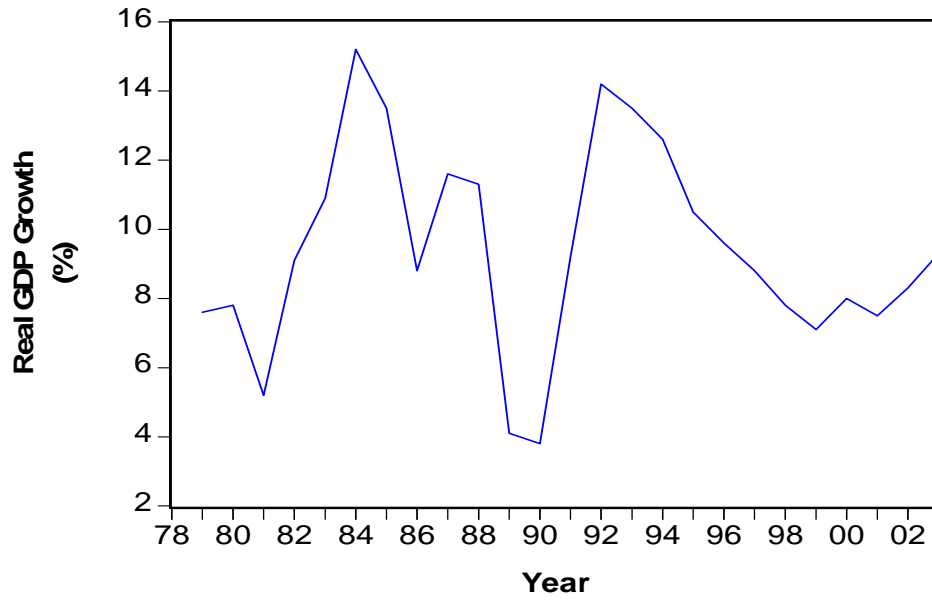
The study attested the "real balances effect" with the growth rate of real money supply (M1) to real GDP and the growth rate of real broad money (M2) to real GDP; and the "intermediation effect" with the growth rate of real quasi-money supply to real GDP.⁴ M1 refers to the sum of currency and demand deposits; quasi-money supply includes time, savings and currency deposits, and M2 is the sum of M1 and quasi-money supply. The analysis on quasi-money supply reflects how extensive bank deposits are being used. These definitions are the same as employed by the International Financial Statistics (IFS). The fourth variable is the growth rate of real domestic credit to real GDP. As a break-down of the domestic bank credit to either the public sector or private sector for the whole study period was not easily derived, mainly due to limited access to complete and reliable data,

⁴ This empirical study of the Chinese economy uses variables in growth rate form. It seeks to evaluate the extent of the impact of banking industry development on China's economic growth, that is, for example, by analyzing whether the growth rate of real M1 to real GDP is likely to have a positive influence on the growth rate of real GDP. In reviewing the literature on the empirical studies which analyze the impact of financial deepening on economic growth, it is noted that the authors have used the relevant data either in level or growth rate forms as indicators for both financial deepening and economic growth. The studies that use data in level form include those of Cheng (1980), Jung(1986), Thornton (1996), and Ariff and Khalid (2005), while those that use the data in growth rate form include the works of Jao (1976), Lanyi and Saracoglu (1983), Choe and Moosa (1999), and Sinha and Macri (1999).

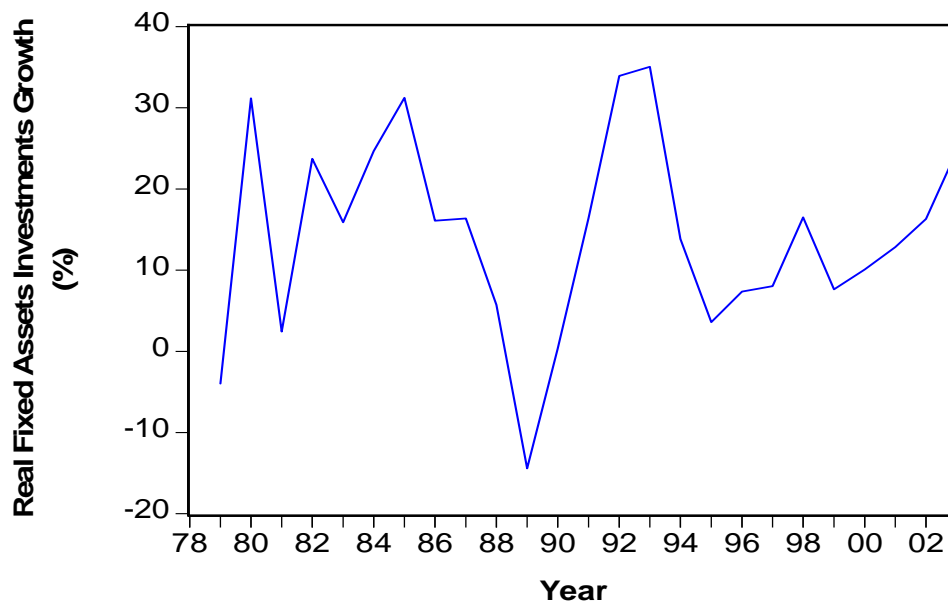
this study thus works with this information relating to the two sectors combined. Finally, the barometers for China's economic growth are demonstrated by the growth rate of real GDP and growth rate of real fixed assets investments.⁵

Figure 2.1 displays plots of the data for all the six time series. Each time series appears to be stationary, and this characteristic is reaffirmed by the augmented Dickey-Fuller (ADF) (Dickey and Fuller, 1979, 1981) method. This technique is applied to determine whether to test for a unit root in the levels, first or second differences forms. The ADF statistics are selected based on the number of lags included by applying the Akaike Information Criterion (AIC).

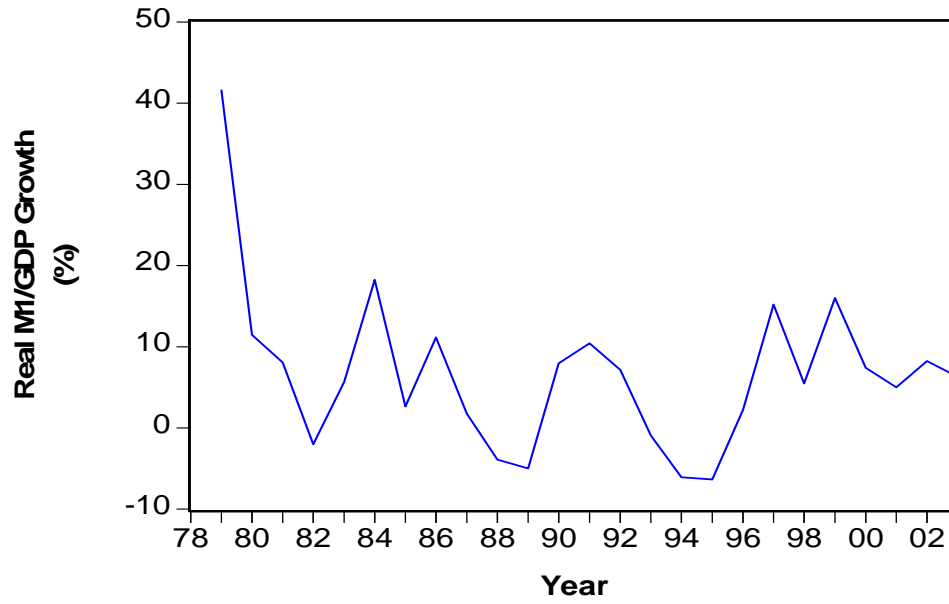
⁵ The China Statistical Yearbook (State Statistical Bureau of the People's Republic of China, 1978-2004) describes fixed investments (or fixed assets investments) as investments made in capital construction in the urban and rural areas; real estate development; the individuals' housing investments in urban areas, industrial and mining areas; and in national defense projects, and civil defense projects.



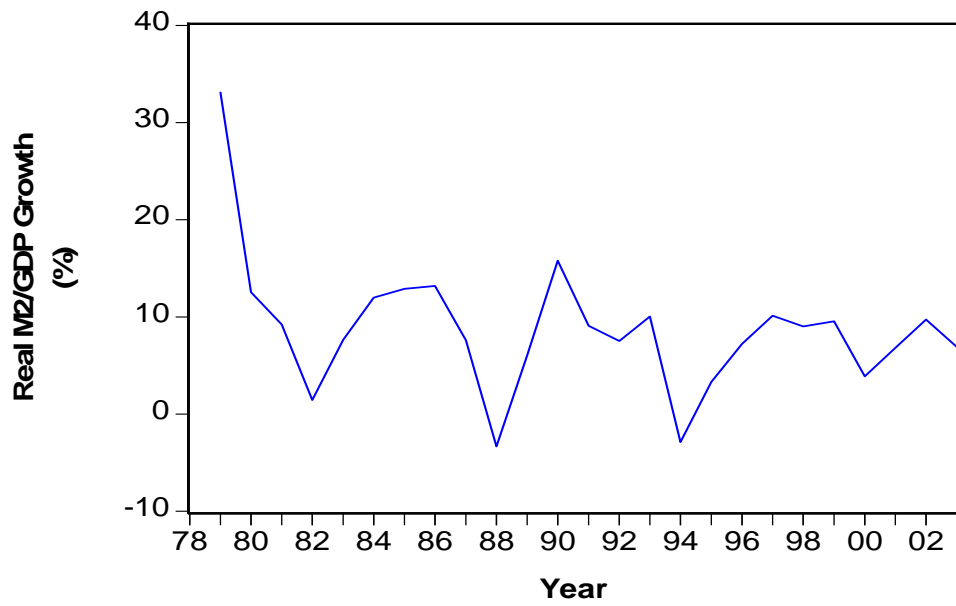
(a)



(b)



(c)



(d)

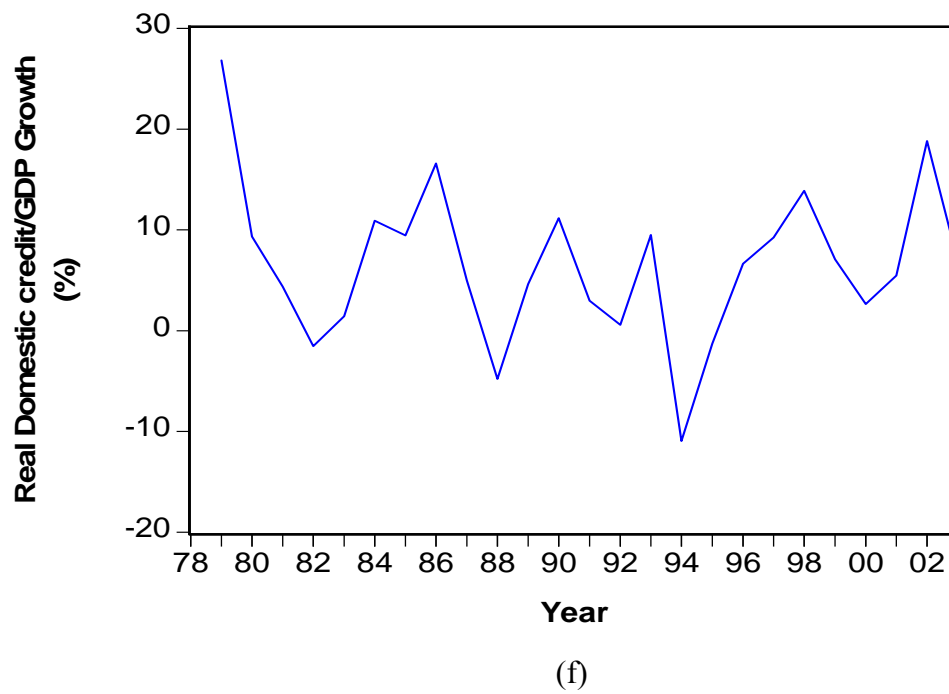
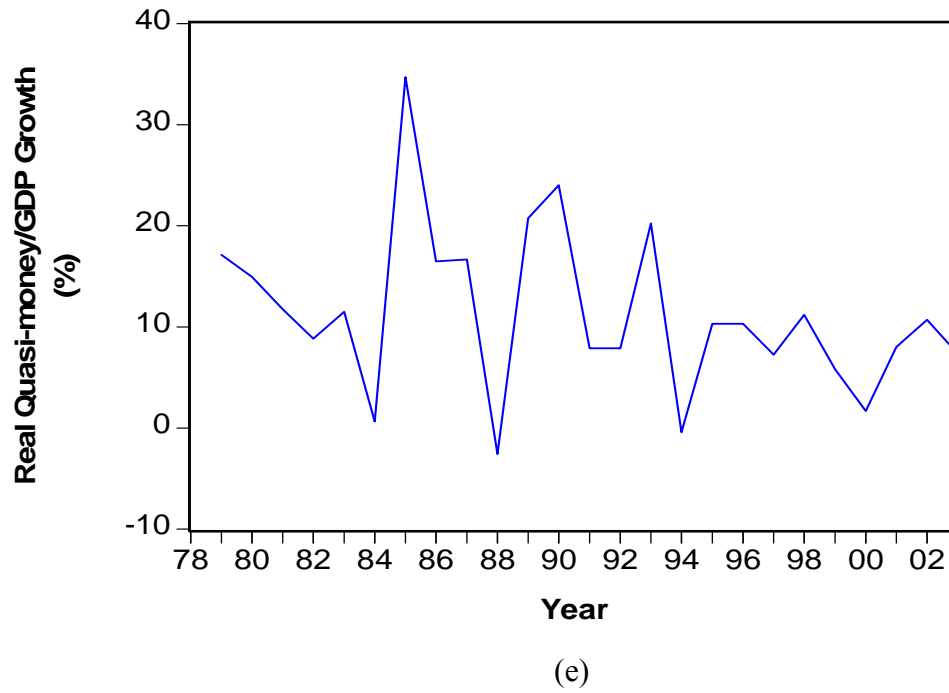


Figure 2.1: Time Series

Table 2.3: Time series properties of the variables – Augmented Dickey-Fuller (ADF) statistics

Variables	Growth Rate
M1/GDP	-5.720715 *
M2/GDP	-4.795305 *
Quasi-money/GDP	-5.437286 *
Domestic credit/GDP	-4.773218 *
GDP	-3.083202 ** (5)
Fixed assets investments	-3.290741 ** (5)

Note:

1. All variables are expressed in real and growth terms
2. * and ** denote rejection of the unit root hypothesis at the one per cent level and five per cent level, respectively
3. The number in parenthesis reflects the number of lags included, using the Akaike Information Criterion (AIC), when the ADF statistic was selected

All the series (in growth terms) are stationary (I(0)) as demonstrated by the ADF test. The unit root hypothesis, that is a non-stationarity situation, is rejected either at the one per cent level (for growth rates of real M1 to real GDP, real M2 to real GDP, real quasi-money to real GDP, and real domestic credit to real GDP) or at the five per cent level (for growth rates of real GDP and real fixed assets investments, both at lag 5). The ADF test results therefore affirm the stationarity characteristic of all the time series as illustrated by the graphs in Figure 2.1.

Since all the variables are stationary, alternative hypotheses are tested to demonstrate the direct influences of the banking industry, via the financial

deepening indicators, on the development of the Chinese economy, as measured by the growth indicators such as the real GDP and real fixed assets investments. The Akaike Information Criteria is then used to determine the number of lags used in the subsequent Granger-causality test. Table 2.4 illustrates the pairwise Granger (1969) causality tests between the financial deepening and economic growth indicators.

Table 2.4: Pairwise Granger Causality tests between financial deepening and economic growth indicators

Null Hypothesis	F-statistic	Probability
M1/GDP does not Granger Cause GDP	2.79432 (2)	0.08773
GDP does not Granger Cause M1/GDP	1.28577 (2)	0.30064
M2/GDP does not Granger Cause GDP	3.38414 (2)	0.05654
GDP does not Granger Cause M2/GDP	0.03852 (2)	0.96230
Quasi-money/GDP does not Granger Cause GDP	2.39659 (3)	0.10883
GDP does not Granger Cause Quasi-money/GDP	0.56065 (3)	0.64914
Domestic credit/GDP does not Granger Cause GDP	1.41871 (2)	0.26783
GDP does not Granger Cause Domestic credit/GDP	0.03283 (2)	0.96776
M1/GDP does not Granger Cause FAI	2.92019 (4)	0.06704
FAI does not Granger Cause M1/GDP	1.82166 (4)	0.18953
M2/GDP does not Granger Cause FAI	3.75413 (2)	0.04338
FAI does not Granger Cause M2/GDP	1.95271 (2)	0.17080
Quasi-money/GDP does not Granger Cause FAI	0.10227 (1)	0.75228
FAI does not Granger Cause Quasi-money/GDP	0.03290 (1)	0.85780
Domestic credit/GDP does not Granger Cause FAI	4.25619 (1)	0.05169
FAI does not Granger Cause Domestic credit/GDP	0.50668 (1)	0.48441

Note:

1. FAI refers to fixed assets investments
2. The number in parenthesis reflects the number of lags included, using the Akaike Information Criterion (AIC)

The Granger-causality test outcomes reveal that there is a “supply-leading” causality relationship between the two financial deepening indicators, that is, both the growth rate of real M1 to real GDP, and the growth rate of real M2 to real GDP, and the economic growth indicator, that is, the growth rate of real GDP. While there is also a causal relationship between the growth rate of real quasi-money to real GDP, and the economic growth variable of real GDP growth, it is not the case for the relationship between the growth rate of real domestic credit to real GDP, and the growth rate of real GDP.

With the exception of the growth rate of real quasi-money to real GDP, the empirical test also demonstrates a similar “supply-leading” causal relationship between all the other financial deepening indicators and the growth rate of real fixed assets investments. The empirical outcome therefore illustrates that China’s banking industry development helps explain its economic growth in the reform era.

2.5 The role of financial deepening in a growing Chinese economy

This section addresses the other important policy-related questions highlighted in the introductory section by revisiting and evaluating the tough challenges that the authorities need to handle, with regards to the role of financial deepening in a growing Chinese economy that has room for even higher growths in the near future. Of prime importance is the efficiency of the allocation of financial resources to the beneficiaries of China's economic development during the last two and a half decades; that is, the important questions are how and where were the financial resources channeled to? Have the scarce financial resources been distributed in an efficient and/or fair manner between the state sector and the non-state sector? Has the percentage of allocation of the financial resources between the two sectors changed during the initial years of economic "openness" and 25 years on?

2.5.1 The growing importance of the non-state sector to China's economic growth

The past 25 years have been years of spectacular growth for this transitional economy. From a macroeconomic perspective, the growing GDP, fixed assets investments and gross industrial output, as illustrated in Table 2.5 speak volumes of China's impressive journey to economic "openness" and development. On closer analysis, as illustrated by Table 2.6, the non-state sector, which is defined

as all production units not directly owned or controlled by the state and comprising collective enterprises, private enterprises and enterprises of other ownership forms⁶, has been the main contributor to industrial output over the years, with its growth outpacing that of the state sector. Its share of China's total industrial output rose from about 35 per cent in 1985 to about 62 per cent and 65 per cent in 2003 and 2004, respectively. The state-owned enterprises on the other end, maintained a share of about 65 per cent of the country's industrial output in 1985, and this declined to about 38 per cent and 35 per cent in 2003 and 2004, respectively. Likewise Table 2.7 shows that the non-state sector plays an increasingly important role in the provision of non-agricultural employment. Its share increased over the years from 30 per cent in 1985 to about 73 per cent in 2003 and 75 per cent in 2004, while the state sector's share decreased from 70 per cent in 1985 to about 27 per cent and 25 per cent in 2003 and 2004, respectively.

⁶ "Other enterprises" include foreign-invested companies and shareholding enterprises without government as the major shareholder, and joint-ventures between the state-owned enterprises and foreign investors.

Table 2.5: Statistics on China's GDP, Fixed Assets Investments and Gross Industrial Output (RMB 100 million)

Year	GDP	Fixed Assets Investments	Gross Industrial Output
1980	4,517.80	910.90	5,154.26
1985	8,964.4	2,543.20	9,716.47
1990	18,547.90	4,517.00	23,924.00
1995	58,478.10	20,019.30	91,894.00
2000	89,468.10	32,917.70	85,673.66
2001	97,314.80	37,213.50	95,448.98
2002	105,172.30	43,499.90	110,776.50
2003	117,390.20	55,566.60	142,271.20
2004	136,875.90	70,477.40	187,220.70

Source: State Statistical Bureau of the People's Republic of China (2004, 2005)

Table 2.6: Share of industrial output by the state sector and non-state sector (per cent)⁷

Year	State-owned enterprises	Non-state enterprises		
		Collective enterprises	Private enterprises	Other enterprises ⁸
1985	64.90	32.10	1.80	1.20
1990	54.60	35.60	5.40	4.40
1995	34.00	36.60	12.90	16.50
2000	47.34	13.89	6.09	32.68
2001	44.43	10.53	9.18	35.86
2002	40.78	8.68	11.69	38.85
2003	37.54	6.65	14.75	41.06
2004	35.24	5.65	16.50	42.61

Source: State Statistical Bureau of the People's Republic of China (1998, 2005)

⁷ For data prior to 1996 on the share of state-owned enterprises in total industrial output includes those enterprises with controlling share held by the state. From 1997, the gross industrial output includes only state enterprises and non-state-owned industrial enterprises with an annual sales income of over RMB 5 million.

⁸ "Other enterprises" include share-holding cooperative enterprises, share-holding enterprises, foreign funded enterprises and enterprises with funds from Hong Kong, Macau and Taiwan.

Table 2.7: Share of non-agricultural employment by the state sector and non-state sector (per cent)

Year	State-owned enterprises	Non-state enterprises
1985	70.00	30.00
1990	62.30	37.70
1995	59.10	40.90
2000	34.99	65.01
2001	31.91	68.09
2002	28.91	71.09
2003	26.82	73.18
2004	25.34	74.66

Source: State Statistical Bureau of the People's Republic of China (2000, 2005)

2.5.2 Bias in credit allocation

While Table 2.6 shows a decline in the state sector's contribution to industrial output, it has, however, continued to be the main recipient of financial resources for its investment in fixed assets, rather than the non-state sector. Are they most "deserving" of such funds? The allocation of resources between the two sectors is questionable. Table 2.8 reiterates that during most of the economic transition era, the state sector obtained more funds for fixed investments than the non-state sector. This re-affirms the state banks' bias in credit allocation in favor of the enterprises in the state sector, with artificially-low-interest-rates loans that do not exhibit high prospects of being repaid, even though their contribution to output

diminished dramatically. While the state sector needed much capital during the initial years of economic “openness”, such financings have gone “overboard” over the years, with a disproportionately low amount of bank credit being allocated to a potential important engine of growth of China’s economic development, that is, the non-state enterprises. It was only in recent years that total investments in fixed assets in the non-state enterprises increase.

There has been much publicity, from the academia, public and private sectors alike, on the reasons why the state sector continues to be the an important recipient of financial resources from the state banks, in particular the four pillar state-owned commercial banks. While these banks need to engage in “policy lending” to state-owned enterprises in industries targeted by the government as development priorities, the main reason points to the difficulty of eliminating (and in a “Big Bang” manner) the “legacy” inherited from the communist’s era of providing “protection” to the state-owned enterprises to avoid potential political and social upheavals. These enterprises have provided their employees with “iron rice bowls” and to stop financing them “abruptly”, especially when an appropriate post-1979 pension plan is not in place, would surely result in political and social “suicides”. The authorities have thus taken a “gradual” approach in reforming the enterprise and the social security systems. This move is no enviable task but has certainly being implemented at the expense of the resource-deprived non-state sector. Meanwhile, many loss-making but deemed politically important state-owned enterprises continue to be financially supported even as their performances slacken.

Table 2.8 Distribution of total investments in fixed assets by sector (per cent)

Year	State-owned enterprises	Non-state enterprises
1980	81.89	18.11
1985	66.08	33.92
1990	66.11	33.89
1995	54.44	45.56
2000	50.14	49.86
2001	47.31	52.69
2002	43.39	56.61
2003	38.98	61.02
2004	35.51	64.49

Source: State Statistical Bureau of the People's Republic of China (2005)

2.5.3 Non-state enterprises “thriving on a tilted playing field”

Bai, et al. (2003) point out that the non-state enterprises, especially the indigenous and small private enterprises, have been “thriving on a tilted playing field” (ibid, pp.104), and that legal and bureaucratic restrictions to entry to certain high profit and high growth potential industries, credit restriction, and poor legal protection, have prevented the non-state sector from growing at its full potential. However, they believe that fiscal and intra-governmental decentralization, the vague and ambiguous property right arrangements, and information decentralization help account for the rapid spectacular growth of the non-state sector in the past two decades although they were being discriminated against by the central authorities.

The non-state's provision of employment opportunities and increased retainable tax revenues allow the local governments to benefit from the fiscal and intra-governmental decentralization. Likewise having a government agency as their partner, particularly in the early stages of their business development, and yielding some benefits and control rights to the former, the non-state enterprises could avoid many of the financial, administrative, and legal difficulties that usually prevail in any business undertaking. Also information independence limited the ability of government agencies to collect arbitrary taxes and fees from the non-state enterprises. While these "transitional institutions" play a significant role in the outstanding performance of the non-state sector, they are unlikely to adequately provide support for its continued rapid growth (ibid, pp.100). These transitional institutions, however, have helped to facilitate the provision of funds to the non-state sector by a much "neglected" and important financial intermediary vehicle, namely the informal curb market.

2.5.4 The role of the curb market financing

The empirical outcomes do not demonstrate a true picture of the workings of financial deepening, as they do not take into account the contribution made by the informal financial intermediaries. The fact remains that financial intermediation through the state banking system has gone predominantly to the least productive, least efficient part of the Chinese economy, that is, the state sector. The argument would have made sense if financial deepening and formal financial intermediation

have been serving the most productive sector of the economy, that is, the non-state sector. This is not the case, however. Hence the primary shortcoming of this empirical test is that it completely ignores the role of the curb market financing in non-state sector development.

The non-state enterprises, that is, mainly the private entrepreneurs, rely primarily on self-financing for their initial investments. The vast majority of them rely creatively on the curb market. These informal and illegal financing practices take various forms such as interpersonal borrowing and trade credit among business people to more institutionalized mechanisms such as rotating credit associations and grassroots credit cooperatives. Tsai (2002), in her research on back-alley banking, highlights that given the fact that the state banks are not available to most non-state businesses (including the illicit diversion of official bank credit from state units to the curb market), it is estimated that during the first two decades of reform, curb market activities accounted for “at least one-quarter of all financial transactions” and “up to three-quarters of private sector credit” (ibid, pp. 36-37). Thus the informal financial sector as a percentage of the Chinese economy is “similar to the scale of informal finance in Taiwan, Thailand, and Korea during their respective postwar decades of rapid economic growth” (ibid, pp.36). Such is the importance of curb market financing to China’s economic growth, a variable not considered in the empirical test.

2.5.5 Growth is driven by China's high savings rates

Growth in China has actually been driven by savings in the banking system, as contemporary China has one of the highest savings rate in the world. As highlighted in CHAPTER ONE, there was an increase in the growth rate of domestic savings to GDP in particular after 1994, averaging 40 per cent, and this was largely due to the reforms that were initiated during the 1991-95 period (Ariff and Khalid, 2005).

Moreover, the central government also exercises greater financial capacity over the state banks by mobilizing deposits in wealthier provinces and reallocating them to areas that require greater subsidization. As illustrated in Table 2.9, which highlights the loan-to-deposit ratio of banks in three different regions, Henan in northern China is the net recipient of bank credits while Fujian and Zhejiang, from the richer coastal south, have been net suppliers of state capital since 1991 (Tsai, 2002).

Table 2.9: Comparison of loan-to-deposit ratios of state banks: Henan, Fujian, and Zhejiang, 1988-1999

Year	Henan Province	Fujian Province	Zhejiang Province
1988	1.48	1.23	1.26
1989	1.42	1.18	1.19
1990	1.36	1.07	1.05
1991	1.28	0.96	0.97
1992	1.25	0.88	0.93
1993	1.20	0.95	0.92
1994	1.16	0.90	0.90
1995	1.12	0.83	0.81
1996	1.09	0.78	0.75
1997	1.13	0.75	0.77
1998	1.14	0.79	0.73
1999	1.12	0.79	0.74

Source: Tsai (2002), pp. 40, Table 2.7

2.5.6 Role of the central bank in mitigating the negative effects of growth in indirect financing

Although the empirical study highlights that China's banking industry development helps explain its economic growth in the reform era, this situation has also led to some negative ramifications. Poor credit allocations and unqualified risk management capabilities resulted in adverse selections, moral

hazards, poor asset quality and state banks' huge non-performing loans (as they have difficulty enforcing loan repayment by state-owned enterprises, the so-called "soft budget constraint"). The irony here is that both lenders (banks) and borrowers (enterprises) are in the public sector, and the former, in particular the state-owned commercial banks, bear most of the financial risk. There was also a leakage of funds from the formal banking system for unproductive uses, such as speculation in real estate and the stock market; unethical business practices such as "connected borrowing" and bribery. Many of these issues have to do with the close-knit relationships among the three key layers in the marketplace, namely, the banking system, the local governments and the state-owned enterprises, which influence the way how financial resources are to be channeled to and used.

Under such situations, what role does the central bank, the PBC, play in minimizing these negative effects from the financial deepening process, which ultimately affects its monetary policy management? Chung and Tongzon (2004) concluded that the lack of independence of the PBC exacerbates the problems already faced by the banking industry, particularly in the areas of supervision and regulation of the financial intermediaries. The fundamental problem lies with the relationship between the government, at both the central and local levels, and the Chinese Communist Party (CCP). The government is entrenched with party politics which challenges the relationship between the PBC and the banking system, the local governments, and the state-owned enterprises. The pervasive stronghold that the CCP has over the central bank negates the many efforts made

in changing the rules of operation for effective central bank management, which are only cosmetic in nature. The central bank itself needs to undergo a “paradigm shift” in its overall undertaking not only in its role in monetary policy management but also in the supervision and regulation of the banking industry. Independence is the “cornerstone” for an effective China’s central banking system, a subject which will be further explored in CHAPTER FOUR.

2.6 Conclusion

The study has taken the approach to delve further beyond what the empirical outcomes have to offer in analyzing the impact of financial deepening on China’s economic growth during the last two and a half decades. Critical questions were put forth relating to the role played by financial deepening in a fast-growing Chinese economy. While the econometric tests were able to offer some analyzes and arouse debates on the relationship between financial deepening and economic growth, it could not be denied that the banking industry was instrumental to China’s growth for the past 25 years. It has been a bank-dominated financing strategy adopted by the authorities to propel economic development. This leads to the question of whether a possible crisis in the banking industry, thereby affecting the financial sector in general, would put brakes to growth. In such a scenario, should the banking industry continue to be one of the important, and if not the most important, financial driver of the Chinese economy? The authorities have not wasted time in recent years to develop the capital markets as an important

financing mechanism to further the growth's agenda. A similar causality examination of the relationship between financial deepening, incorporating both the contributions of a post-WTO banking industry and the financial markets, and economic growth done a decade later may offer some interesting insights.

Likewise, an examination of the relationship between financial deepening and economic growth, incorporating the influence of the non-state sector, may offer new insights to the study. The non-state sector will be the new engine of growth in the foreseeable future. As it is, by late 2004 the country had 3.8 million private enterprises, a rise of 26 per cent from a year earlier. It is forecasted that over the next decade, private entrepreneurs are likely to account for 60 per cent of the total increase in national wealth.⁹ It would then be necessary and lucrative for both the formal financial intermediaries and the financial markets to channel funds to the non-state sector. Till then, financial deepening would have a greater impact on the non-state sector than on the state sector.

⁹ AFP, 12th February 2005. "One-third of capitalists in China are communists." Straits Times, Singapore Holdings Pte. Ltd., Singapore.

CHAPTER THREE

Evaluating the efficiency of Chinese banks: a non-parametric approach

3.1 Introduction and motivation

The banking industry has played an instrumental role in China's overall effort to transform a centralized economy into a market-driven economy since 1979. While there are many enlightening discussions among the academics and practitioners in both the public and private sectors on the banking industry in general, there is a dearth of information on the measurement of the relative efficiency of the domestic banks with respect to their financial intermediation roles, in particular. This area remains relatively under researched, in comparison to the vast amounts of research into the efficiency of banks outside China. Hence I note the important contribution of my thesis in attempting to analyze the relative efficiency of the Chinese banks in 2002, that is, twenty four years on after China "reopened" its "closed" economy.

There are two important reasons why an examination of the efficiency of the domestic banks is useful. Firstly, China's bond and equity markets are not well developed and this thereby increases the importance of the banking industry in propelling the country's economic growth. Secondly, the domestic banks will experience intense competition with the entry of foreign banks when China

adheres to the WTO rulings to deregulate the banking industry. Many of these foreign banks place high importance on efficiency by adhering closely to international standards on credit and risk assessments, liquidity management, asset and liability management, and capital adequacy management. A timely analysis on the efficiency levels of the domestic banks will help bring forth solutions to increase their efficiency levels and thereby on ways to counter foreign competition.

There exist a number of popular techniques to assess the efficiency of banks such as the stochastic frontier approach (SFA), the traditional financial ratios analysis approach and the Data Envelopment Analysis (DEA), a non-parametric approach. The SFA approach implies that a specification of the production function and accurate input prices are required. However, it is not possible to produce an accurate measure of the Chinese labor input price as data on both the costs of the labor input and the number of employees for the banks is both not readily available and unreliable. In addition, a major weakness of Li et al.'s (2001) work using the financial ratios analysis approach for Chinese data is that the changing nature of the banking industry makes evaluation criteria such as "profits, liquidity, asset quality, attitude toward risk, and management strategies" (Yue 1992, pp.31) even more difficult. This study selects the DEA approach to assess the efficiency of Chinese banks as it is a more flexible alternative form of financial analysis and does not require the specification of a particular functional form for the cost, profit or production function.

DEA has been used in a variety of ways to analyze the efficiency of banks in the financial sector. While it is suitable for dealing with multiple output banking units, the analysis is further enhanced by delving into the relative performances of the selected Chinese banks by their organizational status, that is, under the categories of state-owned commercial banks, nation-wide banks, regional banks and city commercial banks. An assessment of their performances is made under two different models, that is, where the customer deposits serves either as an input or an output variable, respectively. The study analyzes if they offer differing efficiency outcomes for the sample of Chinese banks.

Some important questions are asked as the analysis progresses, such as the following:

- what are the main causes of the banks' overall technical inefficiency ("technical inefficiency")?
- are they due to the inefficient operations of the banks ("pure technical inefficiency") or by the disadvantageous conditions under which the banks are operating ("scale technical inefficiency")?
- what are the sources of scale inefficiency and does size play an important role in the relative efficiency of these banks?
- how are the findings different for the different banking segments and what must the inefficient banks do to meet efficiency standards?

Last but not the least important, what do the study results imply for the operation of the Chinese banks and for the process of deregulation of the Chinese banking industry? Does it serve as a good reference for the other transitional economies which may be considering adopting a pro-deregulation approach? As such, measuring the efficiency of their banks is of prime importance. Results indicate that overall relative inefficiency of the domestic banks should make both the bank executive management and policy-makers further implement serious drastic measures to improve the banks' efficiency levels, when evaluating their competitive viability.

The chapter unfolds as follows: Section 3.2 gives a literature review of the DEA technique. Section 3.3 delves into the DEA methodology. Section 3.4 analyzes the selected data and gives a profile of the sample banks belonging to the four organizational forms, that is, the state-owned commercial banks, nation-wide banks, regional banks and city commercial banks. Section 3.5 highlights the major empirical findings and section 3.6 concludes.

3.2 Literature review

There are different measures used in analyzing the efficiency of organizations, firms or decision-making units (DMUs), a term coined by Charnes et al. (1978). An X-efficiency study of a DMU refers to analyzing both its technical and allocative efficiencies. A production plan is technically efficient if there is no way

to produce more output with the same inputs or to produce the same output with fewer inputs. Allocative or “price efficiency” (Farrell, 1957), on the other hand, reflects the ability of a bank to optimally use the inputs, given their pricing information and the production technology.

The main approaches commonly adopted in the academic studies on costs and efficiency in the banking industry are the parametric and non-parametric techniques. The parametric stochastic frontier approach (SFA), which is also sometimes referred to as the econometric frontier approach, requires the specification of a functional form for the cost, profit or production relationship among inputs and outputs. DEA, on the other hand, does not require the specification of a particular functional form for the cost, profit or production function. This technique is more straightforward, and it is aimed to determine an envelopment surface, and the frontier is derived by “enveloping” the observed data in the input-output space in which case there is no way to produce more output with the same inputs or to produce the same output with fewer inputs. Hence the technique is known as Data Envelopment Analysis (DEA).

The SFA approach produces measures of X-efficiency, which is composed of both technical and allocative efficiency, and requires the specification of a cost function. This implies that accurate input prices have to be made available. Unfortunately data on both the costs of the labor input and the number of employees for the Chinese banks are not easily and readily available and, are also

unreliable. Thus it is not possible to produce an accurate measure of the Chinese labor input price. Therefore this thesis does not consider allocative efficiency and instead, the DEA approach is used as even without the data on input prices, the technique is able to analyze both the technical efficiency and scale efficiency of the banks. Scale inefficiency arises when a bank is experiencing non-constant returns-to-scale, which differs from a constant returns-to-scale situation that characterizes a long run, free entry competitive equilibrium.

The DEA technique has its own limitations. Fukuyama (1993) highlights that it assumes the non-existence of the “measurement error and statistical noise” (pp. 1102), unlike the SFA approach. Drake and Hall (2003) reiterate that the absence of the random error term implies that DEA may “overstate the true level of relative inefficiency for some units” as it treats “any deviation from the efficient frontier as being purely associated with inefficiency” (pp. 897).

DEA has been used in a variety of ways to analyze the efficiency of banks in the financial sector. It is used to analyze country-specific banking data such as for Japan (Fukuyama, 1993; Drake and Hall, 2003), United Kingdom (Drake, 2001) and the United States of America (Miller and Noulas, 1996). In his study of a 1990 sample of 143 Japanese banks, Fukuyama (1993) found that scale inefficiencies were mainly due to increasing returns-to-scale. Drake and Hall (2003) examined 1997’s data for 149 Japanese banks with possible large scale mergers among some of these banks. The DEA results showed that the larger

banks have limited opportunity to gain from eliminating X-inefficiencies as they are operating above the minimum efficient scale. On the other hand, there were potential significant economies of scale for the smallest banks. Drake (2001) employed panel data sample covering United Kingdom's banks over the period 1984 to 1995, and found that smaller banks exhibited increasing returns-to-scale while the big four clearing banks (such as Barclays, Lloyds, National West and Midland) showed strong evidence of decreasing returns-to-scale. DEA results for a sample of 201 large banks in the United States of America (Miller and Noulas, 1996), for the period 1984 to 1990, confirmed that the larger banks were also experiencing decreasing returns-to-scale and have higher levels of technical efficiency. The DEA technique is also used for addressing the operating efficiency of domestic bank branches as demonstrated in the works of Sherman and Gold (1985) and Oral and Yolalan (1990).

The DEA technique has been used as an effective tool in making international comparisons between the efficiency of banks in different countries, such as Berg et al.'s (1993) work on the relative competitiveness of the banking industries in three Nordic countries, namely Finland, Norway and Sweden. The study found the average Swedish bank to be much more efficient than the Finnish and Norwegian average banks. Sathye (2001) made a comparison of the X-efficiency (which consists of both technical and allocative efficiencies) of Australian banks with that of banks in Europe and the United States of America using 1996 data. The study found that technical efficiency is more important than its allocative

counterpart among the 29 Australian banks. Oliveira and Tabak (2005) measured banking efficiency based on the appreciation of the bank stocks of 41 countries in the period between 1995 and 2002. The empirical study concluded that on average, the banking efficiency was not largely different among developed and emerging countries. There are also research studies analyzing whether the domestic banks are more or less efficient than foreign-owned banks located in the host countries, and the implications on government policies regarding deregulation and mergers (Sathye, 2001, 2003).

In the case of China, there are not many studies using DEA or other techniques to evaluate the efficiencies of Chinese banks. Li et al., (2001) used financial ratios analysis to evaluate bank efficiency and profitability of the Chinese banks in 1996 and 1997. Some of the financial ratios used include return on equity (ROE), return on assets (ROA), net interest margin, net non-interest margin, net profit margin, asset utilization and earning spread. The study found that the low profitability of the state-owned commercial banks resulted from their higher ratio for non-interest expenses and lower interest margin (that is, ratio of interest income to total assets) than joint-equity banks. This lowered the banks' ROE and ROA even though their assets were utilized more efficiently and they had higher financial leverage. In general, the Chinese banks generated lower returns with higher financial risks compared to banks elsewhere, such as those in the West. There were, however, some difficulties encountered in assessing bank performance. These included the lack of information on bank performance by lines of business and at the regional

levels, and there was no detailed information on the quality of investment and loan portfolios. In addition, Yue (1992) believes that the changing nature of the banking industry makes evaluation criteria such as “profits, liquidity, asset quality, attitude toward risk, and management strategies” (pp. 31) even more difficult. This therefore increases the need for more flexible alternative forms of financial analysis, such as the DEA technique.

Studies using the DEA technique to evaluate the efficiencies of the local Chinese banks include those of Zhao et al.'s, (2001) who found the efficiency levels of state-owned banks to be low, and Zhao's (2000) who reiterated that the overall technical and allocative efficiencies were not as low as we expected them to be. A recent study by Chen et al., (2005) examined the cost, technical and allocative efficiency of 43 banks over the period 1993 to 2000, using the DEA technique. These included the state-owned banks, regional joint-equity banks and investment banks. The objective of the study was to examine whether bank efficiency of the major banks had improved with the implementation of the deregulation program in 1995. The results indicated that the performance of the banks appeared to have improved especially early in the deregulated period. The large state-owned banks and smaller banks were also more efficient than medium-sized banks, and that technical efficiency consistently dominated the allocative efficiency of these Chinese banks. As data on the input costs for the Chinese banks are not readily available and unreliable, the applicability of both Zhao's (2000) and Chen et al.'s, (2005) DEA studies are therefore being questioned. Unlike both these authors,

this study focuses on both the pure technical efficiency and scale efficiency of a sample of Chinese banks.

3.3 DEA methodology

The DEA represents a mathematical programming methodology that can be applied to compute the “relative” efficiency of a variety of institutions in transforming inputs into outputs in relation to its peer group in the industry. The model was initially developed by Charnes et al. (1978) based on the concept of technical efficiency of Farrel (1957). It was further developed by Banker et al. (1984), Färe et al. (1985), and Byrnes et al. (1987). The DEA technique solves linear programming problems to “fit” non-statistical or non-parametric “best-practice frontiers” by “enveloping” the observed data of homogenous decision-making units (DMUs). Sherman and Gold (1985) were the first to apply the DEA technique to the banking industry (Molyneux et al., 1996).

Charnes et al.’s (1978) CCR (Charnes, Cooper and Rhodes) model assumes that a constant returns-to-scale (CRS) technology exists. DEA compares the mix and volume of output and the inputs or resources used by each bank with all the other banks in the sample. The relatively “most efficient” banks become the “efficient frontier”, which is generated when a mathematical algorithm is used to calculate the efficiency score for each bank. The degree of the inefficiencies of the other banks relative to the “efficient frontier” are then determined. These relatively

“most efficient” banks are rated to have an efficiency score of one, while the less efficient banks score between zero and one. The efficiency scores are only relevant to the sample that is being studied. A change in the sample, such as the inclusion of new banks, or change in the inputs and/or outputs, will result in the calculation of new efficiency scores. Therefore the results of efficiency of a certain sample are not comparable to the results of different samples.

Charnes et al.’s (1978) CCR input orientation model tries to answer to what extent the quantity of input could be reduced, without altering the quantity of output produced, for the bank to be considered efficient. The initial objective is to build a convex linear frontier by “enveloping” the observed data in the input-output space in which case there is no way to produce more output with the same inputs or to produce the same output with fewer inputs. The diagram in Figure 3.1 shows an example.

Suppose that each bank (A , B , C , D and E) uses two inputs (x_1, x_2) to produce the output y and the coordinates of the diagram represents the quantities of inputs in relation to the level of output. Each point illustrates the combination of the two inputs required by each bank to produce the same output. The derived “efficient frontier” is made up of convex combinations of the points A , B , C and D (that is, representing banks A , B , C and D , respectively) that are considered efficient. Point E (that is, Bank E) is considered inefficient because it is away from the frontier – there is a point E' situated between the points B and C inside the frontier that can

produce the same output using less inputs than E. The ratio OE'/OE measures the technical efficiency of E and it means the proportion of OE that is really needed to produce the output y .

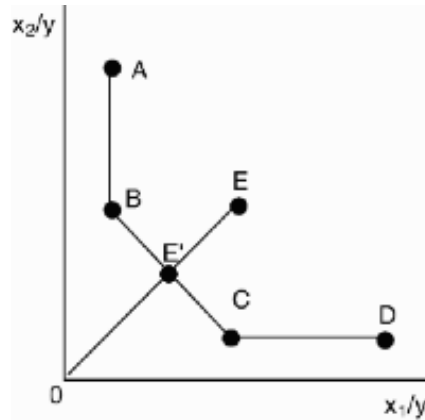


Figure 3.1: Piece-wise Linear Convex Unit Isoquant (adapted from Coelli et al., 1998, pp.143)

According to Charnes et al. (1978), the measure of efficiency used by the DEA is the ratio between the weighted sum of the outputs (also termed as “virtual” outputs) and the weighted sum of the inputs (also termed as “virtual” inputs), subject to the condition that similar ratios for each bank are not bigger than one. The term “virtual” is used for both outputs and inputs as both their respective weights¹ have yet to be determined. These “weights” in DEA are derived from the data instead of being fixed in advance. The mathematical formulation of the (relative) efficiency measure for a bank in a group of banks would be as follows:

¹ They differ from customary weightings (eg. as in index number constructions) so sometimes the term “multiplier” is used to distinguish DEA from other commonly used approaches.

Suppose N DMUs (banks) that can transform I inputs into J outputs. Consider also that I can be bigger, smaller or equal to J , subject to the restriction that the output/input ratios of all the banks are smaller or equal to one. Let y_{jn} and x_{in} denote the j th output and i th input of the n th bank, respectively. The CCR model measures the maximum efficiency, e , of each bank, such as for Bank B (*that is*, e_B , where B ranges over $1, 2, \dots, N$), by solving the fractional programming objective function specified in the following equation.

$$\text{Maximize } e_B = \frac{\sum_{j=1}^J u_{jB} y_{jB}}{\sum_{i=1}^I v_{iB} x_{iB}} \quad (1)$$

subject to:

$$\frac{\sum_{j=1}^J u_j y_{jn}}{\sum_{i=1}^I v_i x_{in}} \leq 1, \quad n = 1, \dots, N$$

$$u_j, v_i \geq 0, \quad i = 1, \dots, I; j=1, \dots, J$$

where u_{jB} is the weight placed on j th output and v_{iB} is the weight placed on the i th input of Bank B . The output weights u_j and input weights v_i are parameters to be estimated.

Equation (1) allows the generation of positive weights that maximize the output/input ratio of each bank in relation to other banks, and hence providing the

efficiency score for each bank. The objective is to assign the highest possible value to e_B by comparing the observed outputs and inputs of all the banks such that none of the banks has an efficiency score greater than 1. This feature conforms to the economic assumption that the nature of production is such that the output(s) cannot be more than the input(s). If the efficiency score reaches the maximum value of one, Bank B satisfies the necessary condition to be DEA efficient; otherwise, it is DEA inefficient.

The linear fractional programming model above can be transformed into a linear programming model when the denominator of the objective function is equal to one:

$$\text{Maximize } e_B = \frac{\sum_{j=1}^J u_{jB} y_{jB}}{\sum_{i=1}^I v_{iB} x_{iB}} \quad (2)$$

subject to:

$$\sum_{i=1}^I v_{iB} x_{iB} = 1^2,$$

²As a fractional number is invariant under multiplication of both numerator and denominator by the same nonzero number, we set the denominator of the objective function in equation (1) to 1, move it to a constraint as done in equation (2) and maximize the numerator, resulting in the linear program.

$$\sum_{j=1}^J u_j y_{jn} - \sum_{i=1}^I v_i x_{in} \leq 0^3, \quad n = 1, \dots, N$$

$$u_j, v_i \geq 0, \quad i = 1, \dots, I; j=1, \dots, J$$

A complete DEA solution would require one such linear program to be solved for each bank, yielding N different (u_{jn}, v_{in}) weight sets.

The problem with the original model is that its use is appropriate only when used in an optimum scale (Coelli, 1996). However, a bank may not be functioning in the desired optimum scale due to imperfect competition or financial restrictions. Therefore the use of a constant returns-to-scale technology operating in a non-optimum scale may lead to measures of technical efficiency being confused with measures of scale efficiency. Banker et al.'s (1984) BCC (Banker, Charnes and Cooper) or variable returns-to-scale (VRS) model includes the concept of variable returns-to-scale to the original model, that is, the BCC model supposes that the evaluated banks present variable returns-to-scale. This allows the calculation of technical efficiency without the effects of scale efficiency. This paper adopts the

³ Under the nonzero assumption of u and $v > 0$, the denominator of the constraint of the fractional program is positive for every n , and hence obtain

$$\sum_{j=1}^J u_j y_{jn} - \sum_{i=1}^I v_i x_{in} \leq 0, \text{ by multiplying both sides of}$$

$$\sum_{j=1}^J u_j y_{jn} / \sum_{i=1}^I v_i x_{in} \leq 1, \text{ by the denominator.}$$

VRS model as China's banking sector is not fully developed and hence perfect competition is unlikely.

The BCC's variable returns-to-scale model modifies the original CCR's constant returns-to-scale model by adding a new restriction \bar{v} ⁴ that represents the variable returns-to-scale. This means that when differentiated returns to scale are assumed throughout the frontier, the model allows the efficiency to vary according to the scale of production. As \bar{v} is not subject to the restriction of positive values, it can assume values smaller than zero:

$$\text{Maximize } e_B = \sum_{j=1}^J u_j y_{jB} - \bar{v} \quad (3)$$

such as

$$\sum_{i=1}^I v_i x_{iB} = 1,$$

$$\sum_{j=1}^J u_j y_{jn} - \sum_{i=1}^I v_i x_{in} - \bar{v} \leq 0, \quad n = 1, \dots, N$$

$$u_j, v_i \geq 0, \quad i = 1, \dots, I; j=1, \dots, J$$

⁴ It is also known as the "convexity" constraint.

Assuming that (x_B, y_B) is on the “efficient frontier”, the following conditions identify the situation for returns to scale at this point⁵,

- (i) Increasing returns-to-scale prevails at (x_B, y_B) if and only if $\ddot{u} < 0$
- (ii) Decreasing returns-to-scale prevails at (x_B, y_B) if and only if $\ddot{u} > 0$
- (iii) Constant returns-to-scale prevails at (x_B, y_B) if and only if $\ddot{u} = 0$

Finally, in investigating the *sources* of inefficiency that a bank or any other DMU might have, Cooper et al. (2000) make comparisons of the (input-oriented) CCR and BCC efficiency scores. The CCR model assumes the constant returns-to-scale production possibility set. As such, the radial expansion and reduction of all observed banks and their nonnegative combinations are possible. In addition there is no account of any scale effect. Therefore the CCR score is called *global technical efficiency* (“TE”). The BCC model, on the other hand, assumes the convex combinations of the observed banks as the production possibility set, and the BCC score is called *local pure technical efficiency* (“PTE”), under variable returns-to-scale. A bank with full BCC efficiency but a low CCR score is said to be operating locally efficiently but not globally efficiently due to the scale size of the bank. As illustrated later, it is reasonable to characterize the *scale efficiency* of a bank by the ratio of the two scores.

⁵ For inefficient banks, we identify returns-to-scale with the projected point on the efficient frontier, such as point E' in Figure 3.1.

Therefore, based on the CCR and BCC efficiency scores, we define scale efficiency of Bank B as follows:

$$SE_B = e_B (CCR) / e_B (BCC) \quad (4)$$

where $e_B (CCR)$ and $e_B (BCC)$ refer to the efficiency scores derived from the CCR and BCC models, respectively. The relationship shown in equation (4) therefore demonstrates a decomposition of efficiency as:

$$\begin{aligned} &\text{Technical Efficiency (TE)} \\ &= \text{Pure Technical Efficiency (PTE)} \times \text{Scale Efficiency (SE)} \end{aligned} \quad (5)$$

It also depicts the *sources* of inefficiency, that is, whether it is caused by inefficient operations (PTE) or by the disadvantageous conditions displayed by the scale efficiency (SE) or both. Figure 3.2 illustrates a single input and single output scenario. For the BCC-efficient Bank A with increasing returns-to-scale, its scale efficiency is given by

$$SE_A = e_A (CCR) = LM/LA < 1,$$

Here Bank A is operating locally efficiently (PTE = 1) and its overall inefficiency (TE) is caused by the scale inefficiency (SE) expressed by LM/LA.

For Bank *B* and Bank *C*, their scale efficiency is one, that is, they are operating at the most productive scale size (where both banks are fully efficient in both the CCR and BCC scores). For the BCC-inefficient Bank *E*, we have

$$SE_E = [PQ/PE] \times [PE/PR] = PQ/PR,$$

which is equal to the scale efficiency of the input-oriented BCC projection *R*. The decomposition of efficiencies for Bank *E* is

$$TE_E = PTE_E \times SE_E \quad \text{or}$$

$$PQ/PE = [PR/PE] \times [PQ/PR]$$

This means that Bank *E*'s overall inefficiency is caused by its inefficient operations and at the same time by the disadvantageous conditions it faces.

The next section illustrates the analysis of the relative efficiency of a sample of Chinese banks using the DEA input-oriented approach and under the assumption of variable-returns-to-scale, in 2002. With the aid of a software application generator, DEA-Solver (Cooper et al., 2000), the technical efficiency ("TE"), pure technical efficiency ("PTE") and the scale efficiency ("SE") scores of each bank are derived. Their returns-to-scale situations are also identified.

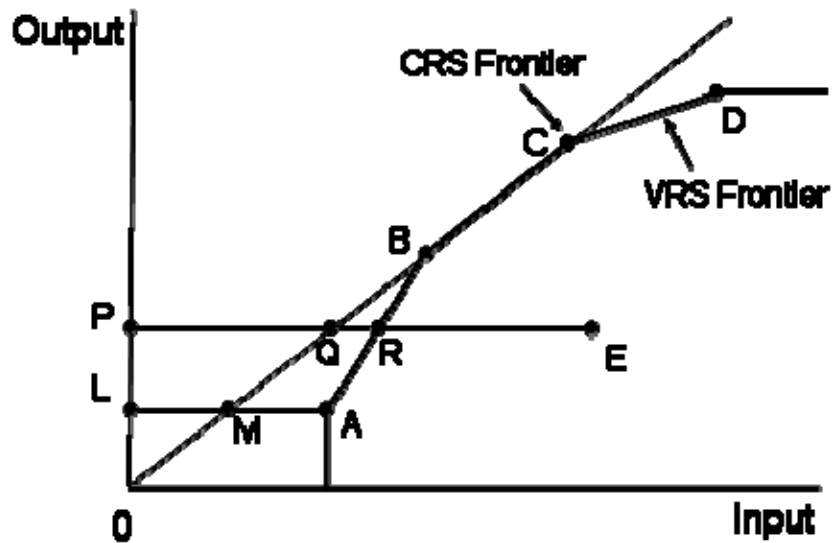


Figure 3.2: Pure Technical and Scale Efficiency (Cooper et al., 2000, pp.137)

3.4 Data Analysis

This section discusses the intermediation approach taken in evaluating the relative efficiency of the Chinese sample banks, based on the selected input and output variables. As academics have diverse views on whether customer deposits should be included as an input, this study adopts two intermediation models, that is, where customer deposits is selected as an input variable in Model A, and as an output variable in Model B. An attempt is made to analyze if the two models offer differing efficiency outcomes for the sample of Chinese banks.

3.4.1 The sample banks

As highlighted in Section 1.3 of CHAPTER ONE, “Banking reforms: policy changes, implementation issues and implications”, China’s “Comprehensive Banking System” consist of the central bank, the People’s Bank of China (PBC), three policy banks⁶, the four state-owned commercial banks, nation-wide commercial banks, regional commercial banks, city commercial banks and the non-banking financial institutions. The non-banking financial institutions include trust and investment companies, insurance companies, finance companies, financial leasing companies, securities companies, rural credit cooperatives and the urban credit cooperatives. The study focuses only on the commercial banks, that is, the state-owned commercial banks, nation-wide banks, regional banks and the city commercial banks. There are some differences in the organizational structure and the sectors they service. Within the banking segment, though, they compete for the same customer set and provide almost similar product and service offerings.

While the banks in the four banking segments have similar commercial inclinations, they differ in size, ownerships, locations and target customers. The state-owned commercial banks are China’s pillar banks that account for 54 per cent of the banking sector’s total assets at the end of September 2004 (China

⁶ These are the Agricultural Development Bank, the Export and Import Bank of China, and the State Development Bank which was later renamed as China Development Bank.

Knowledge Press Private Limited, 2005). In 1979, the Agricultural Bank of China, the Bank of China, and the China Construction Bank⁷ re-established themselves as specialized banks, as they were during the pre-reform period. The Industrial and Commercial Bank of China was established on January 1984 and took over the central bank's general banking businesses. The Agricultural Bank of China provided loans to the agricultural and rural sectors, the Bank of China focused on international businesses, the China Construction Bank provided the financing for construction and infrastructural projects and, the Industrial and Commercial Bank of China served the industrial and commercial sectors. By 1994, these banks were allowed to have overlapped customer bases, across the four niche markets, and served by hundreds of thousands of branches across the country. In 1995 they operated a total of about 158,000 offices but this was reduced to about less than two-thirds the size by the end of 2002 (Lardy, 2004). The state-owned commercial banks' main customers are mainly the huge national state-owned enterprises.

Other national commercial banks or nation-wide banks and regional banks were established to meet the increased financing demand, in particular, from the smaller state-owned enterprises and private small-and-medium enterprises. These banks are the second tier of China's banking system that are legally organized as shareholding companies. They were created in "two waves: 1987-88 and 1992-95" (Lardy, 2004, pp. 99). Unlike the state-owned commercial banks which are

⁷ Previously known as the People's Construction Bank of China.

wholly state-owned, they have a large number of owners. Most of these owners are government entities, with two exceptions. Non-government entities control 70 per cent and 72 per cent of the China Minsheng Bank and the regional Shenzhen Development Bank (Lardy, 2004), respectively. The other banks' dominant share owners are the government entities.

These joint-stock commercial banks are smaller in terms of assets size when compared to the state-owned commercial banks. They account for about 14.6 per cent of all banks' assets at the end of September 2004 (China Knowledge Press Private Limited, 2005). Unlike the nation-wide banks, the regional banks operate within certain geographical areas and thus have less opportunity to diversify their investments. They have close ties with the state-owned enterprises and governments in the regions where they are located, such as Shenzhen in southern China, and Shanghai and Fuzhou in the east. They are thus involved in financing many of the projects initiated by the state-owned enterprises and local governments in these regions.

Lastly, the city commercial banks form the third tier of the banking system. They were established in 1990s through the merger of individual urban credit cooperatives. As of the end of August 2004, there were 112 city commercial banks (China Knowledge Press Private Limited, 2005). Local governments exert great influence over these banks and have majority ownership in many of them. Non-government entities have only 30-40 percent ownership of these banks

(Lardy, 2004). Some foreign institutions have a minority stake in some of these banks, such as the Bank of Shanghai. The city commercial banks form the smallest banking segment in terms of assets size and income. By the end of September 2004, they accounted for only 5.2 per cent of all bank assets (China Knowledge Press Private Limited, 2005). Their business scope is limited to the city where they were founded. They serve mainly the small-and-medium enterprises, in the private sector, in particular.

The thesis focuses only on these domestic commercial banks. Many of these banks provide basic banking services, such as deposit-taking, lending, and payment and clearance. Other more sophisticated and higher value-added product and service offerings, such as cash management, treasury services, securities clearance, credit cards, and housing mortgages, are beginning to be offered by some large banks, such as the state-owned banks and nation-wide banks. However, their volumes remain small. Overall, the lack of technical and managerial expertise, financial innovations, technology-driven banking industry infrastructure, such as a well-established consumer credit information system, has impeded the rapid expansion of new products and service offerings.

This study will examine the operational efficiency of the domestic commercial banks in 2002. The banks' data for the year 2002 reflect the financial intermediary status of the banks in recent times. Based on data availability and data completeness, the study has the necessary information on some of China's largest

banks based on total assets, that is, 28 major banks. They consist of four state-owned commercial banks, five nation-wide banks, four regional banks, and 15 city commercial banks.⁸ These banks are segmented according to function rather than size (such as by total assets or net income) although their categorization somewhat strongly coincides with their size, except for a few banks. A few regional banks, that is, the China Merchants Bank and the Shanghai Pudong Development Bank, are as big as the nation-wide banks such as the China International Trust & Investment Corporation Industrial Bank and the China Everbright Bank. The sample banks' financial information is derived from their annual reports and from the electronic database "Bankscope" (<http://bankscope.bvdep.com>). This is available from Bureau van Dijk. "Bankscope" data sources include FitchRatings, Factiva, Capital Intelligence, Economist Intelligence Unit, Moody's Standard and Poor's and FinInfo.

Figures 3.3 and 3.4 present some preliminary information on the asset and net income profiles of the sample banks (in descending order), organized by their respective segments. Acronyms are used to identify the banks in the diagrams, due to the lack of space. Table 3.1 shows the actual names of these banks. They

⁸ Data for the majority of the city commercial banks were either unavailable or incomplete. The 15 selected ones are major players in the marketplace and their input and output variables are also available and complete. The empirical study, however, recognizes that this small sample bias may have an impact on the results. On the other hand, the rule of thumb established by various authors for the appropriate number of banks to be tested for efficiency is that the sample should be larger than the product of the number of inputs and outputs or at least three times larger than the sum of the number of inputs and outputs. Hence the Chinese sample size met these requirements (section 3.4.3 on "The choice of input and output variables", pp. 116-119).

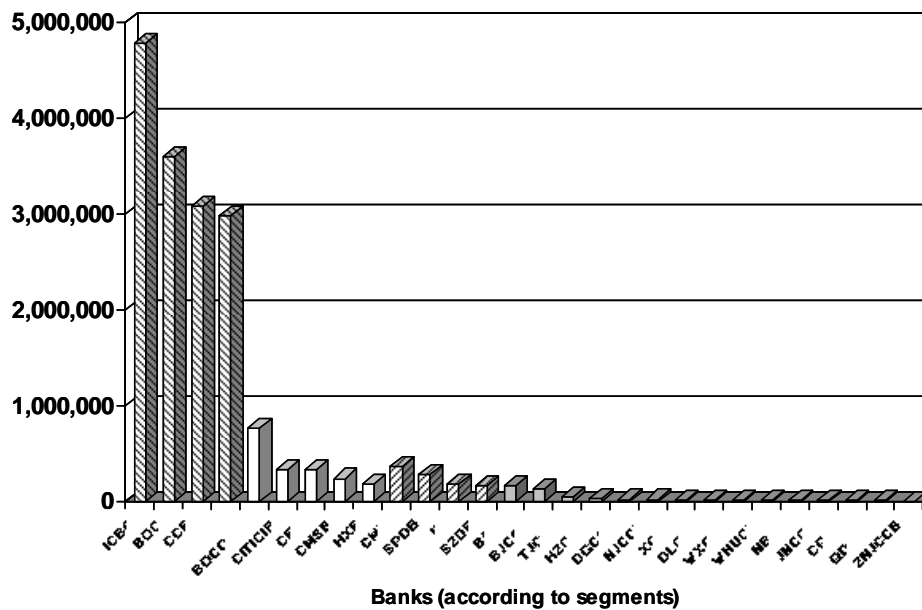
are organized according to their total asset size (in descending order) within the segment. Figure 3.3 highlights the amount of total assets on the vertical axis while the horizontal axis identifies the four banking segments. The first segment refers to the state-owned commercial banks' segment whose total assets range from RMB2,976,566 million (Agricultural Bank of China) to RMB4,776,773 million (Industrial and Commercial Bank of China). This is followed by the next three segments, that is, the nation-wide banks, regional banks and city commercial banking whose assets range from RMB178,146.5-335,162.6 million, RMB164,768.4-371,659.9 million, and RMB4,757.3-168,600 million, respectively. Figure 3.4 illustrates the net income of the sample banks. They range from RMB2,897-10,924 million for the four state-owned commercial banks, RMB271.6-1,416.3 million for the five nation-wide banks, RMB386.9-1,734.3 million for the four regional banks and RMB12.1-800 million for the 15 city commercial banks.

Table 3.1: The four banking segments and their respective banks used in the sample

(I) State-owned commercial banks (4)	(IV) City commercial banks (15)
1. Industrial and Commercial Bank of China (ICBC)	14. Bank of Shanghai (BOS)
2. Bank of China (BOC)	15. Beijing City Commercial Bank (BJCCB)
3. China Construction Bank (CCB)	16. Tianjin City Commercial Bank (TJCCB)
4. Agricultural Bank of China (ABC)	17. Hangzhou City Commercial Bank (HZCCB)
(II) Nation-wide banks (5)	18. Dongguan City Commercial Bank (DGCCB)
5. Bank of Communications (BOCOMM)	19. Nanjing City Commercial Bank (NJCCB)
6. China International Trust and Investment Corporation Industrial Bank (CITICIB)	20. Xian City Commercial Bank (XCCB)
7. China Everbright Bank (CEB)	21. Dalian City Commercial Bank (DLCCB)
8. China Minsheng Bank (CMSB)	22. Wuxi City Commercial Bank (WXCCB)
9. Hua Xia Bank (HXB)	23. Wuhan United Commercial Bank (WHUCB)
(III) Regional Banks (4)	24. Ningbo Commercial Bank (NBCB)
10. China Merchants Bank (CMB)	25. Jinan City Commercial Bank (JNCCB)
11. Shanghai Pudong Development Bank (SPDB)	26. Chongqin Commercial Bank (CQCB)
12. Industrial Bank (IB)	27. Qingdao City Commercial Bank (QDCCB)
13. Shenzhen Development Bank (SZDB)	28. Zhenjiang City Commercial Bank (ZNJCCB)

Source: People's Bank of China (2003)

Total assets (RMB million)



Legend

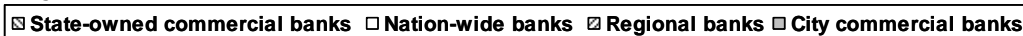
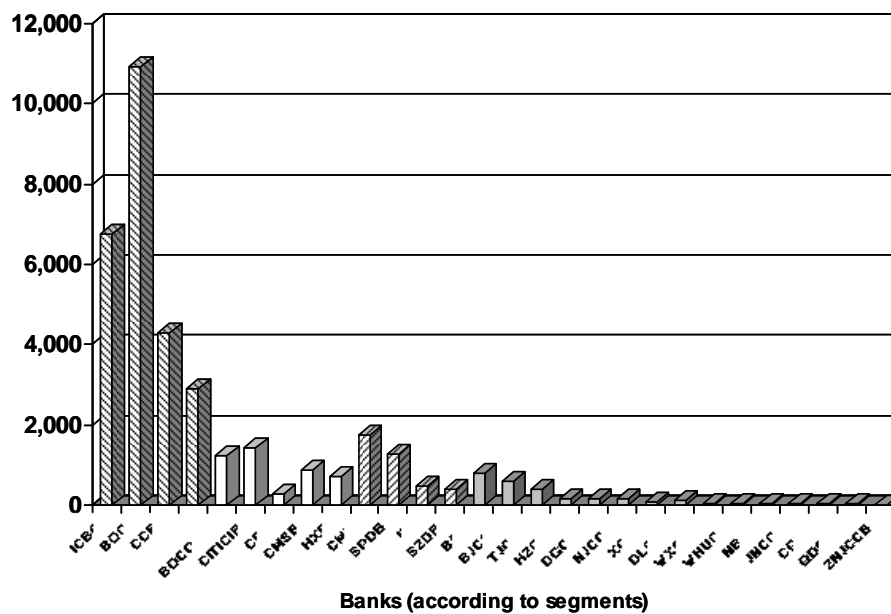


Figure 3.3: Asset profile of the banks

Net income (RMB million)



Legend

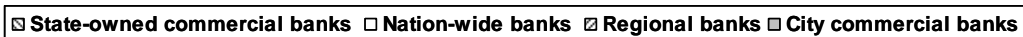


Figure 3.4: Net income profile of the banks

3.4.2 The intermediation approach

There are different approaches taken in analyzing the efficiency and productivity of banks in the financial arena. Studies that opt for X-efficiency (which consists of both technical and allocative efficiencies) analyzes include those of Sathye's (2001, 2003). Some authors even narrow their studies to just technical efficiency (that is, referring to both pure technical efficiency and scale efficiency) and these include works done by Rangan et al. (1988), Yue (1992), and Miller and Noulas (1996). Other research works differentiate their analyzes based on either taking an "intermediation" approach or a "production" approach. While the "production" approach (Sherman and Gold, 1985) highlights the role of financial intermediaries as "producers" of financial offerings, and utilizing resources such as labor and capital to create marketable product offerings such as loans and services; the "intermediation" approach (Yeh, 1996; Yue, 1992; Siems, 1992) examines the banks as financial intermediaries whose roles are to transfer funds from lenders to borrowers. This study adopts the "intermediation" approach.

The effective use of DEA to test the quality of banks can also be demonstrated by analyzing their financial data through different dimensions such as in the areas of operational or service efficiency (Oral and Yolalan, 1990; Parkan, 1987), profitability (Hancock, 1989), and capital adequacy, asset utilization and liquidity (Yeh, 1996). This allows DEA to be used as an alternative bank management tool

to the traditional financial ratio analysis to provide a comprehensive assessment of bank operating efficiency.

3.4.3 The choice of input and output variables

In the empirical analyzes on bank efficiency highlighted above, there are some areas of concern that deserve attention in any new study. These include the choice of inputs and outputs used and, the sample size. The proper selection of inputs and outputs when using DEA to evaluate bank efficiency is important as it allows the management tool to provide important information about a bank's financial status and management performance. Such information serves as an early-warning signal to the top decision-makers on the overall state of the bank's business operations.

The choice of inputs and outputs used by the different studies, however, depend on the approaches taken in DEA in analyzing bank efficiency. For many of the studies that focus on the "production" or "service-efficiency" approaches (Oral and Yolalan, 1990; Parkan, 1987), labor, capital and the number of accounts (commercial accounts and savings accounts) are the obvious choice for inputs while the number of the various transactions (general service, credit, deposit or foreign exchange transactions) measured in number or time serve as outputs. In testing for the standard "intermediation" approach, inputs such as fixed assets (which serve as a proxy to capital resource), interest and non-interest expenses

(general and administrative expenses which serve as a proxy to labor resource, which are typically dominated by personnel expenses) are used to intermediate deposits into outputs such as loans (commercial and industrial loans, consumer loans or real estate loans) and other earning assets. In many cases, the use of the proxy is necessary due to the unavailability of data, for example on employee numbers, across many banking samples. The critical ingredients used for assessing the quality of banking management usually include the number of employees, asset values, interest and non-interest expenses and purchased funds as inputs; while deposits, earning assets and interest income are used as outputs (Siems, 1992).

Some variables are put under closer scrutiny as to whether they should be included as inputs, such as interest expenses, or whether they should serve as either inputs or outputs, such as deposits. Under the operational or service efficiency approach, the interest expenses are excluded as inputs as they are not considered expenditures “directly” generated by the bank operating process (Yeh, 1996). While some studies assume deposits as inputs since they are another source of funds like non-transaction deposits, Siems’s (1992) position is that core deposits are an intermediary output as they are produced by the bank operations. For this matter, this study adopts two models, that is, one using customer deposits as an input variable and the other, as an output variable. In China the combined households and corporate savings deposits have become one of the most important sources of funds for the financial institutions. In fact they were

instrumental to the high economic growth, as high as 12.7 per cent in 1994, that the country experienced since it undertook economic reforms in 1979. The country's domestic savings to GDP ratio rose from 34 per cent in 1981-1990 to an average of 40 per cent since then (Ariff and Khalid, 2005).

The empirical study therefore consists of Model A which has non-interest expenses (general and administrative expenses), fixed assets and customer deposits as inputs, and net loans (that is, taking account of non-performing loans) and non-interest income as outputs; and Model B has non-interest expenses and fixed assets as inputs, while customer deposits, net loans and non-interest income serve as outputs. Table 3.2 displays the summary statistics of both the input and output data of the sample. All variables are measured in millions of Chinese currency, that is, Renminbi (RMB). The table includes the means (MEAN), standard deviations (S.D.) and extreme values for each variable (MIN for minimum and MAX for maximum).

Table 3.2: Descriptive summary statistics on the input and output data, 2002 (RMB million)

Variables	MEAN	S.D.	MIN	MAX
Deposits	511,999.3000	1,046,964.6525	3,403.8000	4,100,517.0000
Non-interest expenses	6,657.2464	13,189.0000	63.1000	47,943.0000
Fixed assets	11,496.2786	23,729.8558	58.7000	75,236.0000
Net loans	365,986.1107	736,802.5679	2,828.0000	2,988,755.0000
Non-interest income	1,120.0300	2,639.0100	1.4000	12,136.0000

Lastly, there are various rules of thumb given for the appropriate number of banks or DMUs to be tested for efficiency using DEA. As recounted by Sathye (2001), Soteriou and Zenios (1998) and Dyson et al. (1998), they believe that the sample size should be larger than the product of the number of inputs and outputs while Nunamaker's (1985) opinion is that it should be at least three times larger than the sum of the number of inputs and outputs. As mentioned in Section 3.4.1 on "The sample banks", the Chinese sample consists of 28 major banks, and this number met the requirements as highlighted by the various authors. The efficiency of each of these banks is measured using the input-oriented "intermediation" approach and under the assumption of variable returns-to-scale. Using a menu-driven application software called "DEA-Solver" (Cooper et al., 2000), the "variable returns-to-scale" option generates reports on the banks' relative technical efficiency ratings. The technical efficiency ("TE") and the pure technical efficiency ("PTE") scores are generated, which are then used to derive the scale efficiency ("SE") scores. The "DEA-Solver" application software also identifies the returns-to-scale situation for each bank, that is, whether it is experiencing constant returns-to-scale, increasing returns-to-scale or decreasing returns-to-scale. In addition, it highlights the percentage reductions in inputs usage that the inefficient banks need to make in order for them to move to the "efficient frontier".

3.5 Empirical results

The DEA technique allows us to calculate the relative efficiency measures for the 28 major commercial banks under two different models, where the customer deposits serves either as an input or an output variable, respectively. The study makes a comparative analysis of the empirical results of Model A and Model B using summary statistics, and highlights whether the main causes of the banks' overall technical inefficiency are attributable to the inefficient operations of the banks ("pure technical inefficiency, PTE") or by the disadvantageous conditions under which the banks are operating ("scale inefficiency, SE"). The analysis also uncovers the sources of their scale inefficiencies, that is, whether these banks are operating under increasing returns-to-scale or decreasing returns-to-scale, and relates the findings to their current business operations. Importantly, the study seeks to confirm if size does play an important role in the relative efficiency of these banks. A further attempt is made to analyze the relative efficiency of the banks across the four banking segments, that is, the state-owned commercial banks, nation-wide banks, regional banks and the city commercial banks. Of equal importance in this exercise is the recommendations made on what the inefficient banks should do to meet efficiency standards. In the concluding section of this chapter, the study assesses what the empirical results imply for the operation of the Chinese banks and for the process of deregulation of the Chinese banking industry. It also notes whether the analysis of this thesis is applicable to the other transitional economies which are considering adopting a similar deregulation

approach. The detailed results of the study are included in the Appendix (pp.273-276).

3.5.1 Evaluating the efficiency of the sample of Chinese banks

The following table, Table 3.3, provides summary statistics on the overall technical efficiency (“TE”), pure technical efficiency (“PTE”) and scale efficiency (“SE”) for the full sample. The table illustrates the means (MEAN), standard deviations (S.D.) and extreme values for each efficiency measure (MIN for minimum and MAX for maximum). A rating of “1” demonstrates full efficiency, while a score of less than “1” depicts relative inefficiency. The empirical results show that there are eight efficient banks using Model A’s input-output criteria and Model B churns out only three efficient banks. Consequentially, Model B produces more inefficient banks than Model A. From a macro perspective, it is clear that all the three relative efficiency measures are lower for Model B compared to Model A. In other words, the inefficiencies are more severe using Model B’s input-output criteria.

Table 3.3: Descriptive statistics on the efficiency measures of the sample of banks

Efficiency Measures	Model A				Model B			
	MEAN	S.D.	MIN	MAX	MEAN	S.D.	MIN	MAX
TE	0.8201	0.1619	0.4289	1.0000	0.7311	0.1799	0.3740	1.0000
PTE	0.8716	0.1480	0.4881	1.0000	0.8331	0.1637	0.4525	1.0000
SE	0.9388	0.0714	0.7320	1.0000	0.8745	0.1025	0.5292	1.0000

The sample means under Model A and Model B are 0.8201 and 0.7311, respectively. This implies that the majority of these financial intermediaries could make significant reductions in their input usage (given output levels) and in so doing, significant cost savings could be achieved. It is interesting to note that more than one third of the sample banks are below the average technical efficiency level, accounting for 42.86 per cent under Model A, and 46.43 per cent under Model B. The Agricultural Bank of China and the China Construction Bank are the two state-owned commercial banks that have below average technical efficiency scores under both models. The Hua Xia Bank is the only nation-wide bank having below average technical efficiency ratings under Model A while it is joined by the China Everbright Bank under Model B. While none of the regional banks attains below average technical efficiency scores, the city commercial banks are the worst-faring banks with 32.14 per cent of the sample not having above average technical efficiency scores under both models.

The bulk of the overall technical inefficiency is attributable to pure technical inefficiency rather than scale inefficiency; as relative to the constructed frontiers, the average pure technical efficiency for all banks in the sample is 0.8716 and 0.8331 under Model A and Model B, respectively. This implies that banks could, on average, have produced the same level of outputs with fewer resources than they actually employed, that is, banks could use approximately 13 per cent fewer resources under Model A and likewise, 17 per cent fewer resources under Model B.

The average scale efficiency under Model A and Model B are 0.9388 and 0.8745, respectively; meaning that, on average, inefficiency from the minimum efficient scale is less than seven per cent under Model A and 13 per cent under Model B. On closer scrutiny, the findings reveal that under Model A, only 28.6 per cent (eight banks) exhibit constant returns-to-scale, as highlighted in the previous paragraph, meaning that the remaining 20 banks experience scale inefficiency. That is, roughly 71.4 per cent of all banks exhibit non-constant returns-to-scale. Among the scale inefficient banks, about 65 per cent of them are operating with increasing returns-to-scale, while 35 per cent are operating with decreasing returns-to-scale. On the other hand, under Model B, 89.3 per cent (25 banks) of these banks experience scale inefficiency and only 10.7 per cent of them (three banks) exhibit constant returns-to-scale. 60 per cent of the scale inefficient banks attain increasing returns-to-scale and the remaining 40 per cent experience decreasing returns-to-scale.

The above findings reveal that in general the sample Chinese banks' relative inefficiency is largely due to poor performing cost-income ratios (such as the minimum pure technical efficiency ratings of 0.4881 and 0.4525 under Model A and Model B, respectively, should give bank management a cause for concern); and comparatively, to a lesser degree a lack of competitiveness among the banks due to the nature of the production, a broad range of product deliverables (but which lack product differentiation and niche markets), excessive headcount, branching, to name a few reasons. The Spearman's Rank Correlation Analysis technique is used to assess the relationship between size (using two size definitions, that is, total assets and net income) and the pure technical efficiency and scale efficiency measures across the spectrum of sample banks. Table 3.4 highlights the coefficients for each of the two efficiency measures against the values of total assets and net income. The results show that under both Model A and Model B, pure technical efficiency is negatively related to either total assets or net income, and this relationship is statistically significant at the five per cent level. This relationship is particularly true for the city commercial banks with size of total assets between RMB14,866 to RMB24,742.9 million (banks falling into this category include Chongqin Commercial Bank, Ningbo Commercial Bank, Wuhan United Commercial Bank, Wuxi City Commercial Bank, Xian City Commercial Bank, Nanjing City Commercial Bank, and the Dongguan City Commercial Bank) and, between RMB279,300.7 and RMB371,659.9 million (and RMB2,976,566 million under Model B) for some of the bigger banks (such as the Shanghai Pudong Development Bank, China Everbright Bank, China

Merchants Bank, and the Agricultural Bank of China). Likewise there are similar dips in efficiency as net income increases between RMB22.0 to RMB151.9 million for the city commercial banks (such as the Chongqin Commercial Bank, Wuxi City Commercial Bank, Ningbo Commercial Bank, Wuhan United Commercial Bank, Xian City Commercial Bank, and the Dongguan City Commercial Bank), and between RMB884.6 to RMB2,897 million for the bigger banks (such as the China Minsheng Bank, Shanghai Pudong Development Bank, China Merchants Bank, and the Agricultural Bank of China). A positive relationship exists between scale efficiency and both the size definitions under both the models. This relationship though, is statistically insignificant.

Table 3.4: Spearman's Rank Correlation Analysis

By Size Definition	Model A		Model B	
	PTE	SE	PTE	SE
Assets	-0.6065*	0.0722	-0.5211*	0.0985
Net Income	-0.5036*	0.1992	-0.5331*	0.1511

* Significant at the five per cent level

The next section analyzes whether the above findings apply when the banking industry is categorized into four different segments; and also discusses what DEA recommends that the inefficient banks need to do to meet efficiency standards.

3.5.2 Evaluating the efficiency of the banking segments

From a micro perspective, that is, when a breakdown of efficiency across banking segments is done, it is clear from Table 3.5 that for either model, no bank category forms the most efficient segment in the Chinese banking industry. None of the banking segment exhibits both pure technical and scale efficiency, and thereby overall efficiency. Among them, the state-owned commercial banks attain the second lowest overall technical efficiency rating, after the city commercial banks, under both models.

Table 3.5: Descriptive statistics on the efficiency measures of the banking segments

Banking Segments	Model A				Model B			
	MEAN	S.D.	MIN	MAX	MEAN	S.D.	MIN	MAX
(I) State-owned commercial banks								
TE	0.8488	0.1082	0.7320	1.0000	0.7796	0.1489	0.6060	1.0000
PTE	0.9805	0.0332	0.9220	1.0000	0.9018	0.1015	0.7668	1.0000
SE	0.8649	0.0985	0.7320	1.0000	0.8584	0.0825	0.7903	1.0000
(II) Nation-wide banks								
TE	0.8927	0.1019	0.7373	1.0000	0.8255	0.1342	0.6664	1.0000
PTE	0.9126	0.1000	0.7378	1.0000	0.8725	0.1265	0.6704	1.0000
SE	0.9783	0.0265	0.9438	1.0000	0.9456	0.0509	0.8818	1.0000
(III) Regional banks								
TE	0.9182	0.0548	0.8653	1.0000	0.7993	0.0424	0.7433	0.8614
PTE	0.9264	0.0529	0.8699	1.0000	0.8350	0.0529	0.7654	0.9100
SE	0.9910	0.0100	0.9800	1.0000	0.9579	0.0100	0.9465	0.9711
(IV) City commercial banks								
TE	0.7620	0.1830	0.4289	1.0000	0.6685	0.1982	0.3740	1.0000
PTE	0.8143	0.1694	0.4881	1.0000	0.8011	0.1959	0.4525	1.0000
SE	0.9315	0.0624	0.8102	1.0000	0.8329	0.1077	0.5292	1.0000

Although these large banks attain a higher pure technical efficiency rating than the other segments, they are nevertheless not at full efficiency. This inefficiency could be a manifestation of or, it is accentuated by the banking problems they are

facing in their business operations, such as their weak financial fundamentals, that is, having low profitability levels. The root causes of the latter include poor asset quality and inadequate capitalization, the need to continue to fulfil fiscal roles, the ballooning growth of non-performing loans (Lardy, 1999; Lau, 1999) and high fiscal costs involved in cleaning them up⁹, the strong influence of provincial governments on the banks' lending and the overall lack of competitiveness of these banks. The banks find themselves caught in the middle of conflicting pressures from the government. On the one hand, they are supposed to clean up their balance sheets and stop making poor quality loans, as they prepare to list their stocks on both domestic and foreign exchanges. On the other hand, they must preserve jobs by propping up unprofitable state-owned enterprises which employ and provide housing and welfare benefits to tens of millions of the population. Until an appropriate and workable social safety net is firmly in place, the shut-downs of these enterprises would be disastrous for a big country like China, and therefore, for the state-owned commercial banks to abruptly stop financing them would result in potentially serious social problems as massive unemployment and social unrests would be the likely outcomes.

Obviously these pillar banks need to improve the cost structure of their business operations to stay competitive such as continuing to close branches which are not economically viable, and cutting surplus staff. These banks each has more than

⁹The Goldman Sachs Group Inc. estimated the banks' clean-up could cost the government USD373 billion (Business Times, 16th December 2002. Singapore Press Holdings Ltd., Singapore).

100,000 employees and tens of thousands of branches. Like the state sector they have nurtured, the banks' development has been driven more by job creation rather than profit, such that by the end of 2002, the China Construction Bank has been an employer to 306,809 staff at 21,608 branches while the Industrial and Commercial Bank of China has a headcount of 405,000 at 22,105 branches.¹⁰ In the next section, I highlight the percentage reduction in input usage recommended by DEA, such as in personnel expenses and branches, for the inefficient state-owned commercial banks to attain full efficiency (see Table 3.6).

The state-owned commercial banks' overall inefficiency is attributable to scale inefficiency rather than pure technical inefficiency. Many of these banks face issues relating to operations management, the use of technology, human resources management (in the areas of skills development in product knowledge and promotion, and customer relationship management), and the lack of competitive product offerings. The sources of scale inefficiency cannot be ignored as under both models three of the state-owned commercial banks experience decreasing returns-to-scale, with the Bank of China being the exception. The state-owned commercial banks' decisions on reinvestment of profits to expand their scale of production are under the control of the Ministry of Finance (Chen and Shih, 2004). This would have an impact on their efficiency levels. Among the four of them, the relatively fully efficient Bank of China is likely to be the one making the furthest

¹⁰ <http://bankscope.bvdep.com>

leap into the new post-WTO economy.¹¹ It embraces changes to its organizational structure and demonstrates willingness to change in response to the oncoming competition. It also benefits tremendously from its international subsidiary in Hong Kong, in many areas, such as skills transfer in human resource management, use of the latest technology-driven banking software applications (for both front-office and back-office) and the implementation of customer-driven marketing and sales techniques.

Unlike the state-owned commercial banks, the technical inefficiency of the other three bank segments is mainly due to pure technical inefficiency rather than scale inefficiency. Under Model A, the nation-wide banks demonstrate having higher average technical efficiency at 0.8927 compared to the state-owned commercial banks and city commercial banks, but lower than the regional banks' mean technical efficiency score of 0.9182. However, under Model B, this segment attains the highest overall average technical efficiency rating amongst all the bank categories, that is, at 0.8255. Although this segment of five banks exhibits the second highest scale efficiency ratings (after the regional banks' segment), only two banks, Bank of Communications and the China International Trust and Investment Corporation Industrial Bank, experience constant returns-to-scale under Model A, and only Bank of Communications under Model B. The only

¹¹ The Bank of China was listed in the Hong Kong Stock Exchange in early 2006. Its initial public offering (with the deal valued at USD92.4 billion) was the world's largest by a financial institution. The proceeds from the deal will be used to build its capital base and expand its business. (Straits Times, 25th May, 2006, Singapore Press Holdings Ltd., Singapore)

bank that encounters increasing returns-to-scale under both models is the Hua Xia Bank, the smallest nation-wide bank based on size of total assets and the second smallest based on net income. The other “bigger” medium-sized banks, the China Everbright Bank and China Minsheng Bank, and China International Trust and Investment Corporation Industrial Bank under Model B, experience decreasing returns-to-scale.

The regional banks experience the highest and second highest relative technical efficiency level under Model A (at 0.9182) and Model B (at 0.7993), respectively. In addition, among all the banking segments, they attain the highest average scale efficiency scores and the source of scale inefficiency for many of these banks (two under Model A and all four under Model B), however, appear to be due to decreasing returns-to-scale. The Shenzhen Development Bank is the only technically efficient bank in this banking category.

Unlike the state-owned commercial banks whose risk is ultimately borne by the state¹², the joint-stock nation-wide and regional banks' risk is ultimately borne by the shareholders. The revenue growths, and thereby efficiency levels, of these banks have been restricted by conditions such as geographical locations, limited business scope (such as traditional deposits, loans and settlements), limited scale of operations (due to lack of funding) and corporate governance issues (as the demarcation of responsibility between the Party Committee, the Board of

¹² This is before the overseas public listing of the China Construction Bank in 2005.

Directors and the senior managers is unclear for these banks). Other challenging problems the joint-stock banks face include a lack of clarity in market positioning, and a failure to achieve differentiation from other banks (Chen and Shih, 2004). Some of these banks sought stock market listings in order to overcome the restrictions imposed by the limited scale of operations. This undertaking not only helps to reduce their non-performing assets and increase their capital adequacy ratios, it also forces the banks to respond to the requirements of the market and the external environment, and to be driven to perform profitably (by focusing on internal reorganization and reforming their current systems and mechanisms) and be held accountable to their shareholders. Their business dealings would then have to be transparent and professionally managed.

While the overall technical efficiency levels are much lower for the banking segments under Model B than for those under Model A, this is considerably more so for the city commercial banks, whose average technical efficiency scores are below the sample average technical efficiency scores under both models. The situation here is that just like most of the banking segments, pure technical inefficiency is instrumental to the low average technical efficiency scores. The city commercial banks are controlled by the local government authorities as they have majority ownership in many of these banks. The level of operational risk is even higher than that of the state-owned commercial banks and the joint-stock nation-wide banks. Accumulation of non-performing assets has reduced the banks' liquidity and the proportion of their assets which are profitable, thus

affecting their competitiveness. Increasing losses, low capital adequacy levels, and inability to pay off debts have also affected the operations of these banks (Deng, 2001; Song, 2002). In addition, scale inefficiency is a result of many of the city commercial banks experiencing increasing returns-to-scale, particularly so under Model B. Not surprisingly, given that they are very much smaller than the regional banks (with the exception of Bank of Shanghai, in terms of total assets and, including Beijing City Commercial Bank and Tianjin City Commercial Bank in terms of net income), they are characterized by increasing returns-to-scale.

3.5.3 Percentage reduction in input usage recommended for the inefficient banks

Thus far, in the previous subsections, the relative efficiency performance of the Chinese banks were scrutinized at both the macro and micro levels. The question now remains as to how the inefficient banks can achieve full efficiency or move to the “efficient frontier”. As highlighted earlier, the DEA input orientation model, using the “DEA-Solver” application software, is able to calculate the percentage reductions in inputs usage that the identified inefficient banks must make in order for them to move to the “efficient frontier”. Table 3.6 illustrates the percentage reductions in the input usage recommended for the inefficient banks in the sample (by banking segments). Model A has non-interest expenses, fixed assets and customer deposits as inputs while Model B works with non-interest expenses and fixed assets only.

Under Model A, the relatively inefficient state-owned commercial banks included the Industrial and Commercial Bank of China, China Construction Bank, and the Agricultural Bank of China. While the DEA identifies that the Industrial and Commercial Bank of China has only to make a 9.90 per cent reduction in all the three input areas, the China Construction Bank and Agricultural Bank of China have to make between 23.78 per cent and 28.92 per cent reductions in their input usage. Under Model B, the reductions required are more significant for these banks, that is, between 17.72 per cent and 57.66 per cent.

The results reaffirm that the China Construction Bank and Agricultural Bank of China require closer management supervision. Under Model B, the China Construction Bank needs to make a 31.06 per cent reduction in non-interest expenses and 41.62 per cent reduction in fixed assets to achieve full efficiency. Likewise the Agricultural Bank of China needs to make a 39.40 per cent reduction in non-interest expenses and 57.66 per cent reduction in fixed assets. The non-interest expenses refer mainly to the high personnel expenses incurred due to the excess headcount at the hundreds of thousands of branches across the country.

The inefficient nation-wide banks identified in Table 3.6 are the China Everbright Bank, China Minsheng Bank, Hua Xia Bank, and the China International Trust and Investment Corporation Industrial Bank. The China Everbright Bank needs to reduce all its inputs by 17.69 per cent under Model A and 29.35 per cent under Model B. As for the China Minsheng Bank, it needs to reduce its three input

usage areas by 9.67 per cent under Model A, while it requires a bigger reduction in non-interest expenses (at 20.87 per cent) and fixed assets (at 23.70 per cent) under Model B. The results also show that in order to attain full efficiency, the Hua Xia Bank needs to cut down all its inputs usage by 26.27 per cent and by a third of total usage under Model A and Model B, respectively. The China International Trust and Investment Corporation Industrial Bank has to reduce its non-interest expenses by 3.67 per cent and its fixed assets by a higher percentage, that is, 22.03 per cent, under Model B.

As for the regional banks, the DEA technique recommends that under Model A, only the China Merchants Bank, Shanghai Pudong Development Bank, and the Industrial Bank need to reduce their input usage by amounts ranging from 6.26 per cent to 13.47 per cent. On the other hand, all the four banks in the sample need to implement bigger input reductions under Model B, ranging from 13.86 per cent of non-interest expenses incurred by the Shanghai Pudong Development Bank, to 42.77 per cent of fixed assets usage by the Industrial Bank.

Eleven city commercial banks have been identified as inefficient under Model A with recommendations for input usage reductions ranging from 9.59 per cent (for Bank of Shanghai) to as high as 64.55 per cent (for Wuhan United Commercial Bank). An additional three banks were included under Model B, with the recommended percentage of input reductions ranging from 1.66 per cent (for Bank of Shanghai) to 77.18 per cent (for Wuhan United Commercial Bank). An

example of a city-based bank that needs to make significant input reductions so as to achieve overall technical efficiency is the Dongguan City Commercial Bank. It has to make a 61.13 per cent reduction in non-interest expenses, 61.47 per cent reduction in fixed assets and a 57.11 per cent reduction in customer deposits under Model A. Under Model B, the Dongguan City Commercial Bank has to make a 62.60 per cent and 70.64 per cent reductions in non-interest expenses and fixed assets, respectively.

It is visible that amongst all the four banking segments, many of the city commercial banks are highly inefficient as noted by the higher percentages of input reductions recommended by the DEA technique. Nevertheless there is a need for each of the inefficient bank to engage in costs cutting, improving productivity through improved human resource management and use of technology, and overhauling many of the existing operational systems. These operational systems include credit and risk assessments, liquidity management, and asset and liability management. The central bank introduced strict controls which required the four state-owned commercial banks to achieve capital adequacy ratios of 8 per cent in 2002 (Chen and Shih, 2004). The results given by the non-parametric technique for the four banking segments are useful not only for improving all the banks' current operations but also for their future strategic growth planning endeavors.

The next section concludes and discusses what the empirical results imply for the operation of the Chinese banks, particularly in a post-WTO era where the banking industry is progressively deregulated by the Chinese authorities.

Table 3.6: Percentage reduction in input usage recommended for inefficient banks (organized by banking segments) - per cent

Model A				Model B		
Banking Segments	Non-interest Expenses	Fixed Assets	Deposits	Banking Segments	Non-interest Expenses	Fixed Assets
(I) State-owned commercial banks						
ICBC	9.90	9.90	9.90	ICBC	17.72	22.34
CCB	23.78	28.92	23.78	CCB	31.06	41.62
ABC	26.80	26.80	26.80	ABC	39.40	57.66
(II) Nation-wide banks						
CEB	17.69	17.69	17.69	CEB	29.35	29.35
CMSB	9.67	9.67	9.67	CMSB	20.87	23.70
HXB	26.27	26.27	26.27	HXB	33.36	33.36
				CITICIB	3.67	22.03
(III) Regional banks						
CMB	13.01	13.01	13.01	CMB	19.15	19.15
SPDB	6.26	6.26	6.26	SPDB	13.86	26.72
IB	13.47	13.47	13.47	IB	25.67	42.77
				SZDB	21.59	21.59

Source: Results are generated by the “DEA-Solver” application software (Cooper et al., 2000)

Table 3.6: Percentage reduction in input usage recommended for inefficient banks (organized by banking segments) - per cent - *continue*

Model A				Model B		
Banking Segments	Non - interest Expenses	Fixed Assets	Deposits	Banking Segments	Non - interest Expenses	Fixed Assets
(IV) City commercial banks						
BOS	9.59	9.59	20.96	BOS	1.66	1.66
TJCCB	46.37	52.54	46.37	TJCCB	50.12	63.57
HZCCB	45.10	16.74	16.74	HZCCB	41.35	12.35
DGCCB	61.13	61.47	57.11	DGCCB	62.60	70.64
NJCCB	51.64	37.73	37.73	NJCCB	48.53	48.53
XCCB	38.39	38.39	38.39	XCCB	53.06	61.74
WXCCB	31.09	31.09	31.09	DLCCB	13.47	43.27
WHUCB	43.01	64.55	39.77	WXCCB	29.48	55.77
NBCB	25.09	28.74	25.09	WHUCB	51.63	77.18
CQCB	38.31	36.10	36.10	NBCB	36.39	49.18
ZNJCCB	30.52	18.98	18.98	JNCCB	20.84	70.39
				CQCB	50.27	50.46
				QDCCB	19.51	21.06
				ZNJCCB	47.08	50.68

Source: Results are generated by the “DEA-Solver” application software (Cooper et al., 2000)

3.6 Conclusion

The empirical exercise, using the DEA technique, allows the identification of both the “relatively” efficient and inefficient banks among a sample of Chinese banks in 2002. Using the “intermediation” approach, an assessment of the relative technical efficiency of these banks were made under two different models where the customer deposits serves either as an input or an output variable, respectively. The empirical results provide a good insight to the performance of the Chinese banks both at the sample and banking segment levels. The DEA results reflect the differences in the Chinese managerial ability to control costs. Its recommendations on improving efficiency levels by cutting input usage can allow management to revisit the way resources are currently utilized, and the DEA results can also enable higher bank executive management to better plan for their organizations’ future. They also have implications on the banks’ strategic planning and the deregulation of China’s banking industry.

At the sample level, the two models offer similar conclusions that the bulk of its inefficiency is attributable to pure technical inefficiency rather than scale inefficiency. Using two size definitions, that is, total assets and net income, the Spearman’s Rank Correlation Analysis test shows that pure technical efficiency is negatively related to either total assets or net income, and that this relationship is statistically significant at the five per cent level. In contrast a positive relationship exists between scale efficiency and both the size definitions. This relationship, however, is statistically insignificant.

The DEA empirical test uncovers that across four organizational forms, for either model, no bank category forms the most efficient segment in the Chinese banking industry. Unlike the other banking segments, the state-owned commercial banks' overall inefficiency is attributable to scale inefficiency rather than pure technical inefficiency, with three of them experiencing decreasing returns-to-scale. The regional banks fare relatively well among the segments, attaining the highest average relative technical efficiency level under Model A, while the nation-wide banks demonstrate a similar performance under Model B. The city commercial banks-segment, on the other hand, is the worst-faring segment whose average technical efficiency scores are way below the sample average technical efficiency scores under both models. Lastly, the study highlights the recommendations made to all the inefficient banks to implement percentage reductions of their various input usage areas so as to attain full efficiency or move to the "efficient frontier".

As the Chinese authorities continue to deregulate the banking industry, primarily to fulfil the requirements laid out by the WTO for membership acceptance, the empirical results affirming the overall relative inefficiency of the domestic financial intermediaries should make both the bank executive management and relevant government authorities further implement serious drastic measures to improve their efficiency levels. With deregulation, the domestic banks need to handle a number of challenges that the new landscape brings. These include intense competition from foreign players and reduced profitability and market shares. Thus it is even more necessary for the banks to become more efficient as

they compete for the same customer base with the foreign banks. When the Chinese banks become more efficient, we might expect improved profitability, greater amounts of funds intermediated, better prices and service quality for consumers. This would also ensure greater soundness of the banking system, and avoiding any government bailouts if substantial losses are sustained, as currently experienced by many of the Chinese banks.

While there is an urgent need for the banks to further engage in costs cutting, improving productivity in human resource management, using better technology, and overhauling many of the existing operational systems (such as in credit and risk assessments, liquidity management, asset and liability management, and capital adequacy management), they would also have to create innovative and quality products and services and cannot compete head-on with the foreign banks just on “plain vanilla” businesses of taking deposits and making loans. Some of the banks also need to recognize that they cannot compete on their own anymore based on their financial strength and existing customer base. There is thus an urgency to cooperate with others either through organizational mergers (such as the merging of some of the inefficient banks highlighted in this study, so as to enjoy greater economies of scale), acquisitions or implementing partnership programs. The relevant authorities should provide the support and encouragement to make such necessary set-ups possible.

The empirical analysis of Chinese banks' performance, however, is restricted by the reliability of the data. Assessing the financial status of the Chinese banks has proven to be difficult due to questionable accounting standards, inconsistent accounting practices, and poor disclosure. Although Chinese law and regulations call for a certain standard of financial reporting by banks and set the accepted accounting procedures to be employed, in details of implementation, however, these regulations and procedures have so much flexibility in interpretation. Thus this has an impact on the soundness of the conclusions we draw from the data. An example relates to the accrual of interest income.¹³ The banks have officially committed to international standards of shortening the accrual period to 90 days in 2002, which means that when interest on a loan remains unpaid for three months, it has to be backed out of the lender's income statement (Lardy, 2004). In practice it is not easy to confirm that the banks have not counted interest due on loans as income even if they went unpaid for a longer period.

Another issue relates to the banks' non-performing loans, that is, in the way they are being accounted for. In China, the overdue loans (defined as loans that have not been repaid six months after the contracted maturity dates) are not considered non-performing (Feng, 1999). According to international practice, loans overdue for three months are considered as non-performing (Mo, 1999). The non-

¹³ Before 1998, the central bank, that is the People's Bank of China (PBC) allowed banks to count interest due on loans as income even if it went unpaid for as long as three years. The accrual period was shortened from two years to one in 1998, to 180 days in 2000 and to 90 days in 2002, which is the international standard.

performing loans are included in the analysis, under the variable “Net Loans”. The inclusion does not have a major effect on the measurement of efficiency as the official amounts are low, except for the four pillar state-owned commercial banks. The exact amount of the non-performing loans in the books of the state-owned commercial banks, however, is far from transparent. Private-sector economists have disagreed with the amounts reported. The non-performing loans were underestimated using China’s accounting systems. The pillar banks had a combined RMB1.8 trillion of bad loans or 26 per cent of the total loans of RMB6.8 trillion as of end October 2001¹⁴, and by the end of 2003, the bad loans amounted to RMB1.9 trillion (Barnett, 2004; China Knowledge Press, 2005). These amounts are expected to be much greater than what has been officially recognized as the country gradually adopts the international standards for banking supervision, as required by the Basel Committee.¹⁵

In addition, as mentioned in Section 3.4.1 on the “The sample banks”, many of these banks are effectively controlled by government bodies or by enterprises and organizations that are themselves government controlled. This would have implications on the decision-making process of the senior bank executives as their

¹⁴ Straits Times, 4th December 2001. “WTO puts China at risk of major financial crisis.” Singapore Press Holdings Ltd., Singapore.

¹⁵ For a long time, the country employed an outdated four-category system of loan classification, consisting of “performing, overdue, idle and bad loans” (Paulson and Hu, 2003, pp. 51). In recent years, China has made important steps towards the recognition of non-performing loans by introducing a new, risk-based, five-category classification system that is closer to the international standard. Still, monitoring changes in non-performing loans over time prove to be difficult as there was no effort made to use the new criterion consistently to re-grade loan books going back for several years (ibid, pp. 51).

livelihood and positions rest with the government. There is a lack of business empowerment among the executives in making major decisions involving human resource management (such as the shedding of personnel expenses), operations (such as reducing the number of branches), investments (such as avoiding high-risk ventures) and loan-making (such as reducing loans to loss-making ventures by state-owned enterprises). These would definitely have implications on the efficiency levels of all the banks.

In conclusion, despite the issues described above, the efficiency studies can be further applied to analyzing the branch efficiency of bank segments at specific locations, such as those along the eastern and southern parts of China where economic activity is vibrant compared to other parts of the country. Over time, a study can be done to analyze the effects of the level of sophistication of product and service offerings, and legal environment on the efficiency of the domestic banks. A comparison of the efficiency levels can also be made between the banking (including the rural credit cooperatives and foreign banks) and non-banking industries in the financial sector. Non-banking entities include those in insurance, finance and leasing. Lastly, the analysis of this study is applicable to the other transitional economies which are considering adopting a similar deregulation approach, and hence making the measurement of the efficiency of their banks an important national priority.

CHAPTER FOUR

A paradigm shift for China's central banking system

4.1 Introduction and motivation

The chapter focuses on the administrative and operational structure of the Chinese central bank, the People's Bank of China (PBC), with the author's advocating the central bank's full independence as the main thrust of the chapter.¹ I attempt to analyze if the PBC is indeed an independent institution as promulgated by the "Law of the People's Republic of China on the People's Bank of China" (henceforth "Law of the PBC"), and describe how some of the manifestations of a truly independent PBC can overcome the impediments that it currently faces. A conscious effort is made to highlight the legal structure of the monetary system with the objective of illuminating its shortcomings and, in particular, the illusion of independence that the central bank law gives.

I recognize that the problems the PBC faces do not just lie with the central bank financing bankrupted enterprises, local governments ignoring the monetary directives of the PBC, or the latter having to fulfill fiscal obligations. The fundamental problem lies with the relationship between the government, at both

¹ An extract of this piece of political economic analysis has been jointly published in the *Journal of Post Keynesian Economics* (Fall 2004, Volume 27, Number 1) and was presented at the 8th Annual Harvard East Asia Society Graduate Students' Conference held at the Harvard University, 4-6th March, 2005.

the central and local levels, and the Chinese Communist Party. The government is entrenched with party politics involving party coalitions and communist elites representing various interest groups. They play important roles in influencing policy changes in China's economic transitional process.

The infiltration of party politics of the one-party state has challenged the relationships between the PBC and the other players, such as the banking system, the local governments, and the state-owned enterprises. The pervasive stronghold that the party has over the PBC negates the many efforts made in changing the rules of operation for effective central bank management, which, I believe, are only cosmetic in nature. This poses the biggest bottleneck to the PBC's performance as a genuine central banker. There is little doubt that the PBC is not totally independent. But probably few central banks are. I acknowledge that the PBC has gained operational independence rather than complete independence.

I therefore conclude that the crucial ingredient to effective central banking is true independence, whether politically, legally, or financially. I note that even the promulgation of the "Law of the PBC" does not guarantee giving the PBC "autonomy" or "discretionary autonomy" due to party interferences. I advocate that the PBC needs to undergo a paradigm shift in order to succeed in effective central bank management so as to serve its roles well as a monetary policy manager as well as a financial regulator and supervisor, and in particular to handle the needs of the "new" monetary and financial environment in a post-WTO

China.² However, I would like to qualify that some conditions need to be fulfilled in order for the PBC to make a successful paradigm shift. Of paramount importance is the fundamental issue on the entrenchment of party politics in the workings of the PBC. I endorse nonparty intervention in the workings of the PBC and all other government institutions as well, such as the Ministry of Finance, where party sentiments often juxtapose the policy-making decisions of these institutions with that of the central bank's for vested interests. All these conditions may be easier said than done. Ultimately, it requires the will and clout of the upper echelons to push the recommended resolutions through, and these do not work effectively if there is still a lack of transparency in governance and disclosure. Therefore, the legal system and enforcement agencies need to be well developed to handle the checks and balances of "nonconformists," which also include the local governments and financial institutions. Otherwise, the PBC may buckle under the weight of a complex and challenging post-WTO China environment where there will be increased monetization and financial depth.

The next section gives a literature review on central banking while Section 4.3 examines the dynamics in the effectiveness of the PBC's monetary policies since reforms took place in 1979. In Section 4.4, I pose the question "Is the PBC an independent central bank?" and display its lack of clout in monetary policy management by highlighting several examples while in Section 4.5, I strongly advocate that the PBC undergo a paradigm shift in central bank management and

² China became a member of the WTO on 11th December, 2001.

believe that the basic ingredient it needs is true independence. Section 4.6 concludes.

4.2 Literature review

The considerable interest in central banking is evidenced by the amount of discussions and literature by the academia, and the public and private sectors, in particular whether the central bank should be an independent entity (Friedman, 1962; Toniolo, 1998; Shull, 1995-1996). This “independent” characteristic of the central bank would have implications on its conduct of monetary policy (Bernanke and Mishkin, 1992; Alesina and Summers, 1993), accountability (Rymes, 1995-1996), relationships with other government agencies (such as the Treasury or Ministry of Finance) as well as the administrative and executive arms of the government machinery (Holtfrerich, 1988) and the macroeconomy at large.

Advocates of central bank independence speak volumes on its correlation with price stability and the necessary disengagement of the incumbent government in mixing monetary policy with its political endeavor, such as promoting easy credit policies “when elections are in view” (Shull, 1995-1996, pp. 212) and financing budget deficits; while those who disagree (such as the Monetarists) hype on the central bank’s bias towards certain segments of the constituencies, in particular the banking community (Levy, 1995-1996), its activities being shrouded in secrecy (Havrilesky, 1995) and its focus on price stability “regardless of the

central government's policy, is much less acceptable" (Carvalho, 1995-1996, pp. 166).

As the central bank of a country in transition, the PBC can perhaps take a leaf from the rich experiences of central banks worldwide, and put them to good use in its implementation of central banking. Although the PBC has made noticeable progress to restructure its organization, operations and management (Almanac of China's Finance and Banking, 1999), its daily management affairs still invite much criticism. Some studies have attempted to study the workings of the PBC. However, most fall short on details and critique. Tokley and Ravn (1997) give a historical background of the PBC's existence; Dipchand et al. (1994) draw up a "scorecard" for the PBC in its central banking role; Xu (1998) highlights the issue of its independence and monetary policy's objectives; Lardy (1998b) extends the discussion further into areas of policy banking, banking supervision and prudential regulation; Cai (1999) recounts the major problems that the PBC encounters in financial supervision; Lou (2001) calls for its independence and autonomy and describes how the organizational restructuring at the end of 1998 would help to facilitate more efficient bank regulation and supervision; White and Bowles (1996) advocate "autonomy" or "discretionary autonomy" for the central bank rather than "independence" as the latter would raise serious problems of political accountability if it implies "total insulation" (ibid, pp. 172); and Godeaux (1991), Volcker (1991) and Sergeant (1999) share some of the salient features of their countries' central bank management for possible emulation by the Chinese

counterpart, although as Sergeant (1999) agrees that these countries are “at different stages of economic development; their financial sectors differ in structure and composition; and there is a different balance in public and private involvement” (ibid, pp. 183). However as China moves towards a market-based economy, I believe that there may be some elements of the other countries’ approach that may be relevant to China in spite of the differences between them.

I wish to create an awareness of the workings and legal structure of China’s central banking and underscore the need for an independent PBC to steer the macroeconomy ahead as the country marches on aggressively in its banking reforms program, which is hastened by its eventual accession to the WTO in December 2001. I discuss the significance of central bank’s influence and autonomy and how independence can enhance the PBC’s capacity to perform its central banking functions. In so doing I endeavor to address some probing questions. Is independence necessary? What is the basis and nature of the PBC’s independence and what are the likely effects on the macroeconomy? Has the “Law of the PBC” granted the PBC sufficient independence to carry out its duties? Does the PBC possess decisional autonomy? I review some criticisms of the PBC’s behavior and performance, related to its independence trait or rather, lack of it. I ask what can be radically recommended for China’s central banking system. What does it take for the PBC to enjoy the full manifestations of true independence? The answers to these questions would definitely assist the PBC in making a successful paradigm shift from its current “controlled” role as a central

banker to one that would one day be managing one of the world's largest reserve currencies and banking system, and be recognized as a regional and international "heavyweight" in monetary affairs.

4.3 Monetary policy management

This section examines the dynamics in the effectiveness of the PBC's monetary policies since reforms took place in 1979. The Chinese economy has undergone periods of mild to serious inflationary and deflationary pressures. There were two episodes of high inflation which exceeded 10 per cent. These occurred in 1988-1989 and 1993-1995 (Woo, 2003). In 1988 the retail price index (RPI) rose by 18.5 per cent and the consumer price index (CPI) rose by 18.8 per cent. In the first half of 1993, the RPI and CPI increased by 13.2 per cent and 14.7 per cent, respectively. Beginning in 1995, the inflation started to decline such that compared to 1996, the RPI rose by only 0.8 per cent in 1997 and the CPI by only 2.8 per cent (Dong, 2003). Meanwhile the growth rate of GDP declined from 9.6 per cent in 1996 to 8.8 per cent in 1997, 7.8 per cent in 1998, 7.1 per cent in 1999 before it rose to 8.0 per cent in 2000, 8.3 per cent in 2002, 9.3 per cent in 2003 and 9.5 per cent in 2004 (Asian Development Outlook, 2005). The PBC has experimented with both direct and indirect controls to manage money supply during these inflationary and deflationary periods, although the appropriateness and quality of the usage were questionable. New monetary policy instruments such as the required reserve ratio and interest rates were experimented upon and used to control, at least partially, the money supply and credit condition. However

their roles have been dwarfed by direct measurements which were heavily used during those crisis periods such as the credit-quota plan (Lu and Yu, 1998).

By setting credit limits on state-run commercial banks, the PBC would be able to control money supply and influence aggregate demand. But the credit-quota plan was a relatively inflexible monetary instrument and difficult to adjust in the face of changing macroeconomic situations. There were also problems in its implementation. These included the opportunity that decentralization created for collusion between local governments, enterprises and the banks which facilitated the occurrence of leakages and diversion of funds, the deteriorating inter-agency coordination, and the declining coverage of the credit-quota plan due to the rapid pace of financial broadening and the growth of financial assets outside the formal banking system. It thus became progressively difficult to enforce and was abolished at the end of 1997. This gave way to asset-liability management and the indirect monetary policy instruments, such as the required reserve ratio, interest rates, central bank's lending policy, rediscount policy and open market operations, thus became relevant as the country's central banking system evolved.

The required reserve ratio proved to be an important tool for monetary policy. The 1992 Southern China's trip by the late Chinese economic reformer Deng Xiaoping triggered an acceleration in economic growth, whereby banks took the opportunity to withdraw "surplus reserves from the central bank and invested them in a range of ventures while the central government regulators looked the other way" (Naughton, 1993, pp. 232, line 15). Such ventures included

speculation in land and capital markets. The annual increase in loans outstanding relative to GDP rose from about 12.5 per cent in 1989 to a peak of 19 per cent in 1993, causing unacceptably high levels of inflation and growing accumulation of risks in the banking system (Lardy, 2004). The PBC instituted a more restrictive monetary policy where the required reserve ratio was capped at 13 per cent (the same rate it had been since 1988 (Guo, 2002)) and as inflation fell to 6 per cent in 1997, the ratio was adjusted to 8 per cent in 1998, and later to 6 per cent in November 1999 (People's Bank of China, 1999).

Although the use of the required reserve ratio had demonstrated its significant role on the performance of the macroeconomy, there were some reservations on its effectiveness. Many of the banks and the non-bank financial institutions started to find alternative ways to circumvent it. As happened in earlier periods, if the required reserve ratio was increased, the individual bank branches could find another avenue to obtain more funds, such as from within their own bank hierarchy, increase utilization of the money market (that is, through inter-bank borrowing), reduce their excess reserves, or increase loans from the central bank (Holz, 1992).

Central bank lending or policy lending is another key instrument used to control money supply. Its implementation, however, had sent mixed signals. It had helped contribute to the inflationary pressures, and it had also helped to get the economy on its feet again. The overheating situation in the first half of 1993 was also fueled by policy lending to banks and other financial institutions to fulfill local

governments' aggressive drive to increase their fixed asset investments. These investments increased by 61.8 per cent during that time (Dong, 2003). However, as deflationary pressures loomed since the beginning of 1995, the PBC's lending to financial institutions was instrumental in improving these institutions' liquidity and the economy in general. The PBC has been using this tool in a timely and controlled fashion to resolve financial risks and ensure financial stability, particularly having witnessed the Asian financial crisis happening elsewhere in 1997.

The replacement of budgetary grants with loans, as promulgated by the "Law of the PBC" in 1995, had resulted in the PBC passing the job over to the state-owned commercial banks to serve the government's fiscal needs (Dipchand et al., 1994). These policy loans were refinanced at subsidized interest rates (Hofman, 1998). The reliance of the state-owned commercial banks on the PBC for "limitless" funds also reflected the central bank's lack of control in monetary base management via its lending policy. The "omnipresence" of the PBC laid the grounds for "abuses" by the state banking system. The state banks could always rely on the central banking system for more funds, after earlier funds were diverted to unintended uses, and hence accounting for the undesirable growth rates of base money particularly during the inflationary periods. Moreover, the non-recovery of loans from the state-owned commercial banks became a regular feature of the banking system. It was without doubt that the central bank lending had played an indirect role in the ballooning growth of the state-owned

commercial banks' non-performing loans, which was highlighted in CHAPTER ONE.

The interest rate is another policy instrument used by the authorities. But its effectiveness is questionable as it is not completely determined by market forces. The PBC has historically fixed all interest rates for loans and deposits offered by commercial banks and other financial institutions. Beginning in 1990, banks were given some ability to price risk when they were allowed to make working capital loans at rates up to 20 per cent greater than the central bank's posted rate (Lardy, 2004). The overheating situation in the first half of 1993 led the central bank to raise interest rates to control the total amount of money supply and flows of funds, to channel credit directly through the central government to key enterprises, and in particular, to prohibit bank funds from investing in real estate markets (Dong, 2003). In 1996 the financial institutions were allowed to set their own interest rates within a 30 per cent band around a base rate set by the central bank. The specialized banks were also given more discretion to charge different interest rates to different enterprises based on business criteria such as their "demands for credit and speed of capital turnover" (Ariff and Khalid, 2005, pp. 82). The PBC has cut interest rates several times since price deflation became obvious, such as in 1998 the interest rates were cut three times to stimulate growth (Dong, 2003). But it was not easy for banks to make loans as firms and consumers were not responsive to changes in interest rates and the real interest rate remains high. In addition, the then Prime Minister Zhu Rongji was

determined to improve the balance sheets of the state banks and to promote restructuring in the state-owned enterprises. He had “peremptorily dismissed bank managers when the proportion of non-performing loans in their banks has gone up” (Woo, 2003, pp. 23). This therefore instilled prudent lending in the entire banking system.

The money market includes the inter-bank lending market, the treasury bill market and the PBC’s discount window. The money market plays a key role in the central bank’s open market operations. The inter-bank lending market allows the financial institutions to conduct short-term borrowing. However around 1993, many of them treated inter-bank lending as a long-term commitment for investments in real estate. This caused chaos in the inter-bank lending market and partially contributed to the 1993 inflation (Xie, 2001). In June 1996 the PBC allowed the inter-bank lending rates to be decided by the financial institutions. This boosted the inter-bank lending market in 1996-1997 (Guo, 2002). In the second half of 1997, in an effort to curb speculative stock trading, the PBC disallowed the commercial banks to trade Treasury-bonds on stock exchanges (China Knowledge Press, 2005). An inter-bank bond market was then established for this purpose. Although Ariff and Khalid (2005) believe that it will take some time for it to develop to full scale to support the open market operations, the inter-bank lending market has developed rapidly since inception. In 1999 its average monthly trading volume was RMB28 billion and this rose to RMB56 billion in

2000 (Xie, 2001), and more than RMB15 000 billion in 2003 (China Knowledge Press, 2005).

In 1996, while the PBC focused on interest rate targets and the required reserve ratio in its conduct of monetary policy, it had to quickly abandon open market operations because of the immaturity of the treasury market. The treasury market was simply too thin and shallow. In recent years, however, it has developed quickly. Guo (2002) highlighted that the total assets of the participants are 95 per cent of the total assets of the financial institutions and this represents more participation than the inter-bank lending market. As the treasury market became more liquid by end 1999, open market operations became a serious monetary policy tool (Kynge, 2000). However, for it to be effective, this will require much greater flexibility of interest rates, which are still not market-driven. The PBC also uses the discount loan to support small enterprises. By the end of August 2001, discount loans totaled RMB108.6 billion (Guo, 2002) and most of them went to small financial institutions.

As highlighted in Section 1.4 of CHAPTER ONE, “1994-2003”, an important aspect of the China’s financial supervisory and regulatory management is the legislation of a regulatory framework governing the central bank and financial institutions. Banks laws such as the “Law of the PBC” and the “Commercial Banking Law” were thus introduced in 1995 (Tokley and Ravn, 1997; Wan, 1999). The banks are required to observe capital adequacy ratios, liquidity ratios

and limitations to exposure to risk. Other major developments include further restructuring of the regulatory framework for financial institutions, and the re-organization of the PBC which frees it from administrative interferences and strengthens its independence in financial supervision. Other laws are also promulgated such as those that guide the process of market exit for the financial institutions (Almanac of China's Finance and Banking, 1999; Lardy, 1999; Mo, 1999).

Lastly, the most fundamental problem, which this chapter wishes to address, is the question of central bank independence. The PBC operates under the close supervision of the State Council and the Ministry of Finance. Currently it manifests some operational independence but lacks clout in making major policy decisions in monetary policy, financial supervisory and regulatory areas.

4.4 Is the PBC an independent central bank?

The PBC was established on 1st December 1948, as the only required state-owned “monobank” deemed necessary for socialism to be achieved. It adopted a fairly similar Soviet-style banking operations. It was the only bank in China performing the functions of both a central bank and one of general banking from 1949 to 1979. It was formed through the merger of three banks – the Bank of Northern China, the Bank of North Sea, and the Northwest Peasant Bank (Wan, 1999). On 17th September 1983, the PBC was ordered to perform exclusively the functions

of a national central bank. It was to be relieved of its duties of performing the functions of industrial, commercial, and savings banking businesses. The “Law of the PBC” was passed in 1995, putting the PBC in charge of monetary policy and banking supervision. It is to “independently implement monetary policies” under the “leadership of the State Council” (“Law of the PBC,” Article 7).³ This was a landmark recognition by the authorities that the rule of law or having a legal framework is critical in financial supervision and regulation. Moreover, the strengthening of the roles of the central bank was deemed necessary, particularly as a financial supervisor and regulator, especially after a spate of bankruptcies that occurred as a result of increasing non-performing loans and unhealthy banking practices. The functions of handling insurance and securities sectors were hived off into separate bodies; that is, the Insurance Supervision Commission of China (ISCC) and the China Securities Regulatory Commission (CSRC), respectively.

The journey to achieving full independence by the PBC has been thwarted with obstacles, some of which are “deliberately positioned.” These are demonstrated by its organizational structure, operational and decision-making process, and credibility with financial institutions and local governments and the public at large. Xu (1998) makes a distinction between the PBC’s independence “from government” and “within government”; that is, autonomy; and factually states that the PBC’s independence “from the government” may not be “very relevant”

³ Refer to Tokley and Ravn (1997) for a review of the various Articles that are included in the “Law of the PBC,” as highlighted in this chapter.

as it functions as a government organ and it is “well known” that the PBC has “limited autonomy or independence in both formulating and implementing monetary policy” (ibid, pp. 144-145). This known fact is enough to give room for a debate on the issue as to how “relevant” the PBC’s current setup is, as its central banking role increases over time with the evolving real and financial sectors. In my opinion, such a “time” has arrived and the PBC needs to stay “relevant,” especially now that China has become a member of the WTO, and is fulfilling the membership requirements but has yet to experience the full impact of what membership brings on its macroeconomy in general, and central banking in particular.

To understand how independence can enhance the PBC’s capacity to perform its central banking functions, I first discuss and address the issues arising from the PBC’s lack of independence, and in the process, I also uncover the legal intricacies of the central bank. These issues are mainly related to the PBC’s lack of political and policy independence, and financial independence. I then seek to understand the fundamental problem that gives rise to these issues; that is, the relationship between the government and the party.

4.4.1 Political and policy independence

There are four areas of concern regarding the PBC’s lack of political and policy independence. At the highest administrative level, the issue deals with the PBC’s

leadership appointments and boardroom decision-making process, which have implications on its central banking operations. These relate to the highly politicized appointment process as well as the pervasive arm of the Chinese Communist Party (CCP) machinery, which seemingly runs the operations at the central bank. The other concerns relate to the resistance at the grassroots level and the PBC's role in policy lending.

4.4.1.1 Leadership appointments

The "Law of the PBC" abolished the board of directors, whose previous representation had caused many conflicts of interests that made the PBC vulnerable to the Ministry of Finance. The new law called for a governor to take over the helm, being nominated by the Premier of the State Council and approved by the National People's Congress (NPC) or its Standing Committee, and subjected to appointment and removal by the president of the country ("Law of the PBC," Article 9). Deputy governors whose appointments and removals are within the powers of the Premier support the governor in his or her work (Article 10). The provisions contained in the central bank law allow for "loopholes" in the hiring and firing process. There are no specifications on the type of desired qualifications and terms of service for both the governor and deputy governors, and this gives way to strong hints on the political background and the CCP's membership as some of the major criteria for selecting the PBC's leadership. The State Council is thereby in a strong position to nominate or appoint persons who

are “loyal” to the government and easily dismiss nonconformists when necessary. Further, the office-bearers may give in under pressures from the government on monetary matters, as they are afraid of losing their positions and powers. Also, the absence of explicit restrictions on central bank officials after they leave office makes them susceptible to “private” incentives and political influence during their tenure with the PBC (Lou, 2001).

4.4.1.2 Boardroom decision-making process

The PBC was separated from the Ministry of Finance in 1984, and took on a status and role equivalent to a ministerial organization (“Law of the PBC,” Article 2). While the “Law of the PBC” states clearly that the central bank shall “independently implement monetary policies” (Article 7), it operates under the “leadership of the State Council” (Article 7) and needs to seek “the State Council for approval prior to implementation” (Article 5). By simply not reporting to a finance minister or some other minister demonstrates the legal independence of the PBC, which will influence its standing and prestige within the government apparatus. However, before the official demise of the annual credit-quota plan at the end of 1997 (Lu and Yu, 1999), the PBC seemed to work in subordination to other central agencies, such as the State Planning Commission (SPC), as an instrument in carrying out the direct monetary policy tool.

Although it is to “independently implement monetary policies” (“Law of the PBC,” Article 7) through the establishment of the Monetary Policy Committee (MPC) (Article 11), the latter’s role has been said to be undermined by another vehicle of the government, the 15-member Central Financial Work Committee (CFWC), a CCP cell that possesses the real decision-making power behind the policies advocated (Gilley and Murphy, 2001). The CFWC’s very existence and clout (such as setting interest rates, closing down banks, deciding the amount of loans the state-owned commercial banks should give to loss-making state-owned enterprises to prevent layoffs and social unrests) makes the PBC a hollow institution. This simply highlights the party’s desire to maintain full control. The 12-member MPC comprises ministerial officials, regulators, and economists “whose functions, compositions, and duties shall be prescribed by the State Council” (Article 11). It was created as an establishment within the PBC and was understood to play a similar role as the United States of America’s Federal Open Market Committee (FOMC). In fact, it plays only a “consultative” role (Article 11) and is not a policy-making institution. These provisions on the creation of the MPC obviously indicate that there are problems with the PBC institutional structure under the central banking law. It also demonstrates the permeating influence of the political party within the government stronghold.

4.4.1.3 Resistance at the grassroots level

The PBC faces the dilemma of reducing administrative intervention by local governments and relying on them to organize the implementation of monetary policy and the realization of macroeconomic goals and objectives. It exercises centralized and unified leadership and control over its branches (Article 12). However, being “free from any intervention by local governments or government departments at all levels, by public organizations or individuals” (Article 7) proves not to be so. The PBC faces challenges and resistance from the local leadership and financial institutions. The latter ignored directives on the dangers of excess credit (Dipchand et al., 1994) and it faces circumventions in many situations (Holz, 1992; Naughton, 1993). Its branches’ lending decisions are being put under the undue influence of the local governments (Lardy, 1998b; Lu and Yu, 1999; Mo, 1999) to fund their pet projects or entities that they have with local businessmen. The PBC branch staff faces conflicts between monitoring the implementation of monetary policy directives by the local governments and branches of state banks, and keeping their “iron rice-bowl”; that is, their jobs, housing, medical, and other welfare benefits, as these are provided by the local governments. Such scenarios have hurt the image of the PBC and hence its credibility as a central bank.

It would not have been an easy task to rein in the substantial powers of the local governments, financial institutions, and enterprises since the time that

administrative and economic decentralization (Chen, 1995) was endorsed by the central government as part of the reform process. The reorganization of the PBC in November 1998 (Almanac of China's Finance and Banking, 1999) was intended, among other reasons, to reduce administrative intervention by the localities, thereby increasing the PBC's power in pursuing monetary policies and financial supervision. Previously, the regional branches were established in parallel with the setup of the 31 administrative divisions. The new organizational structure involves the establishment of transprovincial branches in nine major regions, and supported by 20 financial supervisory offices. It is somewhat similar to the structure of the United States of America's Federal Reserve System (FRS) although I admit, unreservedly, that the FRS is not totally faultless. Like each Federal Reserve district, which covers a number of states, each transprovincial branch covers a number of provinces under its jurisdiction. Being the regional arms of the PBC, they performed defined central bank functions in their respective regions (People's Bank of China, 1999). However, I question the impact that the new structure has on monetary policy management as party politics, such as those involving the CFWC, continue to undermine the influence of the PBC over the localities in the new setup. I will delve more into this issue below.

4.4.1.4 Role in policy lending

Article 3 of the “Law of the PBC” clearly states that the aim of monetary policy is “to maintain the stability of the value of currency” and “thereby promote economic growth.” However, issues arise as these two principle objectives are always in conflict, as there are other aims that monetary policy is targeted to achieve. Xu (1998) notes that the government managed to make the PBC subordinate to its development tasks and high growth policy. As it was before the promulgation of the “Law of the PBC” in 1995, the conflict between these two objectives accounted for the macroeconomic instabilities in the periods from late 1984 to 1985, from late 1987 to early 1989, and in the first half of 1993 while the country embarked on its modernization program. The conflict was exacerbated as the objective of promoting growth brought about demands for financial resources from both the central and local governments for various “top priority” developmental projects.

When the PBC was instituted as a central bank in September 1983, and was supposed to gain “autonomy,” moving away from fiscal responsibilities to monetary ones, policy lending was still mainly skewed toward government priority projects. Fiscal authorities through budgetary appropriations should normally support these requests for funds. There was also no law to limit the government’s discretionary access to the PBC’s coffers to offset its budget deficits. While the PBC had to support both fiscal and industrial policies, it went

“overboard” in fulfilling its obligations and the dissemination of funds. As illustrated in Table 4.1, between 1991 and 1996, the policy loans accounted for about a third of the total state banks’ loans. There was, however, no denial that the PBC was instrumental in financing the growth of the Chinese economy, as evident by its continuous excessive lending.

Table 4.1: Policy loans (RMB billion)

	1991	1992	1993	1994	1995	1996
Policy loans total	6,781.7	7,410.9	9,322.6	11,485.2	14,159.7	16,440.1
Total loans by state banks	18,044.1	21,615.5	26,461.1	32,441.3	39,393.6	47,434.7
Proportion of policy loans (per cent)	37.58	34.29	35.23	35.40	35.94	34.66

Source: Institute of Economics, Chinese Academy of Social Sciences, 1998. “Aggregate Trend, Financial Risk and External Shocks: Analysis of the Current Chinese Macroeconomic Situation.” *Jingji Yanjiu*, (Economic Research), March, 3, pp. 3-14.

Although the PBC was finally released from lending funds to the Ministry of Finance for funding government deficits as promulgated in the “Law of the PBC” in 1995, so that the budgetary grants be replaced by loans (Dipchand et al., 1994), it still indirectly fulfills this request by delegating the fiscal obligations to the state-owned commercial banks. This not only conflicted with these banks’ performance-oriented business goals but also defeated the government’s purpose

of creating three policy banks⁴ to fulfill these fiscal duties. These loans were refinanced at subsidized interest rates, which were usually set below the deposit rates of the same maturity paid to households (Hofman, 1998), and were in fact subsidies for loss-making state-owned enterprises disguised as or “disbursed in the form of bank loans” (Lau, 1999, pp. 74).

The state-owned commercial banks continued to be the main sources of credit, as the capital market was still not well developed. The inabilities of the inefficient and loss-making state-owned enterprises to repay their loans have resulted in ballooning non-performing loans for these banks (Dornbusch and Giavazzi, 1999; Lardy, 1999; Lau, 1999). This has serious implications on the financial sector in general, and the banking industry in particular. However, to stop financing the state-owned enterprises would result in potentially serious social problems as massive unemployment would be the outcome. Hence it has been debated in many quarters that monetary policy accommodates the fiscal policy (Xu, 1998). Until the reforms in the social security system, the enterprise as well as the government budgetary sectors, happen on a positive note, the PBC's independence is compromised when it has to support both monetary and other government economic policies and, in particular, the fiscal and industrial policies.

⁴ These are the Agricultural Development Bank, the Export-Import Bank of China, and the State Development Bank which was later renamed as China Development Bank.

4.4.2 Financial independence

The PBC also demonstrates a lack of financial independence. The ability of central banks, as practiced in the rest of the world, to keep a small fraction of the money they make to finance themselves, provides a certain degree of independence and authority (Volcker, 1991). The PBC is financially dependent on the State Council's budget appropriations. The "Law of the PBC" stipulates that "a budget of the People's Bank of China shall be incorporated in the central budget after it has been examined and verified by the financial department of the State Council and shall be subject to budget implementation supervision by the finance department of the State Council" (Article 37). Moreover, the PBC has to "turn over to the State Treasury the entire net profit from its income for each fiscal accounting year minus annual expenditures after withdrawing funds for its general reserve at a proportion determined by the financial department of the State Council" (Article 38). This financial dependency characteristic in no small way makes the central bank beholden to political interferences.

4.4.3 The relationship between the government and the party

Up to this point, I have drawn attention to the PBC's lack of clout in monetary policy management by highlighting several examples including that of being a reluctant vehicle for funding both fiscal and budgetary needs. It also has been taken to task to financing the decaying state-owned enterprises to prevent

bankruptcies. The latter would not only have implications on unemployment and social unrests but also on the stronghold one-party system. The central bank has to participate actively in such industrial or social policies, though the literature on macropolicy coordination does not deal with such intervention. I realize that even the promulgation of the “Law of the PBC” does not guarantee giving the PBC “autonomy” or “discretionary autonomy.”

I believe that the fundamental problem lies with the relationship between the government, at both the central and local levels, and the incumbent party. The former is deeply entrenched with party politics. These involve party coalitions and communist elites representing competing group and institutional interests, and whose responses and actions have a definite impact on policy changes in the country’s economic transitional process. Among the party coalitions, the “reformers” embrace market-oriented reforms with or without a need to change its basic institution and political features, whereas the “conservatives” oppose both market-oriented economic and political reforms for fear of losing their powers and privileges. Some of the conservatives, though, are “willing to improve central planning and control by reducing the detail and scope of plans and directives” (Chen, 1995, pp. 78). Their primary concern is whether market-driven reforms, such as in central banking, would be compatible with a “socialist” system.

The question on the PBC’s autonomy, let alone independence, is not an easy matter to resolve, as this involves powerful forces at work, at both the center and

the localities, and in both the government and the enterprises. The “competing interests of the center and the localities” (White and Bowles, 1996, pp. 163) continue to generate institutional changes in the financial system, such as those in the central bank, making enforcement of financial discipline by the center more difficult. One such example is the localities’ use of non-bank financial institutions to evade controls exerted through the banking system. Thus the political tug-of-war between competing groups and the interplay of such political forces at all levels has challenged the PBC in its role as the country’s central banker.

It becomes obvious that the PBC’s authority is emasculated by party politics. Such infiltration of party sentiments in most, if not all, government institutions take over policy-making decisions, making the latter hollow institutions. It challenges the relationships between the PBC and the other players, such as the banking system, the local governments, and the enterprises. The various government ministries are under the control of the party, such as the party’s Central Financial and Economic Leading Group being put in charge of financial and monetary affairs, including the PBC, before 1998. The real supervisory power later moved to the more conservative CFWC in 1998. It is thus not uncommon that bureaucratic and legislative decisions have to adhere to “party’s line, principles and policies as well as relevant instructions and decisions of the party Central Committee and State Council” (Gilley and Murphy, 2001, pp. 50), many of which run counter to the principles of monetary policy management as practiced in a market-driven economy, which the PBC aspires to acquire. The

PBC merely serves as an administrative organ for carrying out decisions made by the CFWC. The fact that the latter makes no qualms about its control over the country's monetary and banking policies on a day-to-day basis, with the MPC playing only a consultative role, gives weight to the strong party sentiments in monetary policy affairs.

While the central bank demonstrates a forthcoming attitude toward key issues, such as interest rate liberalization, local currency convertibility, liberalization of the banking sector, or state-owned commercial banks' banking reforms, the CFWC displays a relatively dissembled one. Apparently, a competitive and vibrant banking sector and prudent monetary policy do not rank high on its agenda as compared to social and political stability. Again, the main issue is the PBC's lack of independence, where it is key not only in promoting monetary stability but also in ensuring its effectiveness and efficiency and therefore establishing its credibility (Xu, 1998).

Indeed the pervasive stronghold of the party over the PBC poses the greatest bottleneck to the central bank's performance as a genuine central banker. It negates the many efforts made in changing the rules of operation for effective central bank management, such as those as demonstrated by the "Law of the PBC" and the restructuring of the PBC in 1998. I therefore question the authenticity of these rules and believe that they provide only a cosmetic layer over the skin-deep party-determined policies. I believe that such changes in the rules of

operation of the PBC or any other government institution are of secondary importance, and could even be ineffective, if the relationship between the government and the party is not changed first.

4.5 A paradigm shift for the PBC

In this section, I address some areas where independence can enhance the PBC's capacity to perform its central banking functions by demonstrating some of the manifestations of an independent PBC. However, I also recognize that some conditions need to be fulfilled in order for the PBC to improve its performance in central banking. I see a strong need for the PBC to succeed in effective central bank management so as to serve its roles well as a monetary policy manager as well as a financial regulator and supervisor. It needs to experience the progression to a central banker that is empowered and market-driven so as to handle the needs of the "new" monetary and financial environment in a post-WTO China, where there will be increased financial deepening brought about by the influx of new financial instruments and foreign financial institutions, and increased growths in both the domestic banking sector and financial markets. Hence, I strongly advocate that the PBC undergo a paradigm shift in central bank management.

I believe that the most crucial ingredient the PBC needs is independence. Independence will allow the PBC to exercise its task as a genuine central banker, emulating other central banks in market economies. From my discussions in the

section “Is the PBC an independent central bank?” I note that even the promulgation of the “Law of the PBC” does not guarantee giving the central bank “autonomy” or “discretionary autonomy”, the latter as recommended by White and Bowles (1996), mainly due to interferences from party coalitions and communist elites representing competing group and institutional interests. Independence should be the foundation of the PBC’s effectiveness. Operating the central bank with only “Chinese characteristics” can create loopholes for the infiltration of party politics. A “market-driven” monetary and financial environment in the twenty-first century information age would not operate effectively under the umbrella of a party-controlled PBC. This would have adverse implications for the macroeconomy at large. As it is, there is the possibility of the PBC’s managing one of the world’s largest reserve currencies and banking system, and having a voice in regional and international monetary affairs. An independent, enabled, and empowered PBC is needed to realize this Chinese vision.

The PBC must have the will and power to make radical changes. I address the question of how independence can enhance the PBC’s capacity to perform its central banking functions by demonstrating some of the manifestations of an independent PBC. This includes the MPC having a direct role in policy-making instead of being a vehicle for consultation to the CFWC. The PBC’s political independence would allow it to manage the country’s monetary and banking system without any interference. It would have the authority to set interest rates,

end “perpetual” funding to the loss-making state-owned enterprises, liquidate shaky and non-performing financial institutions that pose a threat to the banking system, and allow competition to drive the financial sector. The PBC would also not be directly involved in credit allocation. It would ensure that credit is not provided to a particular sector through the process of money creation; it should be provided via the budget.

The PBC would demonstrate power as an independent central bank. A powerful PBC would also be able to push through important policy reforms needed for a new post-WTO banking environment. These policies include the continual disposal of non-performing loans of the troubled state-owned commercial banks to debt-salvage companies, and the flotation of the domestic banks (in particular, the state-owned commercial banks) to transform the banking industry into a competitive and independent industry. They will also serve as part of the development of the capital market. The “corporatization” of these banks would also help ensure transparencies, accountability to shareholders, profit management, and professional management of the state-owned commercial banks.

An empowered PBC would have the ability to ensure the full compliance of its monetary directives by local governments and financial institutions, and hence money supply would be manageable and predictable. It would also prevent macroeconomic instabilities like those experienced in the 1980s and early 1990s. Likewise, the PBC would see to it that the actual implementation of severe

penalties be imposed on local governments and financial institutions that do not adhere to the PBC's regulatory and supervisory directives.

However, some conditions need to be fulfilled in order for the PBC to improve its performance in central banking functions, as those described above. These conditions include that the appointments to the PBC need to be based on technical competence and it must be seen to be "objective and nonpartisan." The people holding top management positions should not be political appointees. The PBC must "be close to the political process but not part of it" (Godeaux, 1991, pp. 77). The PBC should also exercise financial independence, reducing its reliance on funds from the state budget to run its operations.

A powerful central bank also needs to be well informed. A lack of prior knowledge is making supervision of the country's banks increasingly difficult to deal with. The PBC should be given access to the books of banks on a frequent basis within a year, just like those practiced elsewhere in market economies. Otherwise, the authorities would never be aware of any banking problems until it is too late. This has major implications, especially when dealing with the 40,000 rural credit cooperatives (RCCs), which holds about 12 per cent of the country's total deposits (Gilley and Murphy, 2001).

For the PBC to demonstrate influence and autonomy, public opinion also plays an important role. However, to garner such public support, it has to be earned. This

has to be done through its demonstration of expertise, professionalism, and accountability. This relies on the quality of the research that is performed at the PBC, a high-quality professional staff and a decision-making body that has the ability to communicate effectively. The PBC will have to build an infrastructure that can attract and keep the best people with a career-based organization and a reasonably competitive salary structure, and provide an environment for open discussion of issues within the bank. Currently, the PBC is losing its best staff to the financial sector, which is exacerbated by the WTO-led entry of foreign financial institutions, with unattractive compensation as the main push factor. In order to regulate foreign banks, the PBC needs people who are highly skilled, such as in international finance and capital flows. Although the PBC runs “20 banking universities and another 15 general finance universities to train future staff for the country’s financial system” (ibid., pp. 52), the quality of the staff is still questionable.

The PBC needs to demonstrate a strong sense of accountability by being transparent in its doings, make public disclosure a way of life, and articulate policies to the rest of the government and the general public. In particular, its role as an independent monetary policy manager has to be articulated to the nine regional centers, which were created in 1998 to reduce the interferences from the local governments. These regions can be instrumental in providing information about regional developments and in communicating with the public.

Of paramount importance is the issue of the entrenchment of party politics in the workings of the PBC. Although I recognize the efforts made by the PBC in its 1998 restructuring endeavor to improve its central banking performance with new rules of operation, new processes, and reorganization, these changes are, however, nullified by the omnipresent CFWC, which has been positioned to “counter” the PBC’s desire for independent central bank management. The PBC should be freed from the institutional grip of the party. It should not merely serve as the administrative organ responsible for implementing the monetary and banking policies as directed by the pervasive and powerful CFWC. The higher authorities should not only recognize that the existence of party politics within the government put brakes to desired market-driven economic advancement, but they should also act on the dichotomy between country interests and party interests.

The solution does not merely involve stripping local governments of their power, as recommended by Wong (1992). Instead, at the highest administrative level, until and unless factions within the party converge to a common understanding of an effective market-driven and independent central bank management, and even if the “Law of the PBC” is further amended (such as in the pertinent areas as highlighted in the section “Is the PBC an independent central bank?”) to give the central bank more independence, the PBC will continue to experience hurdles in its central banking role. Likewise, at the lower government level, with the central government eradicating the root problem of any party interferences to the PBC branch operations, such issues as local governments’ unreasonable demands for

funds to implement their pet projects would be unheard of. While I note that the fulfillment of these conditions does require the will and clout of the upper echelons of the Chinese administration to push these resolutions through, it is also equally important that this is backed by a well-developed legal system that can ensure the enforcement of a higher standard of transparency in governance and disclosure. Such an undertaking would help discourage the “nonconforming” behaviors of the local government and financial institutions.

I believe that the above observations are necessary for the PBC in making a successful paradigm shift from its current position. Otherwise, a post-WTO China environment that manifests attributes of increased monetization and financial depth, may prove too complex and challenging for the PBC to fulfill its roles as the country’s central banker.

4.6 Conclusion

This thesis recognizes the challenges faced by the PBC in its central banking endeavor. The objective of the reforms was to restructure the PBC from its “monobanking” structure to that of a central bank serving both monetary policy management and financial regulatory and supervisory roles. However, the PBC has only gained some operational independence and not complete independence as a central bank. Even the promulgation of the “Law of the PBC” does not guarantee giving the PBC “autonomy” or “discretionary autonomy.” This leads

me to believe that the fundamental problem lies with the entrenchment of party politics within the government, which compromises the sound and effective operations of the PBC. I conclude that any efforts made in changing the rules of operation for effective central bank management are only cosmetic in nature and of secondary importance if the relationship between the government and party is not changed first.

Although I recognize that it is not an easy task, reining in the substantial powers of party politics is the desired solution, which would translate to more independence for the PBC. This would give the PBC considerable autonomy vis-à-vis other ministries under the State Council and above that of local governments to exercise effective monetary policy management and prudential supervision of the financial institutions, to back down on demands to extend loans to unviable projects, and to ensure that any subsidies for policy lending are financed through the budget rather than borne by the banking system.

The PBC needs to make a paradigm shift from its current inhibited and controlled disposition to one that calls the “shots” in all central banking decisions. As China progressively opens to the rest of the world, it is timely that the PBC revisits its roles and functions and makes a quantum leap to genuine central bank management, as practiced in market economies. This is a critical move, as the possibility of the PBC’s managing one of the world’s largest reserve currencies

and banking system, and having a voice in regional and international monetary affairs is no more than a distant dream.

CHAPTER FIVE

Confronting the new Chinese banking environment post-WTO: implications and strategies

5.1 Introduction and literature survey

The pace of events in recent years leading to China's accession to the WTO on 11th December 2001 would prove to refute Dipchand et al.'s (1994) opinion that "foreign banking in China is still a "waiting game"" (ibid, pp. 188). The significance of China's accession to the WTO does not justify that the foreign banks slack behind to partake bigger pieces of the Chinese pie. The advantages of setting a footprint in the Chinese marketplace could be eyeballing for some. These include the domestic and foreign banks', other financial institutions' and non-bank financial institutions' access to the huge corporate and households savings (estimated combined USD1.6 trillion)¹; domestic and foreign invested enterprises' access to loans; corporate and retail customers' access to attractive savings and innovative investment vehicles; domestic financial institutions' access to foreign banks' marketing, risk assessments and operational management techniques; the injection of competition and increase in efficiency in the allocation of monetary resources; and hence propelling the growth of the financial sector in general and banking industry in particular, which will drive the real

¹ Straits Times, 11th December 2001. "China in WTO: China lifts curbs on foreign banks in two cities." Singapore Press Holdings Ltd., Singapore.

sector. These would ultimately contribute to overall economic development and help quicken the “take-off” of the Chinese economy.

There are few doubts that the foreign banks will benefit tremendously from China’s entry into the WTO. However, gaining a big market share is no easy feat, as the domestic state-owned commercial banks are formidable competitors and are going all out to protect their lucrative customer base with improved product and service offerings. In fact some of the recent innovative marketing activities of these banks have alarmed some of their “branded” foreign counterparts who had set foot in China even before the pre-communist regime period in the 1950s, such as the United Kingdom’s Hong Kong and Shanghai Banking Corporation (HSBC) and the Standard Chartered Bank (Standchart).

In many ways, the state-owned commercial banks have a clear advantage over the foreign banks. By September 2003, the “big four” banks, namely the Agricultural Bank of China, Bank of China, China Construction Bank, and the Industrial and Commercial Bank of China, accounted for about 62.3 per cent of the total banking assets (Barnett, 2004). The foreign banks, on the other hand, accounted for 1.8 per cent of the total assets by the end of the October 2004 (China Knowledge Press, 2005). However, for all the foreign banks involved, even a small share of the China market will have a very significant impact on revenue and profit.²

² By 2006, the total amount of local and foreign currency of the foreign banks was USD102.5 billion, accounting for 1.9 per cent of the total assets of all the

There are many reasons why the Chinese government imposed restrictions on the foreign banks in the pre-WTO era. Dipchand et al. (1994) cite the previous “domineering stranglehold” (ibid, pp. 175) that foreign banks had on the local economy in the pre-1949 communist era and the government’s need to prevent this from happening again in the post-1979 economic liberalization period. Zhang and Zheng (1993) cite the protection of local depositors (such as by restricting foreign banks’ customer base and imposing a 40 per cent ratio of total liabilities to total assets within China), and protection of local banks from strong competition (such as in the foreign currency loans and the international settlement businesses) as two compelling reasons for the restrictions imposed on foreign banks. Such competition from the financially strong foreign banks would weigh down the domestic banks, which are already having financial woes, mainly due to their “social obligations” in fulfilling fiscal duties. Even then, Duncan (1995) feels that foreign banks are unlikely to provide real competition for the Chinese banks until they are allowed to compete for local currency business. Dipchand et al. (1994) reiterate the fears of the domestic banks in areas such as losing their “more capable employees to the foreign banks” (ibid, pp. 187) which offer better welfare benefits and higher compensation plans, and the foreign banks’ better access to foreign exchange since they deal with a clientele base made up of mainly joint ventures and foreign-funded enterprises. Reynolds (1982) concludes confidently that although foreign banks have great potential in the Chinese marketplace, they do not have any chance or “repeating their former influence” (ibid, pp. 86), and

financial institutions in the banking industry (<http://en.ce.cn>, China Economic Net, 18th December 2006. “WTO accession boosts China’s banking sector.”

perhaps this is precisely why the need for the imposition of restrictions on the foreign banks. His remark that “in the future, foreign banks will, if anything, be exploited rather than be exploiters in the path of China’s modernization” (ibid, pp. 86) is, however, yet to be seen.

Wong and Liu (2000) in discussing “China’s progress in banking reform and financial liberalization”, are forthcoming that China needs to build a “modern financial architecture in preparation for the further opening-up of its financial markets” (ibid, pp. 5), which comes about with China’s accession to the WTO. Yong (2002) gives his insight as to the reasons for the likely decline of commercial banking business in China. The introduction of financial innovations by the foreign banks that will create investments offering lower risk and high returns, the access to funding in foreign markets and the use of information technology by companies to sell securities directly to the public will ultimately be the pull factors causing a decline in the Chinese commercial banking business. Bonin and Huang (2002) however, conclude that foreign banking plays major roles in institutional building in the financial sector and the development of the inter-bank market as an important alternative source of funds, thereby facilitating the liberalization of interest rates.

However, many of the authors were short on specific solutions on how exactly the banks can improve to increase profitability levels, increase customer satisfaction and market shares. Most of the recommendations, if any, were short of strategies,

particularly on how to handle the onslaught of the international players. A few did mention why and how the domestic banks, especially the state-owned commercial banks, need to “clean up their act” or China needs to “put its financial house in order” (Wong and Liu, 2000, pp. 8). This is specifically so before the foreign banks’ grace period is over when the corporate and retail markets are opened to the foreign banks, that is, two years and five years after accession respectively. Even in a WTO-accession scenario, the foreign banks should not “expect plain sailing for the Chinese business” (ibid, pp. 9), as reiterated by Wong and Liu (2000). The domestic banks could capitalize on the five-year grace period to improve their competitive positions through measures such as mergers and forming alliances, although the nature of how such schemes work were not elaborated.

The objective of this chapter is to assess the implications of China’s accession to WTO on domestic banking, and to analyze the major strategies that the banks could embark on to counter the problems that impair their competitiveness in a post-WTO setting. It will also attempt to give a crystal ball picture of the new Chinese post-WTO banking environment in the immediate future. The chapter notes that the domestic banks need to handle a number of challenges that the new banking landscape brings. These include intense competition from the foreign players, reduced profitability and market shares and “brain drain” of business and critical staff. However, the new climate also offers new revenue-generating business opportunities that require the domestic banks to “think out of the box” to

close those deals. A competitive and vibrant banking marketplace should ensue. The chapter also notes that to handle the formidable competitors, the domestic financial institutions, in particular the state-owned commercial banks, should consider and work on six strategies. These involve capitalizing on their current strengths, diversifying their products and service offerings, revisiting their market positioning postures, overhauling their current operations, implementing merging or alliance strategies with both the domestic and foreign financial institutions alike, and seriously considering a transformation of their organizational set-ups.

Finally, the new banking climate in the near term will see the floatation of the domestic banks, in particular the state-owned commercial banks, so as to transform the banking industry into a competitive and independent industry. This will also serve as part of the development of the capital market. We are also likely to see the eventual formation and nurturing of domestic integrated financial groups that are capable of rivaling the likes of major international players like Citigroup Inc. and the HSBC Holdings. However, the new banking environment in the post-WTO era, ultimately will still be shaped by China's trade and investment liberalization and overall economic reform program. The country is expected to attract some USD50 billion in FDI per year after its entry into the WTO.³

³ An assessment by Supachai Panitchpakdi, WTO Director General Designate. *Straits Times*, 6th November 2001. "China seen attracting US\$50b FDI/yr after joining WTO: Supachai." Singapore Press Holdings Ltd., Singapore.

The chapter is organized as follows. Section 5.2 highlights the analytics of financial liberalization, while Section 5.3 analyzes the implications of WTO's accession on domestic banking. Section 5.4 reviews the strategies that the domestic banks should consider to counter competition and Section 5.5 gives an insight to the new Chinese banking environment in a post-WTO era. Section 5.6 has some concluding remarks.

5.2 Analytics of financial liberalization

According to McKinnon (1989), liberalization such as in the financial arena “remains the only game in town as far as successful economic development is concerned” (ibid, pp. 53). Financial liberalization is supposed to have positive effects on savings, investments, financial intermediation and thus economic development. The notion that liberalization enhances economic efficiency is derived from the Fundamental Theorem of Welfare Economics (that competitive markets yield Pareto optimal equilibria), which argues that competitive markets are “efficient” and hence that capital controls are “inefficient”, combined with the Efficient Markets Hypothesis which portrays financial markets as efficient gatherers and transmitters of information (Malkiel, 1987).

McKinnon (1973) and Shaw (1973) claim that a repressed financial system will result in savings vehicles being underdeveloped and/ or negative or unstable returns on savings; the inefficient allocation of savings among competing uses

and firms are discouraged to invest due to poor financial policies that reduce the returns to investment. On the other hand, liberalization on the financial sector from interest rate ceilings and other restrictions facilitate economic development and growth, as higher interest rates will lead to increased savings and a more efficient allocation of capital.

The policy prescription of financial liberalization entails a move towards a more market-oriented system, which typically involves allowing the interest rates to be market determined (thus controls on both deposit and lending rates are abolished or reduced) and reducing quantitative controls to allow financial intermediaries greater control over the use of their liabilities (subject to certain minimum controls maintained for prudential supervision) (Gibson and Tsakalotos, 1994).

An important element in the liberalization of financial markets is the admission of new entrants, including foreign entrants into the financial services industry (Claessens and Jansen, 2000). Such competition can yield straightforward efficiency gains and innovation in terms of improved range of services, whose benefits will increase over time. However, the initial scrambling to retain or gain market share will see banks seeking new business in unfamiliar territory whose risks they often underestimated (Honohan, 1999). The new liberalized climate often see the incumbents responding to the threat of new entry with an efficiency drive and restructuring, and a contestable and low-margin equilibrium, without rents generated by the directed credit system. With a reduced franchise value,

banks in particular now had little room for error. In Pakistan and Uganda (Aleem and Kasekende, 2001), entrants opted for a less aggressive but very profitable high margin-low volume strategy, allowing high-costs incumbents to stay in the banking business often with higher gross margins than before liberalization. In this new competitive financial services industry, financial intermediaries began to be allowed new scope for their activities, such as universal banking, and such new opportunities could contribute to franchise value. On the other hand, the intensity of competition for existing lines, brought about by the breaking-down of barriers to competition between different institutions and across-the-board liberalization of restrictions on lines-of-business, often result in lower margins than had been anticipated (Caprio et al., 2001).

5.3 Implications of WTO's accession on domestic banking

An early confrontation with the new banking environment will help prepare the domestic banks to handle the competition and new regulatory climate in the next five to ten years. The rules of the banking game will be totally different from those experienced in the “sheltered” years before. Management of these rules requires a complete change in mindset in handling a number of challenges that the new banking landscape brings. These include intense competition from the foreign players, reduced profitability and market shares and “brain drain” of business and critical staff. However, the new climate also offers new revenue-

generating business opportunities, and adding competition and vibrancy to the banking marketplace.

It is obvious that the Chinese banks will face intense competition not only among themselves as each seeks to improve on its product lines and marketing strategies, but also from the domestic banks that have merged their organizations to gain a bigger market share, and the small and medium-sized joint-stock banks will face threats from both large domestic banks and foreign banking giants. The current China-based foreign banks will reorganize themselves to capitalize on the more liberalized banking environment to compete against the new entrants, which include new domestic banks formed by non-banking conglomerates or foreign players who have mathematically convinced themselves that they should partake a slice of the potential huge profitable pie in this emerging marketplace.

Profitable businesses would include the merger business, which quadrupled to USD31.2 billion in 2002 compared to the previous year, and fund management, where the total funds managed were USD10 billion between 1998 to 2000. As China's capital market progressively matures, investment banking is an area that will become lucrative. The capital market was valued at USD560 million in 2002 and the Chinese government allows as much as 33 per cent foreign stake initially in ventures to manage domestic stock and bond sales. The sale of shares was

about USD9 billion in 2001.⁴ The foreign banks are also keen to tap into China's securities firms, hoping to trade A and B shares in the huge Shanghai and Shenzhen share markets. Both of these markets have outstripped Hong Kong's. As of March 2002, the market capitalization of the Shanghai and Shenzhen's share markets was a combined RMB4,371 billion compared to Hong Kong's HKD3,974 billion.⁵ This resulted in more foreign banks keen to seize the investment banking opportunities there.

In this new environment, the domestic banks will experience substantial business taken away by the other players, in particular by banks that newly positioned themselves as market-driven and customer-centric. There will be an outflow of both consumer and corporate deposits, a traditional and "taken for granted" source of funds, to more attractive and new investment vehicles offered elsewhere. This will have an impact on the banks' asset transformation and hence profitability levels. Market shares will also shrink as new competitors invade upon the territories of the banks' well-protected long-term customer base. In fact some customers have already moved their local currency deposits to some foreign banks as they are perceived to be better service providers and are financially sound.

⁴ Bloomberg, 13th December 2001. "More China access for foreign investment banks." Straits Times, Singapore Press Holdings Ltd., Singapore.

⁵ Business Times, 12th March 2002. "China Forays: HSBC keen to buy into larger China securities firms." Singapore Press Holdings Ltd., Singapore.

While more competition warrants the upgrading of current skills, it will also lead to “brain drain” situations where critical staff is poached by other banks, and in particular foreign banks. Most affected will be the middle management who will be enticed by the higher compensation plans and skills upgrading incentives offered by some of the renowned international foreign banks such as the Citibank NA (Citibank), the HSBC and the Standardchart.

On the other hand, more competition would also mean that the domestic banks need to seek out for more new revenue-generating opportunities. They would have to create innovative and quality products and services and cannot compete head-on with the foreign banks just on the “plain vanilla” business of taking deposits and making loans. Some of the banks also need to recognize that they cannot compete on their own anymore based on their financial strength and existing customer base. There is thus an urgency to cooperate with others either through organizational mergers, acquisitions or implementing partnership programs. Support and encouragement should come from the relevant authorities to make such necessary set-ups possible.

The premier four state-owned commercial banks, such as the Agricultural Bank of China, Bank of China, China Construction Bank, and the Industrial and Commercial Bank of China, will have to deal with the increasing foreign competition as they are still beholden to the government and are instrumental to sustaining the inefficient and loss-making state-owned enterprises. The low

quality borrowers have a tremendous impact on the banks' financial performance, and are accountable for the banks' current high non-performing loans' situation, deteriorating balance sheets positions and low credit rankings from international investment advisory firms such as Moody's Investors Services and Standard and Poor's Corporation. The banks' capacity to control credit quality is constrained and this will affect their prospective investments, and ultimately their bottom-lines. Besides, it does not help that the strong financial standings of the foreign banks will glaringly emphasize the financial weaknesses of the Chinese banks. The top management does not deny that the banks need to refocus themselves on market-based performance objectives in order to survive in this new environment. This will be the greatest challenge for these banks that have all along been government-directed and not market-directed.

To be market-driven, there is a need to overhaul many of the existing operational systems, such as in credit and risk assessments, liquidity management, asset and liability management, and capital adequacy management. In other words, the banks need to go back to basic banking management techniques, as practiced in a market economy. Perhaps the greatest change management needed is the organizational culture, which involves a radical change in mindset, a paradigm shift from the archaic self-centered ways of doing things to morally ethical and professional ways. Attitudinal changes are also required.

5.4 Strategies to counter competition

To handle the formidable competitors, the domestic financial institutions, in particular the state-owned commercial banks should consider and work on six strategies. These involve capitalizing on their current strengths, diversifying their products and service offerings, revisiting their market positioning postures, overhauling their current operations and making necessary repairs through a thorough restructuring exercise, implementing a merger and acquisition (M&A) strategy and an alliance strategy with both the domestic and foreign financial institutions, and finally, seriously consider a transformation of their organizational set-ups.

5.4.1 Capitalize on current strengths

The domestic banks, in particular the state-owned commercial banks, already have advantages to start with. They should fully capitalize on their current strengths. They are very familiar with the nature of their markets, having the support and first-hand knowledge about their existing customer base, and have created formidable brand loyalty and well-established “guanxi” relationships with both key corporate customers and government bodies. The branch networks are established and well-positioned geographically across the country, particularly in major cities, serving their respective customer base, and this should enable the state-owned commercial banks maintain their status as “banker of choice” based

on service and accessibility. They are also the “financier of choice” in fulfilling their fiscal obligations, having to finance the state-owned enterprises and government infrastructural projects.

The state-owned commercial banks have access to funding from the traditional deposit-sources, and the inter-bank market. The foreign banks can only take local currency deposits from the corporations two years after the WTO accession, and from the local citizens after another three years. This time factor advantage should give the domestic banks some leverage as they pursue activities to counter the competition. The domestic banks need to strategize on ways to build upon their current strengths. Importantly they need to protect their customer base and market shares, increase revenue by adding new innovative product lines, carve out niches, improve on their delivery channels, being more aggressive in their marketing techniques in the areas of demand generation and account management, demonstrate higher customer-driven service and increase the use of technology to facilitate better business performance.

5.4.2 Diversify product and service offerings

The limited range of products and services provided by the domestic banks fails to reflect the Chinese customers’ needs and wants, such as for medium to long-term investment purposes. An example would be the short-term deposit-taking being currently the only investment vehicle for majority of their retail customers.

The banks need to create new customer-driven products and strengthen current core products in areas of their greatest comparative advantage.

In retail banking, the deposits-gathering business is the most lucrative for the domestic banks as investors lack other “safe” investment alternatives. The USD 1.6 trillion deposits held by the businesses and individuals, and currently residing with the domestic banks proves to be a strong pull for foreign banks to join in the competition, as they cannot ignore the potential in this market. The domestic banks need to react constructively with attractive products and services to protect their viable deposits business before the foreign banks have full access to retail banking in five years, upon China’s entry into the WTO. In fact some of the domestic banks, in particular the state-owned commercial banks, have been proactive in increasing their market share in recent years through introducing the automated-teller-machine (ATM) network. The banks make use of a government-run “Golden Card”⁶ system, which is an inter-bank, inter-regional payments system based on smartcard and ATM technology. This involves the installation of multi-bank ATM networks in major cities built around a common electronic clearing and settlement network. The implementation allows banks to offer combined ATM and debit cards linked to deposit accounts and helps to improve the clearing of withdrawals or funds transfers between accounts.

⁶ Jitong, a Ministry of Electronics Industry subsidiary was responsible for building the “Golden Card” system.

The current consumer explosion also provides excellent opportunities for banks to increase the number of consumer credit products to meet the customers' aspirations and needs. The rising disposable incomes and favorable government policies in recent years have helped moved consumers away from traditional bank savings to spending on big items such as real estate, private vehicles, travel, insurance and securities. Technology has added new consumer wants such as computers and mobile phones. The Housing Reform program announced in 1998 has also helped propelled a consumer-driven residential market. The government is instilling the notion that housing is now an individual's responsibility and not the employer's, in particular the state-owned enterprises being the largest employers in this transitional economy. This is also part of the government's efforts to restructure the state-owned enterprises by reducing their liabilities.

Therefore the retail products and services in line with these new consumer needs would include housing mortgage and automobile financing, renovation loans, hire purchases, personal loans, provision of credit cards, internet-banking and foreign exchange services. The more enterprising banks such as the China Construction Bank and the Industrial and Commercial Bank of China have already moved into fee-based businesses like insurance and fund management⁷, seeking to sell products through their large branch networks. This change highlights their search

⁷ Since then, mutual funds have mushroomed across the country and collectively hold more than RMB300 billion (S\$60 billion) in assets. The potential of the industry has attracted foreign heavyweights such as JP Morgan and Societe Generale (Straits Times, 21st February 2005. "China allows commercial banks to set up mutual fund ventures." Singapore Press Holdings Ltd., Singapore.)

for new profits as they address their bad-debt problems. A post-WTO era will definitely hasten the pace of the domestic banks to pursue revenue aggressively in these business areas, as the foreign banks would also be interested to penetrate into these same areas.

The state-owned commercial banks have also started to venture into the credit card business, in response to a future increase in the retail industry as consumer incomes increase. Currently the majority of credit cards in China function as debit cards and these are restricted to business people and government officials. But as the number of citizens is increasingly becoming middle-class or of high net worth, the government is now proactive in promoting this area of banking business.⁸ It hopes to modernize its financial data communications infrastructure by linking with foreign credit-card companies such as MasterCard and Visa International. In fact the latter has launched China's first banking-card training center in Beijing with the People's University of China. This outfit will train credit-card managers to meet the potential growth of millions of credit-card users in the near future. As of June 2004, China had approximately 476,000 Point-of-sales machines and 64,000 ATMs. About 300,000 merchants accept banking cards.⁹

⁸ According to VISA International's forecast, potential credit card consumers number between 30 to 60 million. By 2010, the middle class is projected to number more than 200 million. At that time, 50 to 75 million credit cards might be in circulation (<http://www.buyusa.gov>, retrieved on 7th September 2007. "Financial Services – U.S. Commercial Service.").

⁹ <http://www.buyusa.gov>, retrieved on 7th September 2007. "Financial Services – U.S. Commercial Service."

As the growth of personal computers increase in the Chinese economy in the new millennium, internet banking opportunities should not be ignored. The Industrial and Commercial Bank of China has already included this delivery channel in its business plans and the Bank of China's Hong Kong-based subsidiary, the Bank of China (Hong Kong) Ltd. (BOCHK), has already worked on a home-banking prototype before implementing it in China.¹⁰

The post-WTO corporate arena also provides excellent opportunities for the domestic banks to increase their market shares, in business areas such as trade financing, infrastructural financing, project financing, investment banking (underwriting, mergers and acquisitions) and advisory services. However, a few factors affect the strengthening of their current core line of business, which is lending to large state-owned enterprises or infrastructural financing. These include the weak financial conditions of the state-owned enterprises, which are accountable for the state-owned commercial banks' high level of non-performing loans, and the fiscal obligations that these banks face.

Although the banks have sought to offer a greater range of services beyond the "plain vanilla" business of taking deposits and making loans, they are still restrained by the government. Some of the regulations imposed on the products, such as the maturity of bank loans and the time taken to approve the launching of new products, have hampered the growth of these businesses. The government

¹⁰ <http://www.cw.com.hk>, 28th May 1998. "Bank of China launches home banking."

has also implemented a China's version of the USA's Glass-Steagall Act of 1933, which barred the banks from dealing in corporate stocks and bonds, so as to prevent risk despite the global trend towards banks offering more varied services. This was enshrined in its 1999 Securities Law. However the government has allowed insurance companies and securities firms to sell their products through branches of banks after signing cooperation agreements. In fact the central bank has now allowed the commercial banks to open intermediate services such as derivative financial services, security brokerages services, investment fund management, information consulting and finance consulting.¹¹ These have definitely helped to increase the breadth of the domestic banks' product offerings to customers. The Agricultural Bank of China has already paved the way and embraced competition by opening 100 "financial supermarkets" nationwide in the third quarter of 2001¹², offering its current and new banking products, from safety deposit boxes to insurance products. The China Construction Bank plans to implement a computer system linking it with brokerages to give its customers the ability to trade shares directly. It has also signed partnerships agreements with several brokerages to offer fund management services to investors.

There is also a need for the banks to focus on product management such as increasing the number and quality of distribution channels, such as the Agricultural Bank of China's "financial supermarkets", and the type of demand

¹¹ ChinaOnline, 11th July 2001. "PBOC: Commercial banks eligible to open intermediate businesses."

¹² Reuters, 17th September 2001. "China WTO entry gradually to erode financial walls." <http://biz.yahoo.com>.

generation activities required to drive business volumes. Such activities could refer to the choice of media for promoting the product and service offerings, and direct marketing.

5.4.3 Market repositioning-target segmentation

A market repositioning exercise is necessary for the domestic banks to counter the forthcoming intense competition from the foreign players. The banks need to carve out different segments out of their customer base into different target groups, and use improved marketing techniques to provide banking solutions tailored to these target segments. The segments could be identified as low, medium and high growth industries; small, medium or large state-owned enterprises; small, medium and large non-state or private enterprises; and as for the retail market, customers can be targeted by income groups. The state banks are now starting to lend more to the private sector and high-tech industries, areas they have traditionally ignored.

5.4.4 Restructuring

The banks need to improve the cost structure of their business operations to stay competitive. The cost restructuring process is to include closing branches which are economically not viable, and cutting surplus staff. The state-owned commercial banks have already started to implement these cost cutting measures.

In 1995 they operated a total of about 158,000 offices but this was reduced to about less than two-thirds the size by the end of 2002 (Lardy, 2004). There is also the need to increase interest incomes.

A restructuring exercise to overhaul the current operational systems is almost mandatory in particular if the financially weak state-owned commercial banks wish to start “anew” after clearing off the high volumes of non-performing loans, by handing them over to asset management companies formed by the authorities to manage these huge bottlenecks that prevent them from recapitalizing their balance sheets. The state-owned commercial banks had a combined RMB1.8 trillion of bad loans or 26 per cent of the total loans of RMB6.8 trillion as of end of October 2001¹³, and this was only slightly reduced to RMB1.77 trillion as of September 2002¹⁴, according to the central bank. Tight internal controls have to be put in place. The capital adequacy ratio needs to be maintained at the BIS-recommended level of 8 per cent. Thorough analysis of credit risks have to be done if good loans are to be given out, and the new loan classification system has to function on an implementation level. The loan origination and credit approval functions have to be separated to eliminate “connected” dealings.¹⁵ The state-owned commercial banks also need to improve on their loan recovery rates.

¹³ Straits Times, 4th December 2001. “WTO puts China at risk of major financial crisis.” Singapore Press Holdings Ltd., Singapore.

¹⁴ Bloomberg, 11th November 2002. “China's top 3 banks plan share sales by 2005.” Business Times, Singapore Press Holdings Ltd., Singapore.

¹⁵ In fact in 1996 the Bank of China had initiated such a move by running ten pilot projects relating to this area.

A market-driven and revenue-based attitude should be taken in the area of management at all levels. Incentive-based and revenue-focus compensation plans should be implemented in the sales and marketing arena, to inject a sense of competition and accountability. In the skills area, resources should be dedicated to train staff at all levels in product knowledge, finance, marketing, customer relationships management, and other critical disciplines, and they should be empowered to make responsible decisions that contribute to the organization's goals and objectives.

Although restructuring is critical and an important strategy to be undertaken, there is no denial that this is going to be a difficult process. In fact restructuring a state-owned commercial bank will prove as difficult as restructuring any state-owned enterprise as the changes required are too radical, for those who are used to or who still prefer a "pre-market economy" way of doing things. Among the four state-owned commercial banks, the Bank of China is likely to be the one making the furthest leap into the new post-WTO economy. It embraces changes to its organizational structure. It also demonstrates willingness to change in response to the oncoming competition. It has a relatively clean balance sheet. It has benefited tremendously from its international subsidiary in Hong Kong, that is, the BOC Group. This consists of twelve smaller banks which have been subjected to international competition over the years. The banks have now merged to form the

newly established BOCHK¹⁶ which has displaced the Hang Seng Bank as Hong Kong's second-biggest bank by assets, after the HSBC. It is the bank's most profitable unit and a key training ground for its parent bankers wanting to learn western banking methods. Therefore, it is no wonder that the Bank of China's staff in the China has better skills than their counterparts in the other three state-owned commercial banks, and this may have help account for the better performance of the bank.

The domestic banks need to implement technology-driven delivery systems to modernize bank operations. These include the latest computer systems and banking software applications available in the international markets that can be tailored to the Chinese environment, improving both the front-office and back-office operations. This will help increase both staff and customer productivity. In 1998 the BOCHK and Hong Kong Telecom launched a home banking service using the latter's subscriber-based interactive TV (iTV) platform.¹⁷ This implementation is the first in the world running on interactive television, allowing iTV subscribers to transfer money between registered accounts in the twelve member banks of BOCHK. Other services available include account balance inquiry, multi-currency and precious metal trading, time deposit management, funds transfers, credit card settlement, information on rates for deposits and foreign exchange and prices on precious metals. The integration of smartcard and

¹⁶ The BOCHK was founded on 1st October 2001. (Business Times, October 2nd 2001, Singapore Press Holdings Ltd., Singapore.)

¹⁷ <http://www.cw.com.hk>, 28th May 1998. "Bank of China launches home banking."

videoconferencing services has been included in the second stage of the home banking implementation. Such advanced use of technology will certainly help prepare the Bank of China in increasing customer satisfaction in China when it replicates the services there, thereby giving it a competitive edge over the other banks.

5.4.5 M&A and alliance strategies

The Chinese government is becoming more proactive in assisting the local players to prepare for the challenges that come with the WTO entry. It encourages and allows the domestic banks and foreign financial institutions to implement a mergers and acquisitions' (M&A) strategy. The resultant pooling of resources would not only help the merged entity to strengthen its financial and marketing positions but also allow it to import Western management practices. Acquisitions also allow the new owner access to the current database of existing customers or perhaps tested products. This M&A exercise applies not only to mainland-based financial institutions but also the Chinese-owned conglomerates based in Hong Kong, such as the China International Trust and Investment Corporation Group (CITIC), which owns the Citic Industrial Bank, and the Everbright Group, which controls the Everbright Bank and Everbright Securities in China.

In the case of foreign ownership, it is no doubt that foreign investment provides one potential source of funding for the large-scale expenditures on equipment and

training that the domestic banks, which survive the WTO shake-out, will need to make. China's financial sector would also gain as foreign banks, especially the international giants like the Citigroup Inc. and the HSBC Group, offer capital market access, structured solutions and unrivalled quality services to their preferred customers. In the areas of skills transfer, the domestic banks would benefit from their counterparts' expertise in risk management, balance sheet restructuring, project financing, and in the new derivatives and hedging business. The strategy that the Chinese government undertakes is to initially allow the foreign banks to acquire stakes in smaller banks or other financial institutions, owned by the city or the provincial governments. Thereafter it will allow the nation's four state-owned commercial banks to sell stakes to foreign investors to help them recapitalize, improve management and clean up the bad debts. Another strategy that some provincial governments undertake is to collect stakes distributed in various investment arms and then sell them as a whole to foreign investors, like in the case of the Shanghai Pudong Development Bank. Table 5.1 illustrates some of the investments made by the foreign financial institutions in Chinese financial entities.

Table 5.1: Foreign investments in domestic banks and financial institutions

Year	Foreign financial institution(s)	Domestic financial institution(s)	Form new venture or acquire a stake in domestic entity
1994	<ul style="list-style-type: none"> • Morgan Stanley (USA), the Government Investment Corporation of Singapore (GIC) and Mingly Corporation (Hong Kong) 		Formed China International Capital Corporation (CICC), a joint venture investment firm, together with CCB; Morgan Stanley has 35 per cent stake
1997	<ul style="list-style-type: none"> • Asian Development Bank (ADB) 	<ul style="list-style-type: none"> • Everbright Bank 	3 per cent stake
1999	<ul style="list-style-type: none"> • International Finance Corporation (IFC) 	<ul style="list-style-type: none"> • Bank of Shanghai 	5 per cent stake
2001	<ul style="list-style-type: none"> • Hong Kong and Shanghai Banking Corporation (HSBC, United Kingdom) • International Finance Corporation (IFC) 	<ul style="list-style-type: none"> • Bank of Shanghai • Nanjing City Commercial Bank 	8 per cent stake (USD63 million) 15 per cent stake (USD27 million)
2002	<ul style="list-style-type: none"> • International Finance Corporation (IFC) • Shanghai Commercial Bank (Hong Kong) • Morgan Stanley Dean Witter & Co. (USA) 	<ul style="list-style-type: none"> • Bank of Shanghai • Bank of Shanghai • China Construction Bank 	Increase stake to 7 per cent (USD25 million) 3 per cent stake (RMB195 million) Formed a joint venture investment bank

**Table 5.1: Foreign investments in domestic banks and financial institutions -
continue**

Year	Foreign financial institution(s)	Domestic financial institution(s)	Form new venture or acquire a stake in domestic entity
2004	<ul style="list-style-type: none"> Hong Kong and Shanghai Banking Corporation (HSBC, United Kingdom) 	<ul style="list-style-type: none"> Bank of Communications 	19.9 per cent stake (USD1.7 billion)
2005	<ul style="list-style-type: none"> Bank of America Corporation Citibank, Citigroup Inc. 	<ul style="list-style-type: none"> China Construction Bank Shanghai Pudong Development Bank 	9 per cent stake (USD3 billion) 5 per cent stake (USD67 million) Holds options to increase ownership to 24.9 per cent

Sources: Various issues of the Business Times and Straits Times, Singapore Press Holdings Ltd., Singapore; and websites (<http://www.buyusa.gov> and <http://www.reuters.com>)

The alliance strategy, which normally involves the signing of cooperative and agency agreements for marketing the partner's products and services, would allow banks and other financial institutions to satisfy their customers with a broader range of product and service offerings. The vast branch networks should play instrumental roles in delivering and facilitating the sales of these offerings to a captive customer base. The Bank of China has established alliances with local banks, insurance companies, securities companies, fund management companies to provide a breath of services to their combined customer base. By building partnerships with other financial entities, the Bank of China is signaling to the marketplace its intention of not only wanting to increase its market penetration

levels, but also to be a formidable and credible competitor to some of the reputable foreign players in its ability to provide a wider range of products and services to meet the new and diverse needs of the Chinese customers in the more liberalized setting. This desire is also boosted by the government's approval of the Hong Kong-based Bank of China International (BOCI), the investment banking unit of Bank of China, to form a RMB1.5 billion joint venture securities firm with Dongfang Asset Management Co., another China-based Bank of China unit, oil giant Sinopec Corp., Beijing-based State Development Investment Co., an investment arm of the Shanghai city government and another unidentified firm.¹⁸ As illustrated in Table 5.1, the China International Capital Corporation. (CICC), an American-based Morgan Stanley's Chinese joint venture, is an example of a Sino-foreign investment banking joint venture operating in China, with a license to underwrite both China-based stocks and overseas listings and it has applied for a brokerage license to deal in domestic securities on China's secondary market.

The partnership program between the HSBC and the Industrial and Commercial Bank of China where the HSBC bank depositors can withdraw the local currencies from selected Industrial and Commercial Bank of China's ATMs in Shanghai and Guangzhou at a fee, is exemplary of another effective partnership program.¹⁹ Another one is that of JP Morgan Fleming Asset Management Co. working with Huaan Fund Management to set up China's first joint venture fund

¹⁸ Business Times, 15th November 2001. "BOCI gets approval for 1.5b yuan venture." Singapore Press Holdings Ltd., Singapore.

¹⁹ Business Times, 30th September 1996. Singapore Press Holdings Ltd., Singapore.

manager; while Fortis Investment Management Co., a unit of the Belgian-Dutch financial company Fortis, is working on a partnership with Haitong Securities Co., China's most profitable brokerage.²⁰ The Citibank, a unit of Citigroup Inc., has signed a continuation of a cash management agreement with Galaxy Securities, China's largest brokerage.²¹ The latter was formed in 2000 by merging five trust firms. The two companies would also cooperate on training, product development, marketing and research. The domestic banks should also take the opportunity to form partnerships with foreign insurance companies who have been awarded new operating licenses, such as Nippon Life Insurance, New York Life Insurance, Manulife Financial, American International Assurance, Metlife and Tokio Marine & Fire Insurance.²²

5.4.6 Organizational transformations

Lastly, the sixth important strategy to be considered by the domestic financial entities relate to organizational transformations. As mentioned earlier in this section, among the four state-owned commercial banks, the Bank of China is likely to emerge as the most successful and most focused of the group as it embraces changes to its organizational structure. It may even compete on an equal

²⁰ Bloomberg, 2nd November 2001. "JP Morgan to form joint venture fund manager in China." Business Times, Singapore Press Holdings Ltd., Singapore.

²¹ Bloomberg, 10th April 2002. "China's Galaxy signs deal with Citibank." Business Times, Singapore Press Holdings Ltd., Singapore.

²² Straits Times, 13th December 2001. "S'pore banks keep lid on plans as China opens up capital markets." Singapore Press Holdings Ltd., Singapore.

footing with some of the international giants. The other three banks will face stiffer challenges in the post-WTO era.

One potentially feasible approach in confronting the intense competition is to split these banks into smaller pieces according to business areas, to form new rational entities. The banks have over the years moved away from their original intent to focus on specific sector areas to handling many overlapped business activities. The new approach would be to have, for example, the project finance and construction lending divisions of these banks be spun off and consolidated into one or two banks. By focusing on their resources rationally, these banks may be better positioned to compete aggressively in their niche areas with their foreign counterparts. Besides this organizational changes would also be made easier as these new entities would only be a fraction of the original organization in terms of size and scope.

Another reform alternative involves creating financial institutions capable of competing with the likes of bankers such as the Citigroup Inc. and the HSBC Group in the international arena. These institutions need to provide a range of integrated financial services, ranging from personal banking services, wealth management, insurance, mutual funds, securities trading to advisory services. The potential candidates who have the financial muscle to create and provide a full range of integrated financial services as well as the capability to compete with the foreigners include the BOC Group and the CITIC Group.

The central bank, the PBC, has also announced another option which it is going ahead to implement, that is the public listing of the state-owned commercial banks, in particular the Bank of China, China Construction Bank²³ and the Industrial and Commercial Bank of China which are the three top banks in China (with combined deposits of more than RMB5.5 trillion). The main reason is to raise money to cover the bad loans, which stood at RMB1.77 trillion and RMB1.9 trillion in September 2002 and 2003, respectively (Barnett, 2004; China Knowledge Press, 2005). These banks, together with fourth-ranked Agricultural Bank of China, are required to reduce their ratio of bad loans from 25 per cent to 15 per cent by 2005, with all bad debt fully provisioned for by reserves. The shares will be sold both domestically and overseas. The Bank of China's plan is that it should be ready for a public listing in the near future, and will use the successful listing of its Hong Kong unit in July 2002 as the model for restructuring the rest of the bank.²⁴ The Industrial and Commercial Bank of China is currently discussing with foreign investors to sell a 10 per cent stake by end 2005²⁵ to pave the way for a public listing in 2006 or 2007.²⁶

²³ It was the first of the big four state-owned commercial banks to be listed on the Hong Kong Stock Exchange and the launch of the initial public offering raised more than USD9.2 billion in October 2005 (<http://www.marketwatch.com>, retrieved on 10th September 2007. "China Construction Bank nears largest domestic IPO.").

²⁴ The USD2.8 billion offering was over-subscribed by 7.5 times and this deal was a significant move in the reform of China's banking industry (<http://www.buyusa.gov>, retrieved on 7th September 2007. "Financial Services – U.S. Commercial Service.").

²⁵ Reuters, 29th April 2005. "ICBC may sell 10% stake, eyes listing". Straits Times, Singapore Press Holdings Ltd., Singapore.

²⁶ By the time the thesis was revised, the bank was already listed on both the stock exchanges of Shanghai and Hong Kong (on 27th October, 2006). Its market

However for the PBC's plan to succeed, the banks would have to convince foreign investors that they could improve their transparency on accounting and corporate governance. Nevertheless the listing of the state-owned commercial banks will put them under the international limelight, and the organizations will be driven to perform profitably and be held accountable to global shareholders. Their business dealings would have to be transparent and professionally managed. This scenario will definitely be a far cry from their pre-listing days.

5.5 The new Chinese banking environment post-WTO

In the near foreseeable future, the financial sector, and in particular the banking industry in China will experience a dramatic change in the post-WTO era. There is no doubt that the changes in the banking arena have evolved over time since the country started its economic reforms program in 1979. But there will be even more exciting events in the coming years, fueled by the influx of foreign investments and trade. A good demonstration would be the changed financial landscape in Shanghai today compared to ten years ago, let alone prior to 1979 when China was still closed to the outside world. The city is now bustling with trading and financial activities, with major international companies making their presence there and, major international financial institutions physically fronting

capitalization was in excess of RMB1 trillion and hence qualifying it as the biggest listed company on China's A-stock market and one of the biggest listed banks in the world (<http://www.icbc.com>, 31st October 2006. "ICBC celebrates its successful listing in Shanghai and Hong Kong.").

the famed Shanghai bund overlooking the Yellow River. This is an ironic reminder of the pre-1949 days where some of the same financial institutions physically stood before they were closed down when the communists took over the country.

The banking environment, however, will face some challenging issues even as it takes on new shape and substance. It is inevitable that competition is set to increase between the domestic and foreign banks, but on a more positive note, they can both play complimentary rather than competing roles. Both parties do possess comparative advantages in their own right. They should exploit complementary advantages that put them both in “win-win” situations, and ultimately also benefiting the consumer. They can do so by continuing to form alliances and establishing other partnerships programs.

Although the prospects for growth in the banking industry are bright, there are still some impediments to the development of its full potential. The domestic front is fraught with weak financial conditions, in particular of the four pillars of the domestic financial wall, the state-owned commercial banks. Their non-performing loans stood like a sore thumb in the whole banking system, and the situation is made worst by the weak financial backgrounds of their main creditors, the state-owned enterprises. Until the current and future non-performing loans of the state-owned commercial banks are eradicated or minimized, and the state-owned enterprises restructured constructively and successfully, the banking industry will

not develop effectively, as desired. As it is, the current status of the state-owned commercial banks makes them very vulnerable and this may limit the alliances and partnerships that could be forged with their stronger foreign counterparts. This will have implications on the transfer of skills to the domestic banks. It is likely that the process of reform and restructuring of the state-owned commercial banks will take several more years to play out. The financial “revolution” as desired, cannot be too fast or too radical given the state-owned commercial banks’ dominant position in the marketplace and their legacy of social responsibility. There is also the need to address the issue pertaining to the limited development of the money and capital markets to fuel domestic demand and sustain the economy in the long haul.

If the scenario is such that the financial conditions of the domestic banks are improved, prudential and supervisory practices strictly adhered to, with the healthy development of the money and capital markets, then the banking climate would be very promising indeed. The banking system would then likely be more competitive and the allocation of credit would be efficient (to quality borrowers only). The overall financial discipline would be improved. Therefore it is clearly in the foreign banks’ interest for the domestic Chinese banks to become stronger in the short term to ensure a smooth market opening process.

Of great importance is the issue of the prevailing central bank-regulated interest rate, which has an impact on the direction that the new banking environment will

take, that is, a competitive and profitable or a stifled and unprofitable one. Currently the domestic banks offer uniform deposits or lending rates to the customers. This creates a competition-slack environment, and without the ability to attract a large local currency deposit base, although there exists a large amount of excess liquidity in the banking system, the foreign banks will find it difficult to even begin compete in the local currency lending business in the near future. The WTO-driven opening of the banking industry will require a gradual deregulation of the interest rates so as to inject competition into the industry.

The new banking climate in the near term will see the floatation of the domestic banks, in particular the state-owned commercial banks, so as to transform the banking industry into a competitive and independent industry. This will also serve as part of the development of the capital market. The government has already paved the way, for example, by allowing two regional banks to be listed on the stock exchanges, namely the Shenzhen Development Bank and the Shanghai Pudong Development Bank, and these are followed by other commercial banks currently seeking approval to be listed. The government appears increasingly to have come round to the argument that the “rigors of a shareholder structure” could “increase efficiency and forced improved management at the banks”.²⁷

Despite the many teething problems that the domestic banks face, even right through the initial phase of the post-WTO period, there is no fear that foreign

²⁷ Financial Times, 1st October 1999. “Building capital markets: More banks in China to go public.” Straits Times, Singapore Press Holdings Ltd., Singapore.

banks will become a dominant force in the Chinese marketplace. Taking a leaf from the experiences of the foreign banks in the other Asian emerging economies, it would be “politically incorrect” to assert a stronger presence in China as it is in these Asian countries. The host countries still need to protect the domestic banks for vested national interests. This is even more so with China’s current social-political framework. It is practically impossible for the Chinese administration to cede this strategically important industry to foreign control in the foreseeable future. In any case, some foreign banks are likely to face constraints by their corporate global business strategies with regards to the business areas they are likely to enter, particularly in China, which is a new unproven harvest ground to many of them.

In the new banking landscape, particularly in the intermediate term, we are likely to see the eventual formation and nurturing of domestic integrated financial groups that are capable of rivaling the likes of major international players like Citigroup Inc. and the HSBC Holdings. The BOC Group and CITIC Group are the two likely candidates to make it to this level, and paving the way for others. They will compete with the international players in offering their customers a complete and integrated range of financial products and services ranging from traditional products, personal banking facilities, insurance, mutual funds, stock trading, underwriting to advisory services, including value-added services such as risk management expertise, structured solutions, internet-banking and quality services and support to preferred clients. This scenario will help bring China’s

financial services sector to a higher operating level, and hasten its growth prospects to be a credible player in the world financial arena.

Finally, however the discussion goes with regards to the new banking environment in the post-WTO era, ultimately it will still be shaped by China's trade and investment liberalization and overall economic reform program. As highlighted earlier in CHAPTER ONE, China's international trade has expanded steadily with its overall share in world trade rising from less than 1 per cent in 1979 to about 6 per cent in 2003 (Prasad and Rumbaugh, 2004). In addition, its FDI registered almost 4 per cent of the GDP between 1999 and 2003. In 2004 its FDI was valued at USD60.6 billion, 3.32 per cent higher than 2003 (China Knowledge Press, 2005). The advantages of low wages, the growing spending power of the Chinese consumers and the phasing out of trade restrictions between China and most other countries are the main factors that account for the strong interests in this emerging economy. A healthy pace in both trade and investments bides well for the banking system and for all the players involved, that is, the domestic and foreign financial institutions, the customers and the government.

5.6 Concluding remarks

The chapter notes that the Chinese banks need to handle a number of challenges in a post-WTO banking landscape. However, the new climate also offers new and exciting revenue-generating business opportunities. A competitive and vibrant

banking marketplace should ensue. To handle the formidable competitors, the domestic financial institutions, in particular the state-owned commercial banks should consider and work on six recommended strategies. These involve capitalizing on their current strengths, diversifying their products and service offerings, revisiting their market positioning postures, overhauling their current operations and making necessary repairs through a thorough restructuring exercise, implementing a merger and acquisition (M&A) strategy and an alliance strategy with both the domestic and foreign financial institutions, and finally, seriously consider a transformation of their organizational set-ups. On a more positive note, the domestic and foreign banks can both play complimentary rather than competing roles.

Finally, the new banking climate in the near term will see the floatation of the domestic banks, in particular the state-owned commercial banks, so as to transform the banking industry into a competitive and independent one; and the eventual formation and nurturing of domestic integrated financial groups that are capable of rivaling the likes of major international players. However, the new banking environment will ultimately still be shaped by China's trade and investment liberalization and overall economic reform program.

CHAPTER SIX

Conclusion: Does China's banking system still have a long way to go?

The development of a modern, commercially-oriented financial sector, and in particular the banking system, is an important precondition for sustaining China's fast economic development and this will help hasten the government's overall effort to transform the centrally-planned economy into a market-based economy. The thesis has effectively tackled the key areas of the Chinese banking reforms. This concluding chapter ponders over the important question regarding the direction of the banking system in the near future, its nurturing process and eventual reformed state. This is answered by revisiting the approach undertaken by the government in reforming the banking system as well as understanding the position the latter is currently facing, that is, it is now at a "new" crossroads after having experienced two and a half decades of transformation.

6.1 The China approach

The government tackles the financial reform process with a strong dose of "faith" by embracing aspects of western banking theories and practices, and tailoring and flavoring them with "Chinese characteristics" to meet China's political and macroeconomic environment. It declares, and openly through various "politically-correct" channels, of desiring to implement the market-economy objectives of

directing finance towards the efficient utilization of capital although, in practice, incompetence, inertia and politically- driven obstacles exist in the implementation process. This is so as the authorities become directly involved in the execution of these objectives. However, there is no denial that visible efforts were made at adopting a market decision-making process in the financial reform arena. While considerable development has occurred in the capital market in recent years, the financial sector remains dominated by banks. The banking reforms have been undertaken in “measured” tones, along “gradual” implementation phases, guided by pragmatism, and “experimental” in nature compared to the “Big Bang” approach as adopted by the former Soviet Union and Eastern European countries, with its debatable resultant pitfalls.

While there is awareness of the problems involved in the implementation of banking reforms in this transitional economy, there is also recognition that significant milestones have been achieved in the last two and a half decades, and hence, the Chinese scenario is definitely a far cry from its pre-reform days. The financial system has undergone a radical transformation, from a monolithic structure with the central bank serving as a “monobank”, performing both central and general banking, to a formalization of a comprehensive banking structure meeting China’s various needs in the reform era, with a diverse spectrum of state, share-holding and regional commercial banks, policy banks and non-bank financial institutions. There has been ongoing formalization of legislations to regulate the financial sector and the banking industry, in particular with the

enactments of the “Law of the People’s Republic of China on the People’s Bank of China” and the “Commercial Banking Law”, both promulgated in 1995; and the legal recognition of the PBC as the country’s central banker in the same year, and its subsequent restructuring and reorganization in 1998 were credible steps taken to increase its autonomy stature. There was also the unification of the inter-bank market and the commercialization of the four pillar state-owned banks although many factors have continued to keep this latter process from progressing smoothly.

The creation of more products and services, as offered in market economies, has helped increase the savings and investments options for the customers. With the re-entry of foreign financial institutions to the marketplace, which have the business objectives of acquiring a pie of the potential huge market in the near future, the customers and enterprises will be the main beneficiaries as they are now being exposed to more and better product lines and services, particularly in a post-WTO environment. The authorities have gradually allowed selected foreign banks to deal in local currency businesses, as well as foreign funding and ownership in some of the financial institutions, and also listing the latter on both the domestic and overseas stock exchanges. There is also a greater involvement of the Chinese banks in international banking, making the acquisition and transfer of market-economy banking, investment and performance- driven management skills possible, and the Bank of China’s Hong Kong-based subsidiary, that is, BOCHK, is a success story in this area, as highlighted in CHAPTER FIVE. Finally, there is

a WTO-enforced paradigm shift occurring in the banking system. While competition in the marketplace was once prohibited in the pre-reform days, it is currently the buzz word among the various players who are now competing in providing better products and services, better pricing, increasing market-driven customer and territorial coverage, and adding value to their sales, marketing and support services.

6.2 Banking reforms at the “new” crossroads

While the government has indeed taken quite a long and rough journey to lay the necessary ground works for a transformation from a centrally-planned banking system to a market-based one, as highlighted by the various banking milestones, the measures undertaken in the reform process, however, attained overall mixed successes. There is still much ample room for significant improvements as serious problems continue to perpetuate the Chinese banking system.

As discussed at great depth in the preceding chapters, a number of constraints severely limit the policy choices available to decision-makers. These include the political constraints, such as keeping the “de-capitalized” state-owned enterprises afloat with unrecoverable bank credit to avoid unrests deemed detrimental to social and political stability, and shielding the pillar banks from both domestic and foreign competition to avoid financial instability; economic constraints, such as the government’s inability to restructure the state-owned enterprises and re-

capitalize the problematic banks due to its fiscal decline; and institutional constraints, such as the “independent” central bank still operating under the pervading arm of the State Council and being emasculated with party politics, and the state-owned commercial banks still being under the umbrella of the state bureaucratic mechanism and not operating as independent commercial entities as widely publicized to be. These constraints continue to exist with their corresponding negative implications such as the current unhealthy performances of the financial institutions, in particular the four state-owned commercial banks with their questionable profitability levels and declining rates of return on assets, the erosion of the quality of bank assets, inadequate provisioning for the non-performing loans, and the banks’ capital adequacy levels not meeting the 8 per cent Basel standard which the central bank adopted in 1994 and subsequently incorporated into the “Commercial Banking Law” in 1995.

There have been ongoing public observations that the measurements of the efficiency of the financial institutions’ operations are not reflected accurately or not at all in their annual reports, particularly for some of the state-owned commercial banks. This scenario implies that even bank regulators have difficulty in supervising and enforcing strict international accounting standards and also risk management practices among the financial institutions. To do so effectively would surely and fully expose the extent of the banking problems, in particular the levels of the financial intermediaries’ non-performing loans, and may cause a crisis of confidence in the banking system. Thus, banking activities continue to be

supervised “ineffectively”. Moreover, some of the government policies inhibit the development of a commercial credit culture (Lardy, 2003), such as requiring the state-owned commercial banks to finance profitable activities of heavily-indebted, money-losing companies, and the implementation of the credit guarantee system provided by the provincial and municipal governments which is not based on borrowers’ creditworthiness. This ongoing implicitly-guaranteed lending practice continues to be in favor of firms in the state sector instead of the non-state sector even though the latter’s contribution to growths in industrial output and employment surpasses that of the state sector’s (as reiterated in CHAPTER TWO). Lately, there is increasing fraud and corruption among senior management and employees, an issue of discussion in the later part of this concluding chapter. In general, currently there is much agreement among the academia, private and public sectors alike, both locally and overseas, that there is much concentration of financial risk within the banking system, which translates into overall high financial risk for the financial sector. Ultimately the customers, that is, mainly the households and genuine domestic and overseas investors, bear most of the risk

Having experienced the transformation period, the Chinese banking system is now on a different and higher plane. While there is optimism about its future despite the ongoing issues faced by the banking system, it also needs to be cautious about its future endeavors. The government is expected to continue reforming its banking system, as before, albeit now with it reaching a new “crossroads”, in particular with the country having gained WTO-membership

stature. Among the key areas that the government should continue addressing or even increase the level of urgency in its banking reform program, include the continued concurrent reforms in the major “dependencies” areas, such as reforms in the enterprise, budgetary and social security systems, non-performing loans’ work-out, the enforcement of rules and financial disclosures, the separation of business from politics, the implications from competition posed by direct finance, the deregulation of the interests rate structure, and ultimately the process of gaining a credible presence in the international financial arena. These are no small monumental tasks.

Restructuring and privatizing the state-owned enterprises, announced at the Fifteenth Congress of the Chinese Communist Party in September 1997, would help remove the most important source of any potential banking crisis in the Chinese economy. Through improvements in the tax administration, the prospects of achieving fiscal revenue buoyancy would help address the lack of financial resources required to handle the implications from the restructuring and privatization exercise. This would thus reduce the reliance on the banking system and also help mitigate the social problems that may arise when the bankruptcy law is being enforced to allow the smooth exit of non-performing, inefficient and redundant state-owned enterprises. Concurrent and well-structured reforms in the social security system would allow future restructuring of more state-owned enterprises to be implemented without the social unrests the country is currently experiencing. However, with due recognition that while this is no easy task, the

challenge lies in the speed of execution and contents of the reform program. The on-going resolution of the non-performing loans' problems has to be escalated as it is the most important cause of financial weakness of the banking system. While rules are made, they are of negligible use if their implementations cannot be enforced. Thus a legal system with enforcements of checks and balances, financial disclosures and transparency would help eradicate, if not minimize, the pitfalls of the China's banking and financial systems.

A necessary policy to be strictly adhered to is the separation of business from politics. This is required at all levels of government functions and amongst the players in the financial sector. However, this "ideal" state is easier said than done as there is a lack of incentives for commercially viable banking businesses, such as the state-owned commercial banks having to operate and lend in a political environment, the unattractive compensation plans for banking staff, and hence the difficulty of cultivating a commercial credit culture. Thus it is not surprising that fraud and corruptions are on the increase, even among government officials¹, senior executives², and employees³ of the state-owned commercial banks. In recent years a series of graft cases occurred in the state-controlled banks, such as

¹ AP, January 18th 2005. "\$1.4b bank fraud busted in China: Dozens of govt officials, bank employees arrested." Today, MediaCorp Press, MediaCorp Pte. Ltd., Singapore.

² New York Times, March 23rd 2005. "Banking scandals show ugly side of China's expansion." The Straits Times, Singapore Press Holdings Ltd., Singapore.

³ AFP, March 28th 2005. "New scandal in China Bank – Former bank typist arrested for embezzling \$9.6 million." Today, MediaCorp Press, MediaCorp Pte. Ltd., Singapore.

the Bank of China and the China Construction Bank⁴, and thus raised transparency and governance issues. Such occurrences could seriously hinder the necessary development and modernization of the banking and financial systems, which China needs so as to be recognized as a full-fledged economic superpower. Thus there is renewed urgency in the China Banking Regulatory Commission's (CBRC) efforts in cleaning up the banking and financial systems particularly ahead of the WTO rules becoming effective at the end of 2006, that will see the opening of the tightly regulated financial sector to an onslaught of overseas competition. These efforts include making more inspections of the pillar banks, issuing circulars on how to mitigate lending risks and improve management, as well as offering generous rewards to bank employees who expose corruption.⁵ The listing of banking groups in the near future would also help to sever the political ties between the banking system and the government.

In the new millennium, the Chinese financial landscape will be vibrant with both indirect and direct financing playing equally important roles in China's economic development. Such co-existence can also help shape China as an important financial player, and increase its readiness to participate actively and gain credibility in the international financial arena. In addition, there are invaluable lessons learnt from the 1997 Asian Financial Crisis as experienced, in particular, by Indonesia, South Korea and Thailand. While China appears relatively

⁴ AFP, March 23rd 2005. "Beijing launches new anti-graft campaign." The Straits Times, Singapore Press Holdings Ltd., Singapore.

⁵ New York Times, March 31st 2005. "China will reward bank employees who expose graft." The Straits Times, Singapore Press Holdings Ltd., Singapore.

unscathed by the Asian financial contagion, due mainly to the absence of capital account convertibility and having a better performing real economy than any other country in Asia with a trade surplus, steady FDI inflows, sharp rise in the official holdings of foreign exchange reserves, and little short-term borrowings; it, nevertheless, exhibits characteristics similar to the affected countries at the brink of the financial crisis. These include a bank-dominated financial system, weak central bank regulation and supervision of banks, excessive growth of lending, and a large build-up of non-performing loans (Lardy, 1999). Hence China is still vulnerable to any potential banking crisis if these problematic areas are not tackled expeditiously. The population would ultimately bear the cost of the financial institutions' poor lending and investing decisions. Both the financial institutions and enterprises would incur higher cost of raising funds as their access to international capital and equity markets would be made more difficult, as the international independent ratings companies highlight the increasing high risk profiles of these entities and China's foreign currency debt. With the domestic financial institutions being exposed to full competition from their non-state and foreign counterparts in a post-WTO environment, the possibility of full-scale banking collapse is not to be taken too lightly.

Therefore, until the various significant problematic areas are implemented forthrightly and with reasonable ease and efficiency, the financial recovery of the banking system would be unlikely and thus it would also not be difficult to conclude that China's banking system still has a long way to go! Likewise the

financial landscape would not be genuinely market-driven if the interest rate structure is not fully de-regulated to allow both the domestic and foreign financial institutions to offer the most “priced-competitive” products and services to both their depositors and borrowers. Nevertheless, the future outlook for Chinese banking is promising, as China gains economic and political strengths on the world stage. It will also be aided by the roles of the Hong Kong Special Administrative Region (SAR) as an important gateway into international financial intermediary and capital markets, and the vibrant city of Shanghai regaining its pre- communist era’s financial hub status where world class foreign financial institutions flock to these days.

6.3 The contributions of my thesis

The thesis has effectively met its objectives of scrutinizing the layers below the “ice-berg” of banking reforms in China and provided some understanding of the implementations with their accompanied issues and implications. The journey of transformation from a centrally-planned banking system to a market-driven one, covering two and a half decades, was not all fanfare but one laden with obstacles, challenges and surprises. While there are mixed successes in this “gradualistic” transformation process, the analysis helps create awareness of the past legacies of the previous regime which have continued to put brakes to the effective implementation of the reform measures.

The thesis uncovers a number of important areas which have implications on the economy at large, such as the workings of the banking system and its sources and uses of funds, the process of institutional and legislative development, the linkages of banking reforms to monetary policy management, and reforms of the enterprise, social security and the budgetary systems. The relationships among the various key players, such as the governments (at both the central and local levels), financial institutions, the central bank, and the state and non-state enterprises are scrutinized and their shortcomings are illuminated. These analyzes are strengthened by an econometric evaluation of the impact of financial deepening on China's economic growth, and a non-parametric technique which assesses the relative efficiency of the Chinese banks where the empirical results affirming their overall relative inefficiency would have implications on the banks' strategic planning and the deregulation of the banking industry.⁶

A good and crisp understanding of the workings of the central bank leaves one pondering over its independence stature and the issues relating to its "inability" or "unwillingness" in overall financial sector management. While commendable efforts are made at the restructuring of the organization, improving its operational and management processes so that the PBC can serve as a better monetary policy manager, financial supervisor and regulator in this transitional environment, the thesis concludes that they are of insignificance if the PBC is not detached from central and local party politics.

⁶ The footnotes on pages 63 and 111 highlight the influence of small sample sizes on the empirical results in both studies."

The pragmatic analysis on the WTO accession factor allows one to take a peep into the future of the “new” Chinese banking landscape. It provides a timely fast track for China to meet world banking standards and be a potential influential world player. It also helps to change the financial institutions’ mindsets on the workings of a market-economy banking system management, especially in the areas of operational management, customer management and people management. This is effectively highlighted by the various recommended strategies that the domestic financial institutions should work on to operate successfully in a post-WTO banking environment.

Lastly, the thesis serves as a useful guide-book for other transitional economies which are planning to take a similar banking reform route. It provides lessons in many areas such as the importance of the creation and execution of operational banking rules and processes; the process of institutional development in the areas of formulating organizational structures and the restructuring of major institutions; the importance of a functioning legislative infrastructure; the commercialization of financial institutions; the importance of having a continued endeavor in executing efficient supervision, prudential regulation and proper accounting standards; the need for linkages to reforms in other pertinent areas, such as the restructuring and privatization of the state enterprises, the social security and budgetary systems; and finally the preparedness and strategies required to operate in a deregulated post-WTO environment.

Indeed the various major areas covered in this thesis on banking reforms in China are all- encompassing and of current market-place relevance. The thesis is a strong fore-runner for future in-depth analysis of the overall financial sector, such as when the contributions of the various non-bank financial institutions, the equity and capital markets, and informal financing are included in the financial development equation.

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APPENDIX

I. Chronology of Foreign Banking Reforms

Year	Major reforms and events
1979-1981	<ul style="list-style-type: none"> • Representative offices allowed for liaison and market research purposes. No banking businesses allowed. • 21 foreign banks established representative offices in Beijing, two liaison offices in Guangzhou, and one liaison office in Shanghai.
1982	<ul style="list-style-type: none"> • Branches were allowed to be established in Special Economic Zones (SEZs) only, namely in Shenzhen, Zhuhai, Xiamen, Shantou. Allowed to do limited banking businesses. Wholly-owned foreign bank subsidiaries and Sino-foreign joint venture banks were still restricted.
1984	<ul style="list-style-type: none"> • Foreign currency deposits-taking and loans businesses granted to the branches in the SEZs and six banks that remained in Shanghai after 1949. Customers were joint ventures, fully-owned foreign enterprises and Overseas-Chinese concerns. • First joint venture bank established, Xiamen International Bank, by the Fujian provincial branch of the Industrial and Commercial Bank of China, the Fujian Investment Business Company, and the Fan Yin Group Company of Hong Kong.

1985	<ul style="list-style-type: none"> • The enactment of regulations governing the administration of representative offices, foreign banks and joint venture banks in SEZs: <ul style="list-style-type: none"> - “The Regulations of Foreign Financial Institutions’ China Resident Missions of the People’s Bank of China”. - “The Regulations on Administration of Foreign Banks and Joint Venture Banks in Special Economic Zones of 1985”. • Leasing joint ventures allowed to be established. • HSBC, Standard Chartered Bank, Bank of East Asia, OCBC allowed to reactivate operations in Shanghai (they had maintained a presence in China after 1949).
1986	<ul style="list-style-type: none"> • The China International Finance Company was established, a joint venture of the Bank of China, Bank of East Asia, the Security Pacific Bank of California, the Sumitomo Bank and Nomura Securities of Japan.
1989	<ul style="list-style-type: none"> • The Shanghai Municipal Administrative Council announced plans to develop the Putong New Development Zone in Shanghai, to restore Shanghai as China’s main financial center.
1990	<ul style="list-style-type: none"> • 1985’s law promulgated replaced by “The Rules on Administration of Foreign and Joint Venture Financial Institutions in Shanghai of 1990”.

1991	<ul style="list-style-type: none"> • Promulgation of “The Rules on Administration of Establishment of Representative Offices by Foreign Financial Institutions in China”. • Branches were allowed to operate in Shanghai. The pioneer batch of foreign banks setting up branches here included Banque Indosuez (which maintained a liquidation presence in Shanghai since 1949) and HSBC (only the Shanghai branch remained after 1949 and the bank was effectively dormant until allowed into the SEZs in the 1980s).
1992	<ul style="list-style-type: none"> • Foreign banking businesses were allowed in additional 12 cities (mainly coastal): Dalian, Qingdao, Ningbo, Guangzhou, Tianjin, Nanjing, Fuzhou, Shantou, Zhuhai, Qingdao, Xiamen and Shenzhen. • Another joint venture bank established, the International Bank of Paris and Shanghai.
1993	<ul style="list-style-type: none"> • By the end of 1993, representative offices and operational institutions (branches, wholly-owned foreign bank subsidiaries or Sino - foreign joint venture banks) of over 150 foreign banks from about 30 countries were established. Established names included the Citibank, Bank of Tokyo and Westpac Banking Corporation.

1994	<ul style="list-style-type: none"> • Foreign banking businesses allowed in ten more cities: Shijiazhuang, Wuhan, Hefei, Xi'an, Chengdu, Hangzhou, Kunming, Haikou, Chongqing and Suzhou. • China unified its previously two-tier exchange rate system. • “The Regulations on the Administration of the Foreign Financial Institutions in the People’s Republic of China”, replaced the two previous sets of regulations, promulgated in 1985 and 1990 respectively. Other rules implemented included “The Administrative Regulations on the Establishment of Resident Representative Offices in China by the Foreign Financial Institutions by the People’s Bank of China”. • Foreign banks were allowed to participate in foreign exchange swap markets, albeit restricted only to one “leg” of the transaction, meaning they can only sell foreign exchange into the market.
1995	<ul style="list-style-type: none"> • Five foreign banks were allowed to open branches in Beijing: HSBC, Citibank, Bank of Tokyo, Banque Indosuez, Bank of East Asia. • New regulations promulgated included: <ul style="list-style-type: none"> - “The Regulations governing Chinese and Foreign Investment Banks”. - “The Regulations for the establishment of investment funds from abroad”.

1996	<ul style="list-style-type: none"> • Local currency, Renminbi (RMB), businesses allowed for four banks in Shanghai only, with restrictions: Citibank, HSBC, Industrial Bank of Japan, Bank of Tokyo-Mitsubishi. • Foreign banks were allowed to conduct dual-leg foreign exchange transactions on China's inter-bank market in four trial locations.
1997	<ul style="list-style-type: none"> • Sino-US WTO agreement reached which allow foreign banks to conduct RMB business with business organizations and retail business two years and five years, respectively, from the signing of the agreement.
1998	<ul style="list-style-type: none"> • Ten additional banks granted licenses for RMB business. Foreign banks allowed to operate RMB business in Shenzhen.
1999	<ul style="list-style-type: none"> • Removal of restrictions on RMB loans with maturity periods more than four months from the inter-bank market. • By the end of 1999, there were 248 representative offices, 157 branches, six wholly-owned foreign banks, seven joint ventures and seven finance companies. • Foreign banks accounted for 1.5 per cent of the total banking assets and only about RMB 6.7 billion, or 3.7 per cent, of the local currency loans.

2001

- As of November, 30 banks were allowed to conduct limited RMB business in Shanghai and Shenzhen.
- Announced liberalization of the financial sector as China gained membership into the WTO (11th December). The Chinese government agreed to open up the financial sector to foreign financial institutions.
- China agreed to commit to full access in five years from the accession for foreign banks. The contents of liberalization included:
 1. General rights
 - Foreign banks will have the same rights (national treatment) as Chinese banks (timing – at the accession)
 2. Geographic and customer restrictions
 - None for the foreign currency business (timing – at the accession)
 - Foreign banks will be able to conduct local currency business with non-Chinese enterprises in designated area (timing – at the accession)
 - Foreign banks will be able to conduct local currency business with Chinese enterprises in designated area (timing – 11th December, 2003)

	<ul style="list-style-type: none"> - Foreign banks will be able to conduct local currency business with Chinese individuals (timing – 11th December, 2006) - Both geographic and customer restrictions will be removed (timing – 11th December, 2006) <p>3. <u>Cross-border supply of services</u></p> <ul style="list-style-type: none"> - The provision and transfer of financial information, financial data processing, and related software by suppliers of other financial services, as well as advisory, intermediation, and other auxiliary financial services are allowed (timing – at the accession)
2002	<ul style="list-style-type: none"> • Since 1st January, all foreign banks have been allowed to provide foreign currency-related services in China. • The authorities published the Rules for Implementing the Regulations Governing Foreign Financial Institutions in the People's Republic of China (January) – on detailed regulations for implementing the administration of the establishment, registration, scope of business, qualification, supervision, dissolution and liquidation of foreign financial institutions. • Foreign banks were allowed to commence RMB-denominated business in Guangzhou, Zhuhai, Qingdao Nanjing and Wuhan (1st December).

2004	<ul style="list-style-type: none"> • The China Banking Regulatory Commission allowed foreign banks to expand their local currency business in Shenyang and Xian (December).
2005	<ul style="list-style-type: none"> • Foreign banks in Ningbo and Shantou were allowed to expand their local currency business. China went beyond its WTO commitments and opened five other cities – Changchun, Harbin, Lashou, Nanning and Yinchuan, to foreign banks’ local currency businesses (5th December).
2006	<ul style="list-style-type: none"> • As of the end of August, there were already 14 banking organizations registered in China with wholly foreign funded and joint ventures, which had 17 branches, sub-branches and subsidiaries. By the end of September, all 73 foreign banks owned a total of 191 branches. • The total amount of local and foreign currency of the foreign banks was USD102.5 billion, accounting for 1.9 per cent of the total assets of all the financial institutions in the banking industry. Their deposits and loans in foreign currency accounted for 8 per cent and 21 per cent of the total amounts, respectively. • The Chinese government removed regional and other restrictions on foreign banks, treating them the same as Chinese banks, for example, they can now sell insurance products just like domestic banks and the government will apply the same standards covering

	<p>registered capital, operating funds, information disclosure and affiliated deals to both domestic and foreign banks.</p> <ul style="list-style-type: none">• The State Council promulgated the Regulations on Administration of Foreign Invested Banks, signifying that China has fully opened its banking industry to foreign investors (11th November), which came into effect on 11th December, the fifth anniversary of China's accession to the WTO.
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Sources: Reynolds (1982); Zhang and Zheng (1993); Dipchand et al. (1994); Romeyer (1994); Duncan (1995); Lees and Liaw (1996); People's Bank of China (1998); Wong and Liu (2000); Salomon Smith Barney, 21st September 2000. "China & the WTO", Economic & Market Analysis: China; various articles from the Business Times and the Straits Times, Singapore Press Holdings Ltd., Singapore; and websites (<http://en.ce.cn>; <http://www.buyusa.gov>; <http://www.calasia.org>; <http://www.celent.com>; <http://www.chinadaily.com.cn>)

II. DEA Results

A. Detailed Results of Banks' Efficiency

BANK	MODEL A				MODEL B			
	TE	PTE	SE	RTS	TE	PTE	SE	RTS
ICBC	0.9010	1.0000	0.9010	Decreasing	0.8228	1.0000	0.8228	Decreasing
BOC	1.0000	1.0000	1.0000	Constant	1.0000	1.0000	1.0000	Constant
CCB	0.7622	0.9220	0.8266	Decreasing	0.6894	0.8403	0.8204	Decreasing
ABC	0.7320	1.0000	0.7320	Decreasing	0.6060	0.7668	0.7903	Decreasing
BOCOMM	1.0000	1.0000	1.0000	Constant	1.0000	1.0000	1.0000	Constant
CITICIB	1.0000	1.0000	1.0000	Constant	0.9633	1.0000	0.9633	Decreasing
CEB	0.8231	0.8680	0.9483	Decreasing	0.7065	0.7946	0.8891	Decreasing
CMSB	0.9033	0.9571	0.9438	Decreasing	0.7913	0.8973	0.8818	Decreasing
HXB	0.7373	0.7378	0.9994	Increasing	0.6664	0.6704	0.9940	Increasing
CMB	0.8699	0.8699	0.9999	Increasing	0.8085	0.8497	0.9516	Decreasing
SPDB	0.9374	0.9527	0.9839	Decreasing	0.8614	0.9100	0.9465	Decreasing
IB	0.8653	0.8830	0.9800	Decreasing	0.7433	0.7654	0.9711	Decreasing
SZDB	1.0000	1.0000	1.0000	Constant	0.7841	0.8148	0.9623	Decreasing
BOS	0.9041	0.9114	0.9920	Increasing	0.9834	0.9878	0.9955	Increasing
BJCCB	1.0000	1.0000	1.0000	Constant	1.0000	1.0000	1.0000	Constant
TJCCB	0.5363	0.5504	0.9744	Increasing	0.4988	0.5578	0.8942	Increasing
HZCCB	0.8326	0.9133	0.9117	Increasing	0.8765	1.0000	0.8765	Increasing
DGCCB	0.4289	0.4881	0.8786	Increasing	0.3740	0.4525	0.8264	Increasing
NJCCB	0.6227	0.7206	0.8642	Increasing	0.5147	0.6110	0.8424	Increasing
XCCB	0.6161	0.6476	0.9514	Increasing	0.4694	0.5585	0.8405	Increasing
DLCCB	1.0000	1.0000	1.0000	Constant	0.8653	1.0000	0.8653	Increasing
WXCCB	0.6891	0.7453	0.9246	Increasing	0.7052	0.8922	0.7904	Increasing
WHUCB	0.6023	0.6746	0.8928	Increasing	0.4837	0.6310	0.7667	Increasing
NBCB	0.7491	0.7981	0.9387	Increasing	0.6331	0.7318	0.8652	Increasing
JNCCB	1.0000	1.0000	1.0000	Constant	0.7916	0.9086	0.8712	Increasing
CQCB	0.6390	0.7658	0.8344	Increasing	0.4973	0.6856	0.7253	Increasing
QDCCB	1.0000	1.0000	1.0000	Constant	0.8049	1.0000	0.8049	Increasing
ZNJCCB	0.8102	1.0000	0.8102	Increasing	0.5292	1.0000	0.5292	Increasing

B. Sources of Scale Inefficiency

Organizational Status	MODEL A			MODEL B		
	No. of banks with			No. of banks with		
	IRS	CRS	DRS	IRS	CRS	DRS
All banks	13	8	7	15	3	10
State-owned commercial banks	0	1	3	0	1	3
Nation-wide banks	1	2	2	1	1	3
Regional banks	1	1	2	0	0	4
City commercial banks	11	4	0	14	1	0

**C. Relationship between PTE, SE and Banks' Assets and Net Income
(RMB million)**

i. MODEL A

BANKS	TE	PTE	SE	ASSETS	NET INCOME
ICBC	0.9010	1.0000	0.9010	4,776,773.0000	6,749.0000
BOC	1.0000	1.0000	1.0000	3,593,908.0000	10,924.0000
CCB	0.7622	0.9220	0.8266	3,083,195.0000	4,304.0000
ABC	0.7320	1.0000	0.7320	2,976,566.0000	2,897.0000
BOCOMM	1.0000	1.0000	1.0000	766,874.0000	1,227.7000
CITICIB	1.0000	1.0000	1.0000	335,162.6000	1,416.3000
CEB	0.8231	0.8680	0.9483	328,343.1000	271.6000
CMSB	0.9033	0.9571	0.9438	241,671.0000	884.6000
HXB	0.7373	0.7378	0.9994	178,146.5000	705.5000
CMB	0.8699	0.8699	0.9999	371,659.9000	1,734.3000
SPDB	0.9374	0.9527	0.9839	279,300.7000	1,285.3000
IB	0.8653	0.8830	0.9800	178,277.5000	476.5000
SZDB	1.0000	1.0000	1.0000	164,768.4000	386.9000
BOS	0.9041	0.9114	0.9920	168,600.0000	800.0000
BJCCB	1.0000	1.0000	1.0000	135,272.0000	607.8000
TJCCB	0.5363	0.5504	0.9744	44,223.2000	407.0000
HZCCB	0.8326	0.9133	0.9117	32,131.9000	149.7000
DGCCB	0.4289	0.4881	0.8786	24,742.9000	151.9000
NJCCB	0.6227	0.7206	0.8642	23,895.3000	166.0000
XCCB	0.6161	0.6476	0.9514	22,680.4000	81.3000
DLCCB	1.0000	1.0000	1.0000	21,133.0000	100.5000
WXCCB	0.6891	0.7453	0.9246	19,218.9000	26.9000
WHUCB	0.6023	0.6746	0.8928	18,968.6000	52.7000
NBCB	0.7491	0.7981	0.9387	18,965.1000	27.3000
JNCCB	1.0000	1.0000	1.0000	16,738.6000	49.0000
CQCB	0.6390	0.7658	0.8344	14,866.0000	22.0000
QDCCB	1.0000	1.0000	1.0000	14,231.6000	27.0000
ZNJCCB	0.8102	1.0000	0.8102	4,757.3000	12.1000

ii. MODEL B

BANKS	TE	PTE	SE	ASSETS	NET INCOME
ICBC	0.8228	1.0000	0.8228	4,776,773.0000	6,749.0000
BOC	1.0000	1.0000	1.0000	3,593,908.0000	10,924.0000
CCB	0.6894	0.8403	0.8204	3,083,195.0000	4,304.0000
ABC	0.6060	0.7668	0.7903	2,976,566.0000	2,897.0000
BOCOMM	1.0000	1.0000	1.0000	766,874.0000	1,227.7000
CITICIB	0.9633	1.0000	0.9633	335,162.6000	1,416.3000
CEB	0.7065	0.7946	0.8891	328,343.1000	271.6000
CMSB	0.7913	0.8973	0.8818	241,671.0000	884.6000
HXB	0.6664	0.6704	0.9940	178,146.5000	705.5000
CMB	0.8085	0.8497	0.9516	371,659.9000	1,734.3000
SPDB	0.8614	0.9100	0.9465	279,300.7000	1,285.3000
IB	0.7433	0.7654	0.9711	178,277.5000	476.5000
SZDB	0.7841	0.8148	0.9623	164,768.4000	386.9000
BOS	0.9834	0.9878	0.9955	168,600.0000	800.0000
BJCCB	1.0000	1.0000	1.0000	135,272.0000	607.8000
TJCCB	0.4988	0.5578	0.8942	44,223.2000	407.0000
HZCCB	0.8765	1.0000	0.8765	32,131.9000	149.7000
DGCCB	0.3740	0.4525	0.8264	24,742.9000	151.9000
NJCCB	0.5147	0.6110	0.8424	23,895.3000	166.0000
XCCB	0.4694	0.5585	0.8405	22,680.4000	81.3000
DLCCB	0.8653	1.0000	0.8653	21,133.0000	100.5000
WXCCB	0.7052	0.8922	0.7904	19,218.9000	26.9000
WHUCB	0.4837	0.6310	0.7667	18,968.6000	52.7000
NBCB	0.6331	0.7318	0.8652	18,965.1000	27.3000
JNCCB	0.7916	0.9086	0.8712	16,738.6000	49.0000
CQCB	0.4973	0.6856	0.7253	14,866.0000	22.0000
QDCCB	0.8049	1.0000	0.8049	14,231.6000	27.0000
ZNJCCB	0.5292	1.0000	0.5292	4,757.3000	12.1000