

**Monetary Policy in China:  
Institutions, Targets, Instruments and Strategies**

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I remain solely responsible for the analyses, interpretations, and conclusions expressed in this thesis. They do not necessarily represent the views of any of the institutions I currently am or I was associated with in the past.

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Washington, DC (USA)

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## **Abstract**

*China's monetary policy aims to reach two final targets: a paramount economical target (i.e. price stability) and a less important political target (i.e. economic growth). The main actor of monetary policy is the central bank, the People's Bank of China (PBC). But the PBC is a non-independent central bank. The State Council approves the goals of monetary policy. Very limited instrument independence means that interest rates cannot be set at the PBC's discretion and in-sufficient personal independence fails to insulate central bank officials from political influence. Monetary policy in China applies to two sets of monetary policy instruments: (i) instruments of the PBC; and (ii) non-central bank policy instruments. The instruments of the PBC include price-based indirect and quantity-based direct instruments. Non-central bank policy instruments include price and wage controls. The simultaneous usage of all these instruments leads to various distortions that ultimately prevent the interest rate channel of monetary transmission from functioning. Moreover, the strong influences of quantity-based direct instruments and non-central bank policy instruments bring into question the approach of indirect monetary policy in general.*

## **In German**

*Chinas Geldpolitik verfolgt zwei Endziele: Ein alles überragendes wirtschaftliches Ziel (d.h. Preisstabilität) und ein weniger wichtiges politisches Ziel (d.h. Wirtschaftswachstum). Der Hauptakteur der Geldpolitik ist die Zentralbank, die People's Bank of China (PBC). Aber die PBC ist eine nicht-unabhängige Zentralbank. Der Staatsrat genehmigt die Ziele der Geldpolitik, und eine sehr begrenzte Instrumenten-Unabhängigkeit bedeutet, dass die Zinsen nicht vollständig nach dem Ermessen der PBC festgelegt werden können. Die ungenügende personelle Unabhängigkeit der Zentralbank schafft es nicht, die Amtsträger dem politischen Einfluss zu entziehen. Der Geldpolitik in China stehen zwei Arten von geldpolitischen Instrumenten zur Verfügung: (i) Instrumente der PBC; und (ii) Politische nicht-Notenbank Instrumente. Die Instrumente der PBC beinhalten preis-basierte indirekte und quantität-basierte direkte Instrumente. Zu den politischen nicht-Notenbank Instrumenten zählen Preis- und Lohnkontrollen. Die gleichzeitige Nutzung dieser Instrumente führt zu vielerlei Verzerrungen, die letztlich verhindern, dass der Zinskanal des monetären Transmissionsmechanismus funktionieren kann. Darüber hinaus stellen die starken Einflüsse der quantität-basierten direkten Instrumente und der politischen nicht-Notenbank Instrumente den Ansatz der indirekten Geldpolitik im Allgemeinen in Frage.*

## **In Chinese**

中国货币政策的最终目的是达到二个目标：一个首要的经济目标（即物价稳定）和一个次要的政治目标（即经济增长）。货币政策的主要角色是中央银行，即中国人民银行。但中国人民银行是一个非独立的央行。国务院批准货币政策的目标，非常有限的货币政策工具的独立意味着利率不能由中国人民银行自主决定和缺乏个体独立不能使央行官员免受政治的影响。中国的货币政策适用于两套货币政策方针：（一）中国人民银行工具，及（二）非中央银行政策工具。中国人民银行工具包括物价为基础的间接手段和数量为基础的直接手段。非央行政策工具包括物价和工资调控。所有这些工具的并存使用导致了多种歪曲而最终阻碍了货币政策传导的利率渠道的职能。此外，数量为基础的直接手段和非央行政策工具的强烈影响，将间接货币政策的总体方针引入了疑问。

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## List of Abbreviations

ABC	Agricultural Bank of China
ADBC	Agricultural Development Bank of China
AMC	Asset Management Company
BOC	Bank of China
BOCOM	Bank of Communications
BOJ	Bank of Japan
CAR	Capital Adequacy Ratio
CB	Commercial Bank
CBRC	China Banking Regulatory Commission
CCB	China Construction Bank
CDB	China Development Bank
CEFTS	China Foreign Exchange Trading System
CHIBOR	China Interbank Offer Rate
CIC	China Investment Corporation
CIRC	China Insurance Regulatory Commission
CITIC	China International Trust and Investment Corp
CLGFE	Central Leading Group for Finance and Economics
CNAPS	China National Advanced Payment System
CPC	Communist Party of China
CPI	Consumer Price Index
CSRC	China Securities Regulatory Commission
ECB	European Central Bank
EIBC	Export-Import Bank of China
EIS	Electronic Interbank System
ERPT	Exchange Rate Pass Through
EUR	Euro
FDI	Foreign Direct Investment
FED	Federal Reserve System of the United States
ICBC	Industrial and Commercial Bank of China
IMF	International Monetary Fund
IPO	Initial Public Offering
JPY	Japanese Yen
MOF	Ministry of Finance
MPC	Monetary Policy Committee
MR	Minimum Reserve
NDRC	National Development and Reform Commission
NFI	Non-Bank Financial Institution
NIBFC	National Interbank Funding Centre
NPC	National People's Congress
NPL	Non-Performing Loan
ODI	Outward Direct Investment
OMO	Open Market Operation
PBC	People's Bank of China
PICC	People's Insurance Company of China
PPI	Producer Price Index
PRC	People's Republic of China
QDII	Qualified Domestic Institutional Investor
QFII	Qualified Foreign Institutional Investor
RCC	Rural Credit Cooperative
RMB	Renminbi
SAFE	State Administration of Foreign Exchange
SOCB	State-Owned Commercial Bank
SOE	State-Owned Enterprise
TIC	Trust and Investment Company
UNCTAD	United Nations Conference for Trade and Development
USD	United States Dollar
y-o-y	Year-on-Year



## 1 PREFACE

In April 2004, I had the opportunity to participate in a seminar jointly organized by the IMF and the People's Bank of China in Beijing on China's Monetary Policy Transmission Process.<sup>1</sup> At that time, I had already been studying and researching the field of economic policy in China for several years. I considered myself as quite familiar with the Chinese financial system and monetary policy environment, but I was struck again about the very special environment and situation of monetary policy in China and the particular role of the PBC in the monetary policy set-up. During the seminar various officials repeatedly stressed the point that China and its monetary policy is different (from Western monetary policy). This insight comes at the background that many of the decision makers were and increasingly are educated in Western theories and methods of modern central banking.

Xie Ping, at that time the director of the financial stability department, used an anecdote about a meeting between Dai Xianglong, the former governor of the PBC, some other officials including Xie Ping himself and Frederic S. Mishkin to highlight the uniqueness of the Chinese financial system and the problem of theory and practice in the Chinese environment. During that meeting, Xie recalled, Dai said to Mishkin he bought 100 copies of his book "The Economics of Money, Banking and Financial Markets"<sup>2</sup> to distribute it around his senior staff in the central bank. Further, Dai suggested to his senior staff to have the book available at all times to provide guidance in decision-making situations. In fact, according to Xie, Dai had claimed to consult the book every day. As to this prominence of the book, the Chinese central bankers often speak about the "Mishkin framework" when they talk about the framework and the structure of the PBC. With this story, Xie tried to express the fundamental tension of monetary policy in China. On the one hand the decision makers are aware of the long approved and established ideas of the West, on the other hand they are unable to implement them without consideration for the Chinese distinctive characteristic features.

Xie urged the foreign experts present in the seminar then to have this in mind whenever they discuss and judge the Chinese financial situation. Taking this into my own research and assessment, this study attempts to provide a comprehensive view of the Chinese monetary policy, the role of the People's Bank of China (PBC), the Chinese central bank, and its monetary policy approach without losing sight of the special Chinese characteristics. For that reason, *CHAPTER 2* of the study starts with an analysis of the Chinese financial sector, the structure of the central bank system as well as the main government sponsored and private (domestic

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<sup>1</sup> Joint China-IMF Training Program – High Level Seminar – China's Monetary Policy Transmission Process, April 12-13, 2004, Beijing.

<sup>2</sup> The book was sold over 100,000 times in China and is available in English and Chinese.

and foreign) institutions in the financial system. This chapter is concluded by an assessment of the PBC's position in the Chinese financial sector. *CHAPTER 3* expands on the operational structure of the PBC and addresses the question of central bank independence by analysing the three forms of goal, instrument and personal independence. *CHAPTER 4* studies the targets of monetary policy in China, which identifies operating and intermediate targets of the PBC used to pursue the two final targets of price stability and economic growth.

The insight of Chinese specific is also the reason why *CHAPTER 5* argues that the monetary policy in China over the last one and a half decade has not only been conducted and influenced by the PBC, but also by other authorities, mainly the central government. Moreover, non-central bank policy instruments which are not controlled by the central bank but have a direct influence on the final targets of monetary policy are in place. Thus, the description of the instruments of monetary policy in China in this study incorporates both the instruments of the central bank and other non-central bank instruments. The instruments of the central bank are divided into two parts: (i) price-based and (ii) quantity-based monetary policy instruments.

*CHAPTER 6* is the heart of the study, which sheds light on the actually effectiveness of the monetary policy approach anchored around the PBC's operating and intermediate targets in its effort to reach the two final targets of monetary policy in China. The data underlying the work covers the period between 1994 and 2008; yet, sometimes shorter time series had to be taken due to data availability. The policy approach entails a mixture of monetary targeting with monetary aggregates, domestic loan targeting through loan increase targets and exchange rate targeting; it is argued that exchange rate targeting was successful up to 2008 since the authorities were able to sterilize foreign exchange market interventions without the incurrance of major costs. Even though mixed results vis-à-vis the controllability of monetary aggregates and domestic loan targets would suggest that monetary policy may not have been able to reach its final targets, the chapter finds a good track record in achieving the final targets. But beyond the mechanical fulfilment of target rates the chapter also finds that very pro-growth monetary conditions with low real interest rates, expansive money supply and high rates of increase of domestic loans induced vigorous growth, which took its toll with severe developmental drawbacks. While the proportion of extremely poor people in China decreased dramatically, economic growth led to a more and more unequal distribution of wealth across the nation. Likewise, vigorous growth led and still leads to boom and bust developments on the stock and real estate markets with significant negative wealth effects for large parts of the population.

The second half of *CHAPTER 6* focuses its analysis on the monetary policy transmission process, the role of the interest rate and estimates the influence of the quantity-based monetary and non-central bank policy instruments on price-stability in China over the last one and a half decades. Significant impact is identified for those instruments; this confirms the hybrid character of the monetary policy approach. Considering this and a found lack between the official monetary policy approach and the actual recognizable central bank reaction in response to inflationary threats, alternative descriptions of the PBC monetary policy approach are sought. The centre of attention is placed on three “simple rules” that are often associated with monetary policy decision-making: the rules suggested by McCallum (nominal GDP targeting) and Taylor as well as inflation targeting. Then a simply credit-augmented Taylor rule is defined, which, however, does not serve well to describe the past monetary policy of the PBC, but could be used to provide guidance on the required (future) monetary policy stance.

The final *CHAPTER 7* concludes with a highlight of reforms needed for enhancing the monetary policy approach in China by addressing central bank legislation, the internal strategy and the external monetary policy approach of the PBC.

## 2 THE CHINESE FINANCIAL SECTOR

Major milestones in the transformation of the Chinese economic and financial system from a planned to a market economy have been achieved in the past three decades. Initially, there was the decision to depart from the planned financing mechanism anchored around the State Planning Commission towards a market driven mechanism centred on commercial banks. Then new players were introduced on the financial stage and four major state banks, the “Big Four” were split off the PBC to carry out the commercial banking activities: These were initially in 1979 the Agricultural Bank of China and the Bank of China followed by the set-up of the China Construction Bank in 1983. Five years into the reforms the fourth big player appeared on the scene in 1984 with the establishment of the Industrial and Commercial Bank of China (Lardy, 1998: 63; and Yabuki et al., 1999: 171-172). During the early years of the 1980s a full-fledged banking infrastructure and system was developed with commercial banks, non-bank financial institutions and foreign enterprises entering the market. Almost three decades later, a plethora of financial institutions, bank and non-bank, state-owned and private, national and local, are operating within the Chinese financial system, making the system appear much like a developed and Western style financial system. But looking beneath the surface of the financial sector “still exhibits the legacy of a centrally-planned economy in which the government, both at central and local levels, continues to play an instrumental role in credit allocation and pricing of capital” (Hansakul, 2004: 3).

**Table 1: Financial sector opening-up as part of China’s WTO accession in 2001**

Geographical areas	Time when foreign banks were allowed to offer services to:		
	<i>Foreign companies and individuals</i>	<i>Domestic companies</i>	<i>Domestic individuals</i>
Open Shanghai, Shenzhen	1996 (pre-accession)	2003	2006
Open Tianjin, Dalian	2001	2003	2006
Open Guangzhou, Qingdao, Nanjing, Wuhan	2002	2003	2006
Open Jinan, Fuzhou, Chengdu, Chongqing	2003	2003	2006
Open Kunming, Zhuhai, Beijing, Amoy	2004	2004	2006
Open Swatow, Ningbo, Shenyang, Xian	2005	2005	2006
<b>Lift all geographical restrictions</b>	<b>2006</b>	<b>2006</b>	<b>2006</b>

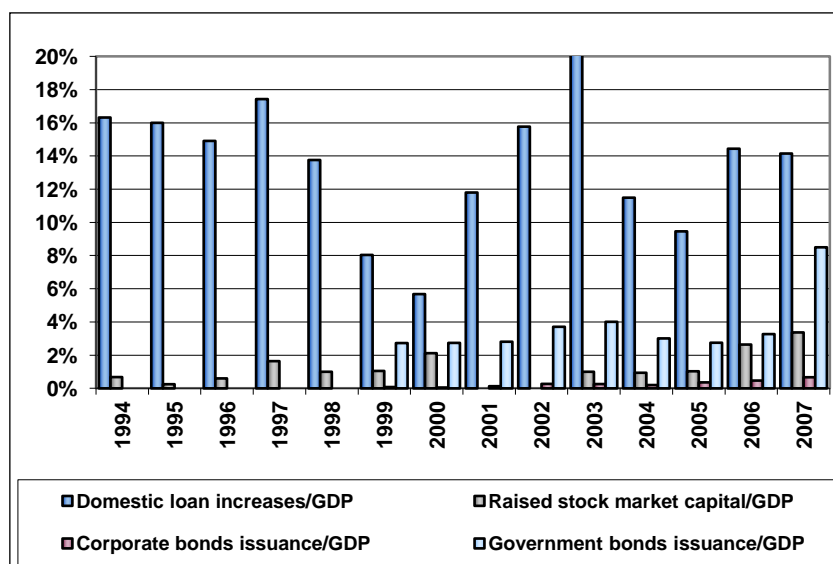
**Source:** García-Herrero et al., 2004: 21-22.

New momentum to reform came from China’s accession to the WTO and its commitments to financial sector opening which led to major changes in the financial sector over the last decade, particularly regarding foreign market entry (García-Herrero et al., 2004: 21-22). With the

signing of the WTO accession papers in 2001, all banks – domestic and foreign – were allowed to officially conduct operations denominated in foreign currency. But this initial opening mainly touched upon the deposit taking business. Then, in 2003 foreign banks got permission to conduct domestic currency businesses with Chinese individuals, but with very strict geographical restrictions. These restrictions were in place until 2006; since then foreign banks have been unrestricted authorised institutions on the domestic currency retail market (Table 1).<sup>3</sup>

Reliance on bank loans: The Chinese financial sector is dominated by bank loan activities (Figure 1), which may indicate some lagging development of alternative financing mechanisms such as corporate bonds. This does not come as a surprise as it requires a long time to develop the necessary infrastructure for a striving corporate bond market (Hansakul, 2006: 2).

**Figure 1: Bank loans dominate the Chinese financial sector, 1994-2007**



**Sources:** Author's own calculation, based on data from [www.chinabond.com.cn](http://www.chinabond.com.cn); CSRC Statistical Information Online Database; PBC Statistics Database Online; Barnett, 2004: 43; and Heilmann, 2001a: 3.

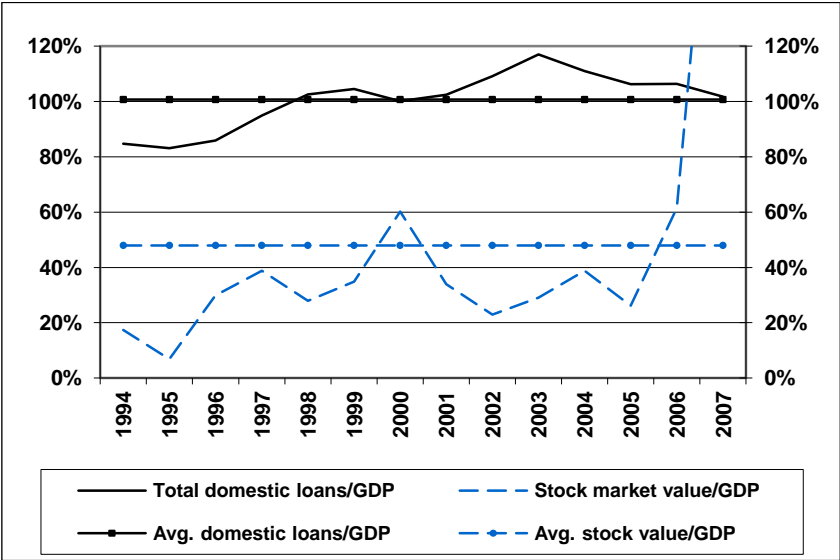
**Notes:** Raised stock market capital/GDP: no data available for 2001 and 2002.  
Government and corporate bonds issuance/GDP: data series start in 1999.

Between 1994 and 2008, the annual increase in domestic credits as percentage of GDP was in double digit values for all but three years (1999, 2000, and 2005) and reached an average 13.5 per cent of GDP. In the same period, annual fund raising through the stock markets

<sup>3</sup> Still, foreign-funded banks in China only account for a fraction of domestic business. There are still many hurdles for foreign banks in way of efficient business operations in China. This is shown in chapter 2.3.1 in the description of the developments of foreign financial institutions in China.

compared to GDP was always in the low single digit regions and on average reached 1.4 per cent of GDP. Likewise, since the first issuance of corporate bonds in September 1999, the average annual issuing volume accounted for a mere 0.3 per cent of GDP between 2000 and 2008. Over the same period, government bond issuance reached average values to GDP of 3.7 per cent. But progress has been made: Figure 1 visualizes the rising trend for the issuances of corporate bonds as a means of financing; the volume in per cent of GDP increased from 0.1 in 1999 to 0.7 in 2007. A similar rising pattern is also shown for stock market issuance to raise capital, which increased from 1.1 per cent of GDP in 1999 to 3.4 per cent in 2007.

**Figure 2: Stock of domestic loans vs. stock market value, per cent of GDP, 1994-2007**



**Sources:** Author’s own calculations, based on data from PBC Statistics Database Online; and World Bank, World Development Indicators.

Alternatively, the dominance of bank loans is seen in the comparison of the total stock of domestic loans to GDP and the total value of traded stocks compared to GDP. Figure 2 shows that the annual stock of domestic loans were always multiples of the annual values of traded stocks throughout the period of 1994 to 2007, except for 2007, when the traded stock market value outpaced domestic credit creation (left-hand side). Looking at average annual data (right-hand side), the stock of domestic loans stood at 101 per cent of GDP between 1994 and 2007 and the value of traded stocks reached 49 per cent of GDP. The resulting ratio of 2.1:1 is significantly higher than in the cases of the Euro area (1.6:1 from 1999 to 2007) and the United States (1.1:1 from 1994 to 2007). And in fact, without the strongly increased value of 2007, where the stock market boomed, the ratio in China would be much higher at 3.1:1 (on stock market developments and its boom and bust cycle, please refer to section 6.2.3.2).



Sequenced reform approach: Undoubtedly, China followed sequential steps in its economic reforms initiated by Deng Xiaoping in 1978: Ever since, the authorities have followed a gradual transition towards a market economy, rather than choosing the “Big Bang” approach of economic reforms (Pyle, 1997; Feltenstein et al., 1998; De Brauw et al., 2002; and So, 2003). On a general level, this sequencing of reforms was characterized by limiting the reform momentum to the rural economy in the early years of the reforms from the end of the 1970s to the beginning of the 1980s (So, 2003: 13). This was subsequently followed by industrial reforms during the latter part of the 1980s with a heavy focus on the development of the then rapidly emerging Township and Village Enterprises<sup>4</sup>, the opening-up of the economy for foreign trade and financial sector reforms. But once the initial focus was widened to the urban and industrial sectors of the economy, the reform approach was also adjusted and the 1980s and 1990s were coined by reform efforts on all fronts and economic sectors. This led to a more and more simultaneous approach to reform across all areas – from industrial policy to trade to the financial sector. In financial sector reforms a special feature was that often de facto changes were introduced early in the process, but the authorities then waited years to formalize such changes. For instance, the People’s Bank of China was freed from its commercial activities and installed as the Chinese central bank as early as 1984, but the central bank law was only adopted in 1995 (Lardy, 1998: 63; Yabuki et al., 1999: 171-172; and Schlotthauer, 2003: 215-216).

The authorities’ overall attention to sequencing becomes obvious by looking at the particular case of the financial sector. Take the timed approach of reforms vis-à-vis the entry of foreign institutions on the Chinese financial market, which was only allowed in 2006 as part of the WTO commitments. Likewise, a sequence in the liberalization of the current and the capital account is recognizable with the current account fully liberalized in the 1990s and a not yet opened capital account. Within the broad area of foreign market entry still a different level of sequencing is recognizable – that is the subsequent introduction of the Qualified Foreign Institutional Investor (QFII) scheme in 2002 and the Qualified Domestic Institutional Investor (QDII) scheme in 2006. It is unclear, however, whether the QDII was more of an adhoc measure back in 2006 to ease capital outflows for releasing pressure of the rising capital inflows, rather than a long planned policy change (see also the discussion in section 5.1.2.3). As for interest rate liberalization, the PBC’s grip over its so-called benchmark interest rate was also reformed in a step by step fashion. The PBC benchmark rates are the lending rate, which is the one-year PBC lending rate, and the central bank lending rate, which is the rediscount rate. Since the start of “market-based interest rate reform” (PBC, 2005c) in 1993, the

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<sup>4</sup> Please refer to Schlotthauer (2003) for an analysis of Township and Village Enterprises in China and their role in the transformation process (Schlotthauer, 2003: 233-260).

PBC lending rate has given commercial banks ever-increasing degrees in setting their interest rates autonomously around the benchmark rate with a significant widening of the freedom in 2004 (see also the discussion in section 5.1.1.1).

But interest rate liberalization does neither start nor end with reforming the PBC benchmarking rates. Much more, in a tightly controlled environment like the Chinese financial system, where central bank interest rates do not transmit through to all maturities and instruments in the financial system, active liberalization across the system is needed. And that is what in 1993 the authorities did with the “market-based interest rate reform” that embarked on specific liberalization, such as: (i) interest rates in the inter-bank markets; (ii) the issuing rate of treasury bonds and policy financial bonds; (iii) the interest rate on foreign currency loans and large-value foreign currency deposits; (iv) and interest rates on long-term large-value RMB negotiated deposits (PBC, 2005c). For an overview of interest rate liberalization in China, please refer to Box 1.

The liberalization efforts towards market-based interest rates were closely linked to the introduction of the necessary financial market infrastructures to make market forces work. To achieve this, the establishments of an interbank market infrastructure with a nationwide bond market as well as domestic stock markets have to be seen as major milestones. A functioning interbank market is of specific importance as the PBC relies on the interbank market to conduct its open market operations of monetary policy, which is a major monetary policy instrument. Stock and bond markets are a necessary source of financing of economic activities and, as shown earlier in this section, there is much scope to tap into these markets as alternative to loan financing. Institutional and infrastructure developments in support of a market-based economy have to be seen as part of the overall sequenced development approach for the Chinese financial sector.

### Box 1: Market-based interest rate reform in China

During the pre-1978 era the interest rate did not play any role as a policy instrument in the macro-economic management of the People's Bank of China. The interest rate was centrally controlled and did not act as a mechanism towards efficient allocation of funds. After 1978 the interest rate came into consideration in order to support the market-based reforms with the need for an indirect, decentralized allocation process. But the interest rate mechanism was largely administered then. Before the reforms were initiated at the end of the 1980s, the PBC controlled and targeted more than 100 different rates. It was thought that this active involvement into the market would allow reducing the high volatility of interest rates in the market during the 1980s. The official starting point of the process of interest rate liberalization was in 1988 with the *Provisional Regulation on Strengthening Interest Rate Administration* issued by the PBC.

In 1992, the 3rd Plenum of the 14th CPC National Congress stated that “the central bank shall promptly adjust benchmark interest rate according to changes in market supply and demand, and allow the commercial banks to flexibly set their own rate on loans and deposits within a specified range.” Several regulations followed, such as the *Program of Deepening Interest Rate Reform during the 9<sup>th</sup> Five-year Plan Period* in 1995. Subsequently, the 3rd plenum of the 16th CPC National Congress in 2002 emphasized that “market-based interest rate reform should be steadily advanced to establish and improve the mechanism for determining interest rate based on market supply and demand. The central bank shall use monetary instruments to influence market interest rate.” And indeed, between 1996 and 2005, the PBC “liberalised, consolidated or abolished” its control over more than 100 types of interest rates, but there are “30 administered interest rates subjected to management by the PBC” left (PBC, 2005c: 17).

Still, important steps have been carried out and good achievements made in the transition to a more market-based economy; the following represents a short summary of the main measures and milestones (Mehran et al., 1996a: 45; PBC Monetary Policy Report, 2002: 13-14; PBC Monetary Policy Report Q1, 2003: 12-14; PBC, 2003e; PBC, 2004g; PBC, 2005c; and Zhou, 2003):

#### *Interbank market, bonds market and negotiable instruments*

- ✓ *January 1986:* The State Council promulgated the “Provisional Regulations of the People's Republic of China on Banks”, which for the first time – but on pilot status – allowed specialized commercial banks to conduct lending business with each other on mutually agreed terms.
- ✓ *March 1990:* The “Provisional Rules on Administration of Inter-bank Lending Business” formulated interbank market rules and imposed upper limits on the interbank lending rate.
- ✓ *January 1995:* All interbank market business was reorganized through the nationwide unified inter-bank market network and the interbank interest rate was established known as the China Interbank Offer Rate (CHIBOR).
- ✓ *June 1996:* The inter-bank money market rate was liberalized, unified and its upper limit abolished to let market supply and demand determine interbank interest rates.
- ✓ *June 1997:* The interbank bond market was established and the rates for both the repurchase and the outright market operations were liberalized based on the PBC issued “Notice on Issues Concerning Inter-bank Bond Repo Transactions”.
- ✓ *September 1998:* The policy financial bonds<sup>5</sup> were successfully issued on the Chinese bond market and the yield was determined by the market.
- ✓ *September/October 1999:* For the first time state bonds were successfully issued on the inter-bank bond market. Large fixed-term deposits by insurance companies became negotiable, i.e. the interest rate of deposits of insurance companies over RMB 30 million RMB with a maturity of more than 5 years could be negotiated between the insurance company and the commercial bank.

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<sup>5</sup> Policy financial bonds are issued by policy banks and are also known as F-bonds; they can be considered as quasi-government papers. During the 1990s, the funds raised through F-bonds were mainly used to support infrastructure projects and develop strategic industries with more than 95 per cent of them issued by the China Development Bank (Seto, 2002: 41).

#### *Reforms with regard to the interest rate bandwidth for lending rates of financial institutions*

- ✓ *March 1999:* The central bank promulgated the *Regulation Governing RMB Interest Rate*, which since then has built the basis for the conduction of interest rate management. The regulation defined the distinction of PBC controlled interest rates and interest rates under the discretion of the commercial banks. Under such an arrangement, the PBC sets a central interest rate – its benchmark lending rate – with a range around this rate. The financial institutions then can set their lending rates within this interest rate range subject to their own discretion.

During that time different interest rate ceilings were applied to loans concerning the ownership and/or the size of the receiving enterprise. Likewise, different financial institutions were subject to different bandwidths, for instance, commercial banks and urban credit cooperatives whose clients were deemed key state-owned enterprises<sup>6</sup> could not exceed the central bank's benchmark rate.

*Upper ceilings* were set to 110 per cent of the benchmark rate to large enterprises and to 130 per cent to small and medium-sized enterprises. Rural credit cooperatives could charge up to 150 per cent of the lending rate. *The lower limits* of the lending rate were set the same for all financial institutions at 90 per cent of the PBC's benchmark rate. Interest rate on loans provided by the three policy banks and other institutions specified by the State Council had to strictly follow the benchmark.

- ✓ *Early 2004:* The *upper limit of the lending rate* for commercial banks and urban credit cooperatives was raised to 170 per cent of the central lending rate set by the PBC. To further promote bank lending in rural areas, the ceiling for rural credit cooperatives was raised to 200 per cent of the benchmark rate. *The lower limit of the lending rate* was set the same for all financial institutions, regardless their origin, and remained at 90 per cent of the PBC's benchmark rate. The new approach ended the practice of charging different rates to enterprise different in ownership and size.
- ✓ *October 2004:* The *upper limit of the lending rate* for commercial banks was abolished, which did not apply to rural and urban credit cooperatives for which the cap increased to 230 per cent. The *lower limit* for all financial institutions remained unchanged at 90 per cent of the benchmark rate. In the words of the PBC, this reform was a "historical milestone" (PBC, 2005c: 17).

#### *Reforms regarding the interest rate bandwidth for deposit rates of financial institutions*

- ✓ *Early reform years of the 1980s:* The authorities granted discretion in setting deposit rates to trust investment companies and rural credit cooperatives on a pilot basis. But in some cases the liberalization created negative consequences. For instance, low performing institutes set higher than the standard rates to attract business, which led to a "massive transfer of deposits and interest rate management irregularities" (PBC, 2005c: 15). As a result the authorities stopped the pilot project in 1990.
- ✓ *The decade of the 1990s:* Over large parts of the 1990s capital adequacy requirements were poorly enforced resulting in a large series of low performing banks. To avoid the problems identified in the pilot program of the 1980s, the decade was coined by a cautious central bank with a tight grip over the interest rates paid on deposits.
- ✓ *October 1999:* Large fixed-term deposits by insurance companies became negotiable and interest rates became determined by the individual parties of the deposit agreement.
- ✓ *February/December 2002:* The national social security fund as well as the provincial social insurance agencies became part in the large fixed-term deposits scheme, introduced in 1999.

At the same time, the PBC started to allow some rural credit cooperatives to set their rates on deposits above the benchmark rate. According to Governor Zhou this was necessary to increase the rural credit cooperatives competitiveness against the postal saving system. Due to favourable policies for the postal saving system, the post attracted huge amounts of savings which could, because of inherent problems of the system, not efficiently be distributed as loans to the farmers. While the credit cooperatives could have undertaken the distribution of funds, they were unable to raise funds. An increased interest rate ceiling on deposits for credit coop-

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<sup>6</sup> According to the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) there are around 500 defined state key enterprises in industrial sectors such as metall, automobile, mechanical, petroleum and power ([www.sasac.gov.cn](http://www.sasac.gov.cn)).

eratives was seen as a solution to this problem.

- ✓ *October 2004:* Interest rates on deposits were allowed to be set below the benchmark rate by all depository financial institutions; it is, however, explicitly not allowed to raise the deposit rates above the benchmark rate.

#### *Reforms regarding foreign exchange interest rate administration*

- ✓ *1994:* The Bank of China was assigned with the task to officially quote the lending and deposit rates of foreign exchange currency in the Chinese financial system.
- ✓ *1996:* Foreign currency business was allowed across commercial banks for which a comprehensive pricing system for foreign currencies was established across the banking sector.
- ✓ *September 2000:* Foreign exchange lending and deposit rates for amounts exceeding USD 3 million were liberalized; since then the interest rates have been negotiable between the banks or financial institutions, whereas the rates for loans or deposits below USD 3 million have remained in the control of the PBC.
- ✓ *March 2002:* Interest rates on foreign currencies for Chinese and foreign financial institutions were unified.
- ✓ *July 2003:* Interest rates on “small-value deposits” in Pound sterling, Swiss franc and the Canadian dollar was liberalized. This effectively enabled commercial banks to independently quote and publish interest rates on deposits of these three currencies. A similar practice for “small-value deposits” in US dollar, the Euro, Hong Kong dollar and the Japanese Yen was specifically excluded.

Interbank market infrastructure: Due to its short-term liquidity balancing function, a well working interbank market is a prerequisite for an efficient usage of monetary policy instruments. China’s interbank money market came into existence at the beginning of the 1980s when it evolved gradually away from a black market style business exchange between commercial banks, which needed short-term funding to manage their short-term liquidity. In the early 1990s, in an effort to formalize the interbank market set-up, the PBC issued more detailed rules and guidelines to clarify the role and the mechanism of the market; these were the *PBC Administrative Measures on the Inter-bank Market in 1990* and the *Regulations on Credit Funding Act in 1994*. Then, a more comprehensive reform was carried out in 1996 with the focus on mainly two points: (i) The definition of the requirements and qualifications for the participation on the interbank market, for instance all participants have to conduct trading through an electronic trading system, and (ii) the limitation of the term of maturity and amount of the trading businesses in the market.

Key development and features of the interbank money and bond market are:

- The PBC is the Chinese authority that is ultimately responsible for the management of the interbank money market. Under the PBC, the China Foreign Exchange Trading System (CEFTS), also known as National Interbank Funding Centre (NIBFC), manages the market operations via the provision of an electronic trading system, which since March 2003 has been the RMB Electronic Trading System (ET03). The system provides trading, broker and floor management features. The market trading infrastructure is suitable for all

transactions on the interbank market from RMB lending operations to bond market transactions to foreign currency trading. The electronic trading system is open from Monday to Friday and closed during holidays; trading times for RMB lending and bond market transactions are from 9.00 to 11.00 and 14.00 to 16.30, for foreign currency trading longer hours exist, which vary depending on spot or forwarding trades (China Money, 2002; China Money, 2004a; and Liu, 2004).

- In the initial stages of the interbank market development only commercial banks could participate on the market. Since the late 1990s, the PBC has extended the market to not only more participants but also to new players. Licensed members can be commercial banks and non-bank financial institutions like finance companies, insurance companies, securities companies, securities investment funds and branches of foreign banks. As a result, licensed members on the interbank market increased from 55 in 1996 to 1564 members in 2008 covering a wide range of institutions from the “Big Four” state-owned commercial banks to policy banks to foreign-funded banks and automobile financing companies (PBC Monetary Policy Report, 2002: 21-22; China Money, 2004b; and China Money, 2008).
- The time horizon for interbank funding between financial institutions can be either in the range of overnight to seven days or from seven days to four months. Policy banks, insurance and security companies can only participate in less than seven days operations. Each period has a maximum trading amount, which is determined by the PBC and that cannot be exceeded. The CFETS processes and publishes the China Interbank Offer Rate, also known as CHIBOR (Seto, 2002: 18ff; PBC Monetary Policy Report, 2002: 21-22; Xie, 2002: 30; China Money, 2004a).
- The clearing system for book transfers is managed via the NIBFC and owned by the PBC. Transactions are cleared on a direct settlement basis with a speed of T+0 for overnight to 7-day maturities and T+1 for all other businesses. Until 2005, the nationwide interbank system that handled the clearing and settlement of interbank operations was based on the electronic interbank system (EIS). The EIS started operation in 1991 in seven cities and expanded to a network of over 2000 units at the county level across China. Starting in 2000 work was initiated on the China National Advanced Payment System (CNAPS) with pilot implementations thereafter. The CNAPS was originally scheduled for nationwide application in 2005, but the EIS was only fully replaced in 2007 (Seto, 2002: 33; China Money, 2004a; and PBC, 2008d).
- Bond trading businesses especially repurchase trading started as early as in 1991. But until 1997 the business was solely conducted on the stock exchanges. To prevent the flood of huge amounts of commercial bank funds into the stock markets the authorities decided in 1997 to establish bond market trading within the interbank market infrastruc-

ture. Nowadays, the institutional framework enables bond trading between commercial banks and other participants on the interbank market as well as between the commercial banks and the central bank. Open market operations with the central bank are done via either outright market operations, i.e. buying or selling of bonds, or they are conducted via repurchase operations (Dai, 2002; PBC Monetary Policy Report 2002: 21-22; and Xie, 2002: 31-32).

It took its time until the overall goal of establishing an interbank money market to enable financial market participants to balance their short-term liquidity had been achieved. Just after the PBC's efforts to formalize the interbank market in 1996, short-term trading (i.e. from overnight to seven days) accounted for only 30 per cent of the total interbank market turnover. Only in 2000 a major shift took place in the time structure of interbank market trading. Then short-term trading accounted for the majority of trading operations with more than 70 per cent. Ever since, short-term operations have been the dominant form of interbank trading (Author's own calculations, based on data from PBC Statistics Database Online). This indicates that the money market matured in a way that it developed towards a mechanism for the short-term management of liquidity positions of the financial system rather than for raising long-term funds for economic development. This is an important pre-condition to make the PBC's monetary policy work. For instance, the monetary policy instrument of the minimum reserve requirement can only be used efficiently when the commercial banks have the chance to adjust their liquidity positions on dedicated short-term markets, i.e. the interbank money market (Li et al., 2002: 8; and Xie, 2002: 30).

Stock market infrastructure:<sup>7</sup> To provide an additional fund-raising source for domestic companies and to generally encourage restructuring of state-owned companies two domestic stock exchanges were established in 1990 in Shanghai and Shenzhen. But from the outset, structures in both stock markets have been divided and fragmented in order to minimize foreign influence over Chinese companies and insulate China from volatile international capital markets. To this end, up until now, different kinds of shares have been traded on both exchanges: A-shares in Shanghai and Shenzhen have been for domestic individuals only and so-called Qualified Foreign Institutional Investors (QFII) since 2002. B-shares have been for foreign currency trading operations of international and since 2001 also domestic investors. Apart from a few truly foreign stock market listings, there is the additional category of H-shares, which comprises stocks of those companies listed on the Hong Kong Stock Exchange (Heilmann, 2001a: 9-11; Schlotthauer, 2003: 234-239; and Hansakul, 2004: 6-7).

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<sup>7</sup> The development of the stock market is analyzed in more detail in section 6.2.3.2.

Many state-owned companies are listed on the two domestic stock markets with only a partial floating of their shares. In these cases, the ratio of publicly traded stocks to all stocks is usually around 20 per cent, which leaves the listed former state companies under de facto state control. Additionally, limited transparency in the stock market at large, widespread usage of insider knowledge to manipulate prices and often government backed protection of unveiled irregularities do their bits to the overall concern about corporate governance in China. In fact, “due to the predominant policy-driven nature of China's stock markets, government announcements tend to have a heavy influence on share prices, provoking the criticism that these prices are not truly reflective of corporate fundamentals” (Hansakul, 2004: 7). It is due to these reasons that the stock market as alternative source of financing is underutilized, somewhat fostering the position of bank loans in the financial system (please see discussion around Figure 1 and Figure 2 above).

Corporate bond market: The development of the market lags farther behind, making bond issuances almost insignificant for financing corporate activities, that has been a fact recognizable ever since their inception in 1999. A distinction is made between two main categories of long-term corporate bonds: Corporate bonds issued from SOEs and those from all other companies. Additionally, corporations in China can issue short-term financing bills. The authorities have used a gradual approach to liberalizing and enhancing the corporate bond market since 2000, for instance by streamlining the rules governing the market and the transfer of regulatory responsibilities to the China Banking and Regulatory Commission (CBRC), which was established in 2003. But companies wanting to issue bonds nowadays also need to prove sound governance and internal structures as well as sufficient repayment capacity. Still, corporate bond issuances only account for a fraction of GDP (less than 1 per cent, see Figure 1); in comparison, in the United States corporate bonds account for more than 100 per cent of GDP and in Japan and the EU just below that. The alternative short-term financing bills are much more utilized in China, mainly due to the easier application procedures and the fact that these bills require no guarantees; this, however, makes trading operations of financing bills relatively risky. Still, outstanding financing bills stood at almost double the value of corporate bonds in 2007 and reached RMB 335 billion (EIU, 2009b: 81-96).

Crossing the river by feeling the stones: The late father of the Chinese economic reforms, Deng Xiaoping, reportedly mentioned that in its economic modernization program China would be “crossing the river by feeling the stones.”<sup>8</sup> The reforms shortly described in this

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<sup>8</sup> It is also reported that the quote originally comes from a speech by Chen Yun, a former senior official in the government of the People's Republic of China (China Radio International: Cross the River by Feeling the Stones).



chapter truly live up to the meaning of this quote. It was shown that reform efforts were often first tested on pilot basis – for instance initially applied to a limited number of companies or individuals, at first restricted to a geographical area or entity, or sometimes reforms were just not formalized until actually proven successful. All this allowed the authorities to “feel” the impact of the reforms and if necessary to adjust, scale back or strengthen their implementation. While this allowed and still allows far more flexibility in the reform process and the chance for lessons learnt, the strategy of “crossing the river by feeling the stones” does imply the non-existence of a strict and enforceable multi-year master plan for the financial sector. This in turn implies that there is a danger of a reform agenda in favour of adhoc and piecemeal activities. The authorities face the difficult task of trying to combine both the “feeling” part of Deng Xiaoping’s reform approach with the need for central enforcement of the agenda to allow national synergies of well-sequenced reform activities.

Every important policy decision about the financial sector needs the approval of the Communist Party of China (CPC) through the Central Leading Group for Finance and Economics (CLGFE). The CLGFE ultimately authorizes “important and strategic policy decisions affecting the financial sector” (EIU, 2009b: 10). The CLGFE reports to the standing Committee of the party, and its members are from the highest political calibres. Presently, Chinese President Hu Jintao chairs over the 12-member CLGFE and Premier Wen Jiabao is its deputy chairman (EIU, 2006b: 9). Long-term policy and reform directions are given through the Financial Work Conference, which is convened every five years, the next conference is to be expected by 2012. Initially, the party established the Finance Working Committee in 1998, which was tasked to “propagating the party’s ideology in the sector and overseeing all appointments” (EIU, 2003: 5). Gradually, eventually these functions were also taken over by the CLGFE in conjunction with the CPC (and the Finance Working Committee was broken up). To ensure the presence of the party and mainstreaming of its thinking, all financial sector players – i.e. the central bank, regulatory organs, commercial banks, insurance companies and non-bank financial institutions – are obliged to have CPC party committees operating within them.<sup>9</sup> Private institutions are no exception to this rule. In fact, up to four of 13 board seats at each bank can be occupied by party committee members (EIU, 2009b: 10; and Heilmann, 2004a: 3-14).

The party committees exert significant influences within the institutions they are operating in, as they usually are in the position to nominate senior managers and to decide upon their benefits and responsibilities. Most importantly, from the view of the CPC this enables the

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<sup>9</sup> In the case of the PBC, the CPC committee is fully enshrined into the institution’s operations through the Education Department of the CPC Committee (see Table 3).

party to establish reporting lines and dependencies across functions and mixes institutional, party and state hierarchy with the sole aim to secure the party's influence and ideology. But recent examples have also shown that the party is aware of the negative perception of these measures in a market environment. For instance, the Economist Intelligence Unit reports of a McKinsey study that shows that "boards [of financial institutions] are increasingly active and that the party has started to seek a more positive role by taking more closely into account the sensitivities of outside investors and by seeking more outsiders as managers. Some financial institutions and the CSRC are hiring (chief) officers overseas – positions that were previously appointed by the party's Organisation Department" (EIU, 2009b: 10). Still, this can only be seen as the beginning of a long process that ultimately has to lead to very limited responsibilities of party committees to ensure consideration of financial business needs rather than party ideologies.

## **2.1 The People's Bank of China (PBC)**

### **2.1.1 Cornerstones in the establishment of the PBC as the central bank of China**

The People's Bank of China (中国人民银行) was founded on 1 December 1948 as a result of a merger of the Huabei Bank, the Beihai Bank and of the Xibei Peasant Bank. During the Mao Era from the foundation of the People's Republic of China (PRC) to the end of the 1970s the People's Bank of China acted as a mono- or unibank as it was common in former socialist and communist countries. The PBC was in charge for both commercial and central bank business activities. During the Cultural Revolution (1966 to 1976) the PBC lost many of its functions due to the chaotic institutional settings through this time. But shortly after the end of the "ten lost years" (Chang, 2003) the PBC regained the sole responsibility over the issuance of the currency and the control of the money supply (ChinaOnline, 2000).

In the wake of the reforms initiated by Deng Xiaoping at the end of the 1970s, the State Council step by step turned over the responsibilities of a central bank to the PBC and decided to cut off its commercial activities. In 1979 the Agricultural Bank of China (ABC) and the Bank of China (BOC) were segregated from the PBC and with this any agricultural or foreign exchange related commercial businesses transferred to the newly created state-owned commercial banks. These steps were retroactively justified by the authorities only in 1983 when the plan to transfer PBC's commercial activities to specialized banks was officially announced. In this year, the China Construction Bank (CCB) was set up as third major state-owned commercial bank. In the same year, the PBC reached its formal independence from the Ministry of Finance (MOF) and became a functional ministry of the State Council (Wei, 1999: 38). The plan to split off the commercial activities was completed in 1984, when with the establishment of the Industrial and Commercial Bank of China (ICBC) the fourth big

state-owned commercial bank entered the scene. Thus, five years after Deng's opening-up, the PBC was freed from its commercial activities and four major state-owned commercial banks – the “Big Four” – had been created to resume the commercial tasks, which previously were under the responsibility of the PBC (Lardy, 1998: 63; Yabuki et al., 1999: 171-172; and Schlotthauer, 2003: 215-216).

But it took another 10 years for the Chinese authorities to establish a legal underpinning for these developments. Only in March 1995 the Law of the People's Republic of China on the People's Bank of China was finally adopted (PBC, 1995a)<sup>10</sup> and then amended in 2003 (PBC, 2003b)<sup>11</sup>. Herein the PBC was defined as central bank for the first time and the role in the organizational system of the PRC was specified. Meanwhile the problem of non-performing loans increased substantially as a result of furthermore excessive policy lending, i.e. credit lending for policy and not for profit purposes. Therefore the authorities decided in 1994 to establish three policy banks to disburden the commercial banks from policy lending (Lardy, 1998: 63; Mehran et al., 1996b: 18; PBC, 1995b; and Yabuki, 1999: 171-172). The three policy banks established were the China Development Bank (CDB), the Agricultural Development Bank of China (ADBC) and the Export-Import Bank of China (EIBC).

### **2.1.2 The operational set-up of the PBC**

The PBC is managed by a team of senior leaders of whom one is the governor, five are deputy governors, three are assistant governors and one is the chief disciplinary officer. Table 2 shows the ten members of the management team, their education and previous senior positions that they held. All but one, Su Ning, have a strong past record of positions and careers either in the PBC or in the PBC subordinated State Administration of Foreign Exchange (SAFE) in charge of the management of foreign exchange transactions and Chinese capital controls. SAFE acts under the leadership of the PBC, but at the same time it also maintains direct links to the State Council as it is a “deputy-ministerial-level state administration”<sup>12</sup>. This means that there could be issues that SAFE is reporting solely to the PBC and other matters which SAFE is only and directly reporting to the State Council. To bring SAFE's policies in line with the prevalent policy stance of the PBC, the head of SAFE is recruited within the Deputy Governors of the PBC. Hu Xiaolian currently holds the double position of Deputy Governor of the PBC and Administrator of SAFE (Table 2).

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<sup>10</sup> Law of the People's Republic of China on the People's Bank of China, adopted at the Third Session of the Standing Committee of the Eighth National People's Congress, promulgated by Decree No. 46 of the President of the People's Republic of China on 18 March 1995, and effective the same day.

<sup>11</sup> Amended in accordance with the “Decision to Amend the Law of the People's Republic of China on the People's Bank of China” made at the Sixth Meeting of the Standing Committee of the Tenth National People's Congress on 27 December 2003.

<sup>12</sup> This information is taken from the SAFE website on the SAFE Organization Structure.

**Table 2: Management team of the PBC, 2008**

Position	Name	Education	Previous Senior Positions
Governor	Zhou Xiaochuan (周小川)	Ph.D. in Economic Systems Engineering	<ul style="list-style-type: none"> <li>• Chairman, China Securities Regulatory Commission</li> <li>• President, China Construction Bank</li> <li>• Deputy Governor, PBC</li> <li>• Administrator, SAFE</li> <li>• Vice President, Bank of China</li> <li>• Assistant Minister, Ministry of Foreign Trade &amp; Economic Cooperation</li> </ul>
Deputy Governor	Su Ning (苏宁)	Senior Engineer	<ul style="list-style-type: none"> <li>• Vice-Chairman, Budget Committee of the Standing Committee of the National People's Congress (NPC)</li> <li>• Director-General, Macro-economic Research Department, Research Office of the State Council</li> </ul>
Deputy Governor & Administrator of SAFE	Hu Xiaolian (胡晓炼)	Master's degree in Economics, Research Fellow	<ul style="list-style-type: none"> <li>• Assistant Governor, PBC</li> <li>• Deputy Administrator, SAFE</li> </ul>
Deputy Governor	Liu Shiyu (刘士余)	Master's degree in Management Engineering	<ul style="list-style-type: none"> <li>• Assistant Governor, PBC</li> <li>• Director-General, General Administration Department of PBC</li> <li>• Director-General and Deputy Director-General, Banking Supervision Department II of PBC</li> </ul>
Deputy Governor	Ma Delun (马德伦)	Bachelor's degree, Research Fellow	<ul style="list-style-type: none"> <li>• Assistant Governor, PBC</li> <li>• Deputy President, PBC Shanghai Head Office</li> <li>• Deputy Administrator, SAFE</li> <li>• Director-General, Accounting and Treasury Department of PBC</li> </ul>
Deputy Governor	Yi Gang (易纲)	PhD in Economics	<ul style="list-style-type: none"> <li>• Assistant Governor, PBC</li> <li>• Director-General, Monetary Policy Department of PBC</li> <li>• Professor, PhD Advisor of Economics, Peking University</li> </ul>
Assistant Governor	Du Jinfu (杜金富)	PhD in Economics	<ul style="list-style-type: none"> <li>• Director-General, Human Resource Department of PBC</li> <li>• Director-General, Department of Statistics of PBC</li> </ul>
Assistant Governor	Li Dongrong (李东荣)	PhD in Economics	<ul style="list-style-type: none"> <li>• Deputy Administrator, SAFE</li> </ul>
Assistant Governor	Guo Qingping (郭庆平)	Bachelor's degree, Senior Economist	<ul style="list-style-type: none"> <li>• President, Tianjin Branch of PBC</li> <li>• Director-General, Internal Auditing Department of PBC</li> <li>• Director-General, Asset Disposal Office of PBC</li> </ul>
Chief Disciplinary Officer	Wang Hongzhang (王洪章)	Master's degree in Economics, Chinese Certified Accountant	<ul style="list-style-type: none"> <li>• President, Chengdu Branch of PBC</li> <li>• President, Sichuan Branch of SAFE</li> <li>• Director-General, Internal Auditing Department of PBC</li> </ul>

**Source:** Author's own compilation, based on data from the PBC Website, Management Team.

The Governor Zhou Xiaochuan and Deputy Governor Su Ning have mixed histories of both appointments in politics and the central bank. Deputy Governor Yi Gang is the only member with an educational background outside of China and very strong academic economic credentials. He received his PhD in Economics from University of Illinois, USA, and before he joined the PBC he was a professor of economics at Peking University. The exact responsibili-

ties of each of the members in the management are unclear. The PBC follows the so-called “governor responsibility system under which the governor supervises the overall work of the PBC while the deputy governors provide assistance to the governor to fulfil his or her responsibility” (PBC Website, About PBC, Management and Organizational Structure). The final authority of all matters within the PBC is always with the Governor.

The PBC runs 18 functional departments covering four main areas (Table 3): *a) Management and administration*, which includes: General Administration Department, Legal Affairs Department, Accounting and Treasury Department, Technology Department, Internal Auditing Department, Personnel Department, and Education Department of the CPC Committee<sup>13</sup>; *b) Formulation of monetary policy operations*, which covers: Monetary Policy Department, Financial Market Department, Financial Stability Bureau, State Treasury Bureau, International Department, and Research Bureau; *c) Financial and monetary information*, which spans: Financial Survey and Statistics Department, and Credit Information System Bureau; and *d) Financial and monetary transactions*, which comprises: Payment System Department, Currency, Gold and Silver Bureau, Anti-Money Laundering Bureau. Director-Generals head departments and in fact many of the present Deputy Governors were in charge of departments in their previous capacities. For instance, Yi Gang was the former Director-General of the Monetary Policy Department, a fact that highlights his particular influence on the monetary policy formulation in the present PBC set-up.

Under the overall responsibility of the PBC Governor (“governor responsibility system”) and the support of the management team, the combined actions of six particular departments have to be seen as main part of the decision process of monetary policy operations in China, described in the area of “b) Formulation of monetary policy operations” in Table 3.

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<sup>13</sup> Article 19 of the Company Law of the PRC states: “An organization of the Chinese Communist Party shall, according to the Charter of the Chinese Communist Party, be established in the company to carry out activities of the Chinese Communist Party. And the company shall provide necessary conditions for the activities of the Chinese Communist Party” (Law Bridge, 2005). This does also apply to the financial sector and the institutions governing it. As a result, all financial sector players, i.e. the central bank, regulatory organs, commercial banks, insurance companies and non-bank financial institutions, are obliged to have CPC party committees operating within them, and private institutions are no exception to this rule (EIU, 2009b: 10; and Heilmann, 2004a: 3-14).

**Table 3: Functional departments of the PBC, 2008**

<b>Name</b>	<b>Main Responsibilities</b>
<b>a) Management and administration</b>	
General Administration Department	<ul style="list-style-type: none"> <li>• Coordinate the daily work of PBC head office</li> <li>• Control, process and archive PBC documentation</li> <li>• Organize press briefings</li> </ul>
Legal Affairs Department	<ul style="list-style-type: none"> <li>• Draft financial laws and regulations related to the PBC functions</li> <li>• Provide financial legal advisory services and handle financial legal affairs</li> <li>• Promote public awareness of financial laws</li> <li>• Provide legal support for the PBC's participation in international financial activities</li> </ul>
Accounting and Treasury Department	<ul style="list-style-type: none"> <li>• Manage the PBC financial accounting system; prepare budget and final accounts including the balance sheet and income statement</li> <li>• Manage the financial affairs and government procurement projects of the PBC</li> <li>• Analyze bank sector accounting systems and improve them with other authorities</li> </ul>
Technology Department	<ul style="list-style-type: none"> <li>• Plan, design, construct and maintain the PBC office systems</li> <li>• Establish technical standards for bank card business and coordinate nation-wide bank card roll-out</li> </ul>
Internal Auditing Department	<ul style="list-style-type: none"> <li>• Conduct internal audits of the PBC based on established rules and procedures</li> <li>• Monitor PBC staff compliance with financial policies, laws and regulations</li> <li>• Conduct separation audits on senior managers leaving the PBC</li> </ul>
Personnel Department	<ul style="list-style-type: none"> <li>• Formulate and implement HR policies of the PBC</li> <li>• Administer the social insurance program of the PBC</li> </ul>
Education Department of the CPC Committee	<ul style="list-style-type: none"> <li>• Publicize and promote CPC doctrines and principles in the PBC</li> <li>• Enhance staff morale and the construction of spiritual civilization</li> </ul>
<b>b) Formulation of monetary policy operations</b>	
Monetary Policy Department	<ul style="list-style-type: none"> <li>• Set intermediate targets of monetary policy and advise on how to achieve them</li> <li>• Design and implement monetary policy instruments</li> <li>• Formulate interest rate and exchange rate policy</li> <li>• Propose policies and implement rules for open market operations</li> <li>• Provide secretarial support to the Monetary Policy Committee</li> </ul>
Financial Market Department	<ul style="list-style-type: none"> <li>• Formulate rules on the interbank lending, bond and foreign exchange markets</li> <li>• Review and approve applications for participation in interbank markets</li> <li>• Assess impact of money market instruments on monetary policy and stability</li> <li>• Formulate credit policy considering economic, social and industrial policies</li> </ul>
Financial Stability Bureau	<ul style="list-style-type: none"> <li>• In cooperation with relevant other authorities, provide analyses of the banking, securities and insurance industry</li> <li>• Assess systemic risks in the financial sector; propose and implement remedies</li> <li>• Monitor institutions that receive lender-of-last-resort support from the PBC and support liquidation or restructuring of those</li> </ul>
State Treasury Bureau	<ul style="list-style-type: none"> <li>• Manage the state treasury</li> <li>• Maintain single treasury accounts for fiscal departments</li> <li>• Conduct analysis on revenues and expenditures of the treasury fund</li> <li>• Act as fiscal agent to issue and redeem treasury bonds and other government securities to financial institutions</li> </ul>
International Department	<ul style="list-style-type: none"> <li>• Manage contacts and cooperation with international financial organizations, foreign central banks, and financial authorities in Hong Kong, Macao and Taiwan</li> <li>• Coordinate the opening of the domestic financial industry in accordance with the existing WTO commitments</li> </ul>
Research Bureau	<ul style="list-style-type: none"> <li>• Provide economic analyses of relevance for monetary policy formulation</li> <li>• Study financial laws, rules and regulations and monitor their compliance</li> <li>• Provide research on China's industrial policies and sector development strategies</li> </ul>

Name (ctd.)	Main Responsibilities (ctd.)
<b>c) Financial and monetary information</b>	
Financial Survey and Statistics Department	<ul style="list-style-type: none"> <li>• Develop a financial sector statistical system</li> <li>• Collect, analyze and publish monetary, financial and economic data</li> <li>• Establish balance sheets and income statements of domestic financial institutions</li> </ul>
Credit Information System Bureau	<ul style="list-style-type: none"> <li>• Manage the credit information system</li> <li>• Institutionalize credit information collection and relevant risk evaluation standards</li> <li>• Promote public understanding of financial risks and knowledge</li> </ul>
<b>d) Financial and monetary transactions</b>	
Payment System Department	<ul style="list-style-type: none"> <li>• Design the financial accounting system of the PBC and construct the China National Advanced Payment System;</li> <li>• Establish payment and settlement rules, especially for industry innovations</li> </ul>
Currency, Gold and Silver Bureau	<ul style="list-style-type: none"> <li>• Draft administrative rules for the issuance of currency, combat counterfeits</li> <li>• Manage production, storage, transportation, renewal and disposal of notes / coins</li> <li>• Manage China's gold reserves</li> </ul>
Anti-Money Laundering Bureau	<ul style="list-style-type: none"> <li>• Manage anti-money laundering activities in China, cooperate internationally</li> <li>• Establish anti-money laundering rules and policies for financial institutions</li> <li>• Assist in the investigation into money-laundering related criminal cases</li> <li>• Ensure proper preventive arrangements for the PBC systems</li> </ul>

**Source:** Author's own compilation, based on data from the PBC Website, About PBC, Management and Organizational Structure.

The influence of the Monetary Policy Department is greatest as it is responsible for the intermediate targets of monetary policy in China, the monetary policy instruments and the interest rate and exchange rate policy. Other key departments are the Financial Market Department and the Financial Stability Bureau. The International Department plays an important role as it is in charge of surveilling WTO commitments and their implementation vis-à-vis the financial sector. The Research Bureau provides decision-support analyses. The work of the State Treasury Bureau has also to be seen, in the view of the author, as an important factor for the actual monetary policy in China as it acts as “fiscal agent to issue and redeem treasury bonds and other government securities to financial institutions” (PBC Website, About PBC, Management and Organizational Structure). The volume of these transactions has an immediate impact on the volumes of monetary base and aggregates, and thereby it crucially influences the monetary stance in China.

Then there is the Monetary Policy Committee (中国人民银行货币政策委员会), but the question is what role this committee plays, if dedicated departments analyze and advise the management team and the final authority of all matters within the PBC is always with the Governor. The establishment of the Monetary Policy Committee (MPC) is enshrined into the Law on the People's Bank of China. In articles 11 (original law of 1995) and 12 (amended law of 2003) it states: “The People's Bank of China is to establish a monetary policy committee, whose responsibilities, composition and working procedures shall be prescribed by the State Council and reported to the Standing Committee of the National People's Congress for re-

cord” (PBC, 1995b; and PBC, 2003b). The MPC was established and institutionalized in July 1997 and consists of 13 members representing important players and decision-makers in the Chinese economy. Apart from the PBC, the represented institutions in the MPC are the State Council, the National Development and Reform Commission, the Ministry of Finance, the National Bureau of Statistics, the State Administration of Foreign Exchange, the China Banking Regulatory Commission, the China Securities Regulatory Commission, the China Insurance Regulatory Commission, the China Banking Association and the Chinese Academy of Social Sciences, a think-tank (Patra et al., 2007: 19-20; and PBC Website, Monetary Policy Committee, Member List). As for the central bank members, there is a small group of members of the PBC management team who are simultaneously serving as members of the MPC, indicating their importance in the formulation of monetary policy. Those serving both in the management team and the Monetary Policy Committee are Governor Zhou as well as the Deputy Governors Su and Yi.

The present member structure of the monetary policy committee is aiming at a strengthening of the central bank’s original functions of formulating and implementing monetary policy in accordance with and for the whole economy. This move towards a more comprehensive and strategic orientation was demanded by the NPC and came into effect in the middle of the year 2003. The ideal to take purely macroeconomic considerations into account is reflected in the appointment of one delegate of the China Association of Banks rather than representatives of the state-owned commercial banks, the “Big Four”. In the earlier versions of the MPC commercial banks had direct representation in meetings. This clearly reflects the desire to decrease the commercial banks influence on the monetary policy authority. With this, the authorities hoped to improve the committee’s advisory role, promote the coordination between monetary and other macroeconomic policies and incorporate and consider the whole economy’s needs in the conduction of the monetary policy (PBC, 2003i).

In their regular meetings – once per quarter – the members discuss the present monetary policy stance, i.e. the state of money supply, interest rate, exchange rate, open market operations, reserves requirements, rediscount rates and the coordination of monetary policy with other macroeconomic policies. The outcome, together with a future monetary policy outlook, is published on the central bank’s website after each regular meeting of the committee.<sup>14</sup> Through its meetings, the committee plays an advisory role with regards to the future monetary policy stance; the committee has no decision-making authority (Patra et al., 2007: 13; and PBC, 2003i). A main reason for the limitation in decision-making of the MPC comes

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<sup>14</sup> MPC meeting records are published after each meeting on the PBC Website.



from the fact that still one delegate represents the voice of commercial banks. Since monetary policy influences the commercial banks' activities and profitability, the decision-making process over the monetary policy has to be independent from the commercial banking sector. Yet, the move to one representative for the whole industry might be the first step towards a MPC as governing body of monetary policy in China in future.

The current consultative nature of the Monetary Policy Committee is also mirrored in the fact that only three members out of 13 are representatives of the PBC. As the name of the committee implies a strong relation to monetary policy one might expect a higher ratio of monetary policy experts from within the PBC. As a comparison, the Governing Council of the ECB consists of six permanent members of the ECB and the presidents of the national central banks of the Euro area; there are no other formal outside representatives. Therefore, having a membership structure with a majority of external experts in the MPC, the committee of course cannot act as a decision-making body within the monetary policy framework of the PBC. And the fact that the MPC meets only once a quarter shows and underlines its purely advice-giving function. Considering the time lags that monetary policy is facing, and to ensure a timely adjustment of its monetary policy stance in reaction to changes in the economic environment, more frequent meetings have to be established. As a benchmark, the governing body of the European Central Bank, the Governing Council, meets twice a month.

So where is the decision-making authority finally deciding on the monetary policy stance, for instance a change of the interest rate? The MPC is not the authority to decide that. The final authority to decide on behalf of the PBC is the Governor of the PBC, presently Zhou Xiaochuan. But even if the PBC found its view on a certain issue, in most of its decisions it is fully dependent on the State Council. This will be discussed in detail in chapter 3 with the analysis of goal, instrument and personal independence of monetary policy in China. It will be shown that the state council is the ultimate decision-making authority in the financial sector in China.

### **2.1.3 Structure of the central bank system in China**

Before 1998, the PBC branch system was structured along the administrative set-up of the government at both the provincial and county level. Thus, the PBC consisted of around 30 provincial branches (Wei, 1999: 41; and PBC, 2000b). In the 1980s these branches were governed through the model of "dual leadership" (Wei, 1999: 41), i.e. the responsibility for the surveillance and guidance of the bank operations was with the PBC, while personnel issues were under the oversight of the provincial governments (White et al., 1988: 35-36). To cut the influence of the local governments, the central government authorized the PBC headquarter

to appoint local branch managers. This decision, however, had limited influence only, and Wei stated in 1999 referring to the time after 1988: “local governments can still influence the personnel decisions” (Wei, 1999: 41). The main problem of this influence of local governments became obvious through the then still existing credit plan system. For each quarter, the PBC provincial branch got a credit allotment for their provision to local banks. However, due to their involvement into personnel questions of the branches, the local governments were able to exert pressure to extend the planned credit ceilings beyond the allotted quota. This ultimately led to inflationary pressure, as the “overruns subsequently had to be accommodated by base money creation” (Tseng et al., 1994: 17). To add on the direct influence of the local governments on the PBC and its branches, the local authorities also exerted indirect influence through the local banks. This was possible as “the local banks represent[ed] the local governments” (Ma, 1996: 148). But local governments push for local instead of central government interests. Thus, local authorities provided “enormous incentives” to allocate more than the original allotted credits. Ma calls this the “central-local monetary game” with the central bank on the one hand and the local banks on the other hand (Ma, 1996: 148).

To face all these problems of the local authorities’ actions jeopardizing central government policies on the monetary side, the mid-1990s saw an overhauling process of the banking system starting with the aim of transforming the “PBC into a kind of Chinese Federal Reserve” (Cho, 1999: 62). One milestone in the process was the adoption of the central bank law in 1995 in which the PBC role is defined in a similar way as the Federal Reserve’s role is defined in the United States Federal Reserve Act.<sup>15</sup> While the exact wordings of the objectives of the central banks differ, both central banks have the goal not only to maintain price-stability but also to promote economic growth.<sup>16</sup> The Fed’s aim for moderate long-term interest rates is not mirrored, however, in the PBC law, probably due to the insight that interest rates in China are yet to be completely liberalized.

One of the reasons for these similarities is in the fact that Alan Greenspan, the former Fed chairman, was involved into the design of the central bank system in China in his role as a consultant to the PBC (EIU, 1997: 19). Another reason for analogousness is in the importance laid on the “Mishkin framework”, which itself is based on the United States Federal Re-

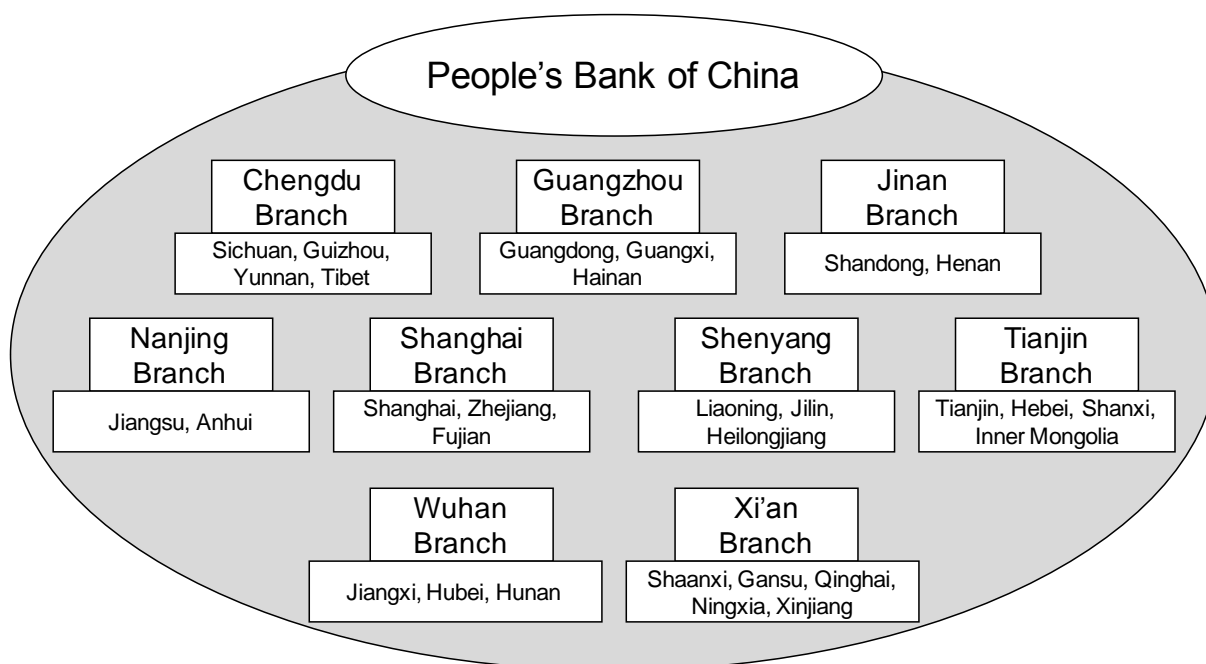
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<sup>15</sup> The text of the Federal Reserve Act is accessible at <http://www.federalreserve.gov/generalinfo/fract/>.

<sup>16</sup> The *Law of the People's Republic of China on the People's Bank of China* says in Article 3: “The aim of monetary policies shall be to maintain the stability of the value of the currency and thereby promote economic growth”. The *Federal Reserve Act* states in Section 2A: “The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.” The goal of “maximum employment” is usually equated with the aim to achieve economic growth.

serve System. Thus, through further structural refinements in 1998 and 1999, the design of the PBC came ever closer to the description of Mishkin’s “Structure of the Federal Reserve System” (Mishkin, 1986: 320ff). This can be particularly recognized in the establishment of nine trans-provincial PBC branches in 1998 instead of the then 31 existing provincial branches. The step towards trans-provincial branches was thought to “break the traditionally strong relationship between local governments and the local PBC branches” (Cho, 1999: 51) through the localization of the decision-making power within the PBC head office. The nine new branches were chosen to be located in Chengdu, Guangzhou, Jinan, Nanjing, Shanghai, Shenyang, Tianjin, Wuhan, and Xian (Figure 3). The new system was established during a transition period of two months (November and December) in 1998. On the basis of the principle of “establishment before dismantlement” the new system operationally started from 1 January 1999 (PBC, 2000b). Since then, the nine trans-provincial branches have covered 29 provinces, autonomous regions and/or central government administered cities. The former Beijing and Chongqing branches were replaced by the PBC Business Management Office in Beijing and the PBC Chongqing Business Management Office in Chongqing. Thus, the administration and the management of financial institutions in Beijing and Chongqing fall under the control of the head office (PBC, 2000b; and EIU, 2003: 1).

**Figure 3: The network of trans-provincial central bank branches in China**



**Sources:** Author’s own visualization, based on information from PBC, 2000b; and EIU, 2003: 1.

The 1999 structural reform of the PBC system did not only introduce the nine trans-provincial branches, but brought along various other structural changes. For instance, financial supervi-

sory offices were established in the jurisdictions of those provinces/autonomous regions where there was no branch anymore. These offices, however, were put under direct leadership of the branch they were associated to. Their main responsibility was set at “on-spot examinations of banks and non-bank financial institutions” and to investigate cases of law violations with the provision of recommendations to deal with them. Likewise, central sub-branches were established in the capitals of those provinces/autonomous regions left without a PBC branch. The set of tasks is similar to the tasks of the branches, but on a smaller level and scale. The main difference is that the central sub-branches mainly report to their respective provincial branches, while the branches report to the head office. Eventually, to reinforce foreign exchange management, the reform strengthened the departments of foreign exchange administration through the appointment of one vice-president responsible for foreign exchange administration. This position has been established in every branch and every central sub-branch (PBC, 2000b).

In 1999, each of the nine trans-provincial branches consisted of 17 functional offices and one additional business management office. The functional offices were divided into offices that perform supervisory functions and offices of service functions, such as cash issuances, state treasury management and the compilation of financial statistics. The business management office was established to carry out the original central bank functions in representation of the head office. The Almanac of China’s Finance and Banking of 1999 summarizes the responsibilities of the then newly established PBC branches. Accordingly, the branches in the areas of their respective jurisdiction pursue the following main tasks (PBC, 2000b; and EIU, 2003: 1-3):

- Carry out relevant central laws, regulations and policies and investigate violations;
- Exercise overall supervision and regulation of financial institutions (not covering securities and insurance companies, supervision of which was transferred to the China Securities Regulatory Commission and the China Insurance Regulatory Commission);
- Analyze the economic and financial situation, propose measures to prevent and counteract financial risks;
- Manage the PBC’s funds, deposit reserves, rediscount, interest rate, cash and any other measures of the PBC credit policy;
- Manage and coordinate the state treasury, payment settlements, cash injections, and compile financial statistics;
- Coordinate and administrate foreign exchange and foreign debts;
- Regulate personnel policies and staff training as well as the financial accounting of the supervisory offices and the central sub-branches;
- Pursue internal audits in financial supervisory offices and central sub-branches.

The reform was supported by trans-regional exchanges of PBC staff members within the PBC branch network. For instance, all nine presidents of the then newly established branches were appointed in a way to ensure regional exchange. Additionally, on average two-thirds of the Chiefs of the divisions of the branches were employed on regional exchange basis. As for the heads of the supervisory offices all of them were recruited trans-regionally (PBC, 2000b) to minimize the risk that branch managers are faced with external pressure and conflict of interest situations from their personal relationships within their working sphere.

While the structure of the trans-provincial PBC branches of 1999 still is in place (EIU, 2009: 1-4), a major change has taken place over the last decade. In 1999, the reform refocused the capacities of the PBC system for strengthening bank supervision and bank risk assessment on the central and the local levels. In fact, ever since its inception as the Chinese central bank, the PBC has been an integral part of the Chinese banking and financial supervisory system. This was confirmed with the central bank law of 1995, which assigned the task to pursue banking supervision activities in Article 30: “The People's Bank of China shall, in accordance with law, exercise supervision and control over banking institutions and their business operations to maintain the legitimate, stable and sound operation of the banking industry” (PBC, 1995b). But with the introduction of the China Banking Regulatory Commission (CBRC) in 2003 these technical capacities were transferred from the PBC to the CBRC. To manifest this change and to reinforce the PBC’s status as the central bank purely in charge of monetary policy, the central bank law was amended subsequently in the same year and Article 30 was deleted from the law’s text (EIU, 2009b: 3-4; and PBC, 2003b). In the words of a PBC official after the promulgation of the new central bank law: “After the [...] financial supervision function being removed, its [The PBC] main function is to formulate and execute monetary policy [...] to better bring in its ability in macroeconomic management and financial risk prevention and mitigation” (PBC, 2003f).<sup>17</sup>

## **2.2 Financial regulation and supervision**

In the course of the 1980s, the PBC was set-up as a central bank with comprehensive responsibilities for supervision of the emerging securities, insurance and banking industries and markets. As a good sign of institutional development during the transition phase, however, the central bank was subsequently freed from these tasks with the introduction of dedicated institutions, distinguished by market segments. During the 1990s, more and more supervisory tasks were split off the PBC. Thus, the PBC was increasingly aligned with the prac-

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<sup>17</sup> Quote translated from the following original statement in Chinese (PBC, 2003f): “人民银行不再履行上述金融监管职责后，其职能主要是制定和执行货币政策，不断完善有关金融机构的运行规则，更好地发挥作为中央银行在宏观调控和防范与化解金融风险中的作用。”

tices of Western style central banks, where financial supervision is often, at least partly, independent from central bank operations. Starting in the 1980s, a new model arose away from several supervision institutions to one integrated institution, which covers all financial areas such as securities, insurance and banking (Westrup, 2005: 17-18). Norway started this approach in 1986, and countries like Denmark, Sweden and Germany followed subsequently. Nevertheless, the example of the German Bundesbank shows that often central banks still assume parts of the supervision process due to the historical close relationship between the central bank and the commercial banks (Bundesbank, 2007).

Similar considerations and discussions were pursued in China. Ever-growing linkages between different areas of the financial sector are often regarded as the main argument for single-institution supervision across industries. The State Council in China decided on a compromise in January 2008 and established two levels of supervision linked through the PBC as member of both levels (EIU, 2008a: 15; and EIU, 2009b: 11): First level supervision is therefore provided between the Ministry of Finance (MOF), the National Development and Reform Commission (NDRC) and the PBC. Second level supervision with an operational and technical focus is provided through the three established commissions for securities, insurance and banking regulation, linked together by the PBC as anchor institution for supervision across industries.

The historical role of the MOF was to serve as the tax collecting authority and to fund government expenditures with it. If necessary, the MOF would also revert to the PBC, a subsidiary of the MOF during Mao Zedong's time, to finance government spending through printing money. Then the role changed with the reform period, which started in 1978. In the initial reform years the MOF owned the state-owned commercial banks and policy banks, which were established to free the PBC from commercial activities and to control the problem of non-performing loans (NPL). Over the years MOF shareholdings were reduced in these institutions and transferred to other state or sometimes private entities. Still the MOF is very influential in bank restructuring operations as the natural bearer of restructuring cost. Today, the MOF is responsible to manage the fiscal affairs of China and also the Chinese authority to raise funds from capital markets through the issuance of government bonds and is the keeper of the national budget. It is partly in control regarding foreign borrowing and exchange transaction, for which it has shared responsibility together with the PBC (and the State Administration of Foreign Exchange, a PBC subsidiary). Any laws and regulations of the PBC regarding foreign exchange transactions and accounting need approval through the MOF. Likewise, companies wishing to pursue bond listings on foreign markets need MOF approval (EIU, 2003: 2-3; EIU, 2006b: 4-5; and EIU, 2009b: 6). The NDRC is responsible for formulat-

ing and implementing China's industrial policies and is a particularly powerful institution on the ministerial level. It was created in 2003 by the merger of the State Planning and Development Commission and the State Office for Economic Restructuring (EIU, 2006c: 45).

In the wake of the global financial and economic crisis, it became very clear that substantial lacks in financial regulation and supervision were among the main drivers of the build-up of the international crisis (UNCTAD, 2009). It is therefore to be hoped and expected that major changes in the international and national regulation and supervision of financial institutions will take place over the coming years. Certainly, it is not yet clear how this will affect the institutional set-up of financial supervision in China. China, just the same as much of Asia, was affected mostly by the economic crisis (crashing foreign demand for exports) triggered by the financial crisis rather than through the financial crisis as such (Economist, 2009a). This did not only come as a result of more prudence in financial investments of Chinese and Asian banks, but it largely reflected the fact that Chinese financial institutions were and still are not fully integrated into the world financial markets due to persistent capital controls in China (see section 5.1.2.3).

The presently prevalent financial supervision in China rests – from a technical point of view – on three distinct institutions, the China Securities Regulatory Commission (CSRC), the China Insurance Regulatory Commission (CIRC) and the China Banking Regulatory Commission (CBRC). The next section will provide short summaries of the tasks, responsibilities and functions of these three supervisory bodies.

### **2.2.1 China Securities Regulatory Commission (CSRC)**

The China Securities Regulatory Commission (中国证券监督管理委员会) was established in December 1992 together with the Securities Committee of the State Council in charge of controlling emerging capital markets. The importance of the issue was subject to fierce political debates only solved when six years later, in 1998, the CSRC was installed as a ministerial rank institution under the supervision of the State Council. Several scandals in and around the securities markets in the 1990s made it an urgent importance to establish one strong regulatory body for this market. Still, and as part of the mixed supervision of first and second level interventions, some overlapped responsibilities with the PBC and the NDRC exist, particularly in the area of further development of the securities markets (ChinaOnline, 2001a; EIU, 2004: 5-6; and EIU, 2009b: 8-9).

Transparency and the lack of it is a hot issue on Chinese securities markets. Despite many efforts of the CSRC to increase market standards and controls with better rules and regula-

tions for the market and the practice of naming and shaming violators did neither reduce corporate fraud nor market manipulation. Legal enforcement is weak on the market and insider trading is widespread. Government authorities play their unique role in this, as government policies often have direct effects on stock market prices. For instance, the Economist Intelligence Unit reports of studies of the Beijing-based Chinese financial magazine “Caijing”, which show that “large movements in China’s stock markets generally correlate with turns in government policies. Although the intention behind such policy moves is benign – such as to ‘save’ the market, or to ‘unlock’ state-owned shares – these actions are unhelpful to the development of a sound investment culture” (EIU, 2009b: 9).

There is a long road ahead for institutional development of the Chinese securities market and the CSRC is responsible for fulfilling some of the required tasks. Among them, the CSRC has the following main responsibilities (ChinaOnline, 2001a; and CSRC, 2008):

- Create policies and plan laws and regulations for the Chinese securities and futures markets;
- Administer the issuance, trading, custody and settlement of equity shares, convertible bonds and securities investment funds and endorse the listing of corporate bonds;
- Manage and supervise the listing, trading and settlement of Chinese domestic futures contracts;
- Investigating and penalizing activities violating securities and futures laws and regulations;
- Supervise investment firms, settlement institutions, investment consulting institutions, fund custody institutions, intermediary agencies and their respective staff and draft applicable rules regarding qualification and training<sup>18</sup>;
- Supervise the listing of Chinese companies on foreign securities markets;
- Supervise the establishment of Chinese securities institutions in foreign countries;
- Supervise the establishment of foreign securities organizations on the Chinese domestic market;
- Manage and control information disclosure processes related to securities and futures and watch over statistics and means of information management for securities and futures markets.

### **2.2.2 China Insurance Regulatory Commission (CIRC)**

The China Insurance Regulatory Commission (中国保险监督管理委员会) is an institution under the administration of the State Council founded in 1998, when insurance supervision

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<sup>18</sup> This was the last task transferred over from the PBC in 1997. Since then, the CSRC has been the sole supervisory authority of the Chinese securities industry (PBC, 2003f).



tasks were transferred from the PBC to the CIRC. At the same time the regulatory powers of the People's Insurance Company of China (PICC) were given to the CIRC; the PICC was the very influential former monopolist in the Chinese insurance market. Initially, the CIRC was established at the vice-ministerial level, but was promoted to ministerial rank in 2003 (ChinaOnline, 2001b; CIRC, 2008; and EIU, 2009b: 9-10).

The urgent initial task of the CIRC after its establishment in 1998 was to consolidate the Chinese insurance market, to close down unauthorized insurers and reduce inefficient redundancies of state-owned insurers. It advanced reforms of existing domestic insurers to implement more profit-driven policies and management practices and to develop popular products. To achieve reductions in operating cost and promote capital security, the CIRC promoted cooperations between domestic insurers and domestic commercial banks (ChinaOnline, 2001b).

Today, the CIRC supervises and develops the Chinese commercial insurance market, covering nonlife and life insurers, reinsurers and insurance intermediaries. The institution pursues the following main tasks (ChinaOnline, 2001b; CIRC, 2008; EIU, 2009b: 9-10; and PBC, 2003f):

- Formulate and implement insurance industry related laws and regulations;
- Approve domestic and foreign insurance companies' business operations for the Chinese market;
- Supervise insurance business operations in the interests of policy holders;
- Promote the development of the insurance market, maintain its order and accomplish fair competition;
- Supervise insurance companies, their subsidies and their respective staff and draft applicable rules regarding qualification and training;
- Establish insurance industry information technology standards and set up a risk evaluation and early-warning system to minimize insurance risks.

### **2.2.3 China Banking Regulatory Commission (CBRC)**

The China Banking Regulatory Commission (中国银行业监督管理委员会) was established in April 2003, when it took over the banking supervision tasks from the PBC. With it the new institution inherited some of the local structures and offices from the PBC previously in charge of banking supervision in the name of the central bank. As a result, only months after its inception the CBRC had a province-wide presence with 36 established office all around China. The Law on Banking Supervision was promulgated later that year and came into ef-

fect in February 2004 (CBRC, 2003)<sup>19</sup>. With its amendments in 2006<sup>20</sup>, which became effective on 01 January 2007, the Law empowers the “CBRC to supervise all banks regardless of their geographic scope, shareholding structure (including financial conglomerates) or business model, and non-bank financial institutions” (EIU, 2009b: 6).

Since its inception the CBRC places its focus on the areas of risk and credit management as well as asset quality and sound internal governance mechanisms. Traditionally, the CBRC supports steady development of the banking sector over hasty expansion. The institution is empowered to punish institutions and individuals in case of violating banking rules and regulations. For instance, it can dismiss top managers and impose fines on institutions (EIU, 2004: 4-5; and EIU, 2009b: 6-8). Today, the institution supervises commercial banks, policy banks, also non-bank financial institutions such as asset management corporations, trust and investment companies and other finance and leasing companies; it is, too, in charge for supervising foreign-funded banks in China. To do so the CBRC developed into a mega-institution with more than 20,000 staff members around the country and in charge of supervising more than 8,000 institutions with almost 3 million staff (China Internet Information Centre, 2003a; EIU, 2004: 4-5; and EIU, 2009b: 6-8). The institution pursues the following specific tasks (China Internet Information Centre, 2003a; and CBRC, 2008a):

- Draft laws and administrative regulations for the purpose of banking supervision;
- Define the business scope and endorse the establishment, amendments and termination of banking institutions and their subsidiaries;
- Supervise banking institutions and if necessary penalize according to law;
- Evaluate the senior managers’ qualifications of banking institutions;
- Collect statistics and compile reports about the banking institutions in China and make them publicly available;
- Consult and assist the Ministry of Finance and the People’s Bank of China in banking and financial emergencies;
- Administer and set up routine management systems for the supervisory boards of major state-owned banking institutions.

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<sup>19</sup> Law of the People’s Republic of China on Banking Regulation and Supervision, adopted at the Sixth Session of the Standing Committee of the Tenth National People’s Congress, promulgated by Decree No. 11 of the President of the People’s Republic on 27 December 2003, and effective on 01 February 2004.

<sup>20</sup> Amended in accordance with the “Decision to Make Amendments to the Law of the People’s Republic of China on Banking Regulation and Supervision, adopted at the Twenty-Fourth Session of the Standing Committee of the Tenth National People’s Congress on 31 October 2006, and effective on 01 January 2007 (CBRC, 2006a).

### 2.3 Financial institutions

A full-fledged financial system with commercial banks, non-bank financial institutions and foreign enterprises entering the market started to evolve in the beginning of the 1980s. Today, the Chinese financial system boasts all kinds of financial institutions making it appear much like a developed and Western style financial sector. Table 4 summarizes the prevalent types of institutions in China and shows the quantity of entities within each grouping.<sup>21</sup>

**Table 4: Categories of financial institutions operating in China, 2007**

<b>Banking corporations</b>	<b>Number</b>
State-owned commercial banks*	4
Joint-stock commercial banks*	13
City commercial banks*	124
Policy banks*	3
Fully foreign-owned financial institutions*	29
Urban credit co-operatives	42
Rural credit co-operatives and rural commercial banks	8,509
Postal savings bank	1
<b>Non-bank financial institutions</b>	
Asset management companies*	4
Trust and investment companies*	54
Finance companies and financial leasing companies	94

**Source:** Almanac of China's Finance and Banking 2008.

**Note:** Institutions marked with asterisk are subject to brief descriptions later in this chapter.

For commercial banking activities, there are the “Big Four” state-owned commercial banks, the 13 “joint-stock” or “shareholding” commercial banks and the 124 city commercial banks. Strictly speaking those of the “Big Four” which are nowadays listed on a stock exchange do also fall under the category of “shareholding” commercial banks, but traditionally are they listed separately as purely state-owned and this is still widely the practice today (EIU, 2008a: 29). The label “joint-stock” or “shareholding” is usually applied to those banks that were re-structured early in the reform process and those which are only indirectly state-owned (e.g. through the holding of another state-owned enterprise). The three policy banks were initially created to take over policy lending of commercial banking activities. Foreign institutions increasingly try to enter the market, but despite China's WTO entry still face many obstacles. Then, there are a huge number of local rural credit co-operatives and rural commercial banks, which total far more than 8,000 institutes. Eventually, there is the group of non-bank financial institutions, such as the four asset management companies, the trust and invest-

<sup>21</sup> This analysis does not include the informal financing, which has a role to play particularly in financing the private sector. For an analysis on the role of the informal financial sector, please refer to Tsai (2002).

ment companies with 54 institutions as well as other finance companies and financial leasing companies with 94 institutes.

### 2.3.1 Banking corporations

State-owned commercial banks: From their inception, the newly established state-owned commercial banks (SOCBs) dominated the Chinese financial sector with market shares in deposits of around 80 per cent over the course of the 1980s (Schlotthauer, 2003: 218). But market shares of the “Big Four” decreased considerably: Being still at around 75 per cent during the latter half of the 1990s (EIU, 1999a: 19), the shares decreased to 58.7 per cent in 2003 and 51.0 per cent in 2008 (Table 5). Since 2007, the category “state-owned” has often included the “Big Four” plus the Bank of Communications (BOCOM). Total assets of BOCOM, which was officially established as “shareholding” bank in 1986, were around four per cent of all financial assets held by banking institutions in 2007. Thus, the true market share of the “Big Four” is just below 50 per cent.

**Table 5: Market shares by type of commercial banks in China, 2003-2008**

Financial assets		State-owned commercial banks	Shareholding commercial banks	City commercial banks	Other banks	Total
Mid-2003	<i>Billion RMB</i>	na	na	na	na	na
	<i>Share (%)</i>	<b>58.7%</b>	<b>13.6%</b>	<b>5.1%</b>	<b>22.5%</b>	<b>100%</b>
End-2004	<i>Billion RMB</i>	16,932	4,697	1,706	8,264	31,599
	<i>Share (%)</i>	<b>53.6%</b>	<b>14.9%</b>	<b>5.4%</b>	<b>26.1%</b>	<b>100%</b>
End-2005	<i>Billion RMB</i>	19,658	5,813	2,037	9,963	37,470
	<i>Share (%)</i>	<b>52.5%</b>	<b>15.5%</b>	<b>5.4%</b>	<b>26.6%</b>	<b>100%</b>
End-2006	<i>Billion RMB</i>	22,539	7,142	2,594	11,675	43,950
	<i>Share (%)</i>	<b>51.3%</b>	<b>16.2%</b>	<b>5.9%</b>	<b>26.6%</b>	<b>100%</b>
End-2007	<i>Billion RMB</i>	28,007	7,249	3,341	14,001	52,598
	<i>Share (%)</i>	<b>53.2%</b>	<b>13.8%</b>	<b>6.4%</b>	<b>26.6%</b>	<b>100%</b>
End-2008	<i>Billion RMB</i>	31,836	8,813	4,132	17,611	62,391
	<i>Share (%)</i>	<b>51.0%</b>	<b>14.1%</b>	<b>6.6%</b>	<b>28.2%</b>	<b>100%</b>

**Source:** CBRC, 2005a; and EIU, China Hand, Chapter: Finance (various issues).

**Note:** The category “state-owned” covers the “Big Four” state-owned commercial banks up until 2006. From 2007 onwards the category includes the “Big Four” plus BOCOM.

Focusing on market shares of “total loans” instead of a measure of “total assets”, Table 6 displays market shares by entity types in percentage of total loans. Similarly to the dominance observed above, Table 6 shows the power of the “Big Four” in “total loans” with a high, albeit decreasing share. Their share decreased by 7.9 percentage points from 66.4 per cent to 58.5 per cent from 2002 to 2005. At the same time, there are the groups of urban and other commercial banks, whose market shares are rapidly increasing. Combined, they accounted for one fourth of the outstanding domestic loans in 2005 (6.1 and 19.4 per cent).

**Table 6: Market shares in percentage of total loans in China, 2002-2005**

Financial institutions	2002	2004	2005
State-owned commercial banks	66.4%	61.5%	58.5%
Urban commercial banks	4.5%	5.4%	6.1%
Other commercial banks	13.3%	16.9%	19.4%
Urban credit co-operatives	0.5%	0.6%	0.6%
Rural credit co-operatives	12.3%	12.2%	11.2%
Finance companies	1.8%	2.0%	2.4%
Foreign banks	1.2%	1.4%	1.8%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Source:** EIU, China Hand, Chapter Finance (various issues).

**Note:** The category “state-owned” covers the “Big Four” state-owned commercial banks up until 2006. From 2007 onwards the category includes the “Big Four” plus BOCOM.

In 1995, more than 10 years after the the commercial banks were established, the adoption of the “The Law of the People’s Republic of China on Commercial Banks” formalized the commercial banking activities (PBC, 1995c)<sup>22</sup>. Reportedly, the Law is guided by the principle that commercial banking activities should be determined by economic rather than political criteria. To facilitate this, commercial banks are granted political and operational independence. Political independence is granted in Article 41, which says: “No unit or individual may forcibly demand a commercial bank to grant a loan or to provide a guaranty”. Operational independence is regulated in Article 4: “Commercial banks shall make their own decisions regarding their business operations, take responsibility for their own risks, assume sole responsibility for their profits and losses and exercise self-restriction” (PBC, 1995c).

But Article 34 of the commercial bank law curtails the granted freedom again when it opens the door for political influence: “Commercial banks shall conduct their business of lending in accordance with the needs of the national economic and social development and under the guidance of the industrial policies of the State” (PBC, 1995c). And in fact, there are examples of political influence on commercial bank activities. Political pressure has been used to facilitate infrastructure projects to fight the deflationary tendency of the Chinese economy at the end of the 1990s. Supporting government expenditures in 1998, domestic loans increased by 15.5 per cent and investments of state-owned enterprises rose by 17.4 per cent (EIU, 2006b: 12; and Flassbeck et al., 2005: 33). More recently, political pressure comes in disguise of the instrument of window guidance, which allows the authorities to directly influence the commercial banks’ loan decisions. And authorities leave no doubt that they still exercise their dis-

<sup>22</sup> Law of the People's Republic of China on Commercial Banks, adopted at the Thirteenth Session of the Standing Committee of the Eighth National People's Congress, promulgated by Decree No. 47 of the President of the People's Republic of China on 10 May 1995, and effective on 01 July 1995.

cretion in influencing domestic loan creation. In the wake of the global financial and economic crisis monthly domestic loans were – politically driven – pushed to increase by almost 20 per cent y-o-y towards the end of 2008 (see Figure 13).

Another milestone in the development of the commercial sector was the promulgation of the “Rules on the Issuance of Subordinated Bonds by Commercial Banks”, which was published jointly by the PBC and the CBRC (PBC, 2004h). The permission to issue subordinated debts has two major impacts on the financial system. First, it facilitates reporting mechanisms and transparency through its conditions to be met prior to issuance (Article 9 and 10 of the “Rules on the Issuance of Subordinated Bonds by Commercial Banks”). Second, the permission provided a new and innovative chance to increase the capital basis of the commercial banks and thus to enhance the financial system’s average capital adequacy ratio (EIU, 2006b: 11).

“Joint-stock“ or “shareholding” commercial banks: The CBRC often refers to the group of “joint-stock“ commercial banks or “shareholding” banks, which are part of the categories of urban and other commercial banks in Table 6. On average, “shareholding” banks have a rather recent and often regional history. For instance, the municipality of Shanghai established Shanghai Pudong Development Bank in 1992 with the target to facilitate the development of the Pudong Development Area; China CITIC Bank split-off the China International Trust and Investment Corp (CITIC) in 1987; China’s first private bank, Minsheng Bank, was established in 1995; and the largest of the group, the Bank of Communications was re-established in 1986 as China’s first shareholding bank. “Shareholding” banks have a market share measured as the percentage of total assets of around 14 per cent (Table 5). Today, 13 banks are usually subsumed under the description of the “shareholding” commercial banks, not including BOCOM (EIU, 2001a: 18-20; and EIU, 2008a: 29-30).

City commercial banks: At the end of 2008 there were 124 city commercial banks (Table 4), which represented 6.6 per cent of the financial sector’s assets in 2008. City commercial banks, usually serve the financial needs of local urban communities both private and corporate (mostly small and medium-sized enterprises). As such, city commercial banks’ business performances depend largely on the economic structure of the communities they are operating in. Often city commercial banks are (partly) owned by local governments. Until the end of 2005, city commercial banks were prohibited to expand beyond the community or city they were established in (EIU, 2009b: 29).

Policy banks: The three policy banks are the Agricultural Development Bank of China (ADBC), China Development Bank (CDB) and the Export-Import Bank of China (EIBC). They

were established in 1994 to liberate the commercial banks from the burden of policy lending. There has been only modest success in the last decade, however, mainly due to two factors: First, the policy banks have never had the size to get involved into large scale policy lending. Second, their ties to the commercial banks have been too strong and their operations have often relied on the administrative support of the commercial banks. For instance, the “ADBC has no separate identity from the ABC [Agricultural Bank of China] and operates out of the ABC’s head office” (EIU, 2006b: 33). The three policy banks account for less than 10 per cent of the financial sector’s assets. In Table 5 they are subsumed under the column “other banks”.

Foreign commercial banks: A key issue in the transformation of the Chinese financial system up to the WTO entry in 2001 was to maintain limited scope for foreign banking activities. Prior to 1991/92, foreign banks were solely allowed to set up branches and joint-venture and only in the Special Economic Zones and Shanghai. There they were able to be involved in export financing through foreign exchange businesses. Since 1992, the geographical scope to conduct business for foreign banks has been widened, with an initial open up of Beijing and selected coastal cities. Ever since, foreign involvements have started with representative offices, which are restricted to non-profit activities such as financial advice and market research for foreign companies. The establishment of a representative office is one condition that has to be met prior to the opening of an operational unit. By 1999, foreign activities were allowed in 23 cities and Hainan Island. In 2000, foreign banks operated 177 operational branches and more than 200 representative offices (EIU, 1997: 28; EIU, 1999a: 35; EIU 2001a: 20; and Schlotthauer, 2003: 216).

The WTO entry in 2001 granted foreign banks new channels of entries through committed liberalizations of the Chinese financial services industry. Since December 2006, five years after accession, national treatment has been granted to all foreign financial institutions entering the Chinese market and thus foreign banks have been allowed to offer banking services in RMB to individuals and enterprises across the country (WTO, 2001b: 34-36). During the five years transition period between 2001 and 2006, only a few foreign banks were allowed to offer RMB-denominated services to Chinese enterprises (Chen, 2004). In anticipation of the December 2006 deadline, foreign banks positioned themselves for national treatment and enlarged their engagements within China. They increasingly established strategic alliances with local banks or bought outright stakes in Chinese banks to be able to use their partners existing domestic networks for the branding of their own foreign products (EIU, 2006b: 33).

As of October 2005, 173 foreign banks set up 238 representative offices in 23 cities in China; of these, 71 foreign banks established a similar number of 238 operational offices in the same 23 cities (CBRC, 2005b). Within one year's time, these numbers increased to 183 foreign banks with 242 representative offices in 24 cities in 2006; of these 73 foreign banks opened 252 operational offices in the same 24 cities (CBRC, 2006b). At the same time and as a result of the fulfilment of the WTO financial services commitments, more foreign banks chose to incorporate fully foreign-owned entities in China with the aim of offering RMB-denominated banking services under their own name. Fully foreign-owned commercial bank entities in China increased tremendously from virtually zero in 2006 to 29 institutes in 2008 (Table 4).

Still, foreign-funded banks in China only account for a fraction of domestic business. In 2002, foreign banks made for 1.2 per cent market share, which increased to 1.8 per cent in 2005 (Table 6) and 2.4 per cent by September 2008 (EIU, 2009b: 34). The low share in the domestic market lies – among other reasons – in the large hurdles for foreign banks to establish business in China. For instance, foreign banks often pay higher rates to borrow RMB on the interbank market than their domestic competitors; borrowing from the interbank market is subject to a 1.5 times ceiling of a branch's capital; and foreign banks are required to have a capital adequacy ratio of 8 per cent for each of its branches and not for all branches on average. While foreign banks have an insignificant share in total loans in China, they have more than 20 per cent market share in the foreign currency market (EIU, 2006b: 33-37; and EIU, 2009b: 34-36).

There are reasons for China to encourage and ease foreign entries into the financial market. The most prominent one is probably that the entrance of foreign banks generally helps to raise the efficiency of the financial economy through the introduction of new technologies, products and new competition (Claessens et al., 2000; Clarke et al., 2003; and Ortiz, 2006). While some of these potentially positive effects may have to be reassessed in view of the global financial and economic crisis in 2008/09 – for instance the problem of host countries to lose their edge over “financial stability management” (Schoenmaker et al., 2008: 58) by overly deregulated and liberalized financial markets – the basic thrust of gaining efficiency through technological diffusion remains intact. And Chinese authorities are well aware of the positive effects. In fact, the CBRC published a note in 2007 in which it set forth the need for opening-up the Chinese financial system by highlighting the positive contributions of foreign entrants on the Chinese market. Among these mentioned are the contribution to “deepened financial markets” and the “the restructuring and reform of the Chinese banking sector”. According to the note, this comes through raising the general quality of banking services, in-



creasing competition and deepening the sector's capacity to respond to the needs of market participants. Further, the CBRC rightly attributes network effects to foreign banks, through which their entry into the domestic financial market supports the development of foreign trade and investment (CBRC, 2007a).

### **2.3.2 Non-bank financial institutions**

The notion of “non-bank financial institutions” goes back to the classification of financial institutions by kind of services provided. As such, non-bank financial institutions (NBFIs) provide bank-related financial services such as asset management, investment, insurance, or financial leasing to pursue which full-fledged banking licenses are not required (Carmichael et al., 2002: 1-19). For the purpose of this study, this section will shed some light on two main groups of NBFIs in China, the Trust and Investment Companies (TICs) and the Asset Management Companies (AMCs).

Trust and Investment Companies: The establishment of TICs was a government-driven process aimed at dividing up commercial banking and investment banking activities of domestic financial institutions. In the initial phase of their establishment in 1979 they were also used as specific vehicles to channel foreign capital and technology into government-guided areas. Realizing the potential to use TICs as financing vehicles, not only commercial banks started to establish TICs, but also industrial conglomerates and even provincial governments. As a consequence TICs mushroomed in the 1980s with 745 TICs in operation in 1988. There were obvious advantages for commercial banks and provincial governments alike to get involved in the establishment of TICs. For instance, commercial banks were able to utilize them as means to circumvent government regulation, while provincial governments opened TICs as quasi-provincial development banks to channel foreign capital without the involvement of the formal system of commercial banks (Kumar et al., 1997: 1-3; and Schlotthauer, 2003: 220-223).

Increasing popularity of TICs in the 1990s led to a boom of unregulated activities. But the TICs share of the Chinese financial system was always relatively low and single-digit over that decade. Over the 1990s the business model of TICs became ever riskier with more and more foreign investors flocking into China. In fact, many foreign investors thought that provincial government involvement signalled de facto government guarantees. But this was not the case, with the exception of the China International Trust and Investment Company, which had an explicit backing through the State Council. It was just a matter of time until the flaws of the business model – operating around the rules, engaging in risky investments and all that “in search of unrealistically high returns” (EIU, 1999a: 43) – would become obvious. The

most prominent TIC in crisis was the Guangdong International Trust and Investment Company (GITIC), which became unable to serve its debtors in autumn 1998. The company did not have enough reserves to repay its foreign exchange denominated short-term debts. The central government did only half-heartedly step in, GITIC failed, and only domestic investors were restituted (EIU, 1999a: 43-46; and Schlotthauer, 2003: 220-222).

Following the failure of GITIC a new round of consolidation was set in motion, a licensing system was established and comprehensive rules for governance and management were set up. For instance, from then on TICs needed to satisfy a minimum required capital and minimum investment rule; lending, leasing and corporate investment funds were set off-limits to TICs; and in 2007, a rule enshrined the new philosophy for TICs away from hasty investments, when “Trust and Investment Companies” lost the word “Investment” to be known solely as “Trust Companies”. Additionally, all TICs in existence in 2007, 54 in number, needed to reconstitute with new licenses within three years from then. TICs accounted for less than one per cent of total assets in the financial sector in 2007. But high growth rates of more than 150 per cent in recent years (164 per cent growth y-o-y in 2007) show that, again, the restructured TICs attract many foreign investors, not least as entry barriers are still lower than in the commercial banking sector (EIU, 2009b: 45-46; and Schlotthauer, 2003: 222-223).

Asset management companies: Chinese authorities established four state-owned asset management companies (AMCs) in 1999 with the main target of solving the non-performing loans (NPL) problem of the “Big Four” commercial banks. Their task was to take over the bad assets of the four banks, dissolve those bad loans and thereby cleaning up the balance sheets of the commercial banks. Each of the “Big Four” was matched with one AMC as the one institution primarily taking care of the bad assets. BOC was matched with Orient Asset Management, ABC with Great Wall Asset Management, CCB with Cinda Asset Management, and Huarong Asset Management was put at the side of the ICBC. Not all transactions, however, followed these original assignments. The overriding mandate for the four AMCs was set from the beginning at maximizing asset recovery within a period of ten years. Debts of RMB 1.4 trillion were transferred to the AMCs in the years of 1999 and 2000, which accounted for just over 20 per cent of all RMB loans in the financial system at that time. AMCs paid the book value on these initial (Ma et al., 2002: 1-2; and Yang et al., 2007: 142). Despite this rather high amount of transferred assets in the initial two years it became clear during the following years that only parts of the NPLs of the “Big Four” had been covered. In fact, large scale government injections directly into the commercial banks were needed few years later in 2004 and 2005 prior to the stock market listings of CCB, BOC and ICBC.

Many ways were applied by the AMC's to actually carry out their businesses and over time measures such as offering debt for equity swaps, packaged sales, trust disposals and liquidations were taken into consideration. With hindsight, however, the debt for equity businesses hindered to find solutions for the NPL problem, rather than it facilitated it. While well-intentioned, "the debt-to-equity conversion had the perverse effect of enabling the SOEs to raise their credit standing, thus allowing them to borrow again from their previous lenders, with no strings attached" (EIU, 2009b: 49). Particularly during the initial time of their establishments, AMC's administrated rather than managed the bad debts. Often political considerations were in the way of the appropriate discounting of loans and a general disinclination of strict enforcements of bankruptcies, slowed down the processes to actually dissolve the NPLs.

As a result, asset recovery through AMC's was very low: By the end of 2005, the AMC's had disposed of RMB 840 billion with a recovery rate of 21 per cent and cash returns of RMB 177 billion (Yang et al., 2007: 142). Li estimates that for the longer period from 1999 to 2007, the recovery reached around 25 per cent for the four AMC's (Li, 2008: 13-14). These figures illustrate that AMC's need a broad base of financing to stem their tasks. While observers generally think that AMC's financed their operations mainly through the issuance of "10-year AMC bonds" to the commercial banks, Ma et al. (2002) argue that the issuance of these bonds played a secondary role only to central bank credits from the PBC to the AMC's; they conclude that "the PBoC credit has been the principal source of cash financing for the AMC's" (Ma et al., 2002: 4).

In preparation of the maturing of the 10-year AMC bonds in 2009, authorities asked selected "Big Four" banks to purchase stakes in AMC's. At the same time and to prepare for the end of their planned lifecycle in 2009, AMC's lobbied hard with the authorities to achieve a legal broadening of their business scope. An early success of these lobbying efforts was the 2004 adoption of a rule by the State Council that allows AMC's to step into the area of investment (banned from the business model of TICs in 2007, see above). Later, AMC's were asked to take over some troubled securities firms and AMC's were striving to get involved into trust and insurance business, too. But broadening the business scope while relying on credits from the central bank and cash injections from the very commercial banks that the AMC's were supposed to free from their NPLs, seems to be a rather problematic endeavour. Unless the business model is not transferred into a self-sustaining fully commercial one – with clearly articulated creditors' rights as well as the actual application of bankruptcy measures without political involvement – any expansion of the AMC's lifecycle will not be able to contribute to the success of the Chinese transition process. But when bonds started to mature in 2009,

authorities seemed willing to simply roll over those bonds, practically carrying forward the current business model and postpone the problem until another decade (Li, 2008: 10-11; EIU, 2009b: 49-51; and WSJ, 2009).

### **2.3.3 Limited competition in the Chinese financial sector**

After three decades of domestic reforms in the financial sector and the step-by-step entrance of foreign banks onto the Chinese market, competition in the Chinese banking sector is still very low. Simply speaking, managers of state-owned enterprises (SOEs) can still rely to be bailed out by the state through the SOCBs. Therefore non-profitable projects are realized and resulting losses have to be bailed out again. This is a vicious circle, from which it is difficult to escape (Che et al., 1998: 9-10). What was true in the analysis in 1998 was still part of the reality in 2005: “Despite the government’s best efforts (and cash infusions) to reduce non-performing assets at the state banks, the banks have simply taken on more bad assets through poor operating practices. Liu Mingkang, the head of the CBRC, has ordered restructuring to be accelerated” (EIU, 2006b: 41). Nowadays, while the issue of NPLs seems at least not to be further deteriorating – due to cleaned-up bank balance sheets with the help of AMC’s and government cash injections and due to improved risk management, the introduction of reporting standards and internal controls – it is still an issue of great concern (EIU, 2009b: 38). Thus, ever since the Chinese transition started, the development of the level of NPLs and the capital adequacy ratio (CAR) in the banks’ balance sheets have been among the main indicators for observers when it comes to the state of the financial system in China.

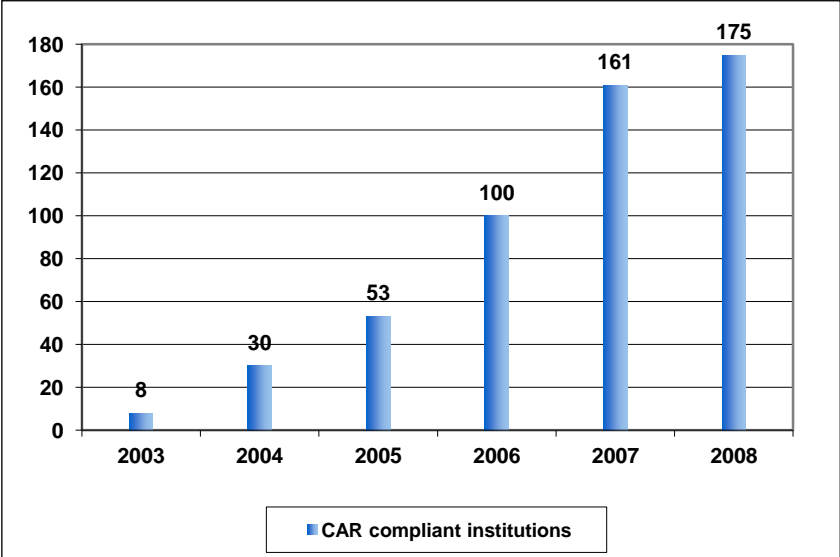
Capital adequacy ratios (CAR): The internationally recognized Basel Capital Accord<sup>23</sup> recommends a credit risk measurement framework with a minimum capital standard (capital adequacy ratio, CAR) of 8 per cent for commercial banking activities. In Article 39 of the commercial bank law, China follows this recommendation and states that any commercial bank granting a loan needs to have a capital adequacy ratio that “may not be lower than 8 percent” (PBC, 1995c). The institution in charge of surveying CARs in China is the CBRC, which publishes regular updates on statistics and sets up applicable rules and guidelines for commercial banks to achieve and report their necessary ratios (CBRC, 2008b). The CBRC also sets the method to calculate the capital adequacy ratio in China, which was initially regulated in the “Regulation Governing Capital Adequacy of Commercial Banks” issued by the CBRC on 27 March 2004 (CBRC, 2008c). The calculation method applied comes very close to the method suggested by the Basel Capital Accord as the risk weight for commercial loans with guarantees was set at 100 per cent (Wei, 2004). Changes in the required ratios were to

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<sup>23</sup> Please see the Website of the Basel Committee on Banking Supervision, which provides further information on the Basel Capital Accord.

be expected in the wake of the global financial and economic crisis. As a first step, the CBRC and other relevant authorities decided to set up and enforce stricter capital requirements for commercial banks starting in 2009. It was decided to gradually increase the required ratios to 10 per cent in 2009 and to 12 per cent in 2010 (EIU, 2009b: 7). Additional adjustments will likely follow to the existing Chinese regulations as higher global minimum standards were decided at the Bank for International Settlements (BIS) Group of Governors and Heads of Supervision meetings in 2010. These new regulations are primarily aiming at increasing the capacities to absorb losses of institutions. To achieve this, it was agreed to increase the share of common equity from 2 to 4.5 percentage points over five years as well as other supporting measures in addition to the existing CAR, which was kept unchanged at 8 per cent (BIS, 2010). In China, much progress in capital ratios has been made over the last decade. As of mid-2008, 175 institutions, which reportedly represented more than 84 per cent all bank assets in China, complied with the minimum capital adequacy requirements of 8 per cent (Figure 4). This is a dramatic increase from only eight complying institutions in 2003.

**Figure 4: Banking institutions with 8 per cent capital adequacy ratio in China, 2003-2008**



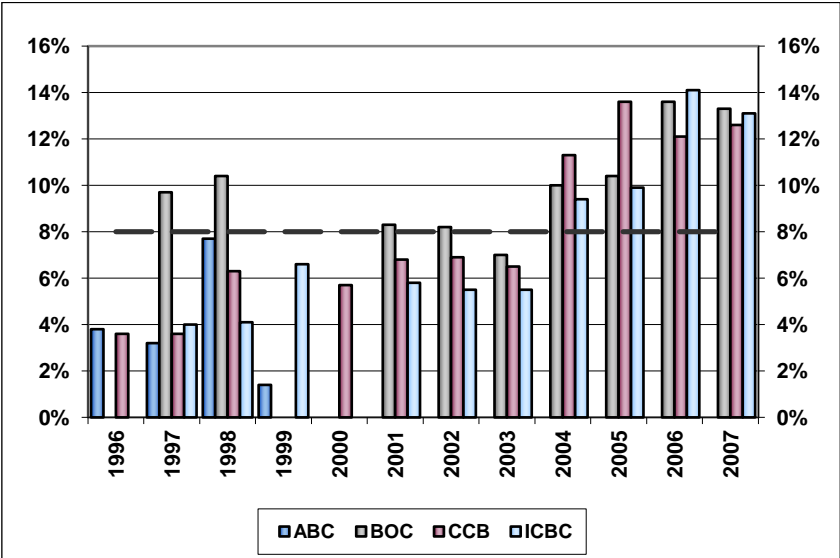
**Source:** CBRC Website, Capital Adequacy Related Data.

**Note:** Data for 2008 indicates the status as of June 2008.

Looking at the capital adequacy ratios by individual institutions, however, makes for a more mixed picture for the 8 per cent requirement, let alone the more ambitious new targets. For instance, the Agricultural Bank of China (ABC) came close to the 8 per cent ratio only in 1998 (Figure 5). Moreover, the ABC stopped to provide data on its capital adequacy ratio after 1998. This seems to be a political sanctioned practice of non-transparency as the ABC got granted a longer transition period than the other big SOCBs, due to its heavy policy-oriented

lending in rural areas (EIU 2006a: 18). Figure 5 also reveals that the Bank of China (BOC) had the highest capital ratio of the Big Four between 1996 and 2003, even though there are several blanks in the reporting practice. The average CAR of BOC in those years with available data reached 8.7 per cent. In the same eight-year period, the China Construction Bank (CCB) and the Industrial and Commercial Bank of China (ICBC) achieved significantly lower CARs averaging only 5.6 and 5.3 per cent, respectively. Since 2003, however, all three banks have shown strong increases in their CARs, which have stabilized above 10 per cent since 2004. The average CARs for BOC, CCB and ICBC stood at 11.8, 12.4 and 11.6, respectively, between 2004 and 2007.

**Figure 5: Capital adequacy ratios of China's "Big Four" commercial banks, 1996-2007**



**Source:** EIU, China Hand, Chapter Finance (various issues).

It is noteworthy to state that the jump from single-digit to double digits of CARs in the 2003 to 2005 period was mainly the effect of government injections of foreign exchange reserves, the issuance of large amounts of subordinated debts and the transfer of bad loans to AMCs, rather than the result of a better and more market-oriented conduct of the bank's commercial activities. For instance, BOC received USD 22.5 billion of the foreign exchange reserves at the end of 2003 and sold RMB 149.8 billion of doubtful loans to China Cinda Asset Management in 2004 (EIU, 2005: 17). In 2004, CCB received a similar injection of USD 22.5 billion, accomplished a transfer of RMB 128.9 billion of bad loans to China Cinda Asset management and issued subordinated debts of RMB 40 billion (EIU, 2005: 17). Back then, ICBC was the last of the big banks to benefit from government transfers of foreign exchange when it received USD 15 billion in 2005. But the ICBC was able to get rid of RMB 407.7 billion in bad

loans through a transfer to China Huarong Asset Management already as early as in 1999 and 2000 (EIU, 2006b: 15).

For other commercial banks, reaching the capital requirement of 8 per cent remains a similar challenge. For instance, while the “joint-stock” commercial banks have a rather recent history paired with an often merely indirect government relationship and a low exposure to policy lending, they fell short of the CAR requirements only recently. In 2004, the group of “joint-stock” commercial banks reached an average CAR of 6.6 per cent (CBRC, 2005a). But since then, “most of the shareholding banks have found strategic investors to help them shore up capital and improve transparency” (EIU, 2009b: 23). As a result, CARs of the 13 “joint-stock” or “shareholding” banks have improved significantly between 2004 and 2008 and reached an average of 10.5 per cent in 2008 (CBRC, 2009). The CAR performance of the city commercial banks increased at an even better pace. City commercial banks had average CARs of 1.36 per cent in 2004, a fact attributed to the very tight relationships with local governments – somewhat comparable to the relationship of the “Big Four” with the central government (EIU, 2006b: 29). Then, CARs of city commercial banks increased and reached the required 8 per cent for the first time in 2006, to jump another leap to 13 per cent in 2008 (CBRC, 2009; and EIU, 2009b: 29).

Non-performing loans (NPL): While there were problems with non-performing loans in China all through the time of the planned economy<sup>24</sup>, the problem was kept undisclosed and covered up through the almighty allocative role of the state. Once the reforms started in the late 1970s, the issue did not immediately get on the agenda. It took more than a decade until the problem was discovered and publicly discussed in 1993, when the thinking of a commercial bank law evolved. It reached the top of the agenda in 1997, when the Asian financial crisis showcased the importance of a well-functioning and healthy financial sector (Lou, 2001: 3ff). For the 1990s, various estimates exist on the scope of the NPL ratio of the total banking system. They vary between 10 per cent and 60 per cent, with Chinese sources being at the lower and foreign sources at the higher end of estimates (EIU, 1998a: 18; EIU, 2000a: 7; and Lou, 2001: 14). One of the reasons for the difference of Chinese and foreign estimates in the 1990s is in the details of the Chinese loan classification system before 1998. For instance, Chinese accounting standards viewed interest income on overdue loans as generated income even if no interest was received. However, the classification differences gradually diminished starting from 1999, when the PBC announced a new classification system (EIU, 2003: 14). With the new system in place, NPL ratios estimated by Chinese and foreign

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<sup>24</sup> It is reported that in 1962 the NPL ratio of all outstanding loans in China reached 15.3 per cent (Lou, 2001: 3).

sources gradually levelled off. Thus, from 2001 onwards domestic and foreign estimates have shown somewhat parallel developments for the “Big Four” commercial banks. And these look rather favourable with the exception of the ABC.

**Table 7: NPL ratios of China's "Big Four" commercial banks, 1996-2007**

	2000	2001	2002	2003	2004	2005	2006	2007
Agricultural Bank of China (ABC)	35.0%	41.1%	36.6%	n.a	26.7%	26.2%	23.4%	23.5%
Bank of China (BOC)	28.9%	26.7%	22.5%	16.3%	5.1%	3.8%	3.3%	2.6%
China Construction Bank (CCB)	15.7%	19.2%	15.2%	9.1%	3.9%	4.6%	4.0%	3.1%
Industrial and Commercial Bank of China (ICBC)	25.1%	29.5%	25.3%	21.3%	18.9%	4.7%	3.8%	2.7%

**Source:** Almanac of China's Finance and Banking (various issues); Annual Reports of ABC, BOC, CCB and ICBC (various issues); and EIU, China Hand, Chapter: Finance (various issues).

**Note:** According to the Economist Intelligence Unit, Chinese banks started only in 2001 to publish "reasonable" figures for their NPL ratios (EIU, 2003: 18). This finding is confirmed by comparing national sources (e.g. bank annual reports) with international sources (e.g. EIU and Fitch Ratings) for 2001 and 2002. Depending on availability, the above list is the most complete possible based on a mix of foreign and international sources.

Table 7 shows that double digit NPL ratios, so common in the 1990s and in the early years of the millennium, are something from the past for the BOC, CCB and ICBC. The BOC and the CCB reached single-digit NPL ratios by 2004, shortly followed in 2005 by the ICBC. The fact that the ABC's ratios were consistently above 20 per cent up until 2007 are another proof of the special status of the ABC and its relatively long period of transformation to slowly fade out policy-oriented lending in rural and agricultural areas (EIU 2006a: 18). But restructuring of the ABC is getting off the ground belatedly: "With most of its bad loans transferred to the state-owned China Great Wall Asset Management Corp and other government backed financial units, its NPL ratio was reported to have fallen to less than 5% at end-2008, from 41% at end-2001" (EIU, 2009b: 21). As was noted before for the increase in the CAR performance in 2004 and 2005, the betterment in NPL ratios of the three other SOCBs during the same period is not a coincidence. In fact, it is a result of the same policy-induced treatments of government injections of foreign exchange reserves, issuances of subordinated debts and transfers of bad loans to AMC.

In the case of the 13 "joint-stock" or "shareholding" banks, their often relatively recent history paired with low exposures to policy-lending and high success rates in finding strategic investors allowed this group of banks to maintain relatively low NPL ratios. While in 2004, the NPL ratio for "shareholding" banks was already at the modest level of five per cent, this ratio declined further on average to 1.4 per cent in 2007 (CBRC, 2005a; and CBRC 2009a). At the



turn of the century, city commercial banks' NPL ratios were somewhere between the high ratios shown for the "Big Four" and the modest NPL levels of "shareholding" banks. In 2004, for instance, they reached 11.7 per cent of NPLs in 2004, a rate that rapidly declined to 2.3 per cent in 2007 (EIU, 2006b: 29; and CBRC, 2009). As a general observation and caveat, however, it is noteworthy to recall that there is a tendency that, due to rising amounts of total outstanding loans, NPL ratios decline even though the total amount of NPLs increases. And total RMB loans increased by almost 350 per cent between 2000 and 2008 from just over RMB 9 trillion to RMB 32 trillion (PBC Statistics Database Online).

In conclusion, it should be noted that both CAR and NPL performances of commercial banks improved significantly between 2000 and 2007, probably with the sole exception of the ABC which still resumes high levels of policy lending in the absence of well-functioning independently operating policy banks. But for the banking system as a whole, more than a decade after the first serious considerations of the NPL problem evolved, considerable progress has been made up to date. Still, the good figures on display need to be handled with care, particularly in the case of the well performing three banks of the "Big Four" group. The improvements in the CAR and NPL ratios of BOC, CCB and ICBC in 2004 and 2005 came not as a surprise. Their timing was determined by the government's wish of listing state-owned commercial banks on international stock exchanges to better prepare for the opening-up of the financial system then scheduled for December 2006 along China's commitments of the WTO entry. In fact, CCB went public in Hong Kong in October 2005 followed by initial listings of BOC and ICBC in June and October 2006, respectively. The performance increases of these three banks were mainly the result of a politically driven process, and this was largely achieved with injections of foreign exchange reserves, the issuance of subordinated debts and the transfer of bad loans rather than the result of a better bank management. Likewise, several of the "shareholding" banks increased their performance records through the involvement of strategic domestic and international investors. But better management played a role, too, particularly in keeping CARs up and NPL rates down once they reached single-digit levels. New requirements will enhance management practices. For instance, flanking the increase of CAR requirements in 2009 and 2010, financial institutions will be required to follow the new Chinese accounting standards. These new standards are in fact closely modelled after the International Financial Reporting Standards (EIU, 2009b: 7, 38).

Chinese banks face a dilemma typical of the transition process: On the one hand, they should function according to market and efficiency criteria, on the other hand, they need to continue to lend to inefficient SOE as important part of their portfolio (Schlotthauer, 2003: 224). Back in the 1990s, this dilemma was reinforced as the Chinese government pursued a

strategy that was based on the continuing operation of SOEs as a stabilizing factor in the transition process. Thus, for political reasons SOEs simply could not go bankrupt up until 1995 (Cho, 1999). Being the main source of finance for SOEs, it was the commercial banks' obligation to provide new loans for their capital replenishments. Adding to the problem there were weak internal bank controls and insufficient banking regulation and supervision (Lou, 2001).

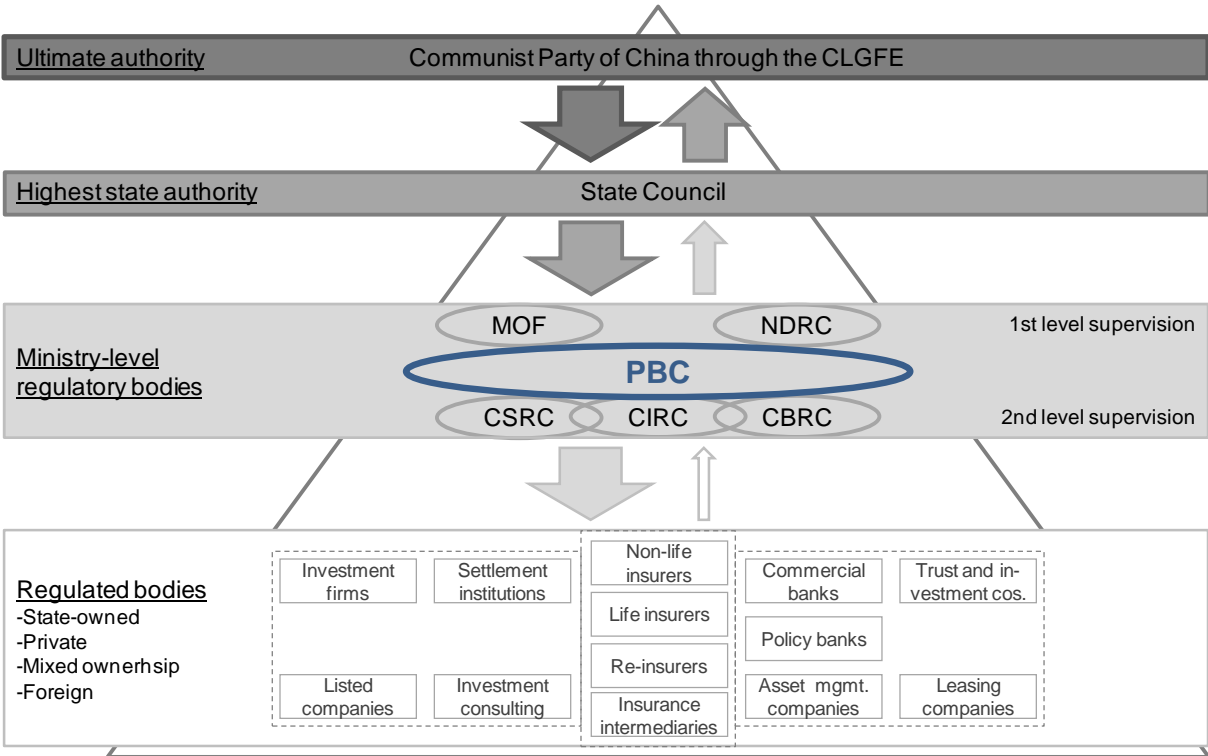
In 1995, a major change in the transition strategy took place, which allowed bankruptcy of SOEs in a move to increase efficiency. But rising social problems did prevent the strict application of the paradigm change (Cho, 1999). As a result, Lou (2001) argues by referring to the late 1990s, "despite the large write-offs of NPLs in recent years, Chinese banks' NPL level has been rising steadily" (Lou, 2001: 15). And similar patterns were still observable in the new millennium. The Economist Intelligence Unit wrote in 2005: "In addition to the NPL problem that developed in the 1990s, there is evidence that the recent explosion in lending (triggered by the government's economy-boosting measures) has resulted in a new NPL pile-up" (EIU, 2005: 13). In the early 2000s, independent estimates of the cost for a total bank restructuring were between 30 and 50 per cent of GDP (Ma et al., 2002: 1; Schlotthauer, 2003: 230; and EIU, 2005: 36-37; EIU, 2007: 50-51). The steps of cash injections through the government and the attraction of domestic and international strategic investors can be seen as the initial – yet insufficient – pickup of that bill. But not only more cash infusions may be needed; to bring the financial system onto a more sustainable growth path, further incentives to better the governance structure and management practices within banks need immediate attention.

#### **2.4 Institutional arrangements in China: The PBC's position**

The PBC occupies a main role in the institutional arrangement of the Chinese financial sector, albeit the PBC is not the central and sole decision-making authority for financial sector matters. There are higher authorities, namely the Communist Party of China (CPC) and the State Council, which exercise most of the ultimate decision-making. This dependency of the PBC on party and state authorities is not only true for the case of financial supervision and regulation, but also for the conduct of monetary policy at large. Figure 6 visualizes the position of the PBC within the institutional set-up of the Chinese financial sector. Chinese financial sector policy can be divided into four categories of authority: The CPC represented through the Central Leading Group for Finance and Economics (CLGFE) has the ultimate authority and the State Council as the highest state level authority is to formally make decisions on the national level. There is vivid exchange between the CLGFE and the State Council not least because of overlapping memberships in both decision-making bodies. Still,

the ultimate authority comes from the CLGFE, which is pictured in Figure 6 through a slightly wider downward than upward arrow.

**Figure 6: The PBC’s position in the institutional arrangement of China’s financial sector**



**Source:** Author’s own visualization, based on information from EIU, 2003: 4; EIU, 2008a: 15; and EIU, 2009a: 10.

**Note:** The width of the arrows indicates the weight in communications of one layer to another layer. For abbreviations, please refer to the text and to the list of abbreviations at the beginning of the study.

The party and state authorities decided in 2008 to establish two levels of ministerial rank supervision bodies of the financial sector, which are tied together through the PBC as a member of both levels. The first level is represented by the MOF, the NDRC and the PBC for policy guidance; the second and more technical level of responsibilities is fulfilled by the three Commissions, the CSRC, the CIRC and the CBRC. While all regulatory bodies have direct links to the State Council, the PBC is tasked with coordinating overall policy coherence for the financial sector (EIU, 2008a: 15; and EIU, 2009b: 11). Ministerial rank regulatory bodies are mostly at the receiving end of communication with the State Council. There are only limited equal exchanges between the two layers of authority. This is visualized through a wider downward than upward arrow. Finally, the regulated bodies build the foundation in the picture of the financial system pyramid in Figure 6. These can be state-owned entities, private companies, foreign enterprises or entities with mixed ownerships. Following the themes of the

regulatory commissions, they can be clustered into the three areas of “securities”, “insurance” and “banking”. There is only a low degree feedback loop between the regulated entities and the regulatory bodies of ministerial rank.

Officially, the PBC is on the same institutional level as the MOF and the NDRC as well as the three supervision commissions. In fact, the PBC, the NDRC and the three supervision commissions, as ministry-level institutions, have the same official status as any Chinese ministry and do report directly to the State Council. But the actual status of an organization within the institutional framework of China depends to a large degree on the personal power and the personal ranking of its leaders in the system. The personal position depends, among others, on the quality of networks a person is member of or simply on the relation to previously influential politicians and their families (Heilmann, 2004b: 58-61). Therefore, the relative strength of each of the institutions is subject to changes over time. For instance, traditionally the PBC’s position is relatively weaker than the position of the MOF or the NDRC. But, there were times in the recent history of the PBC, when the central bank was specifically strong in relation to other institutions on the same ministerial rank. This was the case, for instance, during the 1990s when Zhu Rongji was the Governor of the PBC. Between 1993 and 1995 he not only served as PBC Governor, but also as vice-premier of the PRC and as a member of the Standing Committee of the Politburo (Eckholm et al., 1998). While this arrangement increased the standing of the PBC within the institutions of the PRC at that time, it certainly fostered the political dependence of the institution. This question about the level of central bank independence will be analyzed in the next chapter.

### 3 CENTRAL BANK INDEPENDENCE

There are many studies on the relationship and correlation between central bank independence and low inflation performance, most of which confirm that higher degrees of central bank independence translate into the realization of lower inflation rates and more robust price-stability (Alesina et al., 1993; Berger et al., 2000; Bofinger, 2001; Brumm, 2006; Cukierman, 1992; Cukierman et al., 1992; Grilli et al., 1991; Jácome et al., 2005). While this negative correlation of central bank independence and low inflation was first discovered only for developed countries' central banks (Cukierman et al., 1992), later studies actually found similar patterns for developing countries' central banks (Brumm, 2006). Some of these studies come up with international indexes and rankings of central bank independence, probably the best known of which are the indices suggested by Grilli et al. (1991) as well as Cukierman (1992) and Cukierman et al. (1992). Grilli et al. (1991) build their index based on the distinction of *political independence* and *economic independence* of central banks and look at factors such as the possibility of the central bank to choose its final goals through, for instance, long-term procedures for appointing the senior decision makers of the central bank, and the ability of governments to influence the level of central bank financed government expenditures and (Grilli et al., 1991: 366-370). Cukierman et al. (1992) suggest looking at these issues as legal independence but adding to it the dimension of *actual independence*. For instance, long-ranging terms of office of the governors may not necessary lead to an actually low turnover of central bank governors. "Many central bank laws are highly incomplete and leave a lot of room for interpretation. As a result, factors such as tradition or the personalities of the governor and other high officials of the bank at least partially shape the actual level of central bank independence" (Cukierman et al., 1992: 361).

The suggested methodologies were subsequently used and adjusted and the scope broadened to other countries later. For instance, Debelle et al. (1994: 197) coined the two well-known terms of *goal independence* and *instrument independence*, which is related to the distinction of *political independence* and *economic independence* suggested by Grilli et al. (1991). On the other hand, Jácome et al. (2005) utilize and modify the Cukierman index in their study focusing on Latin America and the Caribbean where they confirm the negative relationship (but no significant causality) between legal independence and low inflation for the region. This chapter proceeds in the analysis of independence of the PBC by utilizing the three forms of independence proposed by Bofinger (2001), which are a comprehensive synthesis of the previous definitions (Bofinger, 2001: 210):

- *Goal independence*, i.e. the central bank is isolated against direct influence of the government on the goals of monetary policy;

- *Instrument independence*, i.e. the ability of the central bank to autonomously set its operating targets<sup>25</sup> and apply its monetary policy instruments; and
- *Personal independence*, i.e. the ability of the central bank decision makers “to resist formal directives as well as informal pressure from the government” (Bofinger, 2001: 210).

In the case of China, two other forms of central bank independence are also sometimes discussed. *First*, many authors discuss the loss of independence to pursue domestically oriented monetary policy in times of heavy inflows of foreign exchange induced by the exchange rate system (for instance Obstfeld, 2006, Goldstein et al, 2008: 4-9; and Prasad, 2008), sometimes also called “relative monetary independence” (Ma et al., 2007a). It will be argued later that this – in view of the author of this study – did not represent a challenge to monetary policy, as the Chinese authorities were able to fully sterilize foreign exchange inflows up until 2008 and probably beyond. Through sterilization operations and in combination with capital controls, authorities in China indeed ensured a certain degree of independence from the policy of the US Federal Reserve despite the pegged exchange rate arrangement over the last decade. *Second*, the issues can also be explored not only in view of independence of the PBC and its monetary policy vis-à-vis government influences (through legislation), but also from operational dominance of a group of domestic financial institutions. A recent study for China finds that “central bank independence has been damaged because of the actual property-right relation between the central bank and the financial institutions” (Huang et al., 2008). Much more, the interlinkages and interdependences between the central bank and the financial institutions are facilitated and reinforced due to the dominance of the “Big Four” commercial banks. For instance, representing at least half of the total size of the Chinese operations on the open market, the “Big Four” are able – at times – to monopolize open market operations and thereby manipulate the money market interest rates. Likewise, financial institutions are represented in the Monetary Policy Committee of the PBC (Xie, 2004b), nowadays through the President of the China Banking Association. This insufficient insulation of monetary operations from the influence of financial institutions is an important source of distortions in the monetary policy transmission process (see section 6.3.3 below).

Coming back to the three forms of independence proposed by Bofinger (2001) and their application in case of the PBC: Compared to the days before the reform period began in 1978, the independence of the PBC has increased tremendously over the last decades as institutions were build to support the introduction of a two-tier banking system in China and the in-

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<sup>25</sup> Operating targets are those targets which the central bank is able to control directly, e.g. interest rates and exchange rates (Bofinger, 2001: 321ff).

stallation of the PBC as the central bank of China (Cho, 1999). But now, after 30 years of reform the independence of the PBC needs to be assessed against the need of a financial system striving to be fully integrated into the world economy.

### **3.1 Goal independence**

Goal independence means that the central government has no influence on the setting of the targets appointed to the central bank (Bofinger, 2001: 210). According to article 2 of the central bank law the monetary policy is to be carried out “under the leadership of the state council” (PBC, 1995b). Therefore goal independence does not prevail in the case of PBC.

### **3.2 Instrument independence**

A central bank is instrument independent if it is able to use its operating targets autonomously (Bofinger, 2001: 210). According to article 5 of the central bank law the PBC “shall report its decisions to the State Council for approval concerning the annual money supply, interest rates, foreign exchange rates ...”. It is not fully clear exactly how “shall” needs to be interpreted, i.e. is it a possibility or necessity, but in the case of China with a strong central authority of the State Council it has to be concluded instrument independence does not exist. This in fact leaves the possibility that the government could exert influence on the central bank to finance government expenditure.

The assessment of instrument dependence of the PBC is confirmed through Table 8, which provides a summary of all monetary policy instruments that were at use in China over the period 1994 to 2008 (see chapter 5 for detailed descriptions of the monetary policy instruments in China). It shows an assessment of whether these instruments are under the control of the PBC and if approval of the State Council is needed in their utilization. It is clear that of the seven monetary policy instruments managed by the PBC (A, B, C, D, E, F, and G), only two of them do not need prior approval by the State Council (D, E). It is noteworthy that any decision related to the level of interest rates needs to have government approval. So while the PBC can freely decide upon the conduct of open market operations, the PBC is actually bound to the State Council’s decision on the interest rate level to be pursued. The two non-central bank monetary policy instruments of price and wage controls do not fall under PBC management (H, I). Much more, both of them need approval by the government, either the State Council or the Ministry of Labour.

**Table 8: Instruments of monetary policy in China and PBC's independence in their usage**

Instrument		PBC managed	PBC decision	State Council approval needed	Comments
A	PBC lending and deposit rates	Yes	No	Yes	Every decision about the level needs State Council approval.
B	Discount and rediscount rates	Yes	No	Yes	
C	Reserve requirements	Yes	No	Yes	Ratios and the interest rates on reserves have to be approved by the State Council.
D	Open market operations (OMO)	Yes	Yes	No	Conduct of OMOs under free disposal of PBC.
E	Window guidance	Yes	Yes	No	Provision of window guidance under discretion of PBC; possible interference from CBRC due to unclear assignments of tasks (Box 4).
F	Direct PBC lending	Yes	Yes	n.a	---
G	Capital controls	Yes (SAFE)	No	Yes	Management through State Administration of Foreign Exchange (SAFE), a close affiliate of the PBC.
H	Price controls	No	No	Yes	Management of price controls through the National Development and Reform Commission (NDRC).
I	Wage controls	No	No	n.a	Management through the Ministry of Labour in conjunction with the NDRC.

**Source:** Author's own research and compilation.

### 3.3 Personal independence

The decision makers of a central bank possess personal independence when they are able to resist formal and informal pressure from the government (Bofinger, 2001: 210). Among the indicators of personal independence are: a) the nomination process for senior decision makers, b) the terms of office and the ability to anytime dismissals of decision makers often judged by the turnover rate of central bank governors, and c) the number of members in the decision-making body (Bofinger, 2001: 215-216; Grilli et al., 1991: 366-368; and Cukierman et al., 1992: 363-367). As with goal and instrument independence before, the practices in China do not indicate personal independence of the central bank decision makers.

The nomination process for senior decision makers is displayed in Table 9, which covers the governor, the vice governors and the directors of departments of the PBC. The governor is nominated jointly by the State Council and the NPC, the vice governors by the Premier and the directors of departments by the PBC governor in conjunction with the PBC Communist Party Committee.



**Table 9: Nomination process of the senior decision makers of the PBC**

Senior Position	Nomination
Governor	✓ State Council ✓ National People's Congress (NPC)
Vice governors	✓ Premier
Directors	✓ PBC Governor ✓ PBC Communist Party Committee

**Source:** Author's own research and compilation with information complemented by data from the website of the People's Bank of China (About PBC, Management and Organizational Structure).

On the surface, the nomination process follows the suggested logic of Bofinger (2001) of a diversified process that involves the government (State Council) and the parliament of the PRC (the NPC), i.e. different legal bodies, to appoint the governor of the PBC. But in China, the parliament is not independent from the State Council with almost no independent decision power even though formally the NPC is the highest decision-making organ of the PRC (Hort, 2000; and Heilmann, 2004b: 76-77). But the NPC only constitutes once a year and throughout the year it is represented by the Standing Committee of the National People's Congress, which gathers once every two months. All members of the National People's Congress belong to the Chinese Communist Party (CPC) or one of the CPC subordinated eight "democratic" parties. The communist party is ruled by the Standing Committee of the Politburo with its nine members, which are largely overlapping with decision makers of the central state (Heilmann, 2004b: 38). For instance, Hu Jintao is the Secretary of the CPC, the Politburo and the President of the PRC. Likewise Wen Jiabao is member of the Politburo and Premier. As for the nomination of the PBC governor this, in effect, makes the State Council the sole decision-making body depending on the stance of the communist party authority presently in power.

The terms of office of the PBC governor are five years. Legal terms of office of five years are generally regarded as rather short which would not allow a very high degree of personal independence. Likewise, possibilities to hold other government positions by a former central bank governor are ranked not favourably for personal independence as inter-temporal conflicts of interests may arise (Cukierman et al., 1992: 358). But in fact, practice shows that central bank and political careers go hand in hand in China. For instance, Zhu Rongji not only served as governor of the PBC between 1993 and 1995, but also as vice-premier of the PRC and as a member of the Standing Committee of the Politburo (Eckholm et al., 1998). In 1998 he was appointed as the Premier of the PRC and was the predecessor of Wen Jiabao.

The ability of governments to anytime dismiss central bank decision makers is often judged by the turnover rate of central bank governors as a proxy of actual personal independence. Table 10 lists the actual terms in office for the governors of the PBC. Since 1978, the average term of the 7 governors (including the current governor Zhou Xiaochuan) is 52.5 months, i.e. 4 years and 135 days. This means that on average none of the governors stayed in office for a whole legislature period (five years) and it indicates a low personal independence of PBC governors on average between 1978 and 2008. But Table 10 also shows that the terms of office increased over the time under consideration. While the average time for the 5 governors from 1978 to 1995 was a mere 41 months, from 1995 to 2008 the average time in office doubled and reached 82 months. It is too early to say, however, if this represents a sustained departure from the practice of early dismissals.

**Table 10: Governors of the PBC and their terms of office, 1978-2008**

Name		From	To	Number of months
Li Baohua	(李葆华)	May-1978	May-1982	48
Lü Peijian	(吕培俭)	May-1982	Mar-1985	34
Chen Muhua	(陈慕华)	Mar-1985	Apr-1988	37
Li Guixian	(李贵鲜)	Apr-1988	Jul-1993	63
Zhu Rongji	(朱镕基)	Jul-1993	Jun-1995	23
Dai Xianglong	(戴相龙)	Jun-1995	Dec-2002	90
Zhou Xiaochuan	(周小川)	Dec-2002	ongoing	> 73

**Source:** Author's own compilation, based on data from the website of the People's Bank of China (About PBC, Former Governors).

Cukierman et al. (1992) mention the point of overlap of governor tenures with political authority changes as a specific indicator of limited personal independence. While the communist party of China is in power ever since 1949, changes in the political authorities still occur. And in fact all new Chinese government administrations since 1978, represented by the leaders Deng Xiaoping, Jiang Zemin and Hu Jintao, triggered a change in the PBC governors: The opening-up policy initiated by Deng Xiaoping lead to a new PBC governor in May 1978 when Li Baohua was selected. With the appointment of Jiang Zemin as President of the PRC in 1993, Zhu Rongji came into the office as PBC governor. And with the new administration of Hu Jintao (President) and Wen Jiabao (Premier) in 2002 Dai Xianglong's reign at the PBC ended and Zhou Xiaochuan was installed as the new PBC governor in December 2002 (Table 10).

As mentioned earlier in the section 2.1.2 on the operational set-up of the PBC, details about the actual decision-making body of the PBC and the processes involved are scarce. What is clear, however, is that the PBC management team involves ten people, of whom one is the

governor himself. Likewise, the Monetary Policy Committee, which plays an advisory role regarding the future monetary policy stance, but has no decision-making authority, has a membership of 13 people, including again the PBC governor. According to Bofinger (2001), decision-making bodies with ten or more members indicate a high degree of personal independence of the central bank. But the fact that the Monetary Policy Committee has no decision-making authority highlights again, that the PBC as a whole is a non-independent central bank, depending on the State Council. This is very well captured in the introduction of the Monetary Policy Committee on the website of the PBC where it is stated: “The opinions expressed in the meeting of the Monetary Policy Committee will be recorded in the form of ‘meeting minutes’. Such minutes or any resulted policy advice, if approved by more than two-thirds of the members of the Monetary Policy Committee, should be attached as an annex to the proposed decisions of the PBC on annual money supply, interest rates, exchange rates or other important monetary policy issues **to be reported to the State Council for approval** [bold by the author of this study]”.

## 4 TARGETS OF MONETARY POLICY IN CHINA

Up until 1996, the credit plan was the most important monetary policy planning and assessment tool of the PBC (Mehran et al., 1996a: 41-42). With a two-years time lag the credit plan was officially abolished in 1998 and an indirect price-based monetary policy approach was officially introduced. This new approach was anchored around a prominently featured monetary targeting framework, which relies on monetary aggregates as intermediate targets. At the same time, domestic loan increase serves as additional intermediate target (Xie, 2004a; and Yu, 2001). In such an approach, these intermediate targets can only indirectly be pursued through the manipulation of its directly controllable operating targets with monetary policy instruments (Bofinger, 2001: 321-368). Through manoeuvring its operating targets to reach its intermediate targets, the PBC aims to accomplish the final targets of monetary policy in China. This chapter will follow this well-known intervention logic and subsequently describe the evolution of operating targets, intermediate targets and final targets of monetary policy in China. Clearly, intermediate targets serve as the connective targets to serve the final targets of monetary policy in China.

### 4.1 *Operating targets*

Operating targets are those targets which the central bank is able to control directly through its monetary policy instruments, usually the monetary base and the money market interest rate. Sometimes the exchange rate is regarded as an additional operating target in an open economy (Bofinger, 2001: 387-388). Theoretically, there is no difference in the usage of monetary base targeting or interest targeting as on the money market – the market for central bank money – any amount of monetary base has a corresponding money market interest rate and vice-versa. But Bofinger (2001) shows that significant differences arise as far as it is realistically assumed that a central bank has to react to shocks in its conduct of monetary policy. And it makes much more of a difference, if a central bank also has decided to adopt a monetary targeting approach. In this case, Bofinger concludes that “*Interest rate targeting* [original italics] is preferable to monetary base targeting when shocks occur mainly in the money multiplier” and “Monetary base targeting is superior to interest rate targeting when the monetary disturbances principally affect either private individuals’ demand for money or bank lending, while the multiplier is relatively stable” (Bofinger, 2001: 327).

The PBC officially follows the monetary targeting approach with monetary aggregates as intermediate targets, so what does the PBC do in terms of monetary base targeting vs. interest rate targeting? In anticipation of results later in this study it seems that the PBC pursues a hybrid approach between the two, i.e. targeting officially the interest rate in an indirect monetary policy approach, but at times needing to revert back to quantity-based measures of

monetary policy in order to compensate the partially ineffectiveness of its interest rate policies. This insight will be the guiding thought in the subsequent description of monetary policy instruments – with the distinction of price-based and quantity-based instruments – as captured in Figure 9. Xie (2004a) concludes in the same vein and states: “The effects of interest rate cuts on saving deposits, consumption, bank loans, and investment growth are all insignificant, therefore it may be fair to argue that at present, interest rate is unqualified to be monetary policy operating target” (Xie 2004a: 28).

#### **4.2 Intermediate targets**

After 1985, along with the quiet transformation of the PBC into a central bank within a two-tier banking system and the starting transformation of the credit plan towards a more market-related practice, monetary aggregates became a more prominent role in the strategy of the monetary authorities. Until 1993 money MO, the currency in circulation together with the credit supply has been the main point of interest for the monetary authority. However, on the search for a nominal anchor, the PBC started to set up target values for the monetary aggregates M1 and M2 in 1993 and 1994. Two years later the PBC announced M1 and M2 growth rates as the official intermediate targets of China’s monetary policy. Then in 1998 the credit plan was officially abolished and an indirect price-based monetary policy approach was introduced anchored around a prominently featured monetary targeting approach. Nowadays, the usages of M1 and M2 as the intermediate targets for the monetary policy of the PBC are commonly accepted. For the PBC, money supply is the most important monetary figure for the conduct of its monetary policy (Xia et al., 2001: 35; and Xie, 2004a: 2; Yu, 2001). Within this approach there is strong emphasis on monetary aggregate M2 alone, a fact indicated by the PBC’s descriptions in its series of monetary policy reports. Simultaneously, domestic loan increase serves as another intermediate target (PBC Monetary Policy Report, various issues; Xie, 2004a; and Yu, 2001).

Table 11 summarizes the definitions of money and monetary aggregates in use for the conduct of the monetary targeting approach. While M2 is the main monetary aggregate in China there are definitions for the whole range from M0 to M3. In this M0 is the narrowest definition i.e. currency in circulation and M3 represents the broadest definition of a monetary aggregate. The aggregate M3 is used solely PBC internally as a reference value for supporting decision-making. The official reporting of the PBC focuses on M1 and M2, there are no statistics published on M3.

Monetary variables need to show a close relationship to the final target of the price level and have to be controllable via the monetary policy instruments to be eligible to serve as interme-

mediate target in the concept of monetary targeting (Bofinger, 2001: 247). Chapter 6 analyzes the effectiveness of the Chinese monetary policy, and deals, among other things, with the question whether these two prerequisites would justify the usage of monetary aggregates and domestic loan increase to serve as intermediate targets in China. It will be shown then that a satisfactory relationship between monetary aggregate M2 and domestic loan increase with the inflation rate exists, but that no full controllability of the intermediate targets is identifiable.

**Table 11: Definitions of money M0 and monetary aggregates M1, M2 and M3 in China**

	<b>Definition used by the PBC</b>
M0	Currency in circulation.
M1	M0 + Demand deposits.
M2	M1 + Quasi-money: (1) time deposits + (2) savings deposits + (3) other deposits.
M3	M2 + (1) Bonds issued by bank and non-bank financial institutions + (2) Commercial papers + (3) Negotiable certificates of deposit + (4) Vostro/nostro accounts.

**Source:** Author's own compilation, based on data from the Almanac of Banking and Finance in China 2003; OECD, Main Economic Indicators, Sources and Definitions; and O'Brien, 2007: 5, 29.

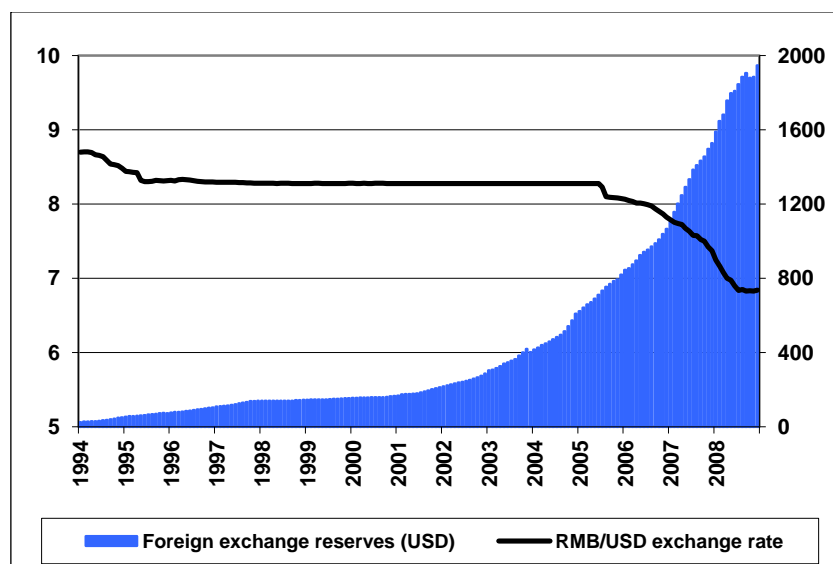
**Note:** M3 is PBC internally used only as a reference value (Almanac of Banking and Finance in China 2003); official reporting usually focuses solely on M1 and M2.

The exchange rate can be seen as yet another intermediate target of the PBC control of which is theoretically determined via the interest rate parity condition. Accordingly, relatively higher domestic Chinese interest rates will lead to a depreciation of the RMB vis-à-vis the foreign currency(ies) as – under the assumption of totally free movement of capital and perfect substitutes of domestic and foreign financial instruments – “arbitrage should ensure that the corresponding rates of return on domestic and foreign paper are identical” (Bofinger, 2001: 393). But empirically, interest rate parity does not hold; much more, in the short-run relatively higher domestic interest rates will lead to capital inflows and thereby to an appreciation rather than a depreciation of the domestic currency. It is due to these reasons that “UIP [uncovered interest rate parity] is obviously not a good theory for forecasting exchange rate changes” (Bofinger, 2001: 395).

This study analyzes the exchange rate regime as well as foreign market interventions and their effects on the conduct of monetary policy in China. This work does not attempt to analyze the extent of which domestic interest rates relate to foreign ones and the reasons behind

capital inflows. This is mainly due to the fact that interest rates are by and large still an administrative tool in China and the exchange rate path is determined mainly by the authorities in a pegged exchange rate regime. Much more, due to the still very limited possibilities of foreign investors to actually invest into domestic financial instruments in China, exchange rate movements cannot to be sensitive to interest rate differentials. The often referred to large-scale “hot money inflows” into China (CRS Report, 2008a; and Economist, 2008c) in fact largely follow exchange rate expectations<sup>26</sup>, but the exchange rate – again – is mainly determined by policy variables.

**Figure 7: RMB/USD exchange rate and foreign exchange reserve accumulation, 1994-2008**



**Source:** IMF, International Financial Statistics; and State Administration of Foreign Exchange, Data and Statistics Online

The exchange rate as a target can be derived from the foreign exchange market. Figure 7 displays the bilateral monthly exchange rate of the RMB with the USD as well as the monthly foreign exchange reserve accumulation from 1994 until 2008. Between 1997 and 2005, China maintained a de facto peg of the Renminbi (RMB) to the United States Dollar (USD). According to Anderson (2003), the peg needed to have the add-on of *de facto* or *quasi*, since the official regulation allowed the RMB to fluctuate within a certain bandwidth (Anderson, 2003: 4). The de facto peg officially appeared to be a crawling peg with very narrow bands.

<sup>26</sup> This is confirmed by the following considerations: Exchange rate appreciation dynamics and expectations were very high in the first three months of 2008, when actual appreciation of the RMB/USD rate reached 4.2 per cent; at the same time foreign exchange accumulation (which includes “hot money” inflows) jumped by USD 154 billion in the first quarter 2008. In contrast, exchange rate appreciation dynamics and expectations were very low in the wake of the global financial and economic crisis in the first three months of 2009, when actual appreciation was virtually on hold with 0.1 per cent; as a consequence appreciation expectations dropped sharply, confirmed by slumping foreign exchange accumulation to a mere USD 8 billion in the first quarter of 2009.

With predominating higher trading bands between 1994 and 1996, the crawling peg arrangement was literally used and the RMB showed an 18-month appreciation path from 8.7 RMB per USD in 1994 to 8.3 RMB per USD in 1996. Facing the outbreak of the Asian crisis, the PBC narrowed the trading band and established the de facto peg of the RMB versus the USD with a trading band of 0.4 per cent around the RMB/USD 8.28 peg. The trading band was further tightened in November 2000 and stood at about 0.01 per cent fluctuation around the central parity of RMB/USD 8.277 until 21 July 2005.

Foreign exchange reserves increased six-fold during the time of the de facto peg. Official reserves stood at USD 121 billion in July 1997 and at USD 733 billion in July 2005, when the RMB reform was initiated on 21 July 2005 (PBC, 2005a). While this study does not make an attempt to assess the scope of a potential RMB undervaluation over the period under consideration, the observations in Figure 7 do not only show that the RMB/USD exchange rate was de facto pegged between 1997 and 2005, but also that it was undervalued: Balance of payments trends can indicate whether a currency is under or overvalued by looking into the question of whether official foreign exchange reserves are falling or rising. Rising official reserves means that the supply of foreign exchange is above the demand at the current price (exchange rate). Thus, with the six-fold rise in foreign exchange reserves, the RMB would have been undervalued during the time of the de facto peg, most likely since the year 2000. Anderson confirmed this using the concept of the more sophisticated basic balance of payment, which incorporates the trade balance as well as medium and long-term capital flows (Anderson, 2003: 11-12; and Anderson, 2006a: 212). In retrospect, the strictness of the de facto exchange rate peg to the USD leads to the conclusion that the de facto peg clearly served as a final target of the Chinese monetary policy up to 21 July 2005.

On 21 July 2005, the authorities announced a reform of the RMB exchange rate system (PBC, 2005a; and PBC, 2005b). After some initial euphoria had dissipated it became clear quickly that the reform was not the start of a flexible exchange rate regime but rather the return to the crawling peg arrangement used actively from 1994 to 1996. The immediate changes of the RMB reform in July 2005 included: (i) an outright appreciation of the RMB against the USD of 2.1 per cent from 8.28 to 8.11; (ii) the change from a peg versus the USD towards a peg against a basket of currencies; and (iii) the reversion to the crawling peg system in which the RMB can be allowed to fluctuate against the USD up to 0.3 per cent against the exchange rate of the previous day (Anderson, 2005: 10; Goldstein et al., 2007: 2-3; and Spiegel, 2005).



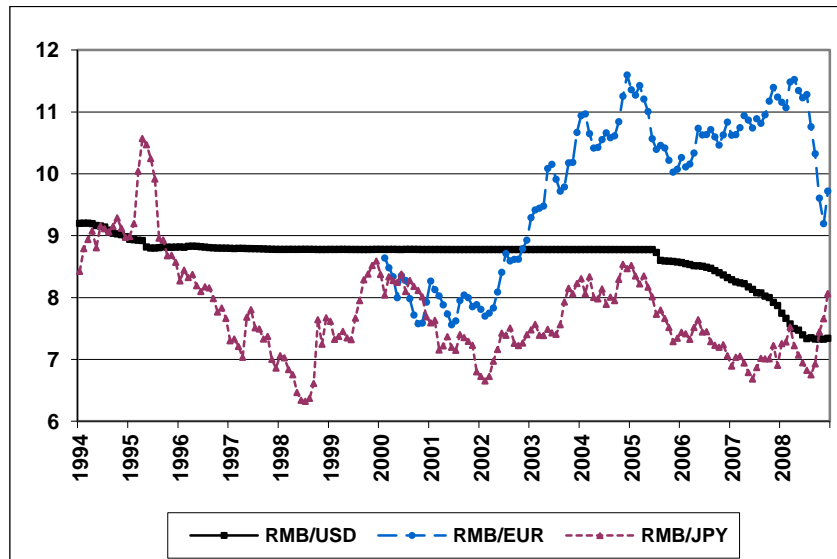
The exact weights of the currencies in the basket are unknown, even though Governor Zhou attempted to clarify this very issue in autumn 2005 when he stated: “The basket should be composed of currencies of the countries to which China has a prominent exposure in terms of foreign trade, external debt (interest repayment) and foreign direct investment (dividend). And the weights respectively assigned to these currencies should also consist with the proportional importance of these countries in China's external sector“. Governor Zhou continued “Generally speaking, annual bilateral trade volume in excess of US\$10 billion is not negligible in weight assignment, whereas that exceeding US\$5 billion should also be considered as a significant factor in currency weight deliberation” (PBC, 2005e). But Spiegel (2005) argues that this was a weak statement as it not only did not give further details on the basket as such, but also did not indicate any obligation to keep the weights constant over time. Ever since, attempts have been made to shed light onto the question of the basket of currencies underlying the peg (for instance Spiegel, 2005; Ogawa et al., 2006; and Frankel, 2009). Frankel (2009) made particularly interesting observations. Initially he argued with his co-author based on statistical analyses that while the authorities did indeed move towards a diversified basket of currencies in their RMB peg over 2006 and the beginning of 2007, the main weight had still been on the USD (Frankel et al., 2007). Then, during the remainder of 2007 and up until May 2008, Frankel (2008) shows that the basket was further strengthened with similar weights assigned for the EUR and the USD. After May 2008, he concludes that statistics show a return back to the USD as main currency of the RMB exchange rate peg: “The regime has come full circle, virtually back to what it was in late 2005“ (Frankel, 2009).

Still, in the three and a half years between July 2005 and December 2008 the RMB exchange rate appreciated substantially by around 20 per cent vis-à-vis the USD. The initial 18 months (up until December 2006) showed a cumulated appreciation by a total of 6 per cent from RMB/USD 8.28 to RMB/USD 7.81 (PBC Monetary Policy Report Q4, 2006). This was followed by 7.0 per cent appreciation in 2007 from RMB/USD 7.81 to 7.30. Then the pace of appreciation was relatively high again in the first half of 2008, but considerably slowed down in the wake of the global financial and economic crisis. The fight against the crisis had an impact on the exchange rate policies, probably due to the lower inflationary threat over the second half of 2008 combined with the authorities aim to not harm the then rapidly falling exports by further appreciating the currency. Still, 2008 appreciation reached 6.8 per cent from RMB/USD 7.30 to RMB/USD 6.83.

Looking at the RMB exchange rates with other currencies shows different development paths for the Euro and the Japanese Yen as it is described here for the US Dollar exchange rate. Figure 8 displays again the obvious stability of the RMB/USD exchange rate, while the Euro

(EUR) depreciated against the Chinese Renminbi from 2000 to 2002 and then appreciated from 2002 to 2005. Similar patterns are recognizable for the Japanese Yen (JPY), the reason of which is in the de facto RMB peg to the US Dollar where the Renminbi followed its anchor country's depreciating path vis-à-vis the Euro and the Yen.

**Figure 8: Monthly RMB exchange rates vis-à-vis USD, EUR, and JPY, 1994-2008**



**Source:** BOJ, Time-series data; ECB, Statistical Data Warehouse; IMF, International Financial Statistics; and [www.chinamoney.com.cn](http://www.chinamoney.com.cn).

**Note:** RMB/EUR exchange rate data consistently only available from February 2000. RMB/JPY exchange rate data from BOJ discontinued in March 2008; supplemented through data from [www.chinamoney.com.cn](http://www.chinamoney.com.cn).

The ultimate authority for the exchange rate target is the CPC and the State Council, but the PBC and SAFE are the responsible institutions for the actual management and implementation of the set exchange rate policy. This becomes clear in the statement made by the PBC when the RMB reform of 21 July 2005 was announced: “The People's Bank of China, with authorization of the State Council, is hereby making the following announcements regarding reforming the RMB exchange rate regime” (PBC, 2005a).

After the RMB reform in 2005 and the switch to the basket peg the RMB/USD, RMB/EUR and RMB/JPY exchange rate paths diverted further (Figure 8). While the Euro appreciated again vis-à-vis the RMB between 2005 and 2008, the Yen depreciated and both currencies' paths further developed into opposite directions in the wake of the global financial and economic crisis. From August 2008, the Euro started to depreciate and the Yen set off for appreciation. Again, these developments largely mirror the exchange rate paths of the Euro and

the Japanese Yen to the US Dollar<sup>27</sup>, thereby indicating that the basket of currencies for the RMB peg after 2005 is heavily USD-based. So still, for the Chinese authorities the exchange rate path of the Renminbi to the US Dollar is where the most attention is paid to.

In its China Monetary Policy Report 2002, the PBC described the development and the outcome of its exchange rate policies since 1994 (PBC Monetary Policy Report, 2002). The PBC analysis serves as a good illustration of the Chinese expectations vis-à-vis the stable exchange rate of the Renminbi after 1994. Accordingly, the policy was successful in achieving a stable RMB/USD exchange rate and acquiring rising amounts of foreign exchange reserves. The report proceeds that both factors have increased the international status of the RMB and the attraction of foreign capital inflows. Likewise, this led to an overall reinforcement of confidence in the Chinese economy and thus made the exchange rate an active tool in promoting economic development and maintaining economic and financial stability (PBC Monetary Policy Report, 2002). In the Chinese perspective, this assessment is certainly true. China's de facto peg has played a unique and positive role in the economy's development of the past 15 years (Flassbeck et al., 2005). Additionally, foreign exchange reserves have been piled up massively and at the end of 2008 they stood at USD 1,946 billion, a value that certainly exceeds the need to safeguard the currency. Moreover, China was among those countries in the world with the highest FDI inflows over the past decade (UNCTAD, 2004a; and UNCTAD, 2007). As the *UNCTAD Trade and Development Report 2004* pointed out, stability of monetary conditions in general, and the exchange rate in particular, were rewarded with increasing faith and thus increased international long-term capital inflows (UNCTAD, 2004b). Therefore, the international trust in the de facto peg's sustainability prior to the RMB reform in 2005 played a crucial role in attracting international businesses to China.

Regarding the reputation of the exchange rate policy, the international community has sent out ambiguous signals over the past 10 years. While the exchange rate has played a crucial role in attracting foreign investors, the international community and the developed countries in particular, have repeatedly urged China to abandon the peg since 2002. But still in 1998, in reviewing the Asian crisis, the World Bank stated: "China's decision to maintain exchange rate stability was and remains, in our view the correct policy, not only for economic recovery in the Asian region but also for China" (Bottelier, 1998). Then in 1999, the international community expected the RMB to depreciate as a response to the appreciation vis-à-vis China's neighbours. Xu (2000b) asked: "Should or will the yuan depreciate?" The Vice-President of

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<sup>27</sup> For an analysis of exchange rate developments during the financial and economic crisis in 2008 and the particular role of "carry trade" in the determination of the Japanese Yen exchange rates, please refer to UNCTAD (2009a).

the Bank of China poured new fuel into the devaluation expectations in February 2002. The New York Times headlined: “Banker says China may need to devalue Renminbi” (McGregor, 2002). Then in December 2002, the international opinion changed direction and first calls for an exchange rate appreciation appeared. The Financial Times made the start with its article: “Time for a switch to global reflation”, where Kuroda et al. (2002) urged China to appreciate the RMB. In the subsequent years, more and more countries and scholars got into the boat and supported the call for an RMB revaluation.<sup>28</sup>

At that time, the controversy over China's exchange rate policy culminated in China's announcement of an exchange rate reform with an initial appreciation of 2.1 per cent from RMB/USD 8.28 to RMB/USD 8.11 on 21 July 2005. Between then and end-December 2008, the RMB/USD exchange rate further appreciated by 19 per cent from RMB/USD 8.11 to RMB/USD 6.83. Total appreciation between 21 July 2005 and the end of 2008 was around 21.1 per cent. Broken down by annual rates of appreciation this means that in 2005 a total appreciation of 4.1 per cent was realized followed by 3.3 per cent in 2006, 6.9 per cent in 2007 and 6.8 per cent in 2008 (Author's own calculations based on data from [www.chinamoney.com.cn](http://www.chinamoney.com.cn)). The year 2008 was a special year in that appreciation of the Renminbi, which changed its pace in the second half with the financial crisis setting into with full swing. At the beginning of the year monthly rates of appreciation of up to 1.6 per cent were recorded, mainly employed to slowdown the economy and ease inflationary pressures. But starting from October 2008 appreciation of the RMB came virtually to a stillstand. Thus, after a record appreciation of 4.2 per cent in the first quarter 2008, the last quarter 2008 saw a fairly stable exchange rate of around RMB/USD 6.83. Unlike during the Asian financial crisis, this time the stability of the exchange rate was less welcome by the international community. Indeed, it was seen as an attempt to stimulate foreign demand for Chinese goods through currency movements (or non-movements) rather than to allow domestic demand to take over the role of the growth engine in China (Jacobs, 2008; Chan, 2009; and Economist, 2009a).

Recalling the variety of policy recommendations illustrates the difficulty of the task for the authorities to pursue an internationally accepted and, simultaneously, a domestically orientated exchange rate regime. At this backdrop and in retrospect, the principle to pursue a stable policy to attract foreign investors by largely ignoring the international academic and policy advice was the right strategy for China. *UNCTAD's Trade and Development Report 2004* stated that based on a stable and favourable exchange rate, China was able to attract large

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<sup>28</sup> Please refer to Woo (2003) and Laurenceson (2005) for good overviews of the international debate on China's exchange rate policy early in the new millennium.

amounts of international long-term investors without giving speculators room for short-term gains on the capital markets. The report concludes that this policy was the best option under the current circumstances of a prevailing international trade regime and the absence of an international financial framework at the same time (UNCTAD, 2004b). The outbreak of the global financial and economic crisis with large turmoil in currency markets in 2008 showed that nothing has changed to this end. Still, no viable international financial framework is in place to protect vulnerable countries from the adverse effects of financial crises or better still to prevent such crises unfolding (UNCTAD, 2009). Limited convertibility on the capital account through capital controls and a still pegged exchange rate were still able to largely insulate the Chinese economy from the financial turmoil. But the financial crisis evolved into an economic crisis with huge drops in foreign demand for imports from China (and Asia at large), thus bringing China (and Asia) at the forefront of the fight against the crisis (Economist, 2009a).

#### **4.3 Final targets**

There are two final targets of the PBC and both are stated in the “Law of the People’s Republic of China on the People’s Bank of China”. Article 3 says, “the aim of monetary policies shall be to maintain the stability of the value of the currency and thereby promote economic growth” (PBC, 1995b and PBC, 2003b). Therefore, the central bank is committed to two different final targets in pursuing its monetary policy. *First*, the bank should aim for a policy that realizes price stability. *Second*, the banks’ policy should support the general economic policy and help to promote economic growth.

Mehran et al. (1996a) interpret the formulations in the central bank law as the insight of Chinese authorities that long-term economic growth can only be realized if long-term price stability predominates, i.e. in their view, price stability is the prominent target of the PBC (Mehran et al., 1996a: 19f). The PBC itself also claims to pursue the stability of the currency as the sole target of its monetary policy. Asked about the two official final targets of price stability and economic growth and their ranking in terms of importance, a PBC official unambiguously made clear that the PBC is not supporting the two targets but only the first one. Only if the target of price stability is reached, he concluded, the central bank would help to pursue other targets, i.e. the promotion of economic growth (Author’s own research).<sup>29</sup>

In the context of the PBC, a non-independent central bank, it has to be doubted that the central bank is strong enough to ignore the goal of economic growth. In China, the central bank’s

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<sup>29</sup> Interview with Mr. Huang, Secretary of the Monetary Policy Committee of the PBC on 8 June 2004.

decision process is not sufficiently independent from the State Council's directive.<sup>30</sup> And governments rather have an economic growth bias than a low inflation bias.<sup>31</sup> Thus, the interpretation of Mehran et al. (1996a) above could only be supported in the context of an independent central bank constitution as it is, for instance, in the case of the European Central Bank (ECB). Therefore, based on the Law of the People's Republic of China on the People's Bank of China, it has to be concluded that the PBC pursues at least two final targets, which are a paramount economical target (i.e. price stability) and a less important political target (i.e. economic growth).

The exact responsibilities in the deliberations to set up the final targets are somewhat unknown. Surely, the ultimate authority lies in the hands of the CPC with the state authority being the State Council. This is captured in Figure 6 above and it fully applies to the set up of the GDP growth targets, which are defined in the five-year plans approved by the NPC and the State Council. China is currently in its 11<sup>th</sup> five-year plan, which covers the period from 2006 to 2010. In individual years, however, targets and forecasts may vary as they are often adjusted due to the very circumstance of that year, usually announced through the State Council or the NDRC. Inflation target rates for each year are formulated through the annual Central Economic Work Conference (中央经济工作会议) usually convened in December of the pre-ceeding year and published through the PBC in its Monetary Policy Reports early in the following year (PBC Monetary Policy Report, various issues).

#### **4.4 Other targets and responsibilities**

In the amendment of the *Law of the People's Republic of China on the People's Bank of China* of December 27, 2003, 14 major functions and tasks of the central bank of China have been formulated (PBC, 2003a). The PBC has to pursue several not legally formulated targets whose emergence is based on the fact that the Chinese financial system is in transition with a mix of price-based and quantity-based instruments. For instance, according to statements of PBC officials during a seminar in Beijing in April 2004,<sup>32</sup> the PBC is responsible to maintain the profitability of the commercial banks within the Chinese financial system. This task results out of the fact that the interest rate liberalization is not yet fully established. The PBC still steers the deposit rates that commercial banks can grant to customers. Thus, the central bank has to make sure that the commercial banks have access to funds at rates below the

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<sup>30</sup> Article 2 of the Central Bank law says "The People's Bank of China shall, under the leadership of the State Council, formulate and implement monetary policies" (PBC, 1995b).

<sup>31</sup> For instance, facing rising unemployment problems and sluggish growth in 2003 and 2004, European leaders repeatedly asked the ECB to lower the interest rates. On 27 February 2004, the German speaking newspaper "Die Welt" headlines "Schroeder and Raffarin call for an ECB interest rate cut".

<sup>32</sup> Joint China-IMF Training Program, *High Level Seminar on China's Monetary Policy Transmission Mechanism*, April 12-13, 2004, Beijing.

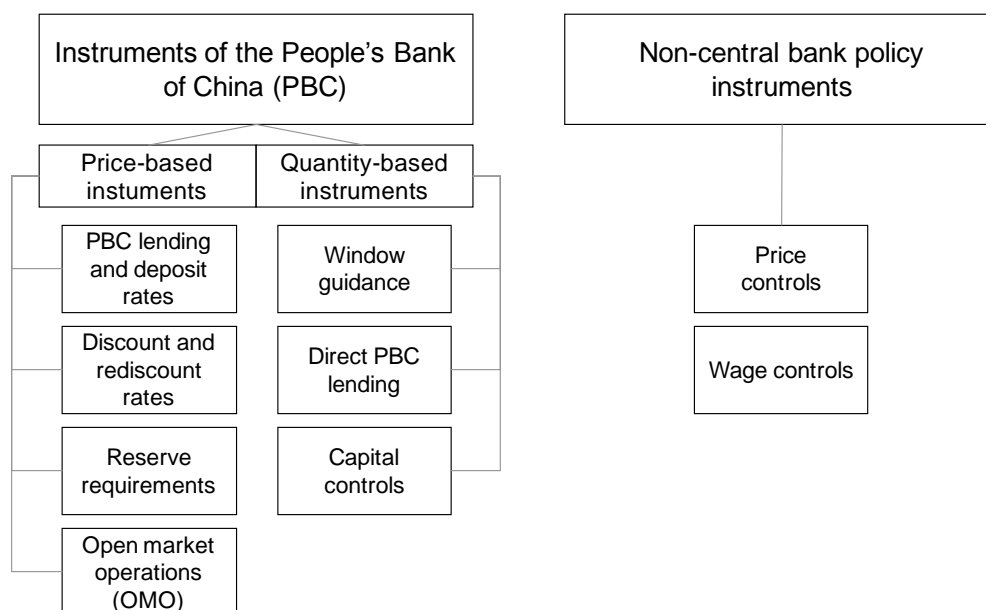
deposit rates. The lending rates, on the other hand, can be set more freely. Since October 2004 the commercial banks can set their interest rates without any upper limit around the fixed benchmark rate of the PBC. Only for rural and urban credit cooperatives there is still an upper limit of 230 per cent of the benchmark rate in place. For all financial institutions a lower limit applies of 90 per cent of the benchmark rate (PBC, 2004g). Those mixes of liberalized and non-liberalized areas make it increasingly difficult to manage the interdependent measures in a consistent and effective way.

## 5 INSTRUMENTS OF MONETARY POLICY IN CHINA

This analysis on the instruments of monetary policy in China argues that monetary policy in the past two decades has not only been conducted and influenced by the PBC, but also by other authorities, mainly the central government. This is due to the fact that the PBC is neither goal nor instrument independent and that non-central bank policy instruments are in place which are not controlled by the central bank but have a direct influence on the final targets of monetary policy. Non-central bank instruments are not primarily monetary policy instruments but affect monetary policy variables.

The PBC classifies its set of monetary policy instruments in China within four categories (Xie, 2004a: 9): Instruments with ratios (i.e. reserve requirements); instruments with interest rates (i.e. central bank lending rates); quantitative instruments (i.e. open market operations); and other instruments (i.e. central bank bills).<sup>33</sup> The classification used in this work somewhat differs from the four categories. *First*, two main categories of central bank instruments are distinguished: (i) price-based; and (ii) quantity-based instruments. *Second*, all four above-mentioned PBC categories are subsumed under the category of price-based instruments. As a *third* kind of instruments, price and wage controls as non-central bank instruments will be highlighted. Figure 9 below visualizes the three-fold differentiation of monetary policy instruments in China.

**Figure 9: Instruments of monetary policy in China, 1994-2008**



**Source:** Author's own visualization.

<sup>33</sup> Xie mentioned that the PBC had introduced and tested 14 monetary policy instruments between 1983 and 2004.



Price-based instruments are instruments that are market conform and use the price to determine the amount of money in the financial system. The classification of open market operations (OMOs) as price-based instruments has its merit even though OMOs were originally designed to control the monetary base. But, in a market-based financial system, every amount of monetary base has its corresponding price. Thus, the major central banks in the world use OMOs to control the money market rate rather than the monetary base. The PBC is also shifting in this direction and is increasingly utilizing OMOs in its conduct of monetary policy. For instance, while the PBC carried out 132 open market operations in 2000 this number increased to 233 in 2008. Quantity-based instruments are instruments that are non-market conform, i.e. instruments that change the amount of money in the financial system without taking into account the price of money. Instruments that would fall into this category are the nowadays-abolished credit plan or newly introduced instruments like window guidance. Capital controls also can be counted to this category since controls leverage on the quantity of capital and not on its price.

This distinction pays tribute to the fact that China's economy and financial system is under transition from a planned towards a market- and price-based system. Having chosen a gradual approach of transformation, it is in the very nature that during the period of transition, price- and quantity-based measurements are in place simultaneously. Moreover, there are certain non-central bank instruments that particularly helped in the past to reach price stability within the context of an uncompetitive and unsound banking environment. And price-stability is not the only final target of monetary policy in China. As it was discussed in chapter 4, the PBC pursues two final targets, which are a paramount target of price-stability and a less important economic growth target. It will be shown that since the mid-1990s a heterodox policy mix applied in China helped to successfully pursue both price-stability and economic growth.

## **5.1 *Instruments of the People's Bank of China as the central bank of China***

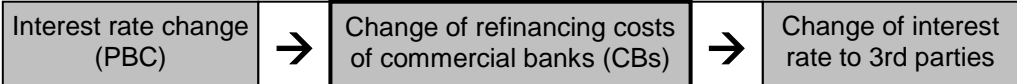
### **5.1.1 Price-based indirect instruments**

Monetary policy textbooks describe the transmission of monetary impulses, among others, via the interest rate channel of monetary policy transmission (see Bofinger, 2001). In a very simplified description, the interest rate channel can be described as follows: (i) in the case of a perceived expansionary monetary stance, the monetary authorities would increase their primary lending rate; then (ii) in a completely market-based environment, the tightened stance of the lending rate would be transmitted into the inter-bank money market rates across all maturities. In other words, the commercial banks' refinancing costs would rise due to the increase in the primary lending rate. The higher cost of financing for commercial banks

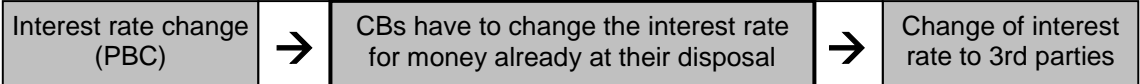
would lead to higher interest rates for outflowing commercial credits. Higher interest rates in turn would lead to a lower demand for credits from the non-banking sector and thus lead to a slowing of the real sector. The reverse logic would apply for the situation of a too restrictive monetary stance. The interest rate instrument influences final targets via its interaction with intermediate targets.

In China, this simplified interest rate channel of monetary transmission is blurred. Due to the partially interest rate liberalization, price-based instruments in China have two different underlying mechanisms of action. *First*, there are instruments that transform the central bank’s policy stance through the interest rate channel of monetary transmission, i.e. OMOs or minimum requirements. *Second*, there are instruments that are not yet subject to full liberalization and thus act under the disguise of price-based instruments, i.e. PBC lending and deposit rates. This means that there are two different ways of transmission of interest rate changes:

1. The transmission of interest rate changes according to the (simplified) textbook interest rate channel:



2. The transmission of interest rate changes as result of administered interest rate changes:



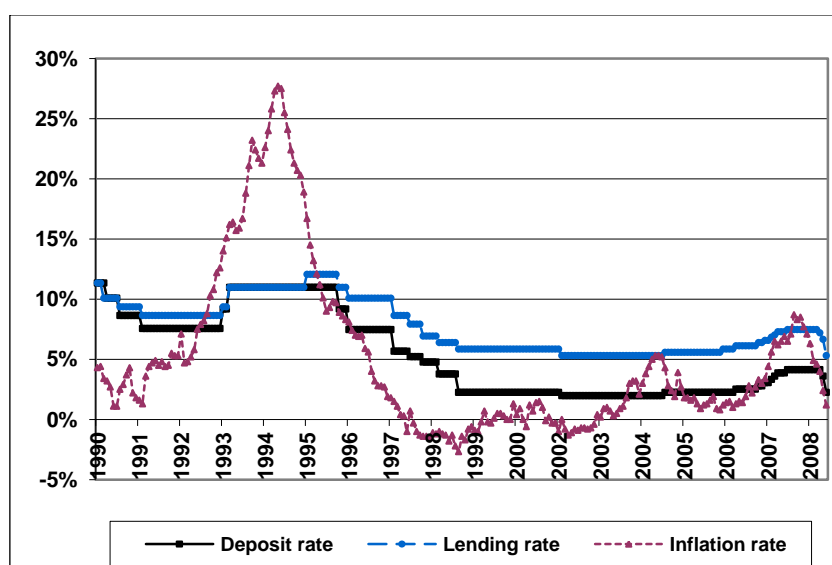
**5.1.1.1 PBC lending and deposit rates**

Xie (2004a) argues that the PBC lending and deposit rates work in a similar market-oriented way as facilities of Western central banks such as in the case of the European Central Bank (ECB), where the marginal refinancing and the deposit facility constitute the upper and lower limit of the money market interest rates.<sup>34</sup> Accordingly, Xie argues that the PBC lending rate constituted the upper limit of the money market rate since 1998 and that the lower limit of the money market from 1998 to 2002 was defined by the interest rate on required and excess

<sup>34</sup> In the case of the Eurozone, commercial banks can use the marginal refinancing facility and the deposit facility to finance their short-term liquidity (Bofinger, 2001). They can also use funds from the money market to balance their positions. All credit businesses to non-bank third parties have to be backed-up by ECB money. If the operations expire, the commercial banks will have to get new funds from the Central Bank or the money market. Through the interconnection to the money market, the marginal refinancing and the deposit facility constitute the upper and lower limit of the money market interest rates. Eventually, according to the interest rate channel of monetary transmission, the levels of the ECB’s facilities influence the rates of lending businesses between commercial banks and non-bank third parties.

reserves (Xie, 2004a: 20)<sup>35</sup>. In theory, this is correct. But while there had been progress towards a price-theoretic underpinning of monetary operations since the mid-1990s, the situation described by Xie (2004a) does not convey the full picture. In certain circumstances, the PBC lending and deposit rates have to be seen as an administrative order from the monetary authority that leverages on existing money already at the disposal of the commercial banks. Thus, credits from commercial banks to non-bank third parties are not necessarily based on a utility-calculation in terms of costs for refinancing from the PBC (the same logic applies for deposits respectively).<sup>36</sup>

**Figure 10: Development of the lending, deposit and inflation rates in China, 1990-2008**



**Source:** IMF, International Financial Statistics; and National Bureau of Statistics of China (monthly updates).

**Note:** Lending and deposit rates are the one year PBC benchmark rates.

The PBC administers two different benchmark interest rates: (i) the benchmark lending rate, which is the one-year PBC lending rate; and (ii) the benchmark rate of central bank lending that is the rediscount rate. The PBC lending rate gives the commercial banks a certain degree in setting their interest rates according to their assessment. At the beginning of 2004, the upper limit of the lending rate for commercial banks and urban credit cooperatives was set to 170 per cent of the PBC benchmark rate and the ceiling for rural credit cooperatives at 200 per cent respectively. The lower limit of the lending rate for all financial institutions was installed at 90 per cent of the PBC's benchmark rate. In October 2004, the ceiling for com-

<sup>35</sup> In fact, the money market rate was constantly below the interest rates on reserves from 1996 to 1999.

<sup>36</sup> The add-on problem that huge parts of credits are not negotiated according to project risks is not subject to this analysis.

mercial banks was abolished and the cap for rural and urban credit cooperatives increased to 230 per cent. The lower limit for all financial institutions remained unchanged (PBC, 2004g). While these and other liberalizations indicate progress towards market-determined interest rates, controlled interest rates are still a reality. For instance, the PBC stated in a large-scale review of the market-based interest rate reform that while since 1996 more than 100 types of administered interest rates were “liberalized, consolidated or abolished currently, there are 30 administered interest rates subjected to management by the PBC” (PBC, 2005c: 17).

## **Box 2: Interest rates in China and the "divisible by nine" rule**

Interest rate adjustments in China usually come in 0.27 percentage point changes or as multiples of it, for instance 0.54 or 1.08 percentage points. Sometimes they also come as 0.18 or 0.72 percentage point adjustments. This is different from practices around the world, where, for instance in the cases of the ECB and the US Federal Reserve interest rates are usually adjusted by 0.25 percentage points or multiples of it. Why make a difference of changing interest rates by 0.27 instead of 0.25 percentage points? Where do adjustments of the order of 0.27 come from? Well, 0.27 is divisible by nine, so is 1.08, 0.72 and 0.18. But why would the PBC want to adjust the interest rates by margins “divisible by nine”? The pronunciation of “nine” in Chinese is homophone to the pronunciation of “longevity” (Piboontanasawat et al., 2007), a fact certainly good for conducting monetary policy with a long-term view for price stability.

But can superstition serve as the main reason for the “divisible by nine” rule? This question is not at the centre stage of attention for economic analyses of China, but it is interesting to look into the reasons behind it to discover some fine nuances in Chinese financial practices. Joseph Yam, Chief Executive of the Hong Kong Monetary Authority did so in an article in 2006, where he traces back the “rule” to the set-up of the Chinese accounting system (Yam, 2006):

*“The answer, interestingly, is tradition, which is reflected in the official guidelines for calculating interest rates on the Mainland. For instance, accounting standards (...) specify how the annual, monthly, and daily rates should be derived from each other. These conversion rules were set based on the assumption that there were 360 days (rather than 365) and 12 months in a year, and always 30 days in a month. The daily rate is therefore the annual rate divided by 360 or the monthly rate divided by 30, and the monthly rate is the annual rate divided by 12. (...) To avoid daily rates with recurring decimals, and the associated rounding complications in calculating the interest, annual interest rates (and any changes) have therefore to be divisible by 360. But since anything is divisible by 40 (provided you have enough decimal places for the exact answer), the annual interest rate, in practice, only needs to be divisible by nine. This, as far as I can ascertain, is the reason for the increase of 27 basis points (divisible by nine) in the benchmark lending rate by the PBoC on 27 April [2006] to 5.85% (also divisible by nine).”*

To adjust the benchmark lending rate, the PBC needs the consent of the State Council. Through this dependency on the State Council, the “central bank lending rate is still not flexible to meet the needs called for by the pre-emptive or fine tuning of monetary policy” (PBC, 2005c: 19). Moreover, the insufficient instrument independence of the PBC is the cause that monetary policy in China often fails to react timely to changes in the monetary policy environment. To mitigate this negative effect, since 25 March 2004, the PBC is allowed to add a surcharge on its central bank lending rate at its own discretion (PBC, 2005c). The development of the PBC lending rate and the deposit rate in relation to the inflation rate are dis-

played in Figure 10 from 1990 to 2008. Interestingly, adjustments in interest rates in China usually come in margins that are “divisible by nine” (see Box 2).

The developments of the PBC lending rate since 2006 point to enhanced ability to fine-tune the instrument from the side of the PBC. In 2006, two slight increases of the PBC lending rates followed each other within four months of time (Figure 10): The first one on 28 April 2006, by 0.27 percentage points and the second one on 19 August 2006, by 0.27 percentage points again up to 6.12 per cent. On the second occasion, the deposit rate was also increased by 0.27 percentage points to 2.52 per cent. In 2007, six upward adjustments of the benchmark interest rate were undertaken to face increasing rates of inflation in March, May, July, August, September and December 2007. The adjustments came as 0.27 or 0.18 percentage points increases and increased the rate in total over the year from 6.12 per cent in January to 7.47 per cent in December 2007. In 2008, the rate stood at 7.47 per cent until September with widespread speculation of further increases, particularly in the first half of the year with inflation rates being consistently above 7 per cent. Some observers argued that the restrictive reactions of 2007 and the first-half 2008 were overdone as the core inflation rate for China was on reasonable levels; reviewing those arguments, Roach (2008) provides a good analysis, why this is not the case. The author of this study does shares this view that the concept of core inflation is less applicable in China than elsewhere (see Box 3). This is mainly due to the fact that food-related expenses account, relatively speaking, for far higher portions of overall expenses in developing countries, including China. It is due to this limited value-added of core inflation analyses for China that this study focuses on and refers to headline inflation rates only.

### **Box 3: Core inflation in China**

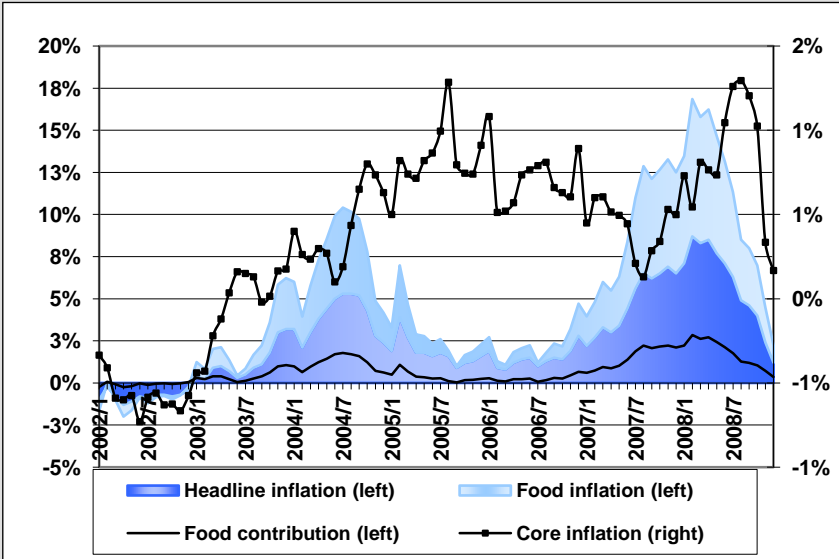
Core inflation is a measure of inflation that unlike CPI inflation does omit some of the components of the underlying consumer price index. Core inflation thus adjusts the headline inflation rate by its most volatile components. The concept of core inflation is often used as an important part of central banks' analyses of current and future price trends and offers simplicity by reducing the extend of erratic price movements. Monetary policy makers look at core inflation because volatile prices of components of the CPI are often the results of supply shocks, such as rising oil and food prices. But typically such shocks are of temporary nature and – if second-round effects can be avoided – do not influence long-term price trends (cf. Bundesbank, 2000; Rich et al., 2005; Lenza, 2007; PBC Monetary Policy Report Q2, 2007; and Wynne, 2008).

The most familiar and most widely used version of core inflation is the rate of growth of the price level that excludes price developments related to food and energy. Such analyses go back to Robert Gordon who used the differentiation of an adjusted inflation rate in his analysis of alternative responses to external supply shocks (Gordon, 1975). The accuracy of the “exclusion method” increases with the depth of the breakdown and the information of the subcomponents and weights of the underlying CPI. Additionally, over the years different other methods have been invented.

For instance, the Bank of Canada introduced an approach that adjusts the weights of components of the CPI to their overall volatility measured by their standard deviation. "The higher the standard deviation (i.e. the volatility) in the component, the lower the adjusted weight" (Bundesbank, 2000: 52). This logic is captured in so-called Edgeworth indices; such core inflation rates have the advantage that they "do not discard potentially useful information about core inflation that may be contained in food and energy prices – or whatever categories are excluded" (Wynne, 2008: 217). But other problems arise: The time-frame underlying the volatility calculation can be largely voluntarily set, thus again reducing the accurateness of the derived index (Shu et al., 2004).

There are several studies and analyses on the applicability of the concept of core inflation in China. Interestingly, the frequency of new studies increases when the headline inflation rate in China experiences substantive upward pressures as it was the case in 2004, 2007 and 2008 (cf. Shu et al., 2004; PBC Monetary Policy Report Q2, 2007; Roach, 2008; and Zhao, 2008b). For instance, Zhao (2008b) develops a three variable structural vector autoregressive (SVAR) model to develop a core inflation rate for China based on consumer price index, food price index and output. Due to data-constraints, however, most studies are based on the logic of the "exclusion method". But in the absence of separate price statistics for energy, core rates in China are usually derived from the headline inflation rate adjusted by one component only, i.e. the category of food in the CPI (Shu et al., 2004: 8).

Figure 11: Headline inflation, food price contribution and core inflation in China, 2002-2008



Source: Author's own calculations based on monthly data and notices provided by the National Bureau of Statistics of China.

Notes: Left-hand axis depicts headline inflation and right-hand axis shows the core inflation rate.

The light blue area of food inflation displays the inflation rate of the items "food stuff" in the Chinese CPI.

The line "food contribution" shows the contribution of food inflation on the overall headline inflation.

Such a core inflation rate can be calculated by using the information of the breakdown of the CPI that underlies the price index in China (Table 31). Food items have a weight of 34.4 per cent. The Statistical Bureau of China publishes the monthly price changes of the item "food stuff" in a consistent manner since 2002. By multiplying the food price changes with their overall weight in the CPI one can derive the part of food price changes in the overall CPI. Subtracting this rate from the CPI headline inflation results in a core inflation rate for China, i.e. the headline inflation rate less food price changes. This is displayed in Figure 11 from January 2002 to December 2008.

The figure shows the headline inflation rate, its food price contribution and the core inflation rate. The light shaded area shows the similarity in the growth paths of food price inflation and headline inflation. This is also reflected in the shaded purple area, which plots the significant contribution of food inflation on the headline inflation rate. One can also clearly see that core inflation increased significantly from the 2003/04 expansionary cycle. Ever since, core inflation has stayed at levels above 1 per cent with the exception of summer 2007. It is striking that core inflation has never passed the two per cent threshold thereby indicating rather low inflationary pressures throughout the period under consideration. Likewise, in his analysis from 1986 to 2007 Zhao (2008b) observes the rather low growth path of core inflation.

The question is whether the concept of core inflation is really appropriate for price analysis in China. The PBC argues against the application of the concept in China and is in favour of the current practice to not publish core inflation statistics in China. "While looking at the overall CPI, the PBC also follows the changes in every item. Given the actual situation in China, any analysis of the price situation should, in addition to looking at the core CPI, also pay attention to the impact of food price" (PBC Monetary Policy Report Q2, 2007: 39). The reason for this – according to the PBC – is that in developing countries like China food prices make up a relative high and substantial part of consumption expenses of consumers. As a result, in China the category "food stuff" has a weight of almost 35 per cent in the composition of CPI, while for instance in the Euro area the weight is merely 19.5 per cent (ECB, 2008).

As a consequence, volatile food prices have a more severe and more direct impact on Chinese consumers than volatility has on consumers in developed countries. And, there is a general absence of efficient mechanisms in developing countries to build inflation expectations that consider and accommodate the temporary nature of food and energy price hikes. Thus, there is a higher probability of second round effects of supply shocks in developing countries (IMF, 2008a: 109-118).

In conclusion, the meaning of core inflation in China is limited and Shu et al. (2004) are right in their observation that it should not be taken as a main means for price analysis. For instance, a trend of below 2 per cent core inflation during the 2007/08 inflationary cycle should not be seen as proof of the absence of inflationary tendencies. In fact, if it was not through the global financial and economic crisis in 2008, inflation pressures in China most likely had not abated so abruptly. At the end it is the headline inflation that counts for the consumers and that rate was driven down by decreasing food, energy and other commodity prices triggered by the global economic downturn in 2008. Without this, second-round effects could have easily started off, a fact all too often disregarded by observers of the core inflation rate.

With the advent of the full-fledged financial and economic crisis in September 2008 a real threat of deflation started to arise. Faced with this very different situation, the PBC followed the major central banks of the world in pursuing expansionary monetary policies to face the crisis. Unthinkable just months before – but then possible due to the fear of deflation – the PBC decreased its benchmark lending rate in five steps from 7.47 to 5.31 per cent in just four months from September to December 2008. Four but one interest rate cut followed the PBC custom of adjustments by 0.27 percentage points. Effective on 27 November 2008, the PBC announced the second largest ever single adjustment by 1.08 percentage points. The total adjustment in 2008 reached 2.16 per cent – downwards. To support these "moderately active" monetary policies, a massive fiscal stimulus package was set in motion in November 2008, totalling RMB 4 trillion over two years to fight the negative impacts of the financial crisis (China Daily, 2008c).

### 5.1.1.2 Discount and rediscount rates

Before 1998, the discount and rediscount rates were set within a floating range of 5 to 10 per cent below the commercial banks' loan and PBC lending rates, respectively. Since 1998, the rediscount rate has been determined in line with other central bank lending rates. In 2004, the rediscount rate was installed as the benchmark rate of central bank lending, i.e. the PBC was given the possibility to change the central bank lending rates within a floating range around the rediscount rate without prior approval of the State Council. However, the turnover of operations within the rediscount instrument itself is too small to have significant influence on the growth of monetary base. Thus, today the rediscount policy primarily aims at influencing the commercial paper market (PBC, 2004e; PBC, 2004f and Xie, 2004a: 3ff).

### 5.1.1.3 Reserve requirements

The PBC introduced minimum reserve requirements in the year 1984 in order to control the financial sector liquidity. At first, the officials set different reserve obligations for the different deposits with regard to their origin and the institution actually holding the reserves.<sup>37</sup> In 1985, the PBC combined all different reserve requirements and set one minimum reserve requirement at 10 per cent. But only from 1998 on the instrument of the reserve requirement was more actively used (Table 12).<sup>38</sup> That year also marks the time when the PBC shifted its monetary policy from direct control to more indirect control and made open market operations (OMOs) the main instrument of its monetary policy.

Table 12 shows the development of the reserve requirement in detail between 1985 and 2008. The table illustrates the relative passivity in using the instrument between 1985 and 1998 and the ever-increasing activity since 2003. There were 5 adjustments of the general rate in the three years between 2003 and 2006. This was followed by 10 adjustments in 2007 and 8 rate changes over the year 2008. The justifications of the PBC in regard to these adjustments show that the reserve requirement ratio is more and more seen as a main instrument to control liquidity in the financial system at large and restrain the relatively fast growth of monetary and credit aggregates of the economy between 2003 and 2006 (PBC, 2003c; PBC, 2006a; PBC, 2006c and PBC Monetary Policy Reports, various issues). To this end, the requirement to hold reserves with the PBC is one means to offset the effects of ever rising capital inflows into China. Through the frequent adjustments, particularly in 2007 and

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<sup>37</sup> For instance, the Agricultural Bank of China (ABC), the Industrial and Commercial Bank of China (ICBC), and the Bank of China (BOC) had to hold 20 per cent on deposits of companies as well as 40 per cent on money of urban and 25 per cent of rural origin. The China Construction Bank (CCB) had a requirement of 30 per cent regardless of the money's origin.

<sup>38</sup> Excess reserves can be voluntarily held only since 1998.



2008, the PBC made clear that the instrument of reserve requirement is a major component of its current monetary policy toolbox.

**Table 12: Reserve requirement ratios in China, 1984-2008**

Year / Effective Date of Change	Reserve requirement ratio - before the change -	Reserve requirement ratio - after the change -	Change in percentage points
1984	<i>Ratios dependent on type of deposits:</i> Enterprise deposits 20 % / Rural deposits 25% / Household saving deposits 40%		
1985	10.0%	10.0%	---
1987	10.0%	12.0%	2.0%
Sep-1988	12.0%	13.0%	1.0%
21-Mar-1998	13.0%	8.0%	-5.0%
21-Nov-1999	8.0%	6.0%	-2.0%
21-Sep-2003	6.0%	7.0%	1.0%
25-Apr-2004	7.0%	7.5%	0.5%
5-Jul-2006	7.5%	8.0%	0.5%
15-Aug-2006	8.0%	8.5%	0.5%
15-Nov-2006	8.5%	9.0%	0.5%
15-Jan-2007	9.0%	9.5%	0.5%
25-Feb-2007	9.5%	10.0%	0.5%
16-Apr-2007	10.0%	10.5%	0.5%
15-May-2007	10.5%	11.0%	0.5%
5-Jun-2007	11.0%	11.5%	0.5%
15-Aug-2007	11.5%	12.0%	0.5%
25-Sep-2007	12.0%	12.5%	0.5%
25-Oct-2007	12.5%	13.0%	0.5%
26-Nov-2007	13.0%	13.5%	0.5%
25-Dec-2007	13.5%	14.5%	1.0%
25-Jan-2008	14.5%	15.0%	0.5%
25-Mar-2008	15.0%	15.5%	0.5%
25-Apr-2008	15.5%	16.0%	0.5%
20-May-2008	16.0%	16.5%	0.5%
15-Jun-2008	16.5%	17.0%	0.5%
25-Jun-2008	17.0%	17.5%	0.5%
15-Oct-2008	17.5%	17.0%	-0.5%
5-Dec-2008	17.0%	16.0%	-1.0%

**Source:** Wei, 1999: 145-146; PBC, 2000a; PBC Monetary Policy Report, various issues; and The Central People's Government of the PRC ([www.gov.cn](http://www.gov.cn)).

**Note:** In 2004, establishment of “differentiated required reserve ratio for different financial institutions” (PBC, 2004b).

It is clear that the instrument is used particularly for the purpose of managing and absorbing liquidity in the financial system and, thus, it plays an important role in the sterilization of foreign exchange market interventions in China (Green, 2005:19-21). Chinese authorities use the instrument in a way similar to what the German Bundesbank did in the 1960s and 70s. Just like the PBC today, the Bundesbank at that time needed to absorb huge amounts of liquidity as a result of the need to maintain a fixed exchange rate to the USD while experiencing large-scale capital inflows. In retrospect, the Bundesbank describes the evolving mini-

minimum reserve requirements as follows: “In the past, and especially during the period of fixed exchange rates, the Bundesbank used the minimum reserve requirements primarily as an instrument for the longer-run adjustment of bank liquidity” (Bundesbank, 1995: 127). As a response then, “special minimum reserve ratios” were introduced and applied to the increment in liabilities subject to reserve requirements if necessary, particularly in 1960, 1970 and 1978. The reserve ratio on the increment could be used in a way so as to increase the overall minimum reserve requirement, i.e. on the combined stock and increment liabilities, up to the legal maximum of 100 per cent (Bundesbank, 1995: 124).

The Chinese reserve requirement regime has three main particular features. *First*, minimum and excess reserves are interest bearing. According to Schlotthauer (2003), during the 1990s the interest paid on the reserves was so high that there were years in which the dominant strategy of a commercial bank was to hold reserves at the central bank instead of granting a risky loan to an enterprise (Schlotthauer, 2003: 212). However, the PBC argues in favour of the interest-bearing component that it was able to constitute a lower limit for the money market rate (Xie, 2004a: 20). This, however, could not be constantly achieved (PBC, 2000a). But with the ever-decreasing interest rates on the reserves the critical issue of holding reserves rather than granting loans disappeared over the years (Table 13).

Until 1998, in addition to the minimum reserves, the financial institutions also had to hold excess reserves or working balances. Normally these reserves can be held voluntarily. But the PBC obliged the big state-owned commercial banks to hold these working balances at a rate between 5 to 11 per cent depending on the institute. The obligation to hold working balances made the working balances just another form of the minimum reserves. As the PBC was aware of the absurd obligation to hold working balances the central bank combined both rates and set one uniform minimum reserve requirement rate in 1998. Since then, commercial banks can really voluntarily decide whether they want to hold working balances or not (PBC, 2000a; and Wei, 1999:145 f). Table 13 displays the underlying interest rates for both the minimum reserves and the excess reserves. But which institutions in the financial system are holding excess reserves and to what extent?

In 2003, the excess reserve ratio of the financial sector stood at 5.38 percent. The four state-owned commercial banks had excess reserves of 4.12 per cent while partly privately owned “joint-stock” commercial banks’ excess reserves amounted to 8.11 percent. Among all financial institutions the rural credit cooperatives (RCCs) had the highest ratio of excess reserves with 8.33 per cent (PBC Monetary Policy Report, 2003). In 2008 the picture was very similar. For the financial sector at large the excess reserves stood at 5.11 per cent at the end of the

year. Broken down by type of institution, the four state-owned commercial banks had 3.93 per cent, partly private “joint-stock” commercial banks had 5.73 and rural credit cooperatives had 10.12 per cent of excess reserves in 2008 (PBC Monetary Policy Report Q4, 2008). While it is somewhat astonishing that over the years the four state-owned commercial banks had excess reserves at levels significantly lower than partly privately-owned “joint-stock” commercial banks, this may have a simple explanation. Partly privately-owned banks do not have such a strong link to the central bank as the state-owned banks do. It is probably to this reason that (partly) private banks hold higher excess reserves to be able to bridge changes in the liquidity supply without direct intervention from the PBC.

**Table 13: Interest granted for required minimum and excess reserves in China, 1987-2008**

Year / Effective Date of Change	Interest rate (%) required reserves	Interest rate (%) excess reserves
1987	4.32	5.76
Sep-1988	5.04	6.48
Feb-1988	7.20	8.60
Apr-1990	7.92	7.92
Aug-1990	6.84	6.84
Apr-1991	6.12	6.12
15-May-1993	7.56	7.56
11-Jul-1993	9.18	9.18
01-May-1996	8.82	8.82
23-Aug-1996	8.28	7.92
23-Oct-1997	7.56	7.02
21-Mar-1998	5.22	5.22
01-Jul-1998	3.51	3.51
07-Dec-1998	3.24	3.24
10-Jun-1999	2.07	2.07
21-Feb-2002	1.89	1.89
21-Dec-2003	1.89	1.62
17-Mar-2005	1.89	0.99
27-Nov-2008	1.62	0.72

**Source:** Mehran et al., 1996a: 46; PBC, 2000; PBC, 2003e; PBC Monetary Policy Report, various issues; and Xie, 2004a: 5.

A *second* feature of the Chinese reserve requirement regime is that the financial system holds high ratios of excess reserves. Interestingly, rural credit cooperatives (RCCs) hold the highest ratio of excess reserves amongst all financial institutions in recent years (PBC Monetary Policy Report, 2003: 6). And RCCs are subject to credits in the direct central bank lending scheme as they are subsidized with central bank money at a very low lending rate.

*Third*, in April 2004, the PBC decided to formally introduce a policy of “differentiated required reserve ratio for different financial institutions” (PBC, 2004b), which linked the required reserve ratio applicable to financial performance indicators such as capital adequacy ratio and

asset quality as well as geographic and institutional scope of the organization, i.e. rural and urban credit cooperatives (PBC, 2003c). Thus, in 2004, financial institutions with capital adequacy ratio below the 8 per cent threshold of the Basel Accord were subject to an 8 per cent required reserve ratio, while ratios for rural and urban credit cooperatives were frozen in the 1999 level to 6 per cent (PBC, 2004c; and PBC, 2004d).

**Table 14: Key elements of the PBC reserve requirement regulations**

Elements	Chinese characteristics
Covered institutions	<ul style="list-style-type: none"> <li>➤ All financial institutions</li> <li>➤ Differentiated required reserve ratio for different financial institutions since 2004</li> </ul>
Liabilities which are subject to reserves	➤ n.a
Requirement ratios	➤ Yes, see Table 12
Maintenance period structure	➤ 10 days, starting on the 4 <sup>th</sup> , 14 <sup>th</sup> , 24 <sup>th</sup> of every month
Required reserve computation period	<ul style="list-style-type: none"> <li>➤ Fully lagged: <ul style="list-style-type: none"> <li>✓ Commercial banks hold their requirement ratio according to the amount of liabilities at the 10<sup>th</sup> day of the prior maintenance period</li> <li>✓ The requirement ratio has to be met exactly on the last (10<sup>th</sup>) day of each period.</li> <li>✓ Fluctuations are permitted during the period.</li> </ul> </li> </ul>
Eligible assets for satisfying the requirement	➤ Central bank balances
Remuneration on assets held according the requirement	➤ Yes, see Table 13
Carry over provisions	➤ No
Penalty structure for failing to meet the reserve requirements	➤ 6 % per day on the amount below the required reserves

**Source:** PBC, 2003h; PBC, 2004b; and author's own research.

Subsequently, reserve requirement ratios for financial institutions subject to the differentiated regime as well as the urban credit cooperatives were largely adjusted with the same stance as the general reserve requirement ratio<sup>39</sup> (PBC, 2006a and PBC, 2006b). This meant that by the end of 2006, the reserve ratio for financial institutions with insufficient capital adequacy was 0.5 per cent higher and for urban credit cooperatives it was 1.5 per cent lower than for all other institutions. By the end of 2006, rural credit cooperatives were still subject to the 1999 ratio of 6 per cent. Due to special circumstances, the authorities started again to more actively utilize the “differentiated required reserve ratio for different financial institutions” in 2008. For instance, the increase of the ratio on 15 June 2008 did not affect rates for those

<sup>39</sup> The general reserve requirement ratio applies to the “Big Four”: (i) ABC; (ii) BOC; (iii) CCB and (iv) ICBC, “joint-stock” commercial banks, city commercial banks, rural commercial banks (rural cooperative banks), China Agricultural Development Bank (a policy bank), trust and investment companies, finance companies, financial leasing companies and relevant foreign funded financial institutions.

banks operating in the May 2008 earthquake areas.<sup>40</sup> Likewise, on 25 September 2008 the requirement was lowered by 1 percentage point for all but the “Big Four” commercial banks and lowered by 2 percentage points for the earthquake areas. And the cut in reserve requirements on 5 December 2008 was more pronounced for small and medium-sized commercial banks (i.e. 2 percentage points) than for the “Big Four” commercial banks (i.e. 1 percentage point).

To conclude, Table 14 displays the technical key characteristics of the reserve requirement system in China, which became one of the main monetary policy instruments of the PBC over the last decade.

#### **5.1.1.4 Open market operations (OMOs)**

In 1993, the PBC introduced the instrument of open market operations (OMOs) into its monetary policy toolbox. But the authorities soon had to realize that the institutional foundation with the absence of an inter-bank market and only rudimentarily liberalized interest rates was not strong enough to establish well functioning OMOs. Thus, in the following years, only few OMOs were carried out and on a very low scale. Therefore, the central bank decided to suspend OMOs in the year 1997.<sup>41</sup> On 26 May 1998, the authorities officially re-introduced OMOs (Dai, 2003: 57). Under new circumstances with a better institutional foundation, the operations were an immediate success. Ever since, OMOs have represented a key instrument for the conduct of monetary policy in China.

##### **5.1.1.4.1 Organizational features**

To ensure efficient operations between the participating parties on the open market – the commercial banks and the central bank – the authorities rest the organization of open market operations on several key pillars:

1. *Grading system for dealers:* Only “grade one” dealers are allowed to carry out transactions on the open market. The number of these authorized dealers was gradually enlarged over the years. In 2003, with the inclusion of new authorized dealers, 43 dealers were allowed to participate in OMOs. This number was increased in 2005 to 52 when a total of 42 commercial banks, four securities firms, four insurance companies and two rural credit cooperatives were confirmed or newly approved (CBMIN, 2007a); PBC Monetary Policy Report Q1, 2003: 11; and PBC, 2006d). The roles and responsibilities of the

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<sup>40</sup> On 12 May 2008 a major earthquake, magnitude 7.9, hit China’s Sichuan Province with the epicenter near the city of Wenchuan. The earthquake killed tens of thousands of people and left millions homeless.

<sup>41</sup> Please refer to Mehran et al. (1996a: 47) for a detailed description for the early years of OMOs.

primary dealers are defined in the “Regulation for Open Market Operation and Primary Dealer” (CBMIN, 2007b).

2. *Primary dealer liquidity daily reporting system*: Since February 2003 the monitoring and supervision system has been enhanced by introducing the so-called “primary dealer liquidity daily reporting system”. Until that time the surveillance system was only effective on the very trading days of open market operations. With the system in place the primary dealers are subject to permanent supervision (Dai, 2002; and PBC, 2004a).
3. *Standardization of open market operations*: Each open market operation is carried out by the monetary policy department of the PBC, which decides about the amount and the kind of the operation. The tenders are carried out via an electronic trading system. All “grade one” primary dealers are invited to bid within the same time window via the computer system (Dai, 2002).

Open market operations include: (i) national bonds; (ii) central bank bills; and (iii) financial bonds from other financial institutions, the so-called policy banks. They are traded as repurchase and outright market operations. Repurchase operations include: Repurchase agreements for the purpose of monetary base withdrawal (“repos”); and reverse repurchase agreements for fuelling monetary liquidity (“reverse repos”). Additionally, the central bank issues central bank bills, securities issued by the PBC. Generally speaking, the PBC withdraws monetary base by issuance of central bank bills and injects monetary base with their redemption (Dai, 2002; Dai, 2003: 57 and PBC, 2003c: 11-12).

The PBC offers two different bidding processes in the conduct of its operations. The bidings can be made on price, i.e. on the interest rate, and on the quantity of the operation. Price biddings apply for fixed quantity operations, whereas quantity biddings are used when the interest rate is predetermined. An oversubscription signals either an appropriate or a too tight level of liquidity in the market; an under-subscription shows over liquidity in the market. Since the inception in 1998 both kinds of biddings were utilized on the open market, but with a majority of quantity tenders until 2003. With the start of increasingly using central bank bills and “repos” for the absorption of liquidity in the financial system from 2003 onwards (see Table 15) there has been a switch in favour of interest tenders. For instance, in the case of central bank bills, which are designed for the absorption of an oversupply of money (in terms of quantity) in the economy – here the authorities have a preference for price biddings cum fixed quantity operations (Author’s own research based on data from [www.chinabond.com.cn](http://www.chinabond.com.cn)).

Price biddings through the interest tender are carried out either as American auctions (sometimes also called English auctions) or as Dutch auctions. American auctions grant allotments according to the individually bidden interest rates of the participating banks, starting from the highest bid until the market is skimmed. As a result, not all bidding banks are allotted. In a Dutch auction the bidders are allotted according to the one interest rate that skims the market. All banks are granted an allotment, but not necessarily with the volume they entered the bidding process.<sup>42</sup> The transaction reports published often focus on the type and volume of transaction, but do not always clearly indicate whether an American or Dutch tender was used. However, the actual structures of the interest rates in “repos” and “reverse repos” indicate that there is a preference for Dutch auctions for these two operations on the open market.<sup>43</sup> On the other hand, central bank bills are often sold with a disagio, i.e. for a price lower than the actual price. The resulting interest rate is then determined according to the maturity of the operation. Central bank bills are usually auctioned with one price to all participants of an operation, utilizing the Dutch auction style (Author’s own research based on data from [www.chinabond.com.cn](http://www.chinabond.com.cn)).

4. *Frequency of operations:* Before 27 February 2003, open market operations were generally carried out once a week – on Tuesday. Between February 2003 and May 2004, several adjustments to the frequency have been made on trial basis with the occasional introduction of a second trading day – on Thursday, particularly between February and April 2003. This was a move to promote and support the institutional foundation for open market operations in China (PBC, 2003d). Since 11 May 2004, open market operations have been generally conducted on two days per week – Tuesday and Thursday.
5. *Transparency through the open market operation information system:* Shortly after each of the transactions are carried out the results of each open market operation will be published on the internet, usually on the same day. The public notice includes information about the kind of securities in operation, the deadlines used, the bidding institutions and their bidding interest rate as well as the winning dealers and their interest rate accordingly. The information is officially announced via two web pages, the “China Bond Market Information Network – 中国债券信息网 – [www.chinabond.com.cn](http://www.chinabond.com.cn)” and the “China Money Network – 中国货币网 – [www.chinamoney.com.cn](http://www.chinamoney.com.cn)”. Both sites are closely connected and partly operated by the PBC or one of its departments.

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<sup>42</sup> Please refer to the “ECB, Glossary” on the ECB Website for details on the different tenders usually used in OMO auctions.

<sup>43</sup> Usage of an American tender is observable by an average interest rate which is precisely calculated on four digits at the decimal place (e.g. 1.2345%). A Dutch tender is indicated by an interest rate calculated on two digits after the decimal point (e.g. 1.2300%).

#### **5.1.1.4.2 Evolving role of open market operations**

From May 1998 to mid-2000, only repurchasing operations were utilized and for the sole purpose of issuing base money. Since mid-2000, however, a major shift took place. Repurchase agreements (“repos”) were increasingly used to withdraw base money from the financial system. This became necessary as increasing amounts of foreign exchange had to be purchased with RMB to keep the de facto peg of the exchange rate. Through the purchase of foreign exchange (“foreign exchange interventions”) the amount of RMB base money increased. To compensate (“sterilize”) for foreign exchange interventions, repurchase operations are one effective tool that can be applied (see section 6.1.3). However, since there is a limit to the potential to sterilize through pure repurchasing operations, in 2003, the central bank started to additionally issue central bank bills. Ever since, central bank bills account for the majority of open market operations in China (see Table 15). Likewise, while “reverse repos” for injecting liquidity into the financial system made up the majority of operations until 2002, the usage of OMOs for the issuing of monetary base became insignificant starting from 2003.

In fact, the usage of “repos” and the issuance of the central bank bills increased dramatically over time with a peak of 141 operations in 2007, again reflecting the ever-increasing need for sterilization of foreign exchange interventions between 2003 and 2008. In 2004, the portfolio of central bank bills was enlarged to three years maturities after the PBC reached its limits with the more short-term operations. In 2007, special treasury bills (特别国债) were utilized to absorb foreign exchange on a very large scale. Two operations took place on 29 August valued RMB 600 billion and on 11 December worth RMB 750 billion. Based on the then valid exchange rates, the authorities absorbed an amount of USD 80 billion and USD 100 billion in August and December, respectively. The magnitude of these two operations becomes even clearer if recognized against the backdrop of 141 liquidity-absorbing central bank bills and 43 “repos” operations with average values of RMB 29 billion and RMB 27 billion, respectively. All central bank bill operations taken together in 2007 reached RMB 4,033 billion; and the sum of all “repos” amounted to RMB 1,157 billion.



**Table 15: Number of open market operations and average amounts (billion RMB), 2000-2008**

Year	Reverse repos		Repos		Central bank bills		Special treasury bills	
	Number	Avg. amount	Number	Avg. amount	Number	Avg. amount	Number	Avg. amount
2000	132	n.a	25	n.a	0	0	0	0
2001	50	n.a	24	n.a	0	0	0	0
2002	77	n.a	32	5	0	0	0	0
2003	73	17	18	10	49	12	0	0
2004	138	40	43	8	94	15	0	0
2005	189	13	62	12	124	22	0	0
2006	137	118	39	51	97	38	0	0
2007	187	90	43	27	141	29	2	675
2008	233	0	111	30	122	35	0	0
Total	1,216	-	397	-	627	-	2	-

**Source:** Author's own calculations, based on data from [www.chinabond.com.cn](http://www.chinabond.com.cn).

**Note:** Average amounts are indicated in billion RMB across all maturities operated in that year.

Special treasury bills (特别国债) were utilized twice in 2007 to absorb additional foreign exchange on a very large scale on 29 August valued RMB 600 billion and on 11 December worth RMB 750 billion.

### 5.1.2 Quantity-based direct instruments

Before the reform era, the credit plan was used as the financial framework for the state investment plan. Necessary credits to reach the given output targets were simply added up. Starting from the 1980s, the instrument of the credit plan has been adjusted several times according to the then new financial and economical environment (Mehran et al., 1996a: 41f). For instance, in the beginning of the 1980s the officials started to permit small deviations from the officially announced credit plan; and in the middle of the 1980s even substantially high deviations were not a subject of punishment any more. In 1988, the PBC had been assigned in charge of the surveillance of the credit plan quotas and the coverage of quotas was widened from banks to non-bank financial institutions (NFIs) and the direct funding of enterprises. From that time on, the PBC started to calculate the credit plan by taking into account macroeconomic targets like price stability, balance of payments and economic growth. By 1995, the credit plan coverage was narrowed down to cover the four major state-owned commercial banks only.

Due to the dominance of the four major state-owned commercial banks, in 1996, still, the credit plan was the most important monetary policy instrument of the PBC (Mehran et al., 1996a: 41f). Only in 1998, the credit plan was officially abolished and an indirect price-based monetary policy was officially introduced with open market operations (OMOs) as the main instrument of the PBC. But ever since, preferential lending to certain areas and industries has still been observable: Credit allocation in certain areas does not follow cost-utility criteria,

i.e. credit allocation is not steered by the price but by the required and/or desired amount of money. In effect, there is still a *quasi* credit plan in operation in various areas of the economy. But compared to the long-term determination of the official credit plan(s) of former times, the amount-driven credit allocation of today serves on an ad hoc basis. Nowadays, the two instruments of window guidance and direct PBC lending are mainly used for the quantity-based allocation of credits in the Chinese financial system.

#### **5.1.2.1 Window guidance**

The PBC started to adopt the policy of “window guidance”<sup>44</sup> in 1998. The framework for the Chinese window guidance was closely modelled according to the Japanese system, which had been in place for more than 40 years until its suspension in the early 1990s. This policy uses benevolent compulsion to persuade banks and other financial institutions to stick to official guidelines. Central banks put moral pressure on financial players to make them operate consistently with national needs (ANZ, 2004). A major point of the concept is the temptation to influence the market participants through words rather than strict rules.

Despite the phrase guidance, which implies a voluntary aspect in the system, the PBC has a major influence on the lending decisions, especially to the four state-owned commercial banks (Ikeya, 2002: 2ff). The PBC regards the instrument “as an important monetary policy [that] can be combined with other instruments to guide market expectations”. By “making the market anticipate its monetary policy”, the PBC claims to achieve a more effective overall monetary policy (PBC Monetary Policy Report Q4, 2006: 16). At times it remained unclear whether the PBC was the sole entity to control the instrument of window guidance. However, this issue appears to be resolved in the meantime (see Box 4). The reason for the window guidance being relatively successful in China is to a great extent in the fact that the governor of the PBC is a higher-ranking official than the leaders of the commercial banks. Thus, according to the hierarchical system, the commercial bank leaders have to adhere to orders made within the policy of the window guidance.

On 5 June 2003, the PBC initiated a particular window guidance process to curb the expansionary tendency in the economic cycle 2003/04. This process was started with publishing a notice about “Further Strengthening the Management of Real Estate Credit Business”, especially targeting the real estate sector. Following that, the PBC asked for window guidance meetings three times in the second half of 2003. In those meetings on 18 July, 11 August and 12 September, the PBC invited representatives from all Chinese financial institutions and

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<sup>44</sup> This is the translation of the Japanese expression. It is also known as “moral suasion” and “jawboning”.

repeatedly asked them to pay attention to the proper capital adequacy ratio and to prevent credit and liquidity risks. Facing a very fast growth of commercial bank loans to the real estate sector at that time, “the PBC timely signalled risks on real estate loans in June to further standardize its development and strengthened window guidance on commercial bank loans” (PBC Monetary Policy Report, 2003: 2). This was a rather strong urge to calm down the commercial banks lending for real estate businesses.

#### **Box 4: Window guidance – is it the PBC’s business?**

In 2004, the responsibility to provide window guidance appeared to be unclear. In April 2004, the China Banking Regulatory Commission (CBRC) advised 11 state-owned “shareholding” commercial banks to limit lending to certain sectors. Additionally, on 13 May 2004, the CBRC held a workshop with the “Big Four” commercial banks “aiming at improving the window-guidance” (CBRC, 2004). These were clear measures that had to be taken within the framework of window guidance. One observer stated that the CBRC in 2004 “gave strict window guidance to major local banks” (Hagiwara, 2004: 5). Moreover, in a press conference on 7 March 2005, the CBRC representatives reported that in 2004, the CBRC enhanced its roles in providing window guidance and risk signalling for banks” (CBRC, 2004).

Since window guidance plays a major role in the monetary policy strategy of the central bank, the PBC should be solely responsible for the application of window guidance. However, with regards to the advice to limit lending in April and May 2004, the CBRC clearly acted without the approval of the PBC. This was confirmed by Mr. Huang, the then Secretary of the Monetary Policy Committee of the PBC in a personal interview with the author of this study. In a move to provide more transparent window guidance policy, the PBC together with the CBRC and several ministries subsequently issued a joint guideline for bank lending by sector in May 2004 (Ma et al., 2004: 3).

Other joint notices of the PBC and CBRC followed, mainly issued through the PBC website. For instance in September 2007, a note on commercial real estate credit mentioned: “Various branch offices of the PBC and the CBRC shall intensify ‘window guidance’ on management of real estate credit of financial institutions within their jurisdiction and strengthen efforts in investigating and punishing violations. Any emerged circumstances and problems during the process shall be timely reported to the PBC and the CBRC” (PBC, 2007c). Likewise, in August 2008 another joint PBC and CBRC note was published (PBC, 2008a).

Still, on several occasions, the CBRC itself reported on its role of providing window guidance – but without mentioning the PBC. For instance, recalling its activities in 2006, the 2007 CBRC work conference stated that “the CBRC continued to conduct window guidance and issue risk alerts to the whole [banking] sector” (CBRC 2007a). Similar statements can be found in the CBRC 2007 annual report (CBRC, 2008d: 53, 64). While after 2004 no single-handed CBRC issuances of window guidance measures were reported again, the CBRC references to the instrument – even in very recent past – are worrying. As an important instrument within the monetary policy toolbox, window guidance necessarily has to be under the full ownership of the PBC, the Chinese central bank.

Since the beginning of 2004, monthly assessments of the PBC “to review economic and financial development and strengthen warnings for the commercial banks to guard against potential risks” (PBC Monetary Policy Report Q1, 2004) have been added to the window guidance policy. In the monthly meetings, credit guidance and information about risks were provided to the commercial banks as an outcome of the assessments (PBC Monetary Policy

Report Q3, 2004). Furthermore, on 23 March 2004, a large-scale window guidance meeting with all commercial banks took place, with the target to set up a credit restriction mechanism according to the commercial banks' risk-control abilities and their capital adequacy (PBC Monetary Policy Report Q1, 2004).

On 21 January 2005, besides the continuation of monthly assessments, one major window guidance conference was convened (PBC, 2005d and PBC, 2006d). In the conference, representatives of the state-owned commercial banks, "joint-stock" commercial banks, policy banks, and the PBC branch offices gathered with a particular focus on "credit support to the rural economy and the non-state sector", since they play "a very important role in promoting the coordinated development of the national economy" (PBC, 2005d). Accordingly, the role of innovation within the financial institutions and improved financial services for agricultural loans were discussed.

Since April 2006, a significant strengthening of window guidance has been recognizable again, mainly due to the pertinent high growth of the economy throughout the year (PBC Monetary Policy Report Q2, 2006). Six meetings were scheduled on 27 April, 18 May, 13 June, 15 August, 3 November and 8 December. All meetings came shortly after respective gatherings by the State Council called for prudent macroeconomic policies to rein excessive loan growth. In the meetings, financial institutions' representatives were "urged (...) to comprehensively, correctly, and actively implement the macroeconomic management policies formulated by the central government" (PBC, 2007a), a strong call to adhere to official guidelines. The meetings showed a mix of dampening efforts "to industries with excessive investment" as well as diversification with financial innovation and again through a special focus on rural areas and the non-state sector (PBC Monetary Policy Report Q2/3/4, 2006). In retrospect and recalling the past year, the PBC reported in its annual 2007 work conference that in 2006 indeed "much attention has been paid to strengthen window guidance and credit policy guidance (in 2006)" (PBC, 2007b).

High economic growth rates and increasing food and commodities prices triggered a period of relatively high inflation rates in 2007 and 2008. Monthly inflation rates were consistently above 5 per cent for 13 months from July 2007 to July 2008, culminating at 8.7 per cent in February 2008. Similar to the responses seen in earlier years, the PBC convened a series of specific window guidance meetings – on top of the monthly assessments introduced in 2004 (PBC Monetary Policy Report Q1, 2004). In 2007, a total of three meetings were held: On 14 March 2007, the PBC urged commercial banks to "comprehensively, correctly, and actively implement the macro-adjustment policies formulated by the central government". Through

this call, the PBC was hoping to dampen the extensive provision of loans that fuelled the economy with domestic loan increase well above 15 per cent since the beginning of that year. A second meeting was held on 11 May 2007 with a focus on measures to prevent the economy overheating. The PBC notes that this particular meeting was held “to convey instructions of the State Council” (PBC, 2008b), showcasing once more the insufficient instrument independence of the PBC.

An intriguing shift in reporting took place during summer 2007. The authorities held a meeting on 24 September with the aim of analyzing the then current economic and financial situation, somehow resembling window guidance meetings as witnessed before. The PBC noted on the specific content of the meeting that “financial institutions were encouraged to uphold a correct perception of market shares, consciously control the pace of loan extensions in line with the needs of the real economy, (...)” (PBC Monetary Policy Report Q4, 2007: 58-59). This statement certainly does not differ in content from the statements made earlier that year in the window guidance meetings of March and May; yet, the PBC did not classify this third meeting in 2007 as a window guidance meeting.

Much more, during the whole of 2008, a year with inflation rates of more than 8 per cent, the PBC did not – according to official reporting – utilize its instrument of window guidance. Similar to the second half of 2007, the steps taken in 2008 often involved recommendations and guidelines on credit lending and must therefore be subsumed under the umbrella of window guidance. For instance, there was a joint notice of the PBC and CBRC on 19 May 2008 focusing on emergency support steps for the May earthquake areas where local and national institutions were “encouraged” to channel funds into these areas. Another joint initiative of these two institutions was a think piece submitted to the State Council proposing that “financial institutions be encouraged to optimize their credit structure while expanding aggregate credit and to increase credit extensions to major areas” (PBC, 2009a).

On 20 October 2008 – amidst the unfolding of the global financial and economic crisis – the PBC held a meeting to analyze the then predominantly dire economic and financial situation. Again, the PBC “encouraged” financial institutions to step up credit support, a notion strongly associated with window guidance. And on 5 December yet a similar conference was convened. In this meeting, the PBC asked among other things to provide the credit support needed to achieve the desired economic growth (PBC, 2009a).

Due to the contents covered and recommendations made, the above initiatives and meetings have to be seen in the context of the PBC instrument of window guidance. This view is con-

firmed by the PBC. In a PBC working session in November 2008 the bank looked for ways to support economic growth through expansionary monetary policy. The PBC outlines the monetary policy measures already taken and appropriate future ones to support the stabilization of the economy. Among the mentioned options “strengthen[ing] window guidance and policy guidance with the priority laid upon credit structure optimization” (PBC, 2008c) is highlighted as a key issue. In fact, the authorities then apparently reversed their stance and started to use the terminology of window guidance more frequently again in the wake of fighting the financial and economic crisis in 2009 and 2010.

The question is why in summer 2007 the PBC stopped the unconcerned referencing to window guidance that it was so used to. Most probably, this reflects the then discussion around and the problems associated with the utilization of non-market-based monetary policy instruments. While these instruments may be effective in the case of the PBC, this approach is inconsistent with the officially communicated strategy of conducting indirect price-based monetary policy. But to overcome this inconsistency, simply stopping the references to window guidance – while continuing with actual business as usual – will certainly not suffice. The authorities realized that but the longer term issue remains to find a time and to fade out and truly substitute window guidance with price-based instruments.

#### **5.1.2.2 Direct People’s Bank of China lending**

Direct PBC lending as a monetary instrument is in the legacy of the planned economy, the application of which was officially discontinued in 1994 (Mehran et al., 1996b: 19). But throughout the 1990s (and beyond) there was a markedly high amount of central bank money permanently flowing within the financial system. This was evidenced, for instance, by excess reserve ratios well above the 10 per cent margin in the 1990s which only gradually came down to 7.61 per cent in 2001 and 5.38 per cent at the end of 2003. Excess reserve holdings stabilized then at rates lower or around 5 per cent and stood at 5.11 per cent at the end of 2008 (Cheng et al., 1996; and PBC Monetary Policy Report, various issues).

This overall high amount of central bank money to a great extent was and is caused through long-term central bank’s loans that are subject to low interest rates without being linked to the predominant monetary policy stance. The long-term loans can be seen as a “planned economy-style” fixed-quantity contribution from the central bank to the commercial banks. Direct central bank lending appears to be the main source of such provision of the central bank money. The total amount of outstanding central bank’s lending was over USD200 billion in 2002, which was about 9 per cent of the monetary aggregate M2 (Xie, 2004a: 20f).

Today's central bank's lending appears in very different ways. It could be an indirect subsidy for rural credit cooperatives with very low interest rates lending. Likewise, it is where the PBC acts as "lender of last resort" to bail-out financial institutions or as a lender to local governments, asset management companies and rural credit cooperatives to get rid of NPLs. For instance, in 2005, the PBC lent money directly to four asset management companies to buy NPLs from the ICBC, making direct PBC lending "more of a way to supply funds to financial institutions (...) and less of a means to make daily monetary adjustments (Jingu, 2007).

### **5.1.2.3 Capital controls**

A third instrument within the quantity-based instrument toolbox of the central bank is the instrument of capital controls.<sup>45</sup> The instrument of capital controls differs fundamentally from window guidance and direct PBC lending as the capital controls' aim is not the amount-driven credit allocation but the quantitative limitation of financial flows between China and the rest of the world. Historically, the case for capital controls in China can be derived out of a few key observations of China's development story.

*First*, the international assessment of the Asian crisis. For instance, UNCTAD's Trade and Development Report 1998, stated that the "management of a country's external assets and liabilities is linked [...] [to factors like] good macroeconomic fundamentals, effective financial regulation and supervision, and even good corporate governance" (UNCTAD, 1998: 101). The report proceeds that these are necessary but not sufficient conditions to avoid financial crisis. Moreover, "a key role here is played by policies aimed specifically at external assets and liabilities – most importantly capital controls but also certain other measures" (UNCTAD, 1998: 101). Krugman pointed into the same direction when he assessed a way out of the crisis: "Yes, there is [a way out]," he concluded, "but it is a solution so unfashionable, so stigmatized, that hardly anyone has dared to suggest it. The unsayable words are 'exchange controls'" (Krugman, 1998).

In the 2008 global financial and economic crisis China's banking system was still largely insulated from holding 'toxic' assets acquired in the global financial markets. But it was due to the dramatic fall of foreign demand for Chinese products that exports slumped and China as much as many other developing countries were contagioned by the crisis. In fact, East Asia's decline in GDP growth in 2009 was preceded by a collapse of trade flows at the end of 2008. While China's exports still grew by 19.2 per cent (y-o-y) in October 2008, they fell dramati-

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<sup>45</sup> In fact, capital controls in China are administered by the State Administration of Foreign Exchange (SAFE), an institution that acts under the leadership of the PBC.

cally to -2.2 per cent (y-o-y) in November and -2.8 per cent (y-o-y) in December 2008 (JP Morgan (2009); United Nations, 2009: 36; and UNCTAD, 2009: 19-22).

*Second*, the importance of the Chinese savings rate in the countries' development story is often highlighted (World Bank, 1997: 4ff.). To this end a key concern for the Chinese authorities has been to keep the peoples' confidence into the banking and financial sector. Preserving this confidence, however, is difficult in a situation with mounting non-performing loans and significant implicit future financial burdens, for instance due to the absence of a comprehensive pension scheme and ever-increasing environmental destruction. In such a situation, a restricted capital account may well be a favourable policy option. As Kato put it in 2004: "Given the magnitude of the task that is required, it will be some time before the financial system is fully strengthened. Until then, maintaining China's steady and gradual approach to capital account liberalization is appropriate" (Kato, 2004).

The *third* and probably strongest argument for capital controls can be derived from the de facto fixed exchange rate target of the RMB since the Asian crisis in 1998. Based on Padoa-Schioppa's "inconsistency triangle" or "unholy trinity", pursuing autonomous monetary policy in a fixed exchange rate regime is incompatible with a free movement of capital. There are several ways out of the "unholy trinity" towards a "consistency triangle". Bofinger (1999) argues in favour of a solution that leaves free capital flows and guarantees an autonomous monetary policy with the introduction of a semi-fixed exchange rate that is adjusted by the interest rate differential ("managed floating"). The most obvious solution, however, would be to constrain the capital mobility and, thus, reach a fixed exchange rate regime that still enables an autonomous monetary policy. And that is what is done in China.

The responsible institution to carry out the capital controls in China is the State Administration of Foreign Exchange (SAFE). SAFE acts under the leadership of the PBC but at the same time also maintains direct links to the State Council as it is a "deputy-ministerial-level state administration". SAFE is the authority in China to manage foreign exchange and gold reserves as well as any other foreign exchange assets of the state. Operationally, SAFE is in charge of managing foreign exchange transactions under the capital account, including inward and outward remittances and payments. SAFE is responsible for the monitoring and supervision of transactions under the current account, which is fully convertible since 1996. Likewise, SAFE pursues the management of capital account transactions, which yet have to be fully liberalized. Historically, controls and restrictions on the capital account were relatively strict for short-term capital flows and less so for long-term capital inflows; four main features can be identified (Yu, 1999: 2-6; Yu, 2008a: 14-15; and Zhang, 2003: 14-15):



- All incoming foreign direct investments (FDI) needed the approval of state planning and trade authorities of the central government. On the other hand, Chinese investors also had to register and seek approval for their outward FDI with SAFE.
- Foreign investors were generally not allowed to invest into domestic securities on Chinese stock exchanges<sup>46</sup> inside the PRC. Only limited investments into B-shares were allowed. On the other hand, a very limited number of Chinese companies were allowed to seek listings on overseas stock exchanges such as New York and Hong Kong.
- Chinese institutions were restricted from issuing bonds on foreign markets except for the Ministry of Finance, the policy banks and ten dedicated authorized institutions. Generally speaking, Chinese residents were prohibited to buy any foreign securities.
- All entities seeking to borrow from foreign financial institutions needed authorization by SAFE. Chinese residents were generally restricted from borrowing of foreign financial institutions without prior approval. Additionally, any request had to be incorporated into the annual foreign borrowing plan of the NDRC.

Ever since the mid-1990s, the authorities have initiated more steps to ease the controls on the capital account. But attempts for liberalization were put temporarily on hold during the Asian Financial Crisis at the end of the decade and were only slowly revived thereafter. In 1998, the Chinese Supreme Court forced an end to illegal foreign exchange transactions (Yu, 1999: 8; and Yu, 2008a: 17). As a result, in 2003, 50 per cent of the Chinese capital account transactions were either lightly controlled or not at all restricted, 30 per cent were more and 20 per cent tightly controlled (SAFE Annual Report 2003).

Starting from 2003, a series of new measures were implemented to ease the restrictions on the capital account in general and to ease the pressure of rising capital inflows by encouraging capital outflows (Ma. et al., 2004; and Yu, 2008a: 18-20). The authorities decided to take a gradual approach for capital account liberalization and through this they still achieved a certain degree of free capital account transactions (Icard, 2004). Measures included relaxations and eventual abolishment of restrictions for domestic enterprises to open foreign exchange accounts; permissions for Chinese residents to legally convert RMB into USD for amounts up to USD 50,000 per year; schemes that allow residents to acquire foreign assets and securities, such as the qualified domestic institutional investors (QDII); and schemes that allow foreign residents to invest into domestic assets and securities, such as qualified foreign institutional investor (QFII).

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<sup>46</sup> For a short overview of the (institutional) developments on the Chinese stock markets since their inception in the early 1990s, please refer to section 6.2.3.2, and, for instance, to Heilmann (2001a), Heilmann (2001b), EIU (2008a), and EIU (2009a).

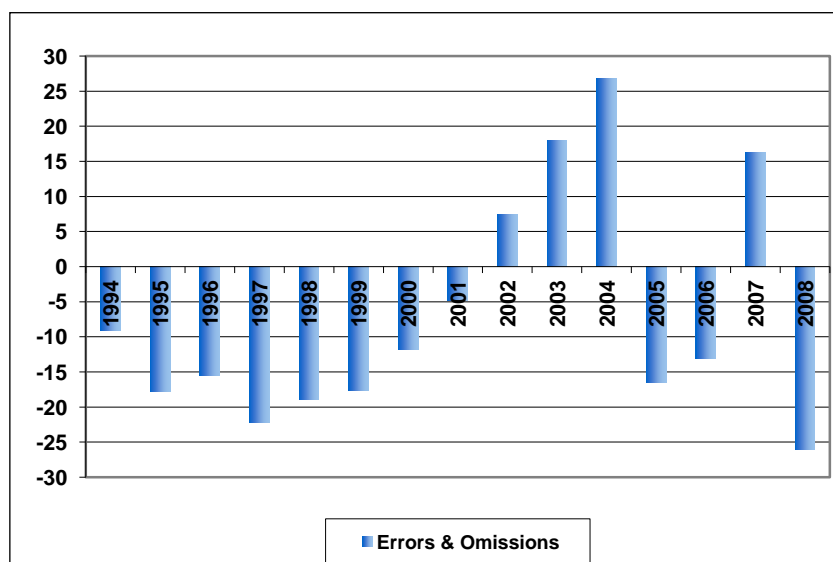
Through the partial liberalization of the capital account in the wake of the 2003 measures, an increased outflow of capital was triggered to balance large inflows of capital associated with the exchange rate peg through increasing outflows (Ma et al., 2007a). Many of the liberalization measures carried out are part of China's "go global" strategy (OECD, 2008), which started in 2000 with the promotion of outward direct investment (ODI). And indeed, capital outflows in form of outward direct investment (excluding financial-sector investment) increased strongly since then. For instance, in 2005 ODI accounted for around USD 11 billion, a figure that increased to more than USD 18 and 25 billion, respectively in 2006 and 2007. It was expected that ODI growth would decline in the wake of the global financial and economic crisis, but for 2008 on a whole growth actually continued and reached more than USD 40 billion. The effects of the crisis, however, were then fully recognizable in 2009, when ODI growth plunged by 50 per cent in the first half of the year (OECD, 2008; OECD 2009; and Ministry of Commerce of the PRC, FDI in China). The QDII is a second means to trigger capital outflows. While it had been considered as early as 2002 (PBC, 2003d) the scheme was finally and officially introduced in April 2006. The scheme allows Chinese individual and institutional investors (including insurers) to invest onshore and hold USD and RMB deposits in offshore markets. In the one year between April 2006 and May 2007, QDII quota to banks and funds totalled USD 14.2 billion (China Fund at [www.fundcn.org](http://www.fundcn.org)).

All capital controls are subject to certain porosity, a fact that can be quantified through the statistics of errors and omissions in the Chinese balance of payments (Figure 12). From 1994 to 2008, USD 242 billion were able to cross the Chinese border as measured through the errors and omissions figures in the Chinese balance of payments, around 70 per cent of which were outflows (USD 173 billion) and 30 per cent were capital inflows of (USD 69 billion). While the 1990s were characterized by huge amounts of capital outflows, the flows changed direction in 2002. Within three years between 2002 and 2004, capital of over USD 52 billion came into the country. Large parts of these inflows could be accounted to rising expectations for RMB appreciation and, thus, constituted speculative inflows. The speculation for appreciation was also displayed by a shift in the prices for non-deliverable forward RMB quotes. As Anderson (2003) shows, the market was expecting devaluation until mid-2002; then the market shifted its expectations and traded the USD at an increasing discount against the RMB (Anderson, 2003: 6 and Ma et al., 2004: 9). In 2005, capital flows in the errors and omissions of the balance of payments changed direction again and in just two years, USD 29.5 billion flew out of the country.

This surprising and significant change of direction is likely to be the product of two factors. *First*, inflows of "hot money" for speculative purposes had eased after the RMB reform on 21

July 2005. *Second*, Prasad et al. (2005a) point to the possibility that “the errors and omissions category may in part reflect an accounting issue”, i.e. that China’s official foreign exchange holdings through SAFE are not valued according to market exchange rates, while the PBC’s stock of international reserves in the central bank’s balance sheet considers exchange rate fluctuations (Prasad et al., 2005a: 12 and Ma et al., 2007a: 17). The inflow of money in 2007 reflected the again rising expectations of further devaluations. This certainly was fuelled by the rates of appreciation actually observable in 2007, which signalled that more might come. In 2007, the RMB/USD exchange rate appreciated by 6.9 per cent, more than double the pace of appreciation in 2006. While this continued in the first half of 2008 – appreciation reached 1.6 per cent in January only – the trend halted in the wake of the global financial and economic crisis in the fourth quarter. The exchange rate was virtually fixed again, but this time at a level of around RMB/USD 6.82 to 6.83. Despite all efforts to liberalize and ease capital controls as well as the considerable porosity of the remaining measures (Figure 12), Ma et al. (2007a) find in their study about the effectiveness of capital controls in China that “China’s capital controls remain substantially binding” (Ma et al., 2007a: 22). A later study of the authors confirms this assessment up to 2007 (Ma et al., 2007b: 284).

**Figure 12: Porosity of Chinese capital controls, 1994-2008 (billion USD)**



**Source:** IMF, International Financial Statistics.

## 5.2 Other non-central bank policy instruments

### 5.2.1 Price controls

Since 1998 three kinds of prices have been predominant in China (China Gate, 1998; and WTO, 2001a): (i) *Market-regulated prices*, which are set by the market through supply and demand and are not faced with any intervention from authorities; (ii) *Government guidance*

*prices*, which can come either as a benchmark price or a floating range set by the government. The floating band is usually between 5 and 15 per cent; and (iii) *Government prices*, which are fixed prices set by the responsible government authorities and are unchangeable unless approved by this authority.

There are prices that have to be set by the central government and other prices that can be set and controlled by the province, the autonomous region or the municipality level. They can be set either by the relevant price department or other related departments. Basis for the control is the listing on so-called price catalogues, which can be issued by both central and local governments.<sup>47</sup> Centrally controlled prices need the approval of the State Council and prices for the local catalogues need the approval of the government on the appropriate level.<sup>48</sup> Governments below the province, autonomous region or municipality level cannot issue their own price controls. Goods, public utilities and services are only eligible when they fall in one of the categories in the following table (Table 16).

**Table 16: Criteria for government control of prices in China**

Item	Facts / Prerequisite
Products	<i>Great importance</i> for the development of the economy and the people's living <i>Scarcity</i> Goods of a <i>monopoly in nature</i>
Public utilities	<i>Important public utilities</i>
Services	Important services of <i>public welfare</i>

**Source:** Price Law of the People's Republic of China, Article 18 (China Gate, 1998).

The report of the working party on the accession of China into the World Trade Organization (WTO) of 1 October 2001 defined the scope of price controls allowed to be in place in China after the WTO entry. Annex 4 of the report lists all products, public utilities and services which are subject to price controls according to the classifications of government pricing and government guidance pricing (Table 17). The report emphasizes that controls "shall not be extended to goods or services beyond those listed (...) and China shall make best efforts to reduce or eliminate these controls" (WTO, 2001a: 77-78).

<sup>47</sup> According to the WTO Report of the Working Party on the Accession of China, the authorities are obliged to publish these catalogues in the Pricing Monthly of the People's Bank of China, which is partly available in the internet via [www.hebwj.gov.cn](http://www.hebwj.gov.cn).

<sup>48</sup> In fact, it is not possible to distinguish the different price catalogues and show clearly what prices are subject to central or local control. Local governments have to inform the central government about their decision of controls which then incorporate the prices in its catalogue. In turn, local price catalogues also contain centrally administered prices. Thus, the central and local governments' price catalogues are fairly similar.

**Table 17: Products, public utilities and services under government control in China, 2001/02**

Item	Description	Classification	
Products	Tobacco	Government pricing	
	Edible salt		
	Natural gas		
	Pharmaceuticals		
	Grain		
	Vegetable oil		
Products	Processed oil	Government guidance pricing	
	Fertilizer		
	Silkworm cocoons		
	Cotton		
Public utilities	Gas for civil use	Government pricing	
	Tap water		
	Electricity		
	Heating power		
	Water supplied by irrigation works		
Services	Postal and telecommunication services charges	Government pricing	
	Entrance fee for tour sites		
	Education service charges		
	Transport services		
	Professional services, e.g. architectural, engineering and legal services		
	Commission agent's services, e.g. commission for trademarks and bidding agents		Government guidance pricing
	Settlement, clearing and transmission services of banks		
	Purchasing and renting of residential apartments		
Health related services			

**Source:** WTO, 2001a: 135-138.

As the eligible criteria show, one strong motive in favour of the introduction of price controls is to secure the provision of goods and services of national importance.<sup>49</sup> Additionally, the management of the general price level clearly is a motivation of price controls: Consider article 26 of the Price Law of the People's Republic of China, which fits into the chapter on the "Control and Adjustment to General Price Level" and states: "To stabilize the general price level is one of the major objectives of macroeconomic policy". Without directly referring to price controls, the law leaves no doubt that price controls are seen as one measurement of macroeconomic policy to influence the general price level (China Gate, 1998).<sup>50</sup>

And there is evidence of the government's active usage of the tool of price controls even in the post-WTO era. For instance, the threat of an overheating economy in the 2003/04 cycle with growing inflation rates prompted the authorities to employ price-controlling measures

<sup>49</sup> It is arguable if price controls can pursue such a target at all. Please refer to Rockoff's "Price Controls" at [www.econlib.org/](http://www.econlib.org/) for a detailed discussion.

<sup>50</sup> Price Law of the People's Republic of China, adopted at the Twenty-Ninth Meeting of the Standing Committee of the Eighth National People's Congress, promulgated by Decree No. 92 of the President of the People's Republic of China on 29 December 1997, and effective on 01 May 1998.

more frequently. *First*, the National Development and Reform Commission (NDRC) in China instructed the provincial authorities in March 2004 to freeze any approval for price increases for the next quarter of the year. The freeze was applied if either the m-o-m local CPI growth reached 1 per cent or higher or y-o-y monthly local CPI reached 4 per cent or higher for three consecutive months (Wu, 2004b). *Second*, using a more indirect measure, the NDRC also asked local governments to set ceilings for profit rates for fertilizer wholesales, i.e. 3 per cent in Heilongjiang and 2 per cent in Hunan Province. Accordingly, a 50 per cent rebate on VAT in the fertilizer industry was re-introduced. The move was aimed at raising the output of crop and thus to reduce the inflationary prices in the food sector (see People's Daily, 2004a; and Tan, 2004).

Similar measures were implemented during the 2007/08 inflationary cycle. For instance, in January 2008 at a State Council executive meeting presided over by Premier Wen Jiabao, it was decided to strengthen price control measures to stabilize market prices, particularly on the local authorities' levels (People's Daily, 2008). China Daily reported in the same month "such a national effort to contain price hikes is well expected since the central authorities made it a clear-cut priority at the end of last year to prevent current price hikes from evolving into overall inflation" (China Daily, 2008a). In response to the policy guidelines given by the State Council, the NDRC on 15 January 2008 published a circular to price regulatory departments at all levels asking for the immediate implementation of controls on prices on products such as grain, food made of grain, edible oil, meat, milk, eggs and liquefied petroleum gas. By the end of January, reportedly, all of the 31 provinces and autonomous regions of China had set up the requested lists on interim price intervention (NDRC, 2008a; and NDRC, 2008b).

While these price controls were featured in the Chinese press in 2007/08, information on the actual temporary nature of the price controls remained scarce. So it was left unclear whether this round of temporary controls was indeed of temporary nature. But authorities and officials did stress this temporariness from time to time. For instance, in a February 2005 article of the Economic Observer Online, an independent Chinese weekly newspaper distributed in major cities throughout China, a member of the China Price Association said the "strategy [of price controls] is only a temporary and emergency measure to buy time for the government to consider other options". A similar message came from a representative of the NDRC in the same interview: "The measure is a temporary and auxiliary policy" (EOO, 2008). But once implemented price controls are never easy to be relaxed again.

In a way, the developments of both 2003/04 and 2007/08 reminded of the call for more effective price controls during the high inflation period of 1993/94. In June 1995, the China Daily published an article with the title: “Strong measures need to guide pricing system” (Fu, 1995). The article quotes a research fellow of a research centre of the State Council, who pointed out that the lack of price controls in the market economy had a strong influence on the rising inflation during that time. This was the beginning of a discussion that ended in the introduction of the Price Law of the People’s Republic of China in 1998. There are no signs that the authorities want to turn back in time and re-introduce controls beyond the Price Law and the WTO agreement. However, it is evident that the authorities use their discretion in setting price controls more actively in times of inflationary or deflationary pressure. In 1998, for example, the first year of the deflationary period of the late 1990s, the authorities used the instrument and set minimum prices in 21 industries to ease the deflationary pressure (Roberts, 1998). But the results were moderate. The deflationary environment lasted for four years, a fact indicating the limitations of the instrument of price controls.

There is also the question about the strictness of the Chinese price controls. For instance some argued that the effects of the announcements of price controls by the Chinese authorities in January 2008 had been clearly overestimated. Rothman, reported by AFP, concluded that “what they (the Chinese authorities) are doing is what governments always do – try and talk down inflation expectations” (AFP, 2008). This is an interesting thought. In fact, introducing and announcing price controls – controversial as they are – may give people the comforting feeling of authorities being aware and reacting to inflation threats and hence lowering overall inflation expectations in the economy. The desired effects may be achieved without actual and strict implementation of the controls. It remains open whether the potential benefit on inflation expectations justifies the use of this planned economy style prescription of a non-central bank policy instrument like price controls.

### **5.2.2 Wage controls**

In the light of the inflationary intermezzo before 1994, authorities realized the crucial importance of the stability (of the growth rate) of the domestic wage level. In fact, China’s wage reform in 1994/95 killed at least three birds with one stone (Flassbeck et al., 2005: 20): It helped to control the inflation rate by linking the wage development to the productivity in general; it helped to keep the nominal exchange rate at a competitive level; and it further strengthened China’s international position by aligning nominal wage increases very closely to productivity growth. This monetary environment created extraordinarily attractive conditions for domestic and foreign investors. Indeed, China’s ability and willingness to control and to discourage short-term speculative capital flows has directly contributed to the attraction of

long-term and fixed capital investments.<sup>51</sup> Using the non-orthodox instrument of wage controls to fight inflation freed monetary policy from going after its traditional domestic target and stabilizing the nominal exchange rate. Despite a vigorously growing economy, inflationary pressure remained remote throughout the 1990s and accelerated only after 2002 when, in conjunction with a strong recovery of the world economy and soaring commodity prices, the Chinese economy approached a stage of overheating.

### **5.2.2.1 Main features of the wage regimes in the reform period**

Historically, in 1978, China's wage regime was characterized by a centrally regulated salary system, which, among others, determined the wages according to regions, occupations, industries and sectors. The heart of the system was a classification scheme with more than 300 standardized occupational classifications used for the salary formation. After the beginning of the reform process in 1978 the wage regime underwent three sets of reforms in 1985, 1992 and 1994/95, respectively (Yueh, 2004: 151ff). This section will mainly focus on the reform in 1994/95. However, a short explanation of the prior reforms helps to apprehend the strategic role of the 1994/95 reform more comprehensively.

The main and common feature of the two early reforms in 1985 and 1992 was a backward looking indexation of wages to inflation. The 1985 reform, for instance, introduced profit-oriented factors as well as regional aspects to the wage-finding process. For example, the centrally planned budget dealing with the allocation of wages explicitly considered regional differences. The dynamics of the local consumer price index constituted an important regional factor, as well as unemployment and regional growth rates did. Later, in the reform of 1992, enterprises were given authority in setting wages according to their own needs through two options: Under the first option, companies were allowed to relate discretionary wage setting to their individual economic performance. The second option enabled enterprises to propose a wage budget based on their own calculations, which then were reviewed by the central authorities taking inflation and other local wages into account (Yueh, 2004: 151ff). The important commonality of both reforms was the indexation of wages to the development of the consumer price index generating the well-known vicious circle of backward looking indexation: a shock, affecting inflation, impacts on the wage level, and rising nominal wages trigger a new round of inflationary acceleration.<sup>52</sup>

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<sup>51</sup> Please refer to UNCTAD (2004) for an empirical assessment of the amount of discouragement for short-term flows.

<sup>52</sup> For a detailed discussion of the development of the inflation rate in China for the period of 1978 to 1995, please refer to Imai (1997).



In light of the inflationary bout in 1994/95, the authorities decided to de-couple nominal wages from the inflation rate. This attempt to break the vicious circle of accelerating inflation and rising inflation expectations was successful. The reform can be divided into a stricter rules-based (1994/95 I) part and a more blurred recommendation-based part (1994/95 II).<sup>53</sup> Companies eligible to set their wages under the rules-based component could use their discretion within the framework of two standards: Firstly, the growth rate of the total salaries of an enterprise had to remain below the growth rate of after-tax profitability. Secondly, the growth rate of per-capita wages ought to be less than the growth rate of labour productivity. Within the recommendation-based part of the reform, the “MOL [*Ministry of Labour*, the author] suggested that enterprises should set wages not only in relation to occupation and rank, but also based on skills and [*individual*, the author] productivity” (Yueh, 2004: 153).

Eligible for the 1994/95 I reform were those Chinese companies publicly listed on the Shanghai or Shenzhen Stock Exchange. A considerable part of the publicly listed companies are subject to state control. Thus, scope and impact of the reforms depend on the government’s willingness and ability to enforce the wage rules. Companies eligible for the 1994/95 II reforms were those SOE’s that underwent at least a partial ownership-transformation without being listed on the stock exchange (Yueh, 2004: 153). The number of companies and employees falling under the 1994/95 II wage reform was much higher than those falling under the 1994/95 I scheme.

The two reform approaches differed in terms of the content and in terms of their scope. The second part represented a guideline rather than a strict and enforced regulation. Unfortunately, due to a lack of data it is impossible to figure out the proportion of those enterprises actually following the guideline. Particularly, the number of employees falling under the reform agenda at all is an open question. Nevertheless, the next section provides a very rough assessment of both, the number of employees subject to the reforms as well as their income.

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<sup>53</sup> It is important to note that the issues to be discussed in the 1994/95 reform analysis relate primarily to the wage settings in state-owned or partly state-owned units in the industry sector. Therefore, any effects of the reforms are decreasing with a declining importance of state-owned enterprises in the Chinese economy. For example, from 1991 to 2001, the employment in the state-owned industrial sector declined sharply from 44.7 million to 18.2 million people, whereas employment in the non-state owned sector increased sharply from 1.82 million to 15.5 million people (National Bureau of Statistics of China, China Statistical Yearbook, several issues). Another obstacle in the calculation of wage control effects is the definition of “employment” in the context of state-owned enterprises. In 1998, around 8.8 million workers of the 15.7 million workers who were laid-off within the state-owned sector were subject to “xiangang”, i.e. affected employees were still registered at their work unit but did not go to work.

### 5.2.2.2 The scope of the wage reforms in the mid-90s

A useful assessment of the impact of the wage reforms has to figure out the scope of the reform measures in terms of the number of employees and their wage bill in relation to the total Chinese wage bill within the 1990s.<sup>54</sup> The share of the state-owned enterprises in the total wage bill was falling rapidly over the 1990s (Table 18).

**Table 18: Share of state-owned industrial enterprises of the total wage bill, 1991-2001**

Year	SOEs' employment (million)	Average wage/year (RMB)	SOEs' wage bill (million RMB)	Total wage bill (million RMB)	SOEs' share of total wage bill (per cent)
1991	44.7	2,477	110,771	332,390	33.3%
1992	45.2	2,878	130,114	393,920	33.0%
1993	44.0	3,532	158,869	491,620	32.3%
1994	43.7	4,797	209,581	665,640	31.5%
1995	43.0	5,625	247,331	810,000	30.5%
1996	42.8	6,280	268,658	908,000	29.6%
1997	40.4	6,747	272,579	940,530	28.0%
1998	27.2	7,668	208,646	929,650	22.4%
1999	24.1	8,543	206,057	987,550	20.9%
2000	20.0	9,552	200,210	1,065,620	18.8%
2001	18.2	11,178	203,887	1,183,090	17.2%

**Source:** Author's own calculations, based on data from China Statistical Yearbook, various issues; and Thomson DataStream.

State-owned units contributed to around 33 per cent of all Chinese wages paid in the year 1991 and to 17 per cent in 2001. This declining share constitutes the upper limit of the wage reform's impact: If it is assumed that the wage reform had a guiding influence on all state-owned units in the industrial sector, it impacted on around a third of all the companies in 1995 and less than a fifth in 2001. However, as shown above, the wage reform did not apply to all state-owned units.

**Table 19: Potential scope of the 1994/95 I wage reform in China**

Year	Companies	Average employment in sample (a)	Projected employment (million)	Listed companies' wage bill (billion RMB)	Listed companies' share of total wage bill
1995	323	--- insufficient data available ---			
2001	1,160	2,700	3.1	35.1	3%

**Source:** Author's own calculations, based on data from CSRC Statistical Information Online Database; China Statistical Yearbook, various issues; and Thomson ONE Banker.

<sup>54</sup> Even though the 1994/95 I reform scheme distinguishes between state-owned and privately-owned companies, they are lumped together as "state-owned" for this part of the analysis. This is justified by the fact that the share of purely private enterprises within the publicly listed companies is between 16 and 35 per cent only, that the overall impact of the 1994/95 I wage reform is very limited and the reported wage spread is only 8 per cent.

According to the China Securities and Regulatory Commission (CSRC) there were 1,160 listed companies on China's stock exchanges in 2001 (Table 19). Of this group, 415 had no state shares or no shares subscribed by the state, which accounted for one third of all listed companies (China Internet Information Centre, 2003b; and Qu, 2003). As non state-controlled publicly listed companies would usually welcome any increase in productivity-linked discretion in wage setting, it is fair to assume that all non-state companies abided to the 1994/95 I reform and that all state-controlled public companies adhered to the reform scheme, too.<sup>55</sup> In this case, the 1994/95 I wage reform affected around 3 million employees with a wage of around 35 billion RMB, representing 3 per cent of the total Chinese wage bill in 2001 (Table 19). The available data is insufficient to estimate the impact in 1995. But, since the number of companies falling under the 1994/95 I wage scheme in 1995 was considerable lower than in 2001, one can assume that the influence in 1995 was less or about 3 per cent.

**Table 20: Potential scope of the 1994/95 II wage reform in China**

Year	SOEs' employment (million)	Average wage/year (RMB)	SOEs' wage bill (million RMB)	1994/95 II employment (million)	1994/95 II wage bill (million RMB)	Total wage bill (million RMB)	1994/95 II share of total wage bill
1991	44.7	2,477	110,771	na	Na	332,390	Na
1992	45.2	2,878	130,114	na	Na	393,920	Na
1993	45.0	3,532	158,869	na	Na	491,620	Na
1994	43.7	4,797	209,581	na	Na	665,640	Na
1995	44.0	5,625	247,331	17.6	98,933	810,000	12.2%
1996	42.8	6,280	268,658	na	Na	908,000	Na
1997	40.4	6,747	272,579	na	Na	940,530	Na
1998	27.2	7,668	208,646	na	Na	929,650	Na
1999	24.1	8,543	206,057	na	Na	987,550	Na
2000	21.0	9,552	200,210	na	Na	1,065,620	Na
2001	18.2	11,178	203,887	11.9	132,526	1,183,090	11.2%

**Source:** Author's own calculations, based on data from China Statistical Yearbook, various issues; and Thomson DataStream.

The evaluation of the 1994/95 II wage reform is based on a much broader statistical coverage. In the mid-90s around 40 per cent of the state-owned enterprises could be classified as part of the so-called recommendation-based wage regime (Yueh, 2004). In 2001 around 65 per cent of all state-owned enterprises underwent an ownership transformation without being listed on one of the stock exchanges (China Internet Information Centre, 2003b). Based on these two figures, the effect of the 1994/95 II wage reform, in terms of its impact in percentage of the total Chinese wage bill in 1995 and 2001, was considerable (Table 20).

<sup>55</sup> The reported average wage level of state-owned units and non-state-owned units in 2001 was rather similar at RMB 11,178 and RMB 12,140. The first amount of RMB 11,178 is underlying this calculation.

In 1995 around 17.6 million employees were affected by the recommendation-based part of the wage reform. This number of employees earned an average wage of RMB 5,625 in 1995, which generated a wage bill of around RMB 99 billion. Due to the serious concerns about the inflationary environment of the mid-90s it is assumed that the potential scope of the wage reform was actually utilized. Thus, according to the 1994/95 II wage reform the authorities could directly influence RMB 99 billion of wages. This constituted a share of 12.2 per cent of the total Chinese wage bill in 1995 and 11.2 per cent in 2001. To sum up, both reforms discussed in this chapter may have impacted between 12 and 15 per cent of the total wage bill in 1995 and around 14 per cent in 2001 (Table 21).

**Table 21: Potential impact of the 1994-95 wage reform on China's total wage bill, 1995 and 2001**

Reform	Characteristics	Number of employees (million)		Percentage of Chinese wage bill	
		1995	2001	1995	2001
1994/95 I	Rule-based	na	3	<=3%	3%
1994/95 II	Recommendation-based	18	12	12%	11%
<b>I + II</b>	---	<b>18-21</b>	<b>15</b>	<b>12-15%</b>	<b>14%</b>

**Source:** Author's own calculations, based on data from CSRC Statistical Information Online Database; China Statistical Yearbook, various issues; and Thomson DataStream.

## 6 EFFECTIVENESS OF THE CHINESE MONETARY POLICY

Monetary policy decision makers are faced with a plethora of information on economic and monetary indicators to judge on the proper stance of their central bank's operating target(s). To simplify the process, monetary policy decision makers and related academics and researchers are on the constant search for strategies and "simple rules".<sup>56</sup> Through these strategies and rules their designers aim to provide practicable guidance to determine the needed level of the operating target. Since it is very difficult for a central bank to control the ultimate goal of price stability directly through the operating target, these strategies often involve an intermediate target that stands between the operating and the ultimate target (Bofinger, 2001: 240-248).

The use of the notion "simple rule" in this work follows Bofinger's definition of a "heuristic", which is: A "simple, generally applicable rule which allows decisions to be taken even under difficult situations in a reliable and fast way" (Bofinger, 2001: 243). Furthermore, simple rules consist of an explicit and an implicit part: The explicit rule defines the concrete value of the targeted variable, whereas the implicit rule defines the needed stance of adjustment of the operating target. Of the various types of simple rules, the following examples stand out:

- *Monetary targeting*, which compares the actual growth rate of monetary aggregates with a target rate. The *implicit rules* states: Positive (negative) deviations should lead to an increase (decrease) in the stance of the operating target, which is the interest rate (cf. Bofinger, 2001: 248-263 who refers to Friedman, 1968; Brunner et al., 1964; and Brunner, 1968);
- *Nominal GDP targeting*, the *McCallum rule*, which compares the actual growth rate of nominal GDP with a target value. The *implicit rules* states: Positive (negative) deviations should lead to a decrease (increase) in the stance of the operating target, which is the monetary base (McCallum, 1987);
- The *Taylor rule*, where the *implicit rule* uses a concrete formula for the determination of the course of the short-term interest rate (Taylor, 1993); and
- *Inflation targeting*, which compares the forecasted inflation rate to the target inflation rate. The *implicit rules* states: Positive (negative) deviations should lead to an increase (decrease) in the stance of the operating target, which is the interest rate (Svensson, 1997).

Officially, the PBC follows a two-pronged domestic monetary policy approach of monetary targeting and domestic loan targeting, both of which define intermediate targets of monetary

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<sup>56</sup> A good overview of the discussion on simple rules and their effectiveness is provided by John Taylor's website "Monetary Policy Rule" available at [www.stanford.edu/~johntayl/PolRuLink.htm](http://www.stanford.edu/~johntayl/PolRuLink.htm).

policy in China. These two approaches serve as points of reference for most monetary policy analyses of the PBC, for instance the PBC Monetary Policy Reports. Often, the emphasis is also on monetary targets alone. From an international perspective, the PBC has additionally pursued a predetermined exchange rate path in form of a crawling peg since 1994, whose exchange rate bandwidths have varied over time. From 2005 to 2008, the crawling peg's scope was utilized to let the RMB appreciate by around 20 per cent vis-à-vis the USD.

This chapter will first look into the official PBC monetary policy approach anchored around intermediate targets, their set-up and the effectiveness of these strategies, then analyze the extent of which the final targets of monetary policy were achieved during the past, and eventually identify the determining factors of the monetary policy transmission process in China. At the end of the chapter, the question will be explored, whether alternative descriptions of the monetary policy approach exist, which would indicate that the PBC follows a simple rule in its conduct of monetary policy.

### **6.1 *Monetary policy approach with intermediate targets***

For a variable to serve as an intermediate target of monetary policy there has to be a sufficient controllability of the variable itself and it needs to show a relationship to the final target of price stability. Thus, in this section two main questions are primarily addressed: (i) Are the intermediate targets of the Chinese monetary policy controllable? (ii) Is a sufficient relationship between these targets and the inflation rate observable? In the case of the exchange rate as an intermediate target, this section will specifically address the question of the sustainability of sterilization operations, as this would indicate the ability of the PBC to actually sustain control over the exchange rate via foreign exchange market interventions without jeopardizing its domestic policy goals.

Monetary policy approaches anchored around intermediate targets are often regarded as nominal anchors within the monetary policy and macroeconomic set-up of an economy. The technique of establishing a nominal anchor describes any method of defining a nominal variable and fixing it at an appropriate level with the aim of reducing inflation and/or achieving price stability. A nominal anchor is thus putting a constraint on the value of the domestic money that is – in one way or the other – necessary for a monetary policy regime to successfully achieve a low-inflation environment. In that sense, a nominal anchor is a “clear target for monetary policy, a way to give people confidence that policy is on track, and a way to tie down or ‘anchor’ expectations of future inflation” (Dodge, 2005). Nominal anchors need not necessarily be explicit and central banks may use an implicit nominal anchor, which is for instance a very strong “overriding concern” for price stability as it is the case of the US Federal

Reserve and the European Central Bank. In other cases, explicit nominal anchors may be used in the form of monetary policy strategies such as monetary targeting, exchange rate targeting or the concept of inflation targeting (Deardorff, 2007: 191-192; ERP, 2007: 162-166; and Mishkin, 2007: 227-252). The PBC appears to have established the two main nominal anchors of monetary targeting and exchange rate targeting. Their effectiveness will be subject to the analysis in this section.

### 6.1.1 Monetary targeting with monetary aggregates

Monetary targeting compares the actual growth rate of monetary aggregates with a target rate. The rationale of the explicit rule and the definition of the target rate of the monetary aggregate are based on the quantity equation of money:<sup>57</sup>  $M \cdot V \equiv P \cdot T$ , with M for the quantity of money, V for the velocity of circulation, P the price level, and T for the transaction volume. Assuming that the transaction volume goes along the development of real GDP (Y), the equation becomes  $M \cdot V \equiv P \cdot Y$ . Through the transformation of the equation into growth rates and the inclusion of normative, potential and trend rates for inflation, output and velocity of money, respectively, the potential formula is derived at:

$$\Delta M3^* = \pi^{\text{target}} + \Delta Y^{\text{potential}} - \Delta V^{\text{trend}}$$

$\Delta M3^*$ : Optimum growth rate of M3

$\Delta Y^{\text{potential}}$ : Potential output growth rate

$\pi^{\text{target}}$ : Target inflation rate

$\Delta V^{\text{trend}}$ : Trend rate of change in the velocity of circulation of money

According to the concept of monetary targeting, the potential formula defines the growth rate of the monetary aggregate of a central bank that is needed to realize the desired inflation rate. The emphasis on trend growth rates for both  $\Delta Y^{\text{potential}}$  and  $\Delta V^{\text{trend}}$  of the concept ensures a medium-term and counter-cyclical perspective (Bofinger, 2001: 250-251). The potential formula was used by the Bundesbank and is currently employed by the European Central Bank (ECB) to define the target rate for their monetary aggregate M3 (Bundesbank, 1997: 76-77; and ECB, 2004: 64). While monetary targeting was the main feature of the Bundesbank's strategy between 1975 and 1998, monetary aggregate M3 plays a "prominent role" as a "reference value" within the ECB's two-pillar strategy.<sup>58</sup> It is important to note, however, that there was a shift in the ECB's focus on the "reference value" from the first pillar in 1999 to the second pillar in 2003/2004 (ECB, 1999: 9; and ECB, 2004: 55).

The simple rule of monetary targeting states: If the actual growth rate of the monetary aggregate is higher than the target growth rate, the central bank has to increase its interest rates;

<sup>57</sup> The quantity equation goes back to Irving Fisher's "The Purchasing Power of Money" of 1911 (Bofinger, 2001: 21).

<sup>58</sup> For a detailed description of the concept of monetary targeting as well as its application in the Bundesbank and the ECB's strategy, please refer to Bofinger, 2001: 248-257 and 295-307.

and if the monetary aggregate is lower than the target growth rate, the authorities have to cut the interest rates (Bofinger, 2001: 256). However, as Bofinger shows, the implicit rule of monetary targeting has never played the main role in monetary decisions in neither the Bundesbank's nor the ECB's set-up. So, how does the PBC do? The Chinese authorities started to set up target values for M1 and M2 in 1994, initially alongside the still used credit plan arrangement. In fact, up until 1996, the credit plan was the most important monetary policy planning and assessment tool of the PBC, which was faded out over the subsequent two years thereafter (Mehran et al., 1996a: 41-42). In 1998, an indirect price-based monetary policy approach was introduced anchored around a prominently featured monetary targeting approach as a nominal anchor that relies on monetary aggregates as intermediate targets as well as domestic loan increase as additional intermediate target (Xie, 2004a; and Yu, 2001).

Today, the monetary aggregates M1 and M2 are the most prominent intermediate targets of the PBC. These values are published in the annual monetary policy report for the subsequent year online in Chinese and English, available on the website of the PBC. Unlike the ECB, which defines its M3 target values via the quantitative equation for money and its derivation of the "potential formula", the PBC apparently is not using such a formula (Table 22). In fact, the PBC formulates its monetary target values via a projection in a normative way. One example is in its Monetary Policy Report of 2003, where the PBC published its monetary targets for 2004 as follows: "Taking into account the time-lag effect of the faster and desired growth of money and credit in 2003, the growth of money supply and loan increase in 2004, **should** [bold by the author of this study] be controlled lower than that of 2003. M2 and M1 are **projected** [bold by the author of this study] to grow by 17 per cent respectively and RMB loans to increase by RMB 2.6 trillion yuan" (PBC Monetary Policy Report, 2003: 1-2).

Another way to show the projection character of the monetary target is in calculating them according to the quantitative equation of money for a comparison. This is done in Table 22, where the ECB "potential formula" is applied to the Chinese situation to calculate the theoretically optimal growth rates for M1 and M2 from 1995 to 2008. Then, these rates are compared to the targets set by the Chinese authorities. Similarity to the values implies a set up of the Chinese monetary targets according to the quantitative equation for money. Table 22 shows that the monetary targets of the PBC were rather close to the quantitative equation for money in 1995 and ever since they fell significantly apart until 2008.



**Table 22: Testing the ECB potential formula for the PBC, 1995-2008**

Year	Target inflation ( $\pi$ )	+ Output potential (Y)	- Velocity of money (V)		= Optimum monetary growth (M*)	PBC targets	
			VM1	VM2		M1*=M2*	M1*
1995	15.0	8.5	-0.04	-0.03	23.5	21-23	23-25
1996	10.0	8.0	-0.04	-0.03	18.0	18.0	25.0
1997	6.0	8.0	-0.04	-0.03	14.0	18.0	23.0
1998	5.0	8.0	-0.04	-0.03	13.0	17.0	16-18
1999	2.0	8.0	-0.04	-0.03	10.0	14.0	14-15
2000	1.0	8.0	-0.04	-0.03	9.0	15-17	14-15
2001	1.5	7.0	-0.04	-0.03	8.5	13-14	15-16
2002	1.5	7.0	-0.04	-0.03	8.5	13.0	13.0
2003	1.0	7.0	-0.04	-0.03	8.0	16.0	16.0
2004	3.0	7.0	-0.04	-0.03	10.0	17.0	17.0
2005	4.0	7.0	-0.04	-0.03	11.0	15.0	15.0
2006	3.0	7.5	-0.04	-0.03	10.5	14.0	14.0
2007	3.0	7.5	-0.04	-0.03	10.5	n.a	16.0
2008	4.8	7.5	-0.04	-0.03	12.3	n.a	16.0

**Source:** Author's own calculations, based on data from Ikeya, 2002: 2; World Bank, World Development Indicators; PBC, 1995a; PBC Monetary Policy Report, various issues; and Xie, 2004a: 2.

**Note:** Target inflation: The PBC publishes target rates for inflation in its Monetary Policy Reports (starting with the PBC Monetary Policy Report 2002); targets usually come from the Annual Central Government Economic Conference. Targets from the time before 2002 are derived from Xie (2004a) and Ikeya (2002).

Output potential: GDP targets of the respective five-year plan of China are taken as proxies for the potential output growth (1991-1995: 8.5 per cent; 1996-2000: 8 per cent; 2001-2005: 7 per cent and 2006-2010: 7.5 per cent). This seems to be a good proxy since estimations for China's potential output growth are usually between 8 and 9 per cent for the period under consideration (Gerlach et al., 2006: 25; and Kuijs et al., 2005: 11).

Velocity of money: Nominal GDP divided by money M1 (for velocity VM1) and M2 (for velocity VM2). The trend rate of velocity of money declined between 1995 and 2008, but the development halted in 2004, 2005 and 2008. The breaks do not change the overall trend.

The question is why the PBC publishes a monetary targeting strategy with monetary targets, whereas the targets are not theoretically derived. The main reason for this might be in the charming character of applying a simple rule, which reads: "If monetary growth exceeds (falls short) of the monetary target, short interest rates have to be increased (reduced). If monetary growth is in line with the target, the interest rate should be kept constant" (Bofinger, 2001: 248). Through the publication of monetary targets, the PBC gets into the position to apply this rule. In fact, it might be of secondary importance how the targets are derived, but most important that they are installed in the first place. But today the concept of monetary targeting is also under criticism more generally. This comes at the backdrop of questionable controllability of monetary targets and an insufficient relationship to inflation. Notwithstanding, an important reason for the use of monetary targeting in China is in the search for a nominal anchor, i.e. the commitment to a consistent and transparent policy framework that the public could use to monitor the actual policy (Croce et al., 2000). With this nominal anchor, the PBC might

hope to gain reputation for its monetary policy just as the ECB did with the monetary targeting framework, once it was established (Mishkin, 2002).

### 6.1.1.1 Controllability

Table 23 shows the comparison of the targeted and actual values of the Chinese monetary aggregates of M1 and M2 from 1994 to 2008. The targeted and the actual values fell together only three times in the case of M1 and only five times in the case of M2 aggregate.<sup>59</sup>

**Table 23: Targeted and actual values for the PBC's monetary aggregates, 1994-2008**

Year	M1 growth (%)		M2 growth (%)	
	Target	Actual	Target	Actual
1994	21	26.2	24	34.5
1995	21-23	16.8	23-25	29.5
1996	18	18.9	25	25.3
1997	18	16.5	23	17.3
1998	17	11.9	16-18	15.3
1999	14	17.7	14-15	14.7
2000*	15-17	16.0	14-15	12.3
2001	13-14	12.7	15-16	14.4
2002	13	16.8	13	16.8
2003	16	18.7	16	19.6
2004	17	13.6	17	14.6
2005	15	11.8	15	17.6
2006	14	17.5	14	16.9
2007	n.a**	21.0	16	16.7
2008	n.a**	9.1	16	17.8

**Source:** Ikeya, 2002: 2; PBC, 2001: 181; PBC, 2006g: 4; PBC Monetary Policy Report, various issues; Thomson DataStream; Wu, 2004a; Xia et al., 2001: 35; and Xie, 2004a: 2.

**Note:** There were no target values for monetary aggregates before 1994.

\* For 2000, Xia et al. (2001) speak of a M1 and M2 targets of 14 per cent each. In this table the official PBC figures are cited as mentioned by Xie (2004a).

\*\* In 2007 and 2008, the bank did not set a target value for the growth of narrow money M1.

M1 values had less than one percentage point deviation in the years 1996, 2000 and 2001 and M2 aggregates met its targets in 1996, 1998, 1999, 2001 and 2007. Obviously, targets were met more easily, when target bands were formulated. Only in the year 1996, the precise targets of 18 and 25 per cent growth for M1 and M2 were met fairly accurate. Strong deviations of more than 4 percentage points occurred three times for M1 and M2 aggregates. These strong deviations particularly arose in the early phase of the formulation of monetary targets, after the high inflation rate of 24 per cent in 1994. From 1999, a more stable control in terms of lower deviations from the targets was achieved. However, only three out of 10

<sup>59</sup> No target values for the growth of narrow money M1 were set for 2007 and 2008.

targets were met with deviations of less than one percentage point between 1999 and 2008.<sup>60</sup> Surprisingly, in 2004, when inflationary pressure was rather strong, the actual values were 3.4 percentage points less than the M1 target and 2.4 percentage points less than the M2 target (Table 23).

To assess the central bank's ability to control the aggregates, the crucial question is whether the monetary targets were actually met. In the case of the PBC, the comparison of the projected targets with the actual values casts doubt on this controllability. In general, the literature ascribes such an uncontrollability of monetary aggregates primarily to the fluctuations in the demand for money, which is "notoriously unstable in the short run" (Bofinger, 2001: 296). As a consequence, it is difficult (if not impossible) to steer monetary aggregates with short-term interest rates. In the particular case of the PBC, arguments about constraints induced through the exchange rate regime and an unstable money multiplier are also often brought forward to explain the controllability problem of monetary targets in China.

*First*, some scholars claim that the exchange rate regime with its de facto peg of the RMB to the USD up to July 2005 and the subsequent crawling peg – both of which undervalued – are the main source of uncontrollability of the Chinese money supply. While Chinese scholars have observed this problem for the 1990s (Xia et al., 2001 and Yu, na), other proponents see it mainly for the 2000s and there due to an undervaluation of the RMB (Goldstein, 2004; McCallum, 2004; Obstfeld, 2006; and Goldstein et al, 2008). Accordingly, the undervalued peg of the exchange rate led to increasing foreign exchange inflows, which had to be converted into RMB and thus increased domestic money supply in China. But to counter this "the central bank can 'sterilize' some or all of this potential increase in liquidity (on base money) by undertaking a number of offsetting operations, the most important of which are typically sales of securities to the banks (i.e. open market operations in government bonds or sale of central bank bills) and increase in the reserve requirement" (Goldstein, 2004: 25). In fact, since 1994, foreign exchange inflows and their associated increase in monetary base have been successfully sterilized through the monetary policy instruments of the PBC. Moreover, even starting from 2000 when sterilization operations increased dramatically to offset capital inflows, the impact of the piling up of international reserves on the domestic liquidity condition was virtually insignificant (Green, 2005; Anderson, 2006b; and Anderson, 2007). The analysis on the sterilization of capital inflows (section 6.1.3) through open market operations confirms this assessment for the time up to 2008.

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<sup>60</sup> In this respect, the PBC is in good company. The German Bundesbank reached only 11 of its 24 monetary targets from 1975 to 1998, despite occasionally very broad target corridors of up to 3.9 per cent. Nevertheless, the German Bundesbank performed very well in terms of achieving low inflation.

Second, Xia et al. (2001) argue, among other factors that an unstable currency multiplier is a particular cause of uncontrollability of monetary aggregates in China. The instability of the money multiplier would lead to an unpredictability of the relationship between the monetary base and the monetary aggregates. A stable relationship, however, is crucial since the monetary aggregates are controlled through the steering of the monetary base. Therefore, an unstable and unsteady money multiplier makes the task of monetary targeting difficult. Indeed, Table 24 shows that the currency multiplier was largely unstable from 1994 to 2008. Money multiplier m1 decreased from 1.14 in 1994 to 1.03 in 1996. Then, from 1996 to 2005, the multiplier m1 was on a stable increasing path and stood at 1.63 in 2006. In 2006, multiplier m1 decreased slightly to 1.62 and subsequently to 1.29 in 2008. In the overall perspective, the development of the multiplier m1 shows an unstable and up-and-down path between 1994 and 2008. Money multiplier m2 was on an ascending path from 1994 to 2006 with 2.56 in 1994 and 4.44 in 2006 with one break in this path from 1995 to 1996. The multiplier m2 decreased after 2006 to 3.68 in 2008. Throughout the period under consideration, the standard deviation of m1 was 0.22 with an average value of multiplier m1 of 1.40; m2 showed a standard deviation of 0.62 with an average multiplier m2 of 3.56. Table 24 supports Xia Bin's observation of an unstable money multiplier.

**Table 24: Monetary base, monetary aggregates and the money multiplier in China, 1994-2008**

Year	Monetary Base	Monetary Aggregates		Money Multiplier	
	(B)	M1	M2	m1	m2
		<i>billion RMB</i>		<i>m=M/B</i>	
1994	1,722	1,967	4,400	1.14	2.56
1995	2,076	2,308	5,697	1.11	2.74
1996	2,689	2,756	7,208	1.03	2.68
1997	3,063	3,481	8,872	1.14	2.90
1998	3,134	3,869	10,172	1.23	3.25
1999	3,362	4,698	11,608	1.40	3.45
2000	3,649	5,454	13,009	1.49	3.56
2001	3,985	6,169	14,961	1.55	3.75
2002	4,514	7,088	17,696	1.57	3.92
2003	5,284	8,412	21,101	1.59	3.99
2004	5,886	9,582	24,243	1.63	4.12
2005	6,434	10,690	28,301	1.66	4.40
2006	7,776	12,604	34,560	1.62	4.44
2007	10,155	15,256	40,344	1.50	3.97
2008	12,922	16,622	47,517	1.29	3.68

**Source:** Author's own calculations, based on data from IMF, International Financial Statistics.

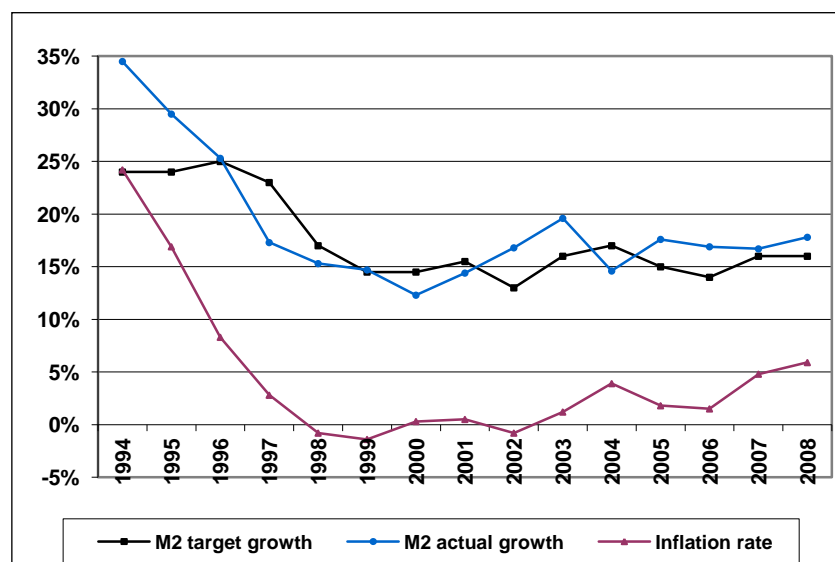
But it is difficult to argue that this is a particular problem of the Chinese monetary system. In comparison, the German Bundesbank's money multipliers were equally far from being stable. Between 1975 and 1989, the multipliers for M1, M2 and M3 (m1, m2, m3) had standard deviations of 0.05, 0.28 and 0.30 with average values of 2.59, 4.41 and 7.60 (Author's own cal-

culations, based on data from IMF, International Financial Statistics). Moreover, Germany's most prominent monetary aggregate M3 had a far less steady pace of change than China's aggregate M2, which was on a trend ascending path between 1994 and 2006. At this backdrop, it has to be doubted that the unstable money multiplier is a major cause of the observed distortions in China. In the author's view, the main reason for the problems in the controllability of monetary aggregates in China comes from a misleading interest rate channel for monetary transmission, which is mainly caused by the transition economy with the simultaneous usage of price- and quantity-based monetary instruments.

### 6.1.1.2 Relationship to inflation

The second condition for a factor to be suitable as an intermediate target of monetary policy is a significant relationship to the overall goal of price stability. Figure 13 displays M2 target growth rates, M2 actual growth rates and inflation rates from 1994 to 2008. Due to the prominence of M2 within the monetary policy set up this section focuses solely upon the analysis of the relationship of monetary aggregate M2 to inflation. At first sight, there is a parallel run of M2 growth rates and inflation rate recognizable from 1994 to 2008.

**Figure 13: Inflation rate, targeted and actual values of M2 in China, 1994-2008**



**Source:** Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 2001: 181; PBC Monetary Policy Report, 2002, various issues; PBC, 2006g: 4; Thomson DataStream; Wu, 2004a; Xia et al., 2001: 35; and Xie, 2004a: 2.

**Note:** Target bands, e.g. 23-25 per cent are displayed as the medium value of the bandwidth.

Over the whole period, the actual M2 growth rates are mirrored by the inflation rate fairly well. From 1997, M2 target growth rates show a particular close development with the inflation rate. This finding might be attributed to the fact that the monetary targets are set up as a pro-

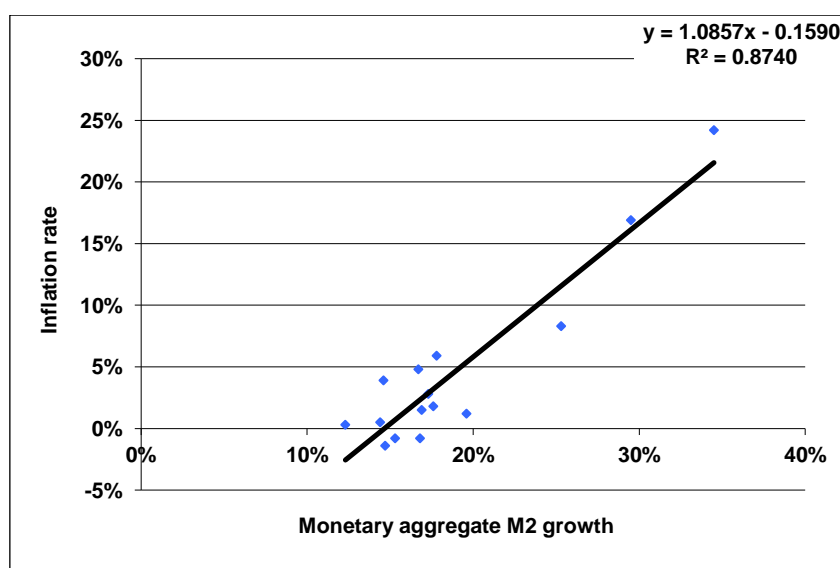
jection based on adaptive expectations rather than as a theoretical derivation. In Figure 13, seven phases of monetary developments can be distinguished from 1994 to 2006:

1. *1994-1996 --- M2 actual > M2 target:* According to the monetary target approach, when the actual monetary growth is higher than the target, inflationary pressure will be prevalent. Indeed, inflation was high during the three years under consideration. The inflation rate was on a declining path and stood at 24.2, 16.9 and 8.3 per cent in 1994, 1995 and 1996, respectively. It appears that the inflation declined along a decreasing trend of actual M2 growth that developed from 34.5 to 29.5 and 25.3 per cent. Wage and price controls have also played a major factor in bringing down the inflation rate in that period.
2. *1996-1999 --- M2 actual < M2 target:* The four years of 1996-1999 show actual M2 growth rates that were lower than target M2 growth rates. According to the monetary target approach, this would indicate deflationary tendencies. Indeed, declining rates of inflation developed from 8.3 to 2.8 to -0.8 to -1.4 per cent in 1996, 1997, 1998 and 1999, respectively. The effects of the Asian crisis have to be seen as an important contributing factor to low inflation rates in that period.
3. *1999-2001 --- M2 actual < M2 target:* After a short time of same growth rates of actual and target M2 in 1999, the actual values were running below the target values again in the subsequent years. This reinforced the prevailing deflationary pressures with inflation rates of -1.4, 0.3 and 0.5 per cent in 1999, 2000 and 2001, respectively.
4. *2001-2003 --- M2 actual > M2 target:* In 2001, the situation had changed fundamentally for the first time since 1996. The actual growth rates of M2 developed on a higher course than the targeted values, which signalled inflationary pressure. In fact, the inflation rate gained momentum and increased from -0.8 per cent in 2002 to 1.2 per cent in 2003 and 3.9 per cent in 2004.
5. *2004 --- M2 actual < M2 target:* To fight the inflationary pressures, restrictive policy measures in 2003/04 led to a decrease of the actual monetary growth and a drop below the initially targeted rate. Due to these measures, inflation stabilized at a level below 5 per cent at the end of 2004 and stood at 2.4 per cent in December.
6. *2005-2007 --- M2 actual > M2 target:* The restrictive measures taken in 2004 proved successfully in dampening the inflationary pressure with the inflation rate declining from 3.9 per cent in 2004 to 1.4 per cent at the end of 2006. But in monetary terms in 2005 and 2006, actual growth was higher than the targeted growth (2.6 per cent in 2005 and 2.9 per cent in 2006). The declining inflation rate in 2005-2006 may as well be the time-lagged effect of the tightening policy of 2003/04.

7. 2007-2008 ---  $M2 \text{ actual} > M2 \text{ target}$ : Monetary growth continued to exceed the targeted growth rates in 2007 and 2008. This was accompanied by a pick-up of inflation which culminated at 8.7 per cent in February 2008.

The description of the phases and the visualization of Figure 13 demonstrate a fairly close relationship between money M2 and the inflation rate between 1994 and 2008. Moreover, in phases with higher (lower) actual than targeted M2 growth rates, inflationary (deflationary) tendencies were prevalent, with the exception of the two years 2005 and 2006. It shows that by manipulating monetary growth, the PBC may actually be able to influence the course of inflation.

**Figure 14: Correlation of M2 growth and inflation rate in China, 1994-2008**



**Source:** Author's own calculations, based on data from Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 2001: 181; PBC Monetary Policy Report, various issues; Thomson Data-Stream; Wu, 2004a; Xia et al., 2001: 35; and Xie, 2004a: 2.

The visual close relationship is supported through statistical testing of the correlation of M2 and the inflation rate. Figure 14 plots the results of a linear correlation analysis between actual M2 growth and the inflation rate based on monthly data from 1994 to 2008. Both variables are closely related with a correlation coefficient of 0.9353, also reflected in the  $R^2$  value of 0.8747.

### 6.1.1.3 Monetary targeting policy and actual People's Bank of China reaction

Another interesting point is the question, whether the PBC followed the "implicit rule" of the quantity-based theory monetary policy approach. The simple rule of monetary targeting states: "If  $M2 \text{ actual} > M2 \text{ target}$ , the central bank has to increase its interest rates; and if  $M2$

actual < M2 target, the authorities have to cut the interest rates”. Table 25 summarizes the PBC’s behaviour in terms of interest rate changes as compared to the theoretical suggestion. In line with the discussion above, seven periods are distinguished. In the two phases between 1994 and 1999, the PBC reacted according to the proposals of the quantity theory. In the situation of the actual M2 growth exceeding the targeted growth between 1994 and 1996 (A), the PBC increased its interest rate accordingly. From 1996 to 1999 (B), the actual amount ran below the targeted value. As a response, the central bank cut its interest rate in 1997 and 1998.

**Table 25: Monetary targeting policy reaction and actual PBC reaction, 1994-2008**

Years	Actual and targeted growth rates	Textbook policy reaction	Actual PBC reaction	PBC move according theory?
A 1994 - 1996	M2 actual > M2 target	Interest rate increase.	Interest rate increase in 1995 and cut in 1996.	Yes, cut in 1996 justified by the overall decreasing inflation rate.
B 1996 - 1999	M2 actual < M2 target	Interest rate cut.	Subsequent interest rate cuts 1997 and 1998.	Yes.
C 1999 - 2001	M2 actual < M2 target	Interest rate cut.	No move within the period; interest rate cut between 2001 and 2002.	No, move too late.
D 2001 - 2003	M2 actual > M2 target	Interest rate increase.	No move within the period.	No.
E 2004	M2 actual < M2 target	Interest rate cut.	Interest rate increase in October 2004, two years after M2 actual started to exceed M2 target.	No, interest rate increase needed in 2001-2003.
F 2005-2007	M2 actual > M2 target	Interest rate increase.	Two interest rate increases in 2006, six in 2007.	Yes.
G 2007-2008	M2 actual > M2 target	Interest rate increase.	No increases in 2008; large rate cuts at end-year to face international crisis.	No, interest rate increase indicated for period until September 2008.

**Source:** Author’s own compilation, following the seven phases identified in Figure 13. The actual PBC reaction is based on the one-year lending (benchmark) rate as published in IMF, International Financial Statistics.

In the two phases of 1999-2001 and 2001-2003, the PBC widely ignored the indications of the theory. From 1999 to 2001 (C), the actual value was still below the targeted value, but the PBC did not cut the interest rate in a timely manner. The moves came very late in 2001 and 2002. In fact, since 2001, the real worth of monetary growth has exceeded the targeted value. The late move has reinforced the overall change towards inflationary pressure rather than fighting deflationary pressures of the late 1990s. For the period 2001 to 2003 (D), the



actual values increased at a higher pace than the targeted values. The PBC did not react with an interest rate increase until October 2004. However, the actual values had already come down below the target levels at the end of 2004 (E). Thus, the interest rate move came too late again. The restrictive stance of 2003/04 had its influence on 2005. As a result, an interest rate increase was not imminent to face the fact that actual monetary growth was higher than the targeted growth rate in that year. Due to the persistence of the situation in 2006, the two interest rate moves in April and August 2006 indeed corresponded to the logic of the monetary targeting framework. The tightening policy was continued with six more rate raises in 2007 as inflation started to pick up again in 2007 (F), following the prescription of the monetary targeting approach. But, while monetary aggregates and inflation rates further increased in 2008 with the latter reaching more than 8 per cent in the first quarter, no additional moves of the interest rate followed (G). At the end of 2008, the situation changed completely, when the international financial and economic crisis set into full swing and aggressive interest rate cuts were needed to support the fight over the crisis.

The question is: Why did the PBC not act according to its monetary indicators, particularly from 1999 to 2004? Additionally, are there any other factors rather than the interest rate that have major influence on the slope of the inflation rate? An answer frequently stated to face the first question is that due to the pegged exchange rate, increasing interest rates would trigger capital inflows and thus make it impossible to pursue an autonomous monetary policy in China. This argument, however, ignores the fact that China maintained and still maintains a certain degree of capital controls, and moreover it has the instrument of sterilized foreign exchange market interventions. In the author's view, there must be other factors that influence the inflation rate and their importance within the current monetary policy set-up in China, which outweigh the concept of monetary targeting. In fact, the analysis in chapter 5 showed that within the past two decades, there have been instruments of that kind at work. In the 1990s, wage and price controls were important parts of the macroeconomic steering mechanism. The instrument of window guidance has gained importance and has even been intensified since the 2003/04 expansionary economic cycle. And apart from the generally limited role of interest rates in China, there is the distorting influence of the instrument of direct PBC lending. In 2002, 9 per cent of monetary aggregate M2 fell under the category of direct PBC lending and, thus, could not be influenced by interest rate adjustments at all.

### **6.1.2 Domestic loan targeting through loan increase targets**

Ever since the existence as the central bank in a two-tier banking system in China, the PBC has put major considerations on the growth rate of domestic loans (Yu, 2001). Until 1998, the emphasis on credit was embedded into the state credit plan, which provided the economy

with the necessary credits to reach the given output targets. In 1998, without the credit plan system in place, increase in domestic loans had been incorporated into the indirect monetary policy concept. Since then domestic loan increase has had to be seen as an intermediate target in addition to monetary aggregates (Xie, 2004a: 2).<sup>61</sup> The most prominent tool to guide domestic loan increases is the instrument of window guidance, the importance of which comes at the expense of interest rates mainly due to an insufficient interest rate elasticity of loans in China. Nowadays, growth targets of domestic loans are published together with the monetary aggregates in the PBC's monetary policy reports. The focus of the following analysis is from 1998 to 2008. No reliable data for domestic loan increases are available for the time before 1998.

### 6.1.2.1 Controllability

Table 26 shows the comparison of the targeted and actual values of domestic loan increases, which is actually only possible from 1998 to 2006 since no targets were published in 2007 and 2008. Similar to the observation about the monetary targets, one can see that the domestic loan targets were missed in the majority of years. In fact, only in 2001, the target was met accurately. The remaining eight targets were missed in a range from 2.4 (in 2006) to 7.4 percentage points (in 2003).

**Table 26: Targeted and real values for domestic loan increases in China, 1998-2008**

Year	Target growth* (%)	Actual growth (%)
1998	12.7	15.5
1999	15.7	8.3
2000	11.7	6.0
2001	13.1	13.0
2002	11.6	16.9
2003	13.7	21.1
2004	16.4	11.6
2005	14.1	9.8
2006	12.8	15.2
2007	na**	16.6
2008	na**	18.8

**Sources:** PBC, 2001; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; and Xie, 2004a: 2.

**Note:** \* Target values are usually published in billion RMB. Using the data of total domestic loan increases the target is converted into a percentage growth target.

\*\* In 2007 and 2008, the PBC did not set a target value for domestic loan increases, reportedly to enhance the flexibility in financial macroeconomic control (China.org.cn)

<sup>61</sup> Monetary targets and domestic loans show a quite similar development path of their actual rates between 1998 and 2008; but not surprisingly, domestic loans show relatively lower rates of growth in times of active use of the instrument of window guidance, for instance in 2003/04.

Generally, the problem in the control of domestic loan growth in China lies in its interest rate inelasticity. The limited influence of interest rate changes mainly comes from the mix of price- and quantity-based monetary instruments, which prevent both of them from working properly. Other specific factors also come into play (Wei, 2004): For instance, local governments often do not have the necessary global perspective on economic matters, but do often pursue self-interests. Since they have the power to influence lending decisions on local commercial banks, local governments can increase the amounts of locally administered loans to make up for decreasing centrally managed policy loans. Additionally, credit systems of the banks do often not sufficiently apply risk-related credit policies that price the credits according to the underlying risks. Most loans are simply priced around the central bank's benchmark rates. Thus, the price as a tool to regulate the amount of credits is often not applied and the total amount of granted loans then is higher than the expected level. But increasingly – under the supervision of the China Banking Regulatory Commission – the Basel capital adequacy ratio is subject to special attention. Therefore, slowly the overall lending mentality veers towards more risk-related credit policies.

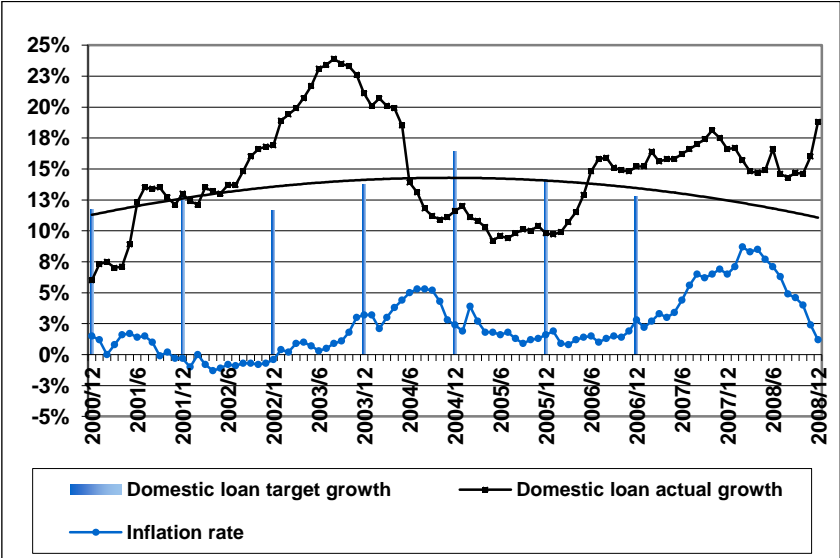
#### **6.1.2.2 Relationship to inflation<sup>62</sup>**

Figure 14 displays the development of the actual and targeted loan growth in comparison to the inflation rate from December 2000 to December 2008 on a monthly basis. The actual loan growth shows an upward trend until the peak of almost 24 per cent monthly y-o-y increase in domestic loans in August 2003. The decline in growth figures from 2003 to 2005 indicates the efforts of the Chinese authorities to implement a more restrictive monetary stance to face the expansionary economic cycle of 2003/04. Starting from 2006, loan increases picked up again and increased over the 15 per cent threshold again in July 2006. The rate stayed around that level until 2008. At first sight, the figure shows a lagged relationship between domestic loans and the inflation rate. The time lag lies in the range of around 5 to 12 months. To illustrate the development in detail, a closer look at six phases is helpful.

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<sup>62</sup> The focus in this section is from December 2000 to December 2008. Only since December 2000, the PBC has published monthly data for domestic loan developments on its website [www.pbc.gov.cn](http://www.pbc.gov.cn) (see PBC Statistics Database Online).

**Figure 15: Inflation rate, targeted and actual values of domestic loan increase, 2000-2008**



**Source:** Own calculations, based on data from PBC, 2001; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; and Xie, 2004a: 2.

**Note:** The black curve is a trend line for the target values since target values are not available monthly. No target values were published for 2007 and 2008.

*Phase 1*, with moderate loan increases of 6 to 9 per cent from December 2000 to May 2001. *In response*, the inflation rate drifted for a period of negative rates six months later in November 2001 and stayed deflationary for one year until December 2002.

*Phase 2*, with stable loan growth rates of 12 to 15 per cent between June 2001 and August 2002. *In reaction*, five months after the loan growth rate hit the 15 per cent margin in August 2002, the deflationary pressure eased and the inflation rate showed positive rates from January 2003 onward.

*Phase 3*, with volatile growth rates of loans of 16 to 24 per cent between September 2002 and May 2004 with the culmination of 23.9 per cent in August 2003. *Consequently*, the inflation rate showed an upward trend with a time lag of about 6 to 12 months. Due to the time lag and loan growth rates of above 15 per cent until May 2004, the inflation rate kept rising even though the loan growth rates showed a downward trend since the peak point of August 2003.

*Phase 4*, with stable growth rates between 9 and 11 per cent from August 2004 to May 2006. *In reaction*, five months later, the loan growth rate calmed down to below 15 per cent in June 2004, the inflationary pressure eased and the inflation rate showed a considerable decline to 2.8 per cent in November 2004. After a one-off increase in February 2005 to 3.9 per cent, the

inflation rate embarked on a stable pace between 0.8 per cent and 1.9 per cent between May 2005 and November 2006.

*Phase 5*, with loan growth rates at the 15 per cent threshold from June 2006 until August 2008 with a culmination of 18.1 per cent in October 2007. At the same time the inflation rate increased strongly throughout and reached 8.7 per cent in February 2008, which certainly also was heavily fuelled by increasing food prices then (see Box 3 on the concept of core inflation in China). Efforts to implement restrictive policy drove the domestic loan growth rate little lower and down to below 15 per cent for the first time in 15 months in March 2008. This was the start of a cooling of the inflationary trend and the inflation rate lowered slowly to below five per cent in August 2008.

*Phase 6*, with the arrival of the financial and economic crisis in September the situation changed completely: The unwinding of the global food price hike and dampening export demand drove down both the inflation rate and GDP growth. *In response*, authorities tried to revive the credit market to support the suddenly fragile economic situation. Loan growth rates shot up again to 18.8 per cent in December, but this time not indicating an immediate inflationary threat due to the specific crisis situation.

**Table 27: Correlation of domestic loan increases and inflation rate in China, 2000-2008**

<i>Measured with time lag</i>	<i>Correlation coefficient</i>	<i>Linear regression equation</i>	<i>R<sup>2</sup></i>
t <sub>0</sub>	0.1209	y = 0.0554x + 0.0106	0.0146
t <sub>0+1</sub> month	0.2017	y = 0.0961x + 0.0054	0.0407
t <sub>0+2</sub> months	0.2735	y = 0.1381x + 0.0001	0.0748
t <sub>0+3</sub> months	0.3234	y = 0.1701x - 0.0035	0.1048
t <sub>0+4</sub> months	0.3757	y = 0.2059x - 0.0078	0.1411
t <sub>0+5</sub> months	0.4271	y = 0.2412x - 0.0122	0.1825
t <sub>0+6</sub> months	0.4648	y = 0.2682x - 0.0155	0.2161
t <sub>0+7</sub> months	0.4916	y = 0.2875x - 0.0177	0.2417
t <sub>0+8</sub> months	0.5135	y = 0.3017x - 0.0194	0.2637
t <sub>0+9</sub> months	0.5364	y = 0.3159x - 0.0210	0.2877
<b>t<sub>0+10</sub> months</b>	<b>0.5434</b>	<b>y = 0.3187x - 0.0209</b>	<b>0.2953</b>
t <sub>0+11</sub> months	0.5404	y = 0.3153x - 0.0202	0.2920
t <sub>0+12</sub> months	0.5238	y = 0.3039x - 0.0183	0.2743

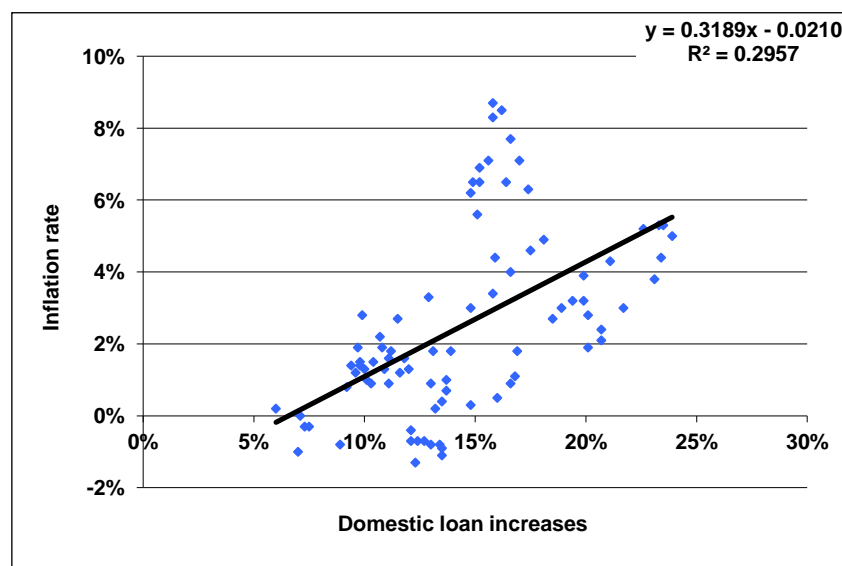
**Source:** Author's own calculations, based on data from PBC, 2001; PBC, 2003a; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; and Xie, 2004a: 2.

**Note:** Correlation tests are based on monthly data ranging from December 2000 to December 2008. The first column indicates the time lag with which different coefficients are tested between domestic loan growth and the inflation rate. Tested in t<sub>0</sub> means that no time lag was taken into account. Since this is a linear two variable model, R<sup>2</sup> is simply the square value of the coefficient.

With the exception of the time of the global financial and economic crisis, the chart analysis in Figure 15 indicates that there is a “neutral stance” of domestic loan increases of 10 to 15 per cent, which leads to an inflation rate of around 1 to 3 per cent within a time lag of 5 to 12 months. This time-lag is confirmed through statistical correlation analyses with a method that uses iterative linear regression tests considering time lags from zero to twelve months ( $t_0$  to  $t_{0+12\text{months}}$ ).

Table 27 shows that there is no significant positive correlation between domestic loan increases and the inflation rate, when short time lags are underlying the test. But there is a significant relationship with underlying time lags of nine to eleven months ( $t_{0+9\text{ months}}$ ,  $t_{0+10\text{ months}}$  and  $t_{0+11\text{ months}}$ ). The highest correlation identified is at  $t_{0+10\text{ months}}$  with a coefficient of 0.5434. This indeed indicates that the inflation rate tends to follow the developments of the domestic loan increases with a delay of around 10 months. Another way to display the results of Table 27 is to take the time lag and plot the linear correlation of loans and inflation rate considering the 10 months. This is depicted in Figure 16.

**Figure 16: Correlation of domestic loans and inflation rate at a 10-month time lag, 2000-2008**



**Source:** Author’s own calculations, based on data from PBC, 2001; PBC, 2003a; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; and Xie, 2004a: 2.

**Note:** The graph takes into account a time lag of 10 months for the inflation rate following domestic loan increases. This is because Table 27 identified 10 months as the time lag with the most significant correlation of both variables.

Additional support to the hypothesis of a “neutral stance” of loan increases comes from the fact that the PBC’s own growth targets between 1998 and 2006, with the exception of 2004, were within the 10-15 per cent margin. However, Figure 15 also shows the main problem of

the approach to target loan growth through quantity-based instruments such as window guidance, i.e. the volatile growth rates of domestic loan that limit the ability to fine-tune monetary policy.

### **6.1.3 Exchange rate targeting through foreign exchange market interventions**

#### **6.1.3.1 Controllability**

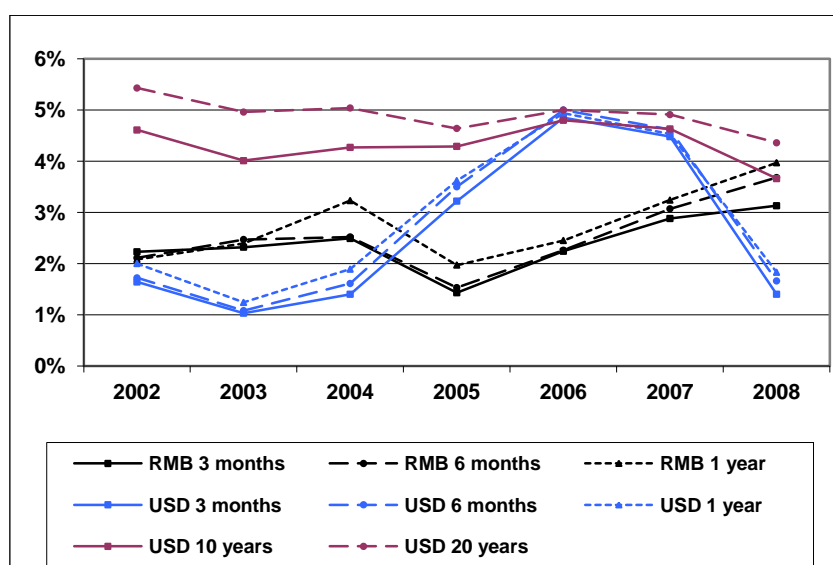
The exchange rate functions as an intermediate target for monetary policy as it can be indirectly influenced and steered by the interest rate, which links adjustments in the level of the domestic interest rates to exchange rate movements via the interest rate parity condition. For instance, relatively higher domestic Chinese interest rates would eventually lead to a depreciation of the RMB following the logic of the interest rate parity condition. But this work acknowledges the fact that interest rates are by and large still an administrative tool in China and that the exchange rate path is determined mainly by the authorities in a pegged exchange rate regime. Much more, due to the still limited possibilities of foreign investors to actually invest into domestic financial instruments in China, exchange rate movements are largely not induced by interest rate differentials, but the exchange rate is mainly determined by policy variables and the expectation of policy changes vis-à-vis the RMB exchange rate. But the PBC can revert to the direct channel of foreign exchange market interventions to keep the exchange rate at a predetermined level. Foreign exchange market interventions will influence the level of the exchange rate through decreasing or increasing the supply of foreign exchange in the domestic foreign exchange market. For instance, a central bank would purchase foreign exchange to avoid an exchange rate appreciation, and it would sell foreign exchange to prevent its exchange rate from depreciating (see for instance Bofinger, 2000b).

Starting from 2002, the PBC used foreign market interventions solely to purchase foreign exchange and thereby preventing an appreciation of the RMB. In this case and as a consequence of frequent foreign exchange market interventions, the PBC needs to sterilize its interventions to keep the domestic monetary policy stance constant. Sterilization in the context of the PBC refers to the policy to keep the monetary base constant (monetary base targeting). This is achieved through a mix of monetary policy instruments and particularly through open market interventions. But the problem of open market operations for sterilization purposes is that they cause costs. These sterilization costs are largely defined through the domestic and foreign interest rate differential. Domestically, on the one hand, the central bank has to offer a certain interest rate to absorb the excess liquidity. On the other hand, the central bank earns money on its acquired foreign exchange reserves. “Thus, if a central bank tries to target a constant *nominal* exchange rate (...) in a situation where the domestic inter-

est rate is higher than the foreign rate, it is not able to defend its currency against strong appreciation pressure for long” (Bofinger, 2001: 390).

There are two main opinions vis-à-vis the cost of sterilizing foreign exchange rate in China. The proponents of the argument that the exchange rate regime is one major cause of the uncontrollability of the development of monetary base in China after 2002 usually argue that the costs (direct and indirect) of sterilization are too high to be maintained over an extended period (Goldstein, 2004: 27; Goldstein et al, 2008: 4-9; and Obstfeld, 2006).<sup>63</sup> The other group argues, correctly in the author’s view, that sterilization measures up to 2008 were largely able to compensate capital inflows into China, including those induced by the foreign exchange regime. As a result, the impact of capital inflows on the domestic liquidity conditions was virtually insignificant (Anderson, 2006b; Anderson, 2007; Green, 2005).

**Figure 17: Interest rates for Chinese sterilization operations and US treasury bonds, 2002-2008**



**Source:** Author’s own calculations based on daily data from [www.chinabond.com.cn](http://www.chinabond.com.cn) and the United States Department of the Treasury, Historical Data Online.

**Note:** Domestic Chinese interest rates (black lines): Average interest rates granted to domestic financial institutions through liquidity absorbing operations on the open market (i.e. “repos” and central bank bills). Maturities: 3, 6 and 12 months.

United States interest rates (blue lines): Average yield rates of holders of United States Treasury Bonds. Maturities: 3, 6 and 12 months.

United States interest rates (purple lines): Average yield rates of holders of United States Treasury Bonds. Maturities: 10 and 20 years. The majority of Chinese foreign exchange reserves held as United States Treasury Bonds are in long-term maturities (CRS Report, 2008b).

<sup>63</sup> In 2005, Yu Yongding, Professor at the Chinese Academy of Social Sciences and as a member of the Monetary Policy Committee at the PBC argued in a similar way. According to an article of the Financial Times from 14 April 2005, he “thinks sterilization can continue for ‘quite a while’ but says the cost is getting higher” (Balls et al., 2005).



Moreover, several studies come to the conclusion that the sterilization costs in China are either very low or even negative, i.e. the PBC is likely to make money through the exchange rate regime (see Anderson, 2005; Green, 2005; Prasad, 2008; and Qu, 2005). For instance, Green (2005) calculates that the PBC received a net income of the exchange rate peg in 2004 of “at least (...) USD8.4 billion (...) and possibly as much as USD15.4 billion” (Green, 2005: 25).<sup>64</sup> Likewise, Prasad, concluding his analysis of the effects of foreign exchange rate inflows up to 2007 states: “This means that, at the margin, sterilization is essentially a money making operation for the PBC” (Prasad, 2008: 85). The logic of such cost-return analyses becomes apparent by considering interest rate returns on USD bonds and RMB interest rates (Figure 17). The figure displays clearly that between 2004 and 2008 the yields on all maturities of United States Treasury Bonds (US T-Bonds) – the preferred holding of Chinese foreign exchange reserves<sup>65</sup> – were consistently higher than the interest granted to domestic financial institutions through liquidity absorbing operations on the open market. Looking at long-term maturities, which on average made up more than 90 per cent of Chinese holdings of US Treasury Bonds between 2002 and 2008, one can recognize that a considerable profit margin was realizable for the Chinese authorities from 2002 to 2008, until the global financial and economic crisis set in fully in September 2008.

What does that mean concretely for sterilization operations from 2002 to 2008? The difficulty of these kinds of cost-benefit analyses is to judge what interest rates – for sterilization measures in China and foreign exchange reserve yields abroad – one has to compare. Much more, the exact composition of foreign exchange reserves in currencies, asset classes and their maturities is unknown. Table 28 attempts to assess the costs and benefits of foreign exchange market interventions for the time of 2002 to 2008 based on average interest rates. The analysis assumes that the full amount of the growth of the reserves is sterilized every year<sup>66</sup> and that reserves are held in USD denominated assets. Further, the calculation considers that one half of the sterilization is carried out through open market operations (i.e. “repos” and central bank bills) and the other half is absorbed by minimum reserves (MR). Average costs therefore occur for half of the amount of annual growth for each open market op-

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<sup>64</sup> This assessment was confirmed for the subsequent period of 2005–2006 through two new studies by Green as referred to by Goldstein et al. (2007).

<sup>65</sup> For instance, of the USD 243 billion of foreign exchange reserves in June 2002, USD 181 billion were kept in US Treasury Bonds (75 per cent); similarly, in June 2005, of USD 711 billion, USD 527 were held in US Treasury Bonds (74 per cent); and in 2008, of USD 1,809 billion, USD 1,205 billion were in US Treasury Bonds (67 per cent). Thus, historically the majority of the Chinese foreign exchange reserves were held as US Treasury Bonds (Author’s own calculations, based on data from the US Department of the Treasury, Statistics on Foreign Portfolio Holdings of U.S. Securities).

<sup>66</sup> This assumption has the effect that the analysis assesses the maximal potential cost of sterilization since the PBC does not sterilize the full amount of foreign exchange inflows (Goodfriend et al, 2006: 24; and Greenwood, 2008: 212).

erations and MR. Net profit is calculated as the difference between the income through the interest rate on US T-Bonds and the average cost.<sup>67</sup>

**Table 28: Cost and income through Chinese sterilization operations, 2002-2008**

Year	Re-serves	Annual growth	Average interest rates			Average costs		Average income	
			Open Market	MR	US T-Bonds	Open Market	MR	US T-Bonds	Net Profit
	<i>Billion USD</i>		<i>Per cent</i>			<i>Billion USD</i>		<i>Billion USD</i>	
2002	286	74	2.15	2.07	3.09	0.80	0.77	2.29	<b>0.73</b>
2003	403	117	2.38	2.07	2.36	1.39	1.21	2.76	<b>0.16</b>
2004	610	207	2.66	1.89	2.79	2.75	1.95	5.77	<b>1.07</b>
2005	819	209	1.71	1.89	3.83	1.78	1.97	7.99	<b>4.24</b>
2006	1,066	247	2.22	1.89	4.85	2.74	2.34	12.00	<b>6.92</b>
2007	1,528	462	3.16	1.89	4.55	7.30	4.37	21.03	<b>9.36</b>
2008	1,946	418	3.41	1.89	2.61	7.13	3.95	10.90	<b>-0.18</b>

**Source:** Author's own calculations based on daily data from [www.chinabond.com.cn](http://www.chinabond.com.cn); State Administration of Foreign Exchange, Data and Statistics Online; and the United States Department of the Treasury, Historical Data Online.

**Note:** Sterilized amounts: The analysis assumes that on average half of the increase in foreign exchange reserves each year was sterilized through open market operations (i.e. "repos" and central bank bills) and the other half was absorbed through minimum reserves. This proxy is derived from Green's analysis of 2003, where he estimates that 47.5 per cent were effectively absorbed through open market operations (Green, 2005: 19). The ratio is likely to be similar in subsequent years as both the total foreign exchange reserves and the sterilized amounts through "repos" and central bank bills have increased. Yet, foreign exchange reserves have risen fourfold, while the sterilized amounts increased ten-fold. This "mismatch" in growth can be explained through the increasing amounts of sterilization operations on the open market that have to be rolled over and are estimated at around RMB 1,000 billion per year. Considering the rolling over, Green's proxy seems a good indicator for the full period under consideration

Minimum reserves: The interest rates on minimum reserves were changed on 21 December 2003 to 1.89 per cent and were adjusted again on 27 November 2008 to 1.62 per cent. In both cases the rate valid for the majority of the year is displayed, i.e. 2.07 per cent for 2003 and 1.89 per cent for 2008.

Reserve composition: This analysis does not recognize that the actual composition of foreign exchange reserves of China extends to more than just USD denominated assets.

Exchange rate changes: Valuation gains/losses through exchange rate movements are not considered. This issue gained in prominence during the global financial and economic crisis, as fears came up that a depreciating USD would jeopardize the value of China's foreign exchange reserves. State media subsequently confirmed China's commitment to buy USD bond. For instance, China Daily headlined on 20 November 2008: "US treasury bonds 'still the best option'" (Xin, 2008).

The figures of Table 28 do not resemble the high profit estimates that Green calculated for 2004 (Green, 2005). This was to be expected as Green worked with a very concrete data set for one year, whereas this analysis works with average figures across years. Naturally, the results presented here indicate the trend in the costs and benefits for each year. The key

<sup>67</sup> For further explanations of the assumptions, please refer to the note below Table 28.

finding is that the sterilization of foreign exchange market interventions in China did not only not incur any cost, but much more generated a net profit for China over the period from 2002 to 2008. Just in 2008, in the wake of the global financial and economic crisis with drastic interest rate cuts in the United States and a de facto zero per cent policy, a moderate cost occurred. In the view of the author, this does not represent a general shift in the cost-benefit balance of the sterilization operations; it rather shows the extraordinary fast reaction of the United States authorities to the global crisis. In fact, the Chinese reaction set in at the end of 2008: The interest rate of the last central bank bill of the year 2008 on 25 December came down to one per cent.

It is necessary for this analysis to recognize a major shift in the management of the Chinese foreign exchange reserves that started in 2003 when China created a quasi sovereign wealth fund called Central Huijin Investment Company, which mainly aimed at domestic assets. In 2007, the authorities followed suit with a full-fledged sovereign wealth fund called China Investment Corporation (CIC), which has a broader and international orientation with Central Huijin being one of its investment divisions. CIC received an initial contribution of China's foreign exchange reserves valued at USD 200 billion (Truman, 2008a: 169; and Truman, 2008b). Broader investment possibilities through sovereign wealth funds in the future will mean higher rates of return for accumulated reserves, which thus will positively affect the overall cost-benefit analysis of foreign exchange market interventions in China.

This analysis also has to be seen at the backdrop of extraordinary stocks of foreign exchange reserves. It is crucial for the computation of the costs and benefits to compare the interest rate expenses of the outstanding debts for sterilization purposes with the whole stock of foreign exchange reserves (Anderson, 2005). In his example referring to 2004, Anderson pointed out that interest payments for around USD 200 billion domestically had to be compared with interest gains of around USD 600 billion. In this situation, the lack of the exact knowledge of the interest rate return matters far less than it is often argued. The sheer size of the dollar stocks indicates that there is a profit, and the stock of USD rose up to USD 1,946 billion by the end of 2008.<sup>68</sup>

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<sup>68</sup> Goldstein et al. (2008) argue that even these huge reported amounts are subject to a downward-bias due to three issues: i) The transfer of foreign exchange from the central government to other public agencies, for instance the USD 66.4 billion that were granted to Central Huijin; ii) Swap transactions of the SAFE with commercial banks that freed SAFE's balance sheets from huge amounts of foreign exchange; and iii) Some commercial banks are asked to hold minimum reserve requirements in foreign exchange, particularly since 2007.

A possible caveat to the assessment may come from the fact that sterilization through central bank bills and “repos” is only possible as long as these instruments are actually accepted by the commercial banks on the open market. While reports on actually failed auctions are rare, a comparison of interest rates of central bank bills and “repos” with alternative investments for commercial banks is a good way to illustrate the problem (Lardy, 2008: 3). Take 2006 for instance, the interest rates of sterilization operations on the open market averaged 2.2 per cent and the yield for minimum reserves stood at 1.9 per cent, but the average money market rate with 7-day maturity reached 2.4 per cent. And the rate of return for commercial banks – if they had lent to individual bank customers – could have even reached up to 6.6 per cent in 2006 for one year (PBC Monetary Policy Report Q4, 2006: 7). Likewise, in 2008, sterilization operations averaged 3.4 per cent and the yield for minimum reserves still stood at 1.9 per cent. The 7-day maturity money market rate reached 3 per cent and bank lending to individual customers had an average yield of 8.3 per cent (PBC Monetary Policy Report Q4, 2008: 7).

Still, the PBC seems not to have difficulties in finding counterparts for its sterilization operations. The reason is that the PBC has granted less than one per cent interest on excess reserves since 2005 and in that case, even low yield central bank bills have seemed attractive (Roubini et al, 2005: 3). Another way to ensure “interest” of commercial banks to invest in the PBC sterilization instruments, the central bank substantially has increased its minimum reserve requirements in recent years, and did so particularly in 2007 and 2008. Additionally, the PBC relied on its ability to guide credit-lending through its instrument of window guidance. In fact, evidence suggests that the PBC was always able to successfully sterilize foreign exchange inflows from 2002 until 2008. For instance, Greenwood argued in 2008 that “under current operating procedures the value of sterilization instruments outstanding increases roughly in line with the level of foreign exchange reserves” (Greenwood, 2008: 209). He shows this by comparing the growth of foreign exchange rate reserves with the amount of money tied in minimum reserves and central bank bill. He finds a largely parallel run of growth in foreign exchange reserves with the amount of liquidity absorbed through minimum reserves and central bank bills from 2002 to 2008 (Greenwood, 2008: 209). Goodfriend et al. (2006) conclude similarly: “By and large, the PBC seems to have had little trouble soaking up liquidity using PBC bills” (Goodfriend et al., 2006: 24). This finding is broadly supported by the proponents of the argument that sterilization costs are either very low or even negative such as Anderson (2006b), Anderson (2007), Green (2005), Laurens et al. (2007) and Qu (2005). Not least, it is supported by the key finding in Table 28, i.e. the sterilization of foreign exchange market interventions in China did not only not incur no cost, but much more generated a net profit for China over the period from 2002 to 2008.

A separate problem may be that opportunity costs from holding central bank bills could be substantial. For instance, if a bank invests its funds into central bank bills rather than in financing investment projects the very bank might have lost opportunity (Goldstein, 2004: 27; and Greenwood, 2008: 210). Lardy calls this lost opportunity a “tax on banks”. He also finds that this “tax” is higher in the case of minimum reserves than through sterilization on the open market (Lardy, 2008: 3). In the author’s view, opportunity costs are certainly a valid concern in general, but not necessarily a significant problem in China. Commercial banks there, owing in large parts to the usage of quantity-based direct monetary policy instruments, dispose of huge amounts of excess liquidity<sup>69</sup> so that sterilization operations unlikely do significantly restrict commercial banks to lend into investment projects that they would have otherwise pursued.

Those scholars who claim that the above-described mechanisms were never able to sterilize the full amount of foreign exchange inflows argue that this results in a loss of independence in the conduct of monetary policy in China (Eichengreen, 2004; Goldstein, 2004; Goldstein et al, 2008; McCallum, 2004; and Prasad et al, 2005b). These assessments usually reason that since not all foreign exchange inflows can be sterilized, be it due to high direct sterilization cost or low demand for sterilization instruments, ever-increasing amounts of liquidity in the Chinese financial system lead to undesired high growth rates of money supply. The exchange rate target, so the argument goes, therefore determines monetary policy in China, rather than it is determined by the judgement of the PBC according to the Chinese domestic situation. In short, China faced and still faces the often referred to conflict between the choice of the internal and the external equilibrium (Blanchard et al, 2005; Frankel, 2005; and Obstfeld, 2006).

The author of this analysis argues that this is not the case and with this follows the arguments of studies from Anderson (2006b), Anderson (2007), Green (2005), Laurens et al. (2007) and Qu (2005). Surely, reaching the external equilibrium is a major target of Chinese monetary policy. But while it may not be the optimum policy that leaves not much flexibility to adjust to both external and internal shocks (Eichengreen, 2004; Goldstein, 2004; Goldstein et al, 2008; McCallum, 2004; and Prasad et al, 2005b), the authorities were indeed in the position to maintain the policy for a sustained period of time up to 2008. And there is no reason to believe that sterilization measures may not work anytime soon. Relatively low sterilization cost paired with measures to incite commercial banks to buy and accept the PBC sterilization instruments ensured that those parts of the foreign exchange inflows deemed by the PBC to

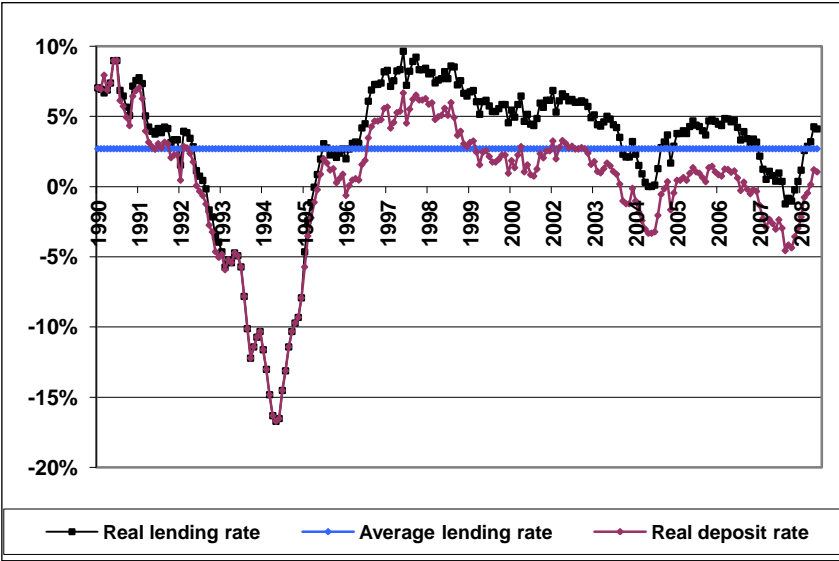
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<sup>69</sup> This can be seen in the high holdings of excess reserves, discussed for instance in section 5.1.1.3.

be sterilized were actually absorbed. Additionally, capital controls and limited capital account convertibility supported this policy through the provision of shelter from volatile international capital flows invested through an open capital account (see section 5.1.2.3).

Surely, over the last decade bubbles have built up and burst, asset prices have risen and declined, thus indicating unbalances in the domestic economy (see chapter 6.2.3) But this is the effect of overall loose and pro-growth monetary conditions in China largely determined by domestic factors (Flassbeck et al, 2005). For instance, from 1990 to 2008, the real interest rate judged by the benchmark lending rate was negative for four years and in the majority of years below five per cent. The average real lending rate was a meagre 2.7 per cent (Figure 18).

**Figure 18: Real interest rates in China, 1990-2008**



**Source:** Author’s own calculations, based on data from IMF, International Financial Statistics; and National Bureau of Statistics of China (monthly updates).

**Note:** Underlying lending and deposit rates are the one year PBC benchmark rates.

This is a very low real lending interest rate within an overall “clearly accommodative” monetary policy stance (Flassbeck et al., 2005: 14), particularly at the backdrop of an annual average real GDP growth rate of 10.5 per cent (World Bank, World Development Indicators). From 1994 to 2008, money supply was relatively expansive and above target for 8 out of 15 years (Table 23). Domestic loan increases were comparably high (above 15 per cent) for the majority of the period between 1998 and 2008 (Table 26). And all this was supported by wage and price controls for much of the 1990s, which allowed pro-growth monetary conditions that prevented overly high inflation rates to develop. It will be argued later in this work

that many of these developments should be seen as a result of a Chinese economy in transition coined by the simultaneous usage of market-based and non-market-based macroeconomic policy instruments.

### **6.1.3.2 Relationship to inflation**

To analyze the relationship and impact of the exchange rate regime on the domestic price level it is useful to review the role of the pegged exchange rate in the overall monetary policy and macroeconomic set-up of China. The still great importance of the exchange rate is highlighted through the fact that in any PBC Monetary Policy Report after the July 2005 RMB reform major consideration goes to the exchange rate system. Usually the PBC ends its elaborations with the notion about the fact that the RMB exchange rate was kept and will continue to be kept “basically stable at an adaptive and equilibrium level” (PBC Monetary Policy Report Q4, various issues from 2005 to 2008). It is a well-known concept of monetary economics that the exchange rate of a country can be pegged as part of the domestic monetary policy approach and thereby used as a nominal anchor to create stable inflation expectations. Likewise and as a more short-term solution, pegged exchange rate measures are also often used for macroeconomic stabilization programs, where runaway inflation needs to be reined through a strong and credible nominal anchor (Edwards, 1992).

Several studies confirm that the pegged exchange rate system of the PBC has been installed and has served as a nominal anchor in China ever since 1994 (Williamson, 2004; Flassbeck et al., 2005: 11-14; McKinnon, 2006: 8; IMF, 2008b; and Lafrance, 2008). Reviewing the time from the mid-1990s to the mid-2000, McKinnon writes in 2006: “The monetary problem China faced, and still faces, as its increasingly open economy grew by leaps and bounds was how to anchor its domestic price level, i.e., keep inflation low and stable. Because its capital markets are still immature, the People's Bank of China (PBC) cannot rely on a Friedman rule that fixes the rate of growth in M1—or on a Taylor rule that relies on manipulating the shortterm interbank interest rate—to control overall macroeconomic activity in order to achieve an inflation target. So the simplest solution was to look for an external monetary anchor” (McKinnon, 2006: 8). Xu argued years earlier that “the past two decades of economic reform has made domestic prices in China sufficiently market-determined and linked to world prices so that the exchange rate can serve as an effective nominal anchor. Exchange rate stability leads to domestic price stability” (Xu, 2000b: 272-276).

Another way to show how the exchange rate influences the domestic price level is the concept of exchange rate pass through (ERPT). Murray (2008) gives a good definition of what ERPT covers: “ERPT (...) usually refers to the direct effect that an increase (or decrease) in

the external value of a currency has on the domestic price of imported goods and services, and on domestic price indices more generally". More specifically, Ghosh et al. (2006) use a measure of the percentage change in domestic prices of an importing country as response to a one per cent exchange rate change of the trading countries. There are several studies which analyze the extent of ERPT globally, in emerging market economies, in Asia and specifically in China (see Ghosh et al., 2006; Ca' Zorzi et al., 2007; Bussière et al., 2008; Chu et al.; 2008; and Chu et al., 2009). While these studies generally find a relationship and influence of the exchange on domestic price levels, the extent of the found relationship varies (Bussière et al., 2008).

Ca' Zorzi et al. (2007) show that low inflation countries (i.e. less than 10 per cent) generally do experience much less ERPT than high inflation countries, case in point in their study is China. In fact, they find, unlike earlier suggested, that ERPT in emerging market economies with modest inflation rates follows similar low pass through patterns as ERPT in developed economies. Ghosh et al. (2006) analyze ERPT in Asian economies since their trade-dependency could mean particular high levels of ERPT. While not focusing on China directly, such a particular relationship is not found. But two recent studies by Chu and co-authors focus on China specifically and they do find a significant ERPT for China. They conclude that a 10 per cent appreciation of the nominal effective exchange rate would slow CPI inflation by 1.1 per cent within one year and by 2.0 per cent over a period of two years. Thus, without the 20 per cent appreciation witnessed between July 2005 and December 2008 inflation rates of 4.8 per cent in 2007 and 5.9 per cent in 2008 would have been significantly higher with more than 6 per cent in 2007 and close to 8 per cent in 2008. This mechanism is confirmed by a study of the Hong Kong Monetary Authority on the Chinese monetary framework, which concludes: "Although the exchange rate policy may have a limited role in helping decelerate rapid economic growth, it is effective in helping curb inflation. The authorities could thus take advantage of this feature of the exchange rate policy by adjusting the pace of the renminbi appreciation when facing rising inflationary pressures" (Liu et al., 2007).

## **6.2 Final targets**

The discussion so far has shown that the two domestic intermediate targets of the PBC – monetary aggregates and domestic loan increases – show a reasonable relationship to the inflation rate. But at the same time, the PBC's ability to actually control those targets is limited. On the other hand, the exchange rate is both controllable through sterilized foreign market interventions and serves as an important nominal anchor in China's monetary policy approach. At the background of these findings, it is important now to look at the final targets of monetary policy in China and the authorities' track record in pursuing them. The targets un-



der consideration are the final targets of monetary policy identified earlier in this study: (i) inflation rate; and (ii) the GDP growth rate. To start with, Table 29 displays the targeted and real values for both the inflation rate and GDP growth between 1994 and 2008.

**Table 29: Target and actual values for the inflation rate and GDP growth, 1994-2008**

Year	Inflation rate (%)		GDP growth rate (%)	
	Target	Actual	Target	Actual
1994	10.0	24.2	8.5	13.1
1995	15.0	16.9	8.5	10.9
1996	10.0	8.3	8.0	10.0
1997	6.0	2.8	8.0	9.3
1998	5.0	-0.8	8.0	7.8
1999	2.0	-1.4	8.0	7.6
2000	1.0	0.3	8.0	8.4
2001	1.0-2.0	0.5	7.0	8.3
2002	1.0-2.0	-0.8	7.0	9.1
2003	1.0	1.2	7.0	10.0
2004	3.0	3.9	7.0	10.1
2005	4.0	1.8	7.0	10.4
2006	3.0	1.5	7.5	11.6
2007	3.0	4.8	7.5	11.9
2008	4.8	5.9	7.5	9.0

**Sources:** Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 1995a; PBC, 2000a; PBC Monetary Policy Report, various issues; World Bank, World Development Indicators; and Xie, 2004a: 2.

**Note:** \* Targets for the inflation rate for a year are formulated through the annual Central Economic Work Conference (中央经济工作会议) usually convened in December of the preceding year and usually published through the PBC in its Monetary Policy Reports early in the following year.

\*\* The GDP growth targets are defined in the 8th, 9th, 10th and 11th five-year plan, respectively. It has to be noted that targets and forecasts for individual years may vary as they are often adjusted due to the very circumstance of that year. The five-year plan figures take the longer view.

### 6.2.1 Inflation rate

Looking at the targeted and actual inflation rates from 1994 to 2008 in Table 29 shows that the initial years from 1994 to 1996 are stamped by the authorities' efforts to bring down the inflation rate from the high levels of the early 1990s. After missing the inflation target by almost 15 per cent in 1994 with an inflation rate of over 24 per cent, the authorities set more realistic and achievable targets in the subsequent years. From today's perspective, these targets were prudentially set to successfully achieve a gradual de-inflationary environment. The comparable strong breaches of the targets in 1997, 1998 and 1999, respectively, have to be seen in the light of a restrictive monetary stance that aimed at not allowing the inflation rate to rise again. In the mid-1990s, the authorities applied a variety of orthodox and non-orthodox measures (including wage controls) that within the time frame of two years led to a

sharp decline of the inflation rate. The almost sudden change from an inflationary to a deflationary environment in a very short time indicates the limited fine-tuning ability of the policy mix of that time.<sup>70</sup> The underlying deflationary environment from 1998 to 2002 contributed to the already difficult problem of fine-tuning. And there was the impact of the unfolding Asian crisis, which led to major economic turmoil and drastic growth corrections across Asia. This added to the deflationary tendencies, which were primarily caused and sustained by a huge amount of over-supply in the Chinese economy in general and within the state-owned sector in particular. Lin (2000) argues that the deflation at that time was structural rather than a monetary policy induced problem. Starting in 2000, the actual inflation rate stabilized on a very low level facilitated by very low target inflation rates.

The actual inflation rates went up to 1.2 per cent in 2003 and 3.9 per cent in 2004, somewhat mirroring the targeted inflation rates (Table 29). Again, with a mixture of orthodox and non-orthodox measures (interest rate hike in October 2004; increased usage of window guidance) the inflationary pressure of 2004 was brought under control. The inflation rate was kept at low levels in 2005 and 2006 through the continuing application of the heterodox policy-mix with intensified window guidance and increases in the interest rate (twice) and minimum reserves (three times) in 2006. Inflation rates picked up substantially again in the years 2007 and 2008 with actual rates of 4.8 per cent and 5.9 per cent, respectively. Inflation rates actually stayed above 5 per cent for a total of 13 months from July 2007 to July 2008. In both years, target inflation rates were missed by 1.8 per cent and 1.1 per cent, respectively.

Looking at the set-up of the 2008 target for inflation reveals a major short-coming in the monetary policy set-up in China, i.e. insufficient independence of the PBC. Often inflation targets have to be seen as political rather than monetary targets derived from an economic rationale. While since 2000 the set-up of the monetary policy targets of the PBC was usually the result of consultations around the Annual Central Economic Working Conference, convened in December of the current year for the following year, this was not the case in 2007/08. For 2008 no inflation target was announced in the conference gathered from 3-5 December 2007. It was not until March, when the Chinese Premier Wen Jiabao addressed the First Session of the 11th NPC, which announced the Chinese inflation target for 2008 as set to 4.8 per cent (Zhao, 2008a). It is no coincidence that this target equalled the actual inflation of 2007. In fact, this showed that the announced target was primarily a political target and not a monetary policy target published and pursued by the authority in charge of monetary policy, i.e. by the PBC.

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<sup>70</sup> For a more detailed discussion of the 1993/94 inflationary cycle and a comparison to the 2003/04 economic situation, please refer to Ma et al. (2004).

### 6.2.2 GDP growth

The GDP growth rates displayed on the right-hand side of Table 29 illustrate two main expansionary economic cycles between 1994 and 2008. While annual GDP growth rates averaged 9.8 per cent over the whole period, this increased to 11.3 per cent from 1994 to 1996 and to 10.8 per cent from 2003 to 2007. These are impressive figures and well above the medium-term growth targets of the central government as put forward in the five-year plan. And if targets were not exceeded they were met: In between the two main cycles from 1997 to 2002 the planned growth rates of 7 to 8 per cent were actually realized. But this comes at the background of the Asian crisis, when major growth corrections took place across the continent. With the exception of the mid-1990s, high GDP growth did not translate into very high inflation rates, a fact mainly subscribed to the Chinese heterodox policy mix (Flassbeck et al, 2005), utilizing market-based policy tools where possible and at the same time not ignoring the centrally planned history of the economy.

Since the opening-up in 1978, economic growth measured by GDP has long been regarded as the main purpose of Chinese economic policy, pursued almost at all cost (Cho, 2005; Huang, 2008; Canzler et al., 2008). Historically, this was fuelled by the so-called “eight per cent rule” which states that around eight per cent economic growth is needed to absorb laid-off workers of state-owned enterprises (SOEs) and new entrants onto the labour market as well as avoiding soaring inflation rates. The rule is not scientifically derived. In fact, Thomson (2009) tracked its origin and found it from a simple consideration during Deng Xiaoping’s time. Thomson concludes: “There’s no complicated secret formula, no hallowed equation precisely linking growth to employment, no connection to the revered words of Confucius, Mencius, or Lao-tzu. Back in 1982, it was determined that it would take 8 percent annual growth to quadruple the economy by 2000” (Thomson, 2009). Despite this simplicity, the rule certainly serves as a major guiding principle for economic policy in present day China. This is also confirmed by the recent developments in the wake of the global financial and economic crisis. In its deliberations on the response to the crisis, the Chinese leadership made clear on several occasions that eight per cent growth is to be maintained over the period that the crisis is fully unfolding. And in fact, eight per cent GDP growth was defined as the annual target growth for 2009 (China Daily, 2009; and Xinhua, 2009).

Generally speaking, however, a perception change in the assessment of GDP growth targets in China started to unfold throughout the last decade. Instead of solely focussing on GDP growth at all costs, more recently the concern over the quality of growth, its sustainability, personal security and personal consumption was put into the frontline (Bi, 2005; and Naughton, 2006). This is not a new concept, though. Going back to Confucius more than 2,500

years ago, Deng Xiaoping formalized some of these principles in the notion of the “xiaokang society – 小康社会” in the 1980s (Economist, 2003). This was later reinforced by Hu Jintao’s notion of the “harmonious society – 和谐社会” in 2005 (Economist, 2005). The “xiaokang society” promotes basic prosperity for the population (Economist, 2003) and Deng Xiaoping reportedly said in 1984 “xiaokang means that, by the end of this century, our per capita GDP reaches US\$ 800” (EIU, 2009a: 4). In conjunction with this, the “harmonious society” addresses specifically the rising gaps within the society, particularly between rural and urban areas (United Nations, 2004; and Economist, 2005). But in fact, for large parts of the population, particularly in rural China and in those areas with high levels of ecological degradation, the two concepts often seem not to be more than just “expressions of good intentions” (Naughton, 2006: 4). So still, GDP growth is the main gauge for policy and development success in China.

Nevertheless, there has been a change in perception vis-à-vis growth at all cost over the last three decades: *First*, medium-term GDP targets of the 10<sup>th</sup> and 11<sup>th</sup> five-year plans were set below the targets of the previous plans at 7 and 7.5 per cent growth. *Second*, while during the high growth phase of the mid-1990s the authorities readily allowed GDP growth rates to climb clearly over the 10 per cent threshold, many efforts were undertaken – largely without success – not to let the growth rates climb to unsustainable levels, particularly in 2007 and 2008. For instance, Wong (2007) and Canzler et al. (2008) analyzed that after decades of “fast growth” China is now shifting toward more “balanced growth”. Likewise, in another analysis, Wong in 2008 found that the “runaway growth” during 2007 and 2008 paired with high inflation rates “prompted China’s top leadership to declare that reducing economic overheating and curbing inflation would be the top policy priorities for 2008” (Wong, 2008). Indeed, Chinese Premier Wen Jiabao in a speech at the National People’s Congress urged in 2007 that balanced growth “steady and fast” was needed, particularly at the then backdrop of four years of double-digit growth (Zhao, 2007).

*Third*, while in the 1990s and the beginning of the millennium the main suspicion of Chinese statistics was that actual real growth rates were lower than officially published (ChinaOnline 1998; and Economist, 2002). A decade later it was suspected that GDP growth rates in China could be actually underestimated (MOFCOM, 2003; and Wolf, 2005). And in fact, in December 2005, the National Bureau of Statistics announced the results of the first nationwide economic consensus that led to a 0.2 percentage points upward revision of the average GDP growth rates for each of the years between 1993 and 2004 (EIU, 2006c: 32-33).

### 6.2.3 Developmental drawbacks

So far, this study has analyzed that China's unique policy mix was able to not only realize high economic growth rates, but also to keep the inflation rate relatively low. But did steady economic growth come by in a smooth and inclusive fashion? Vigorous growth is often subject to breaks in its steady path through a build-up of economic imbalances, bubbles and their subsequent bursting (cf. Bordo, 2002; Caballero et al., 2002; and Girdzijauskas, 2009). This section argues that China is no exception and indeed pro-growth monetary conditions with low real interest rates (Figure 18), expansive money supply (Table 23) and high rates of increase of domestic loans (Table 26) induced vigorous growth that took its tolls. Three main breaks can be identified: The unequal distribution of growth and wealth across the nation and boom and bust developments on the stock and on the real estate markets.

#### 6.2.3.1 Inequality

The World Bank's World Development Report 2009 addressed the question whether economic growth and equal distribution of its benefits are simultaneously achievable goals. The report concludes that generally "economic growth will be unbalanced. To try to spread out economic activity is to discourage it. But development can still be inclusive, in that even people who start their lives far away from economic opportunity can benefit from the growing concentration of wealth in a few places. The way to get both the benefits of uneven growth and inclusive development is through economic integration" (World Bank, 2008: xxi). The report also shows that China's opening-up 30 years earlier was based on this insight by quoting the famous sentence of Deng Xiaoping: "If all of China is to become prosperous, some [areas] must get rich before others" (World Bank, 2008: 73).

And this is what happened in China. While the proportion of extremely poor people in China, based on national data and the national poverty line, decreased dramatically from 250 million to 15 million people between 1978 and 2007 (World Bank, 2009), economic growth could be achieved only at the cost of higher inequality. In fact, many areas and many people of China do only insufficiently participate in the unique growth story with rising disparities across the country (Schüller, 2001; Kuijs et al., 2005; and Chen et al., 2008). The Gini-index of income inequality within urban areas, for instance, nearly doubled from 16.2 in 1982 to 30.8 in 2003. And in rural areas the index rose from 24.7 in 1981 to 37.3 in 2003. The overall Chinese Gini-index, non-adjusted for the rural-urban cost of living, rose from 30.9 in 1981 to 45.3 in 2003 (United Nations, 2004; and World Bank, 2009).<sup>71</sup> This is not to say that regional disparities are a phenomenon that only started after the economic reform was initiated in 1978. Indeed,

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<sup>71</sup> For a detailed discussion of this and other development issues in China please refer to the United Nations Report "China's Progress Towards the Millennium Development Goals: 2008 Report".

significant disparities existed before 1978, but the situation was certainly reinforced through the transition to a market economy and the opening-up process with trade liberalization particularly in the coastal areas (Schüller, 2001).

The increasing disparity and unequal income distribution attract more and more public attention (World Bank, 2009). In February 2004, the People's Daily referred to a report conducted by the Chinese Academy of Social Sciences with the headline "Survey shows increasingly urban-rural income gap in China". According to the article, the leadership around Hu Jintao and Wen Jiabao was well aware of the problem, and they were "urging coordinated development between rural and urban areas, as well as between western and eastern areas" (People's Daily, 2004b). This eventually led to the formulation of the concept of the "harmonious society" in 2005. This concept targets the rising gaps within the society to ensure five basic balances: i) Between economic and social sectors; ii) between domestic growth and external opening-up; iii) between rural and urban areas; iv) between Eastern and Western provinces; and v) between man and nature (United Nations, 2004; and Economist, 2005; World Bank, 2009: 45-46).

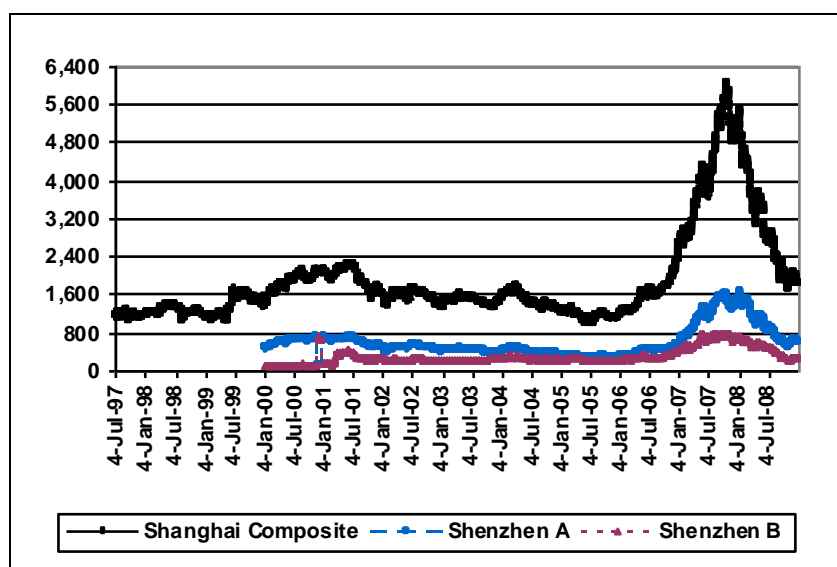
An additional policy to address disparity is the "go west" policy, which was initiated just before the turn of the millennium to attract domestic and foreign direct investment in the hinterland of the 12 poorest provinces and regions. But the policy has mixed results. For instance, the Western area of China, which covers approximately two-thirds of the Chinese landmass, could only attract USD 2 billion of FDI per year between 2000 and 2005. This was not even half of the amount of FDI that the city of Shanghai received annually during that period (People's Daily, 2006). It is clear now that no quick fix can be achieved, let alone solely through direct investments and infrastructure projects. Long-term and full-fledged economic integration is needed in conjunction with further facilitation of migration towards the prosperous economic centres on the east coast (World Bank, 2008).

#### **6.2.3.2 Stock market**

Early considerations for the establishment of stock markets date back to 1984. But the issue was politically too controversial at that time so that no formal structure could be introduced. Still, several state-owned enterprises – in search of new capital – started to issue stocks and bonds with the support of local and provincial governments and banking institutions. As a result, by 1987/88 the PBC formalized a few local security trading posts, the two largest ones in Shanghai and Shenzhen. Regulations for these local trading posts were too diversified, however, to be harmonized in a national stock trading system. So it was in 1990 that these two cities were granted the right to officially open a stock exchange in each jurisdiction as pilot

stock exchanges. This pilot status was gradually relaxed through increased institutionalization and political backing of both markets in 1991 and 1992, until the label “pilots” was officially removed in 1995. Still, those years were marked by an institutional wrangling over the central management of the stock markets. The CSRC was too new and weak to resume central leadership; the PBC’s grip over the market – while still partly in charge of its regulation – was too loose. At the same time local governments and officials took advantage of the regulatory vacuum and were behind speculation and illicit trading practices. As a result hundreds of companies issued stocks and bonds without any central authorization and surveillance. By the mid-1990s the central authorities set-out for a process to gain control over the market, which ultimately led to the strengthening of the CSRC with the 1998 decision to grant ministerial status to the institution (Heilmann, 2001a: 11-15; and EIU, 2008a: 89-90).

**Figure 19: Shanghai and Shenzhen stock market indices, 1997-2008**



**Source:** ECONSTATS available at [www.econstats.com](http://www.econstats.com).

**Note:** Consistent historical stock market data from inception in 1990 to 2008 is neither available for the Shanghai nor the Shenzhen Stock Exchange.

The stock markets in Shanghai and Shenzhen have two categories of shares; these two kinds are differentiated by the type of investors in those stocks: A-shares are for domestic individuals only and since 2002 for some so-called Qualified Foreign Institutional Investors (QFII). B-shares are for foreign currency trading operations of international (and since 2001 also domestic) investors (Heilmann, 2001a: 9-11; and Schlotthauer, 2003: 243-239). Figure 19 displays the developments on the Shanghai Stock Exchange for the period from 1997 until 2008. The graph shows the Shanghai Composite Index, which tracks the daily price performance of both A and B shares traded in Shanghai. Additionally, the graph depicts the per-

formance of the Shenzhen A and B indices from 2000 to 2008. Developments on the Shenzhen Stock Exchange largely mirror those in Shanghai and due to the overall dominance of the Composite Index of the Shanghai Stock Exchange this section will largely focus on market developments in Shanghai.

From 1990 to 1997, stock market prices showed extremely high volatility (Xu, 2000a). Investors, among them state-owned companies and government institutions, moved billions of RMB in and out of the market, sometimes within hours. The Economist Intelligence Unit in 1999 compared these speculative forces with developments in other emerging market economies and found that “the speculative tendencies exhibited in China, reflected in rate at which stock changes hands, are matched only by Taiwan” (EIU, 1999a: 57). As a matter of fact, speculative forces, illicit trading practices and manipulation led to a large disconnection of stock market developments from any real effects. In 1997, the authorities attempted a large cracked down on speculation and illicit practices on the markets in response to the developments over the preceding years, which culminated in the first half of 1997. At that time the impending Hong Kong handover drove speculators into a stock market investment spree that drove the Shenzhen market up by 600 and the Shanghai market up by 300 per cent (EIU, 1998a: 66-68; and EIU, 1999a: 57-58).

As a response to the crackdown efforts speculation, insider trading and other illicit practices went down, but did not disappear. From 1997 to 2001 the markets grew quickly again, albeit more steadily than before with the Shanghai Composite doubling to more than 2100 points in 2001. But this rally ended abruptly in 2001, when a huge scandal brought to light that 10 per cent of all traded stocks were subject to price manipulations, often again with involvement of government officials; additional fears over the size and scope of a plan to sell more and new government shares triggered the bubble to burst in 2001 (Schlotthauer, 2003: 243-239; and EIU, 2008a: 90).

After five years into decline – the stock market stood at about the same level in 2006 as it did in 2001 – prices started to pick up again in 2006, the year when China opened up its banking system as part of its WTO entry obligations. Starting late 2005, the Chinese market then had only good news until October/November 2007, when the Shanghai Composite was just a few points short off the 6000 points marker (Figure 19). The same good news were true all over Asia where markets ran from one record high to the other; but commentators warned of overheated bubble markets as early as in May 2006 and increasingly so over the subsequent year (Economist, 2006a; and Dyer, 2007). Still, growth continued, particularly in China and Hong Kong, where many Chinese initial public offerings (IPOs) found their placements. Some



of the IPOs were oversubscribed up to 540 times and the IPOs in Hong Kong brought more than USD 50 billion of new capital into Chinese companies, mainly state-owned, over the time 2005 and 2006. The two largest IPOs in 2006 – Bank of China (BOC) and Industrial and Commercial Bank of China (ICBC) – generated a combined fund injection of USD 32 billion in 2006 alone. Many other IPOs followed on all Chinese markets, i.e. in Shanghai, Shenzhen and Hong Kong; the combined value of all those IPOs reached more than USD 90 billion in 2007 (Dyer et al., 2006; Economist, 2006b; Economist, 2006c; Economist, 2007d; and Lau, 2006).

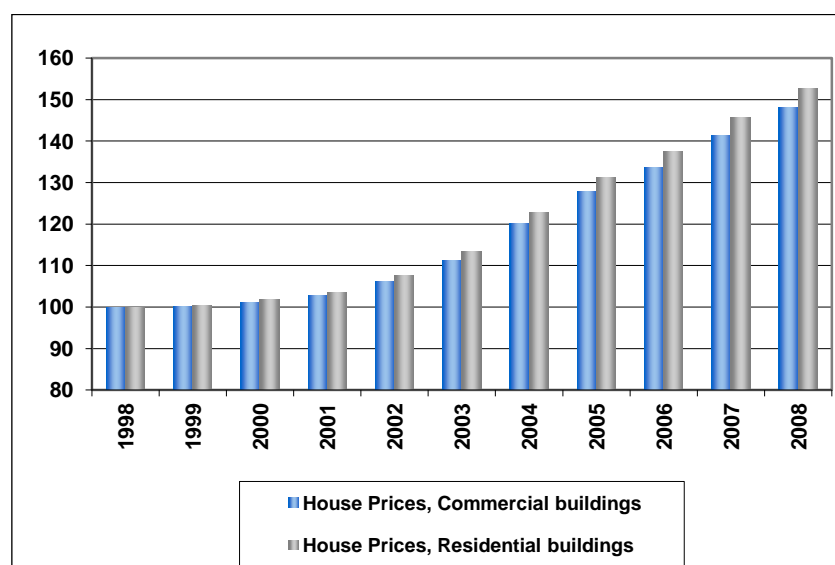
In about two year's time, the Shanghai Stock Exchange had again increased its value by 600 per cent, somehow resembling the bubble pattern of 1996/97. In August 2007, three of the six largest companies of the world – measured by market capitalization – were Chinese companies (ICBC, PetroChina, and China Mobile). And the market rally fuelled relentless investments and speculation of ordinary people, from students to pensioners, who felt the need to be part of the stock market party. Their involvement was facilitated by two developments: First, technology made it possible to trade shares anywhere and at anytime for relatively low cost, encouraging small scale speculations. Second, and more worryingly, many Chinese middle class families whom the economic boom enabled to accumulate assets like houses and apartments, now used those assets as collaterals for raising money to buy shares. Still, more than half of all stocks are held by government institutions and state-owned enterprises. The number of active private individuals invested in stocks and mutual funds is estimated to be at around 30 million (Economist 2007a; Economist 2007b; Economist 2007c; and Economist 2008d).

It took less than 12 months for the bubble to burst and the Shanghai Composite to lose almost all of the previous gains (Figure 19). Early warning signs of this decline included a peaking of IPO share prices: At the end of 2007 as many as 50 per cent of that year's IPOs had stock prices below their IPO prices (Economist 2007d). The global financial crisis of 2008 then fully turned the balance; the markets tumbled with severe losses and at the end of 2008, the Shanghai Composite Index was clearly below the 2000 points marker (Economist 2008d). The effects were widespread for institutional and private individual investors alike, resulting in losses in excess of USD 1 trillion. Those of the 30 million odd private investors who had invested through and with collaterals on assets, pension and retirement funds or otherwise borrowed money lost their fortunes. In fact, the bursting stock market bubble may have created more worries than good. Worse, no lessons were learned and a new rally took off shortly thereafter. The Shanghai Composite Index doubled within nine months from 1729 points on 31 October 2008 to 3412 points on 31 July 2009.

### 6.2.3.3 Real estate market

The real estate market was opened to domestic individuals, collectives and companies in 1988 through granting rights for land-use. This came a decade after joint-venture invested foreigners were already allowed to acquire land through their venture. In 1988, the authorities amended the Constitution and the Law on Land Administration to not only create and recognize the right for private entities to hold and use land owned by the state, but also to transfer such rights in a market. The administration of land-use rights is the responsibility of municipal governments. The rights are restricted to the use of land. Generally speaking the state retains the full ownership of all land – urban and rural – with the exception of land owned by collectives such as Townships and Villages. The authorities distinguish between allocated and granted land-use rights. Allocated rights are not term-bound and allocated to entities such as government institutions, state-owned enterprises, schools and hospitals. The state may expropriate allocated land. In contrast to this, granted rights are term-bound and they can be transferred on the market for land-use rights. Granted land can usually not be expropriated before the termination of the granted period, i.e. up to 70 years for residential, up to 50 years for industrial, and up to 40 years for commercial and recreational use. A new Property Law, effective since 2007, has clarified that the terms for granted land for residential use are to be automatically renewed when the granted time comes to an end (EIU, 1999b: 1-6; and EIU, 2008b: 1-12).

**Figure 20: Commercial and residential real estate indices, 1998-2008**



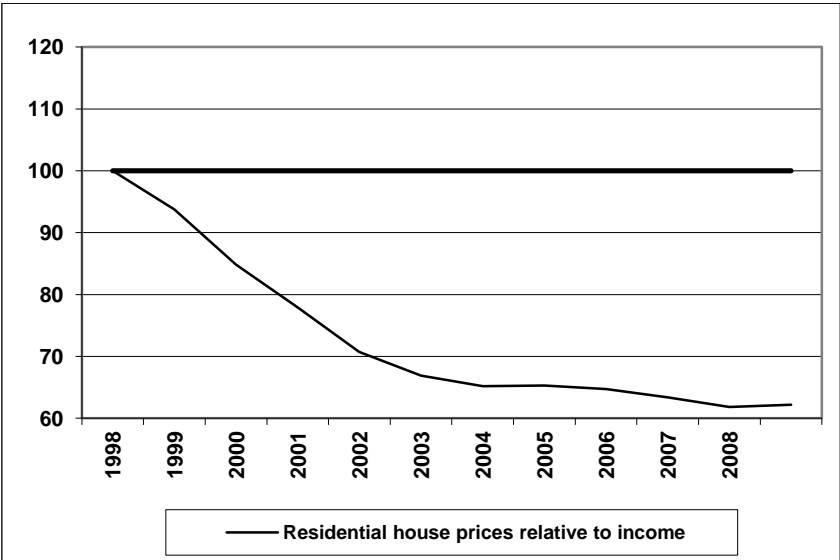
**Source:** Author's own calculations, based on data from China Statistical Yearbook, various issues.

The 1990s were the first decade in China with an open property market with above mentioned characteristics. But the decade was also the first one with a speculative property bub-

ble, somewhat similar to the developments elsewhere in Asia at that time. Local and provincial governments across the country, in search for quick profits, allotted large amounts of land for use and development mainly for industrial and commercial use. Reviewing the decade's developments, the EIU reported in 1999: "As the decade closes, the signs of ill-advised investment are to be seen everywhere in Chinese cities: semi-full international-grade office towers, half-completed residential complexes abandoned by bankrupt local developers, and decimated downtown areas awaiting redevelopment" (EIU, 1999b: 19).

To respond to some of the developments witnessed over the 1990s, the Urban Real Estate Law from 1995 and the Urban Real Estate Development and Business Regulation from 1998 tried to standardize the supervision and procedures of urban property markets and urban land development. While this laid the foundation for widespread private ownership of urban property, it could not prevent another let-loose investment spree to take off. Figure 20 depicts two house price indices – for commercial and residential buildings – from 1998 to 2008. And prices for either purpose did only follow one upward direction with average house prices increasing by 50 per cent until 2008. This was fuelled by easy access to funding and the expectation of ever increasing prices.

**Figure 21: Residential house price developments relative to income, 1998-2008**



**Source:** Author's own calculations, based on data from China Statistical Yearbook, various issues, in the style of Economist (2008e).

In order to judge whether average price developments are a sufficient indicator for a general bubble in the housing market it is useful to compare the relative development of average house prices to average income: in a bubble house prices would usually expand more quickly than income (Economist, 2008e). In China, however, average incomes more than

doubled between 1998 and 2008, which led to an overall declining share of house price expenditures in the people's pockets – despite the rising prices in the real estate sector. This is shown in Figure 21. Certainly, in many segments of the market, price increases were often much quicker, fuelled by reckless speculation as anecdotal evidence shows. For instance, real estate prices in Beijing and Shanghai doubled in only four years between 2005 and 2009. Earlier, in 2001 prices in Beijing increased by 40 per cent in the one year that Beijing won the Olympic bid. And Shanghai recorded 25 per cent growth of its housing prices in the single year of 2003 (Fu, 2004; Hu, 2007; and Mufson, 2010). For several years, government officials were trying to curb speculation in the market, by imposing stricter rules on housing loans, increasing down payment requirements and restricting the number of total mortgages available to any one individual investor as well as other measures (cf. PBC, 2003j; and PBC, 2007c).

Then prices stopped increasing in 2008 for the first time within a decade. The National Real Estate Climate Index decreased most of the months of 2008, showing falling prices on a month-on-month basis (this still translated into overall price increases year-on-year). In some cities prices were hard hit. In Beijing, for instance, prices declined by up to 15 per cent in late summer and autumn 2008, in Shanghai property prices fell by 10 per cent in the second half of 2008 (Cao, 2009; China Daily, 2008b; National Real Estate Climate Index, various monthly issues 2008; and Yu, 2008b).

At the backdrop of the global financial and economic crisis, the task at hand for the authorities on all levels was now to prevent real estate prices to fall too much. Dozens of cities responded to the downturn with cuts in transaction taxes and even with outright subsidies (Economist, 2008f). In combination with the fiscal and monetary stimulus applied to fight against the effects of the global financial and economic crisis, the authorities succeeded: prices did not plummet. On the contrary, prices picked up again in 2009 with sales indices of buildings in 70 medium-large sized cities up by 7.8 per cent and month-on-month price increases throughout the year (National Bureau of Statistics of China, Operation of the National Real Estate Market in 2009). This likely was the continuation of the build-up of a real estate bubble, if not on the national level then in certain segments such as the housing markets in Beijing and Shanghai (Schuman, 2009; Sheng, 2009; and Wang et al., 2009). It remains to be speculation to judge how severe a bursting bubble would actually hit, but it would probably be hardest on those real estate owners on the lower end of the property market, just like the foreclosures in the United States real estate bubble of 2008 hit that end the hardest. The effects could be devastating.

### **6.3 The transmission of monetary impulses in China**

#### **6.3.1 The role of the interest rate**

Figure 22 shows the development and relationship of interest rates and intermediate targets in China. The displayed interest rates are the one-year lending rate, which is the official benchmark rate of the Chinese central bank, and the 7-day money market rate, which is the most traded maturity on the Chinese interbank market. The upper part of the figure (a) presents the comparison of the interest rates with the growth rate of the monetary aggregate M2<sup>72</sup>. The lower part (b) shows the comparison with the growth rate of domestic loans. According to (simplified) textbook theory, the growth rates of monetary aggregates should increase with declining interest rates.

Figure 22a shows that the reality is somehow different in the case of China. Here, M2 growth and the interest rates show a rather parallel development, particularly between 1994 and 2000, during which both M2 growth and interest rates were decreasing. For the same period of time a similar pattern is recognizable for domestic loan increases and the interest rates. This is equally surprising as domestic credits should increase with declining interest rates (Figure 22b). A major turning-point in the run of the curves is the year 2000. M2 growth rates started to increase significantly from 2.3 per cent in 2000 to 19.6 per cent in 2003. Domestic loan increase rose from 6 per cent to 21.1 per cent, respectively. The rise was not triggered by the interest rate, since interest rates were stable at 5.85 per cent from June 1999 to January 2002. The latter part of the increase, however, was accompanied by a slight decrease of the benchmark interest rate from 5.85 per cent in 2001 to 5.31 per cent in 2002. Then the interest rate remained stable again from February 2002 up to October 2004. Contrary to what the theory would expect, M2 growth and domestic loans growth decreased from 19.6 to 14.6 per cent (M2) and from 21.1 to 11.6 per cent (loans). Thus, the decreases have to be attributed to other tools such as window guidance, which was intensified in the 2003/04 cycle. On 29 October 2004, the benchmark lending rate was raised from 5.31 to 5.58 per cent. While M2 growth slightly decreased from 17.6 to 16.9 per cent from 2005 to 2006, domestic loan growth jumped from 9.8 to 15.2 per cent.

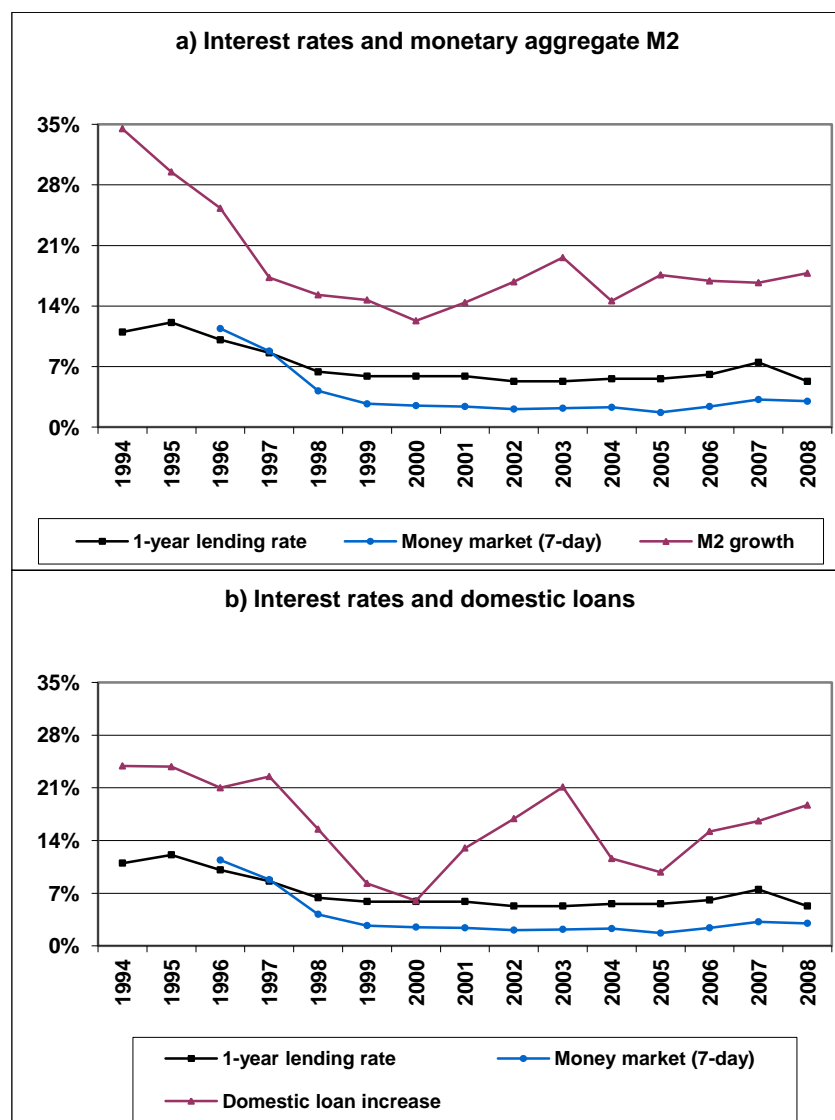
Domestic loans picked up again after 2005 and increased from 9.8 per cent annual growth to 18.7 per cent annual growth in 2008. At the same time, monetary aggregate growth M2 was stable around the high level of 17 per cent growth per year. This happened at the backdrop of rising interest rates. The PBC benchmark rate (1-year lending rate) increased from 5.6 per cent in 2005 to 7.5 per cent in 2007; the interest rate on the money market (7 days) almost

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<sup>72</sup> The focus in this section is on M2 as the most prominent monetary aggregate.

doubled from 1.7 per cent to 3.2 per cent. Again, rising interest rates should trigger slower monetary aggregate and loan growth, but this was not the case.

**Figure 22: Interest rates, monetary aggregate and domestic loan increases in China, 1994-2008**



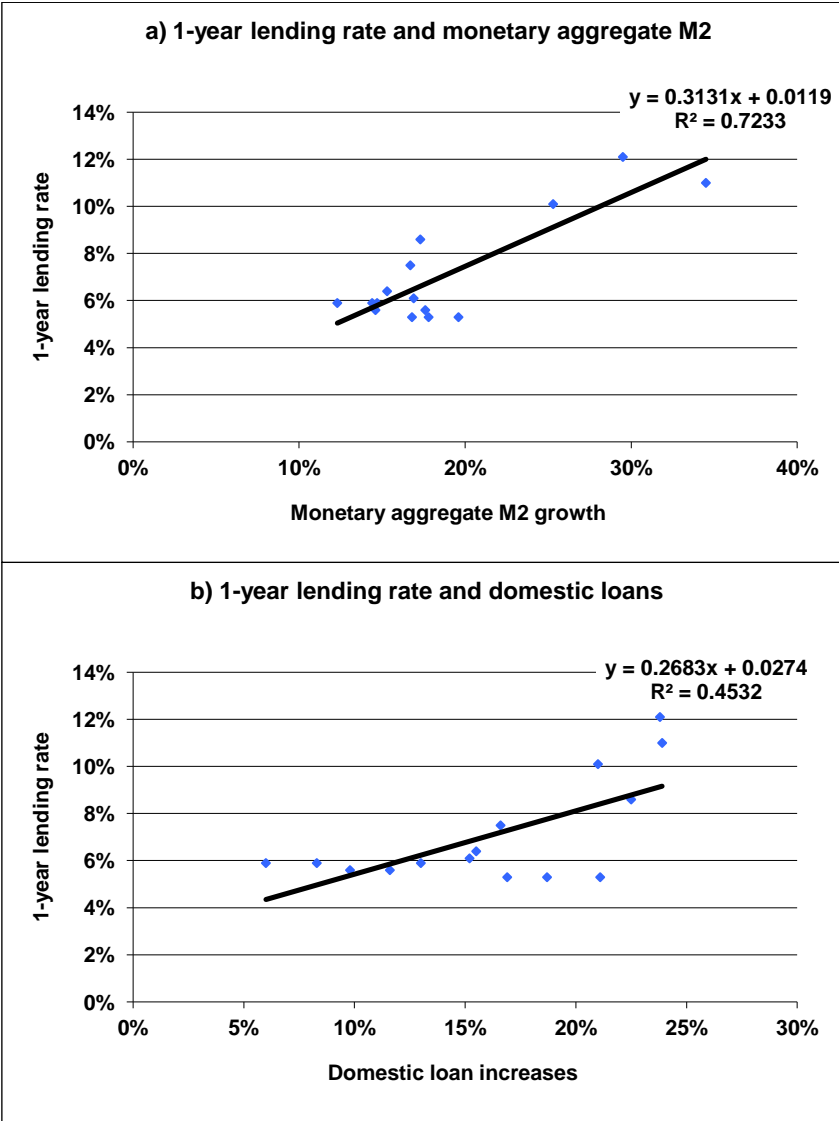
**Source:** Own calculations, based on data from IMF, International Financial Statistics; Li et al., 2002: 8; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; Seto, 2002: 25; and Yang et al., 2004.

**Note:** While the Chinese interbank market came into existence in the 1980s, institutional requirements for a functioning interbank market were introduced only in 1996. Thus, meaningful money market interest rates are available from 1996 onwards only (Xie, 2002; China Money, 2004a; and Liu, 2004). For a good description of the development of the interbank market in China, please also refer to Imam (2004).

7-day maturity data is chosen since this maturity had the highest trading volumes on the interbank market between 1996 and 2005; since then 7-day maturities come second just after overnight trades. Thus, over the whole period under consideration, the 7-day money market rate is a good gauge for the money market at large.

The discussion around Figure 22 indicates that there is no consistent textbook style reverse relationship between the interest rate on one hand and M2, and domestic loan growth on the other hand. And indeed, this is confirmed by a significant positive correlation of interest rates with M2 growth and domestic loan increases (Figure 23). The 1-year lending rate is positively correlated to M2 growth with a coefficient of 0.8505 ( $R^2$  value of 0.7233) and to domestic loan increases with a coefficient of 0.6732 ( $R^2$  value of 0.4532). So no significant reverse relationships are recognizable.

**Figure 23: Correlation of interest rates with M2 growth and domestic loan increases, 1994-2008**

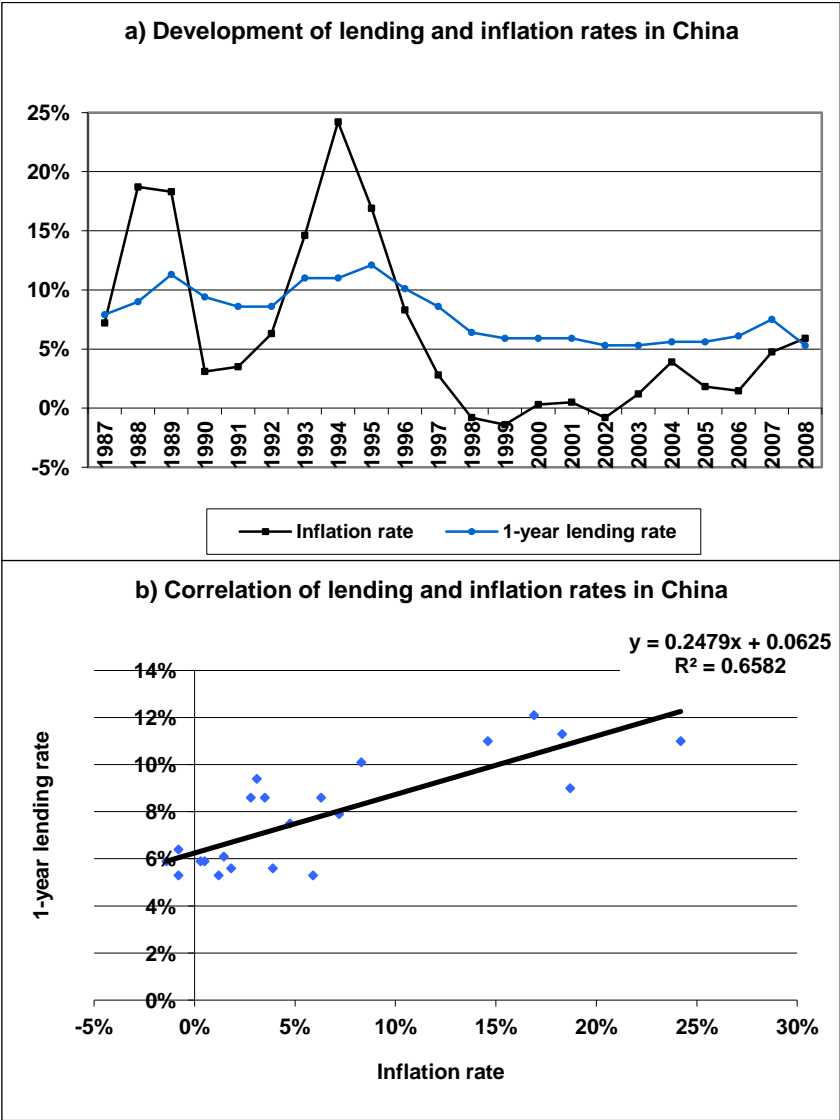


**Source:** Own calculations, based on data from IMF, International Financial Statistics; Li et al., 2002: 8; PBC Monetary Policy Report, various issues; PBC Statistics Database Online; Seto, 2002: 25; and Yang et al., 2004.

The largely rectified relationship suggests that the interest rate channel as the mechanism for the transmission of monetary impulses in China is not functioning properly. The finding re-

flects the fact that China is an economy under transition, which is not yet completely market-based but not entirely centrally planned either. Despite efforts to introduce a market-based indirect monetary policy approach anchored around open-market operations (OMOs), there is still the need for quantity-based monetary measures to achieve the monetary policy targets. It is hardly possible to quantify the influence of the quantity-based instruments. But to attempt to do so in a general way, it is useful to have a look at the development of the price-based monetary policy instrument represented by the PBC lending rate and its influence on the inflation rate. Figure 24a shows visually that the inflation rate tends to be lower in phases with lower interest rates and higher in periods with higher interest rates.

**Figure 24: Lending and inflation rates in China, 1987-2008**



**Source:** Author's own calculations, based on data from IMF, International Financial Statistics.



This is confirmed through a correlation test in Figure 24b, which reveals a positive linear correlation with a coefficient of 0.8113 and a  $R^2$  value of 0.6582.<sup>73</sup> The positive relationship was most obvious for the period 1987 to 1999 with a correlation coefficient of 0.8035 ( $R^2$  value of 0.6456) whereas from 2000 onwards, this kind of reinforcing relationship between interest and inflation rates started to fade. A correlation analysis for the period 2000 to 2008 only leads to a coefficient of 0.2963 ( $R^2$  value of 0.0878). This fact might indicate the increasing degree of marketization of the financial system in China over the years. Visually, Figure 24a shows this harmonization of lending and inflation rates for the period between 2006 and 2008. But this assessment could also simply reflect the fact that the authorities – particularly towards the end of the observation period – have increasingly used the instrument of interest rates in the conduct of monetary policy. Raising interest rates in relation to higher inflation would then result in the observed harmonization of the two curves.

But in the view of the author this is not the main reason for the general trend similarity in movements of interest and inflation rates. On the contrary, in the context of a simultaneous usage of price- and quantity-based instruments the interest rate channel fails. For example, imagine the event of an interest rate increase to fight inflation. If there are quantity-based instruments used simultaneously that primarily aim at given amounts of money without considering prices, the higher prices for the given amount of funds would lead to higher overall prices. The transmission process via the interest rate channel will be distorted then. Thus, the simple rule of monetary targeting of an interest rate increase would not lead to the desired outcome. The declining money M2 and credit growth rates between 1994 and 2000 are part of this phenomenon.

Several other studies examine the effects of interest rate policy in China, for instance Wang et al. (2001), Xie et al. (2003), Goodfriend et al. (2006), Mehrotra (2007) and Liu et al. (2009). These studies confirm the weak relationship between interest rates and inflation rates and they show the limitations of interest rates in the present monetary policy set-up in China. For instance, Liu et al. (2009) conclude that “the weak long-term relationship reflects the fact that the interest rate as a tool of monetary policy is rather ineffective in China”. Xie et al. (2003), in their highly popular article on monetary policy in China, confirm the problem underlying the simultaneous usage of price- and quantity-based instruments. They analyze the relationship between the inflation rate and the interest rate from 1996 to 2002. Again, as a result, they find that there is only a vague relationship between the two. If there are any effects at all, they conclude, there might be a dampening effect of raising interest rates but not a stimulat-

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<sup>73</sup> The positive correlation of lending and inflation rates may also have to be attributed to the interlinkages between nominal, real interest and the inflation rates, known from the Fischer equation.

ing effect on falling rates. Additionally, Xie et al. (2003) point to the important factor of time lags within the monetary policy transmission process. The decision lag of monetary policy would be between 6 to 10 months, with an overall time lag of interest rate effects of at least 18 months, which is also very volatile in different periods of time. Considering the latter, it is more astonishing that the PBC opted for the late or no interest rate moves in 2001, 2002, 2004 and 2008 (Table 25).

### **6.3.2 Influence of quantity-based monetary and non-central bank policy instruments**

#### **6.3.2.1 Window guidance**

Window guidance is the most prominent quantity-based monetary instruments of the PBC. Much more, as shown above for the expansionary cycles of the 2000s, window guidance was and still is one of the main instruments used. The increasing emphasis on window guidance in the PBC's monetary policy reports expresses the current importance of the instrument (PBC Monetary Policy Report Q3/4, 2004; PBC Monetary Policy Report Q2, 2006; and PBC, 2007a). Back in 2005, Green went so far to state: "controlling credit growth by administrative means may be the most important means by which money supply is currently being constrained" (Green, 2005: 21). And in fact, at that time domestic loan increases calmed down significantly from 2003 to 2004 (Figure 15). After a peak of almost 24 per cent in August 2003, growth rates showed a declining path and reached a sustainable level of below 15 per cent in June 2004. Towards the end of 2004, the domestic loan growth rate was stable at around 11 per cent, certainly a major achievement of window guidance back in 2003 and 2004. In fact, the PBC was able to keep growth rates stable at the 11 per cent margin up to May 2006. But then loan growth rates rose above and stayed around the 15 per cent threshold again up until 2008 (see section 6.1.2 on domestic loan targeting).

The exact way how window guidance meetings function and the level of suasion used in those meetings remain publicly unknown. It is sure, however, that guidelines for lending volumes are given.<sup>74</sup> Delatte estimates that the effect of administrative control over domestic credits is significant and that the influence of window guidance on credit lending would be around 15 per cent (Delatte, 2008: 21). This estimation may well understate the importance of window guidance, particularly at the backdrop of the high level of interest rate inelasticity of domestic credits. Administrative control through window guidance is a major means to influence and guide credit expansion in China. While it is already difficult to estimate the influence on domestic loans, it is even more difficult, if not impossible to estimate the impact of window guidance on the inflation rate; the more so as information on lending volumes is not

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<sup>74</sup> Green (2005: 21) is of the same opinion and cites with references to participants of window guidance meetings.

published. Window guidance also plays an important role in the sterilization of foreign exchange market interventions. But the role of the instrument in the sterilization of foreign exchange inflows is unknown, again due to lack of details on lending volumes.

### 6.3.2.2 Price controls

The power of price controls as a means of inflation control can be assessed for the years 2001 and 2002, due to the existence of detailed records of price regulations during the finalization of China's WTO entry in 2001. Table 30 shows the shares of government guidance and government prices in 2001/02 according to three areas: (i) social retailing (A), (ii) agricultural products (B) and (iii) production inputs (C).<sup>75</sup> The stance of government controlled prices that include both government guidance and government prices was at 5.2 per cent, 16.2 per cent and 14 per cent, respectively for (A), (B) and (C).

**Table 30: Approximate share of government controlled prices in China, 2001/02**

Type of prices	Social Retailing (A)	Agricultural Products (B)	Production Inputs (C)
Market-regulated prices	94.7%	83.3%	86.0%
Government guidance prices	1.2%	7.1%	4.4%
Government prices	4.0%	9.1%	9.6%
<b>Government controlled prices</b>	<b>5.2%</b>	<b>16.2%</b>	<b>14.0%</b>

**Source:** WTO, 2001a: 11.

**Note:** Government controlled prices are the sum of government guidance prices and government prices.

The first two columns of Table 31 display the definition of the basket of goods that has been underlying the Chinese Consumer Price Index (previous year=100; Paasche Index) since January 2001. The basket weights are only marginally changing over time and can be regarded constant between 2001 and 2008. Additionally, official statistics in China published a fixed-base index with 1985 as basis period (Laspeyres Index).<sup>76</sup> The Laspeyres Index (1985=100) leads to the same changes as the Paasche Index. Usually, references to CPI changes in China are linked to the CPI based on Paasche published by the National Bureau of Statistics of China (China Statistical Yearbook, various issues). Thus, the assessment of this section focuses on data of this CPI.

<sup>75</sup> For simple reasons, it is assumed that government guidance prices and government prices are equally effective. Furthermore, since the actual stance of guidance within the bandwidth of the government guidance prices (5-15 per cent) is hardly quantifiable, it is assumed that the values tend to be very close to the lower/upper margin in any deflationary/inflationary environment.

<sup>76</sup> The weighting of the basket (1985=100) is not available.

The basket of goods consists of 600-700 goods and services that in 2003 were aggregated into 251 headings and 8 major categories (China Statistical Yearbook, 2004). The 8 categories include: (i) prices for food; (ii) alcoholic beverages and tobacco; (iii) clothing; (iv) household facilities and articles; (v) medicine and medical items; (vi) transportation and communication; (vii) recreation, education and cultural articles; and (viii) residence (Table 31). The three items weighing most are: (i) food (34.4 per cent); (ii) residence (14.8 per cent); and (iii) recreation, education and cultural articles (14.3 per cent). Together, the three largest groups comprise 63.5 per cent (Shuai et al., 2001).

**Table 31: Consumer Price Index and the potential impact of price controls in China, 2001/02**

Item	Basket weight [a]	Area of control (acc. Table 30)	Scope of control [b]	Potential impact [a*b]
1 Food	34.4%	A+B+C	35.4%	12.2%
2 Alcoholic beverages and tobacco products	5.0%	B	16.2%	0.8%
3 Clothing	8.9%	B+C	35.4%	3.2%
4 Household facilities, articles and services	6.5%	A+C	19.2%	1.2%
5 Health care and personal articles	8.8%	A+C	19.2%	1.7%
6 Transportation and communication	7.3%	A+C	19.2%	1.4%
7 Recreation, education and culture articles	14.3%	A	5.2%	0.7%
8 Residence	14.8%	A+C	19.2%	2.8%
<b>CPI total</b>	<b>100.0%</b>			<b>24.1%</b>

**Source:** Own calculation, based on data from Shuai et al., 2001; and WTO, 2001a: 11.

**Note:** The 3rd column area of control estimates the kind of government controlled prices – social retailing (A), agricultural products (B) and production inputs (C) – applicable to the item.

The 4th column scope of control adds up the weights of the 3rd column area of control according Table 30 (A = 5.2%, B = 16.2%, and C = 14%).

The remaining columns of Table 31 combine the information of the weighting scheme of the 8 CPI items with the estimated share of government controlled prices within each of the items. The definition of government controlled prices is taken from Table 30. The assessment about the potential scope of the price controls on the total CPI basket is derived as follows:<sup>77</sup> *First*, in the third column *area of control*, it is assessed whether the eight categories of the basket fall under one or more areas of Table 30. If the products of a category fall in all three areas, i.e. social retailing (5.2 per cent controlled prices), agricultural products (16.2 per cent controlled prices) and production inputs (14 per cent controlled prices), the category's weight

<sup>77</sup> It is assumed that the impact on the CPI basket equals the influence on the CPI.

of 34.4 per cent is multiplied with 35.4 per cent. Thus, for instance, price controls in the category *food* could influence a maximum of 12.2 per cent of the total CPI basket. Due to various data constraints, the calculated impact represents the maximum possible influence on the CPI basket and the impact is likely to be overstated.<sup>78</sup> *Second*, the potential impacts of each of the 8 categories are summed up to the potential impact of price controls on the whole CPI in China, which is around 24 per cent for the years 2001/02. However, due to the problems in the classification of the fourth column *scope of control [b]*, the actual influence of the price controls on the inflation rate tends to be smaller than 24 per cent. Considering the data constraints, the influence was probably between 15 and 20 per cent in the years 2001/02 with decreasing impact over time along the ever-increasing marketization of the economy. Assuming a trend decrease of impact of 1 percentage point per year – to reflect progress in market reforms – the maximum possible influence of price controls over the CPI was still around 10 per cent in 2008.

For 2004, HSBC published an alternative estimation that assigns price controls a much higher role in terms of inflation control than the CPI based assessment of this section. In its report *China Economic Insight* it is estimated that the effect of the price controls in the overheating economy in July 2004 kept the inflation rate on a level of almost half of the level compared to a situation without controls: “Without the government’s controls over the prices of electricity, coal and transportation, both the producer price index (PPI) and the consumer price index (CPI) would be rising at close to 10% rather than the official July figures of 6.4% and 5.3%, respectively” (Qu, 2004: 5). It is unclear, however, on which factors the estimation is based on. Later alternative estimates for the higher inflation period in 2007/08 were not available.

Price controls have a major macroeconomic downside, which – for instance – could be observed in the 2003/04 economic cycle. They prevent the automatic stabilizer of increasing prices from working properly. Increasing prices in a situation of an expansionary economy would lead to decreasing demand and have a dampening effect on the economy. Reports about shortages in certain sectors and energy blackouts in 2003 and 2004 suggest that price controls in those sectors prevented the effectiveness of the build-in stabilizer (Aredy, 2004 and Qu, 2004: 5). The controversy was also alive in the 2007/08 cycle. The concluding paragraph of an article in the New York Times in February 2008 highlights the tough choices that

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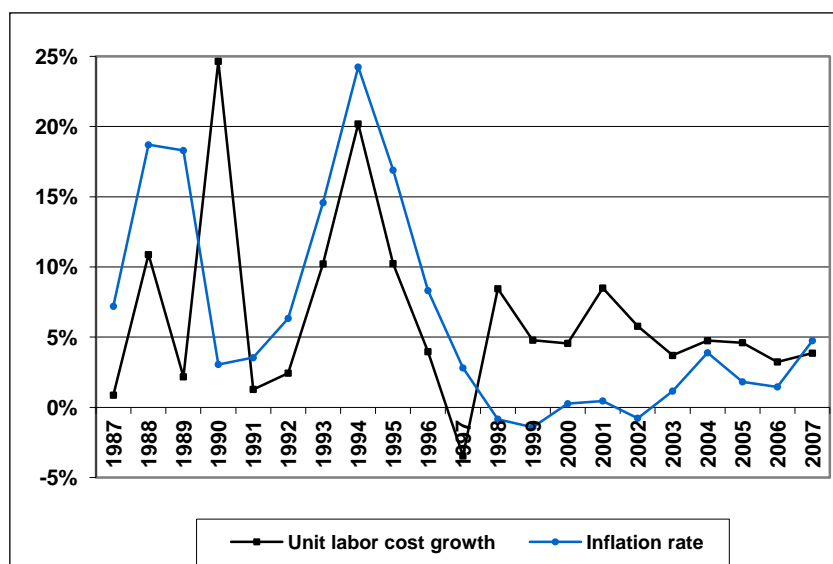
<sup>78</sup> For instance, the assessment cannot consider the case where only one part of a group falls under social retailing, but five components fall under the category of agricultural products. In this case, the whole set will be applied to social retailing and agricultural products. Additionally, a lack of exact definitions of the three areas of government controlled prices might lead to a wrong categorization of the components of a group.

had to be made by the authorities in China, typical for a country in transition: “The government also faces the dilemma that leaving price controls in place could erode incentives for farmers and others to produce more goods, while lifting price controls could result in even higher inflation” (Bradsher, 2008).

### 6.3.2.3 Wage controls

In China, as elsewhere, nominal unit labour cost growth (ULC)<sup>79</sup> is one of the most important determinants of the inflation rate. The growth of nominal wages in relation to productivity is decisive for the inflation rate, as the overall domestic cost level in a vertically integrated economy more or less exclusively consists of labour inputs in different forms. Figure 25 shows how closely linked unit labour cost-changes and the inflation rate are. Thus the authorities were able to set an upper limit for inflation through the control of nominal wages, which had been the aim of the wage reform.

**Figure 25: Unit labour cost growth and the inflation rate in China, 1987-2007**



**Source:** Author’s own calculations, based on data from UNCTAD Database for Trade and Development Report 2008; and IMF, International Financial Statistics.

Whereas in the late 1980s and the early 1990s the growth rate of unit labour was volatile and high, in the aftermath of the reforms of 1994, volatility and growth of this important cost component was brought under control. The largest inflationary bout, with 25 per cent in 1994, marked the end of the old era of necessary macroeconomic stabilization. In the subsequent years unit labour cost growth fell to 3.97 per cent in 1996 and to -3.46 per cent in 1997. The inflation rate mirrored this development with 8.32 and 2.81 per cent in 1996 and 1997, re-

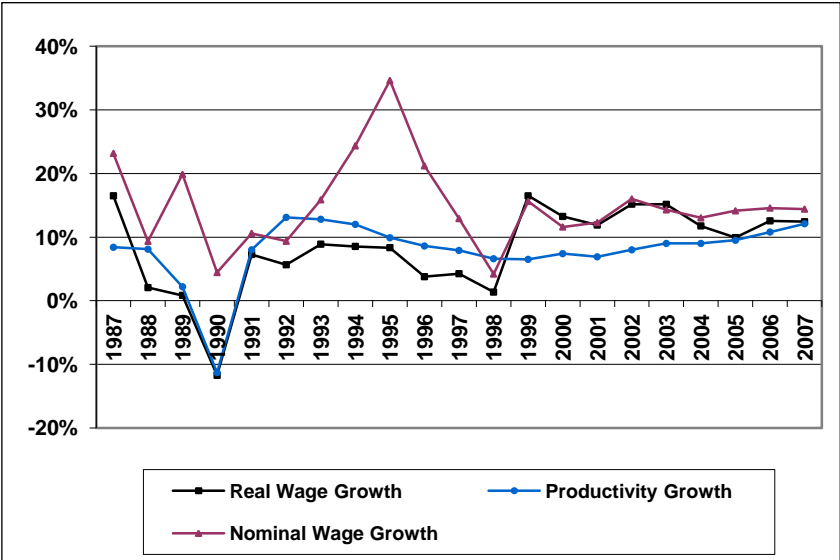
<sup>79</sup> Change rate of gross income of employed population divided by the real GDP in RMB.

spectively. In 1998, unit labour cost growth and nominal wage growth jumped up with almost 10 per cent again, well above the inflation rate, which turned negative in 1998. Subsequently, only in 2004 and 2007 did the inflation rate again come close to the path of ULC growth. The reason for this, however, was in not in specific ULC developments, but mainly in the strong increase of inflation rates, fuelled by heavily rising food prices (Figure 11).

Between 1998 and 2002, deflationary pressure was a main feature of the Chinese economy with real wages making good on some of the income losses that labour had been suffering in the years before. The de-coupling of the inflation rate from the development of the unit labour costs and the implied de-coupling of the real wage from productivity may reflect the growing scarcity of labour after two decades of vigorous growth (Figure 26).

Additionally, the end of the slowdown of real wage growth in 1997 marked the return to a phase of a briskly growing Chinese economy without facing the inflationary difficulties of the early 1990s. In 1998, real wage growth had been coming down to 1.36 percent, before the effects of the wage reform on nominal wages faded successively. Growth in real wages stayed higher than productivity growth for every year between 1999 and 2007. But the difference narrowed over time and the pace of real wage growth started to approximate with productivity growth from 2004 onwards. Inflation rates increased substantially in 2004 and 2007, largely driven by food price inflation (Figure 11), which in turn drove real wage growth down and increased the gap between real and nominal wages.

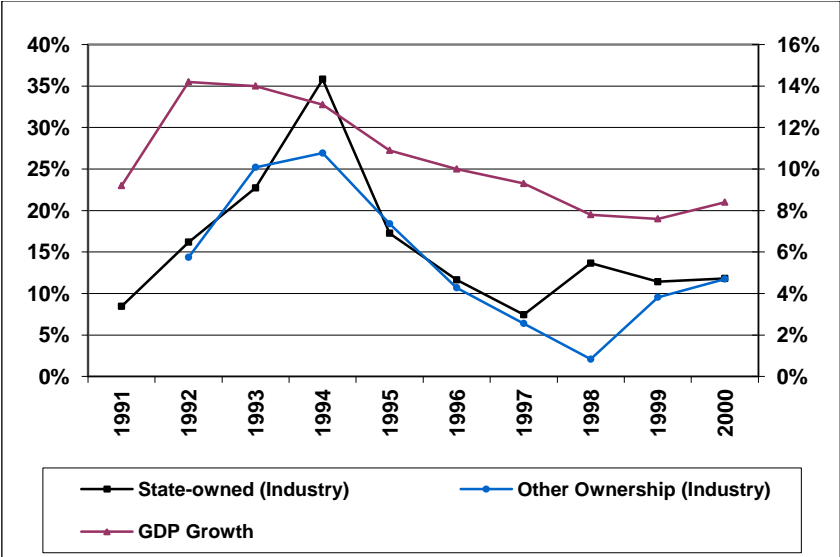
**Figure 26: Real wage and productivity growth in China, 1987-2007**



**Source:** Author’s own calculations, based on data from EIU, Country Data China; ILO LABORSTA Internet Database; and IMF, International Financial Statistics.

In retrospect, a number of reasons played their roles to make the wage reform a success. Obviously, despite the absence of government instruments to enforce strict adherence to the reform, the majority of all companies eligible to the recommendation-based wage reform 1994/95 II incorporated skill- and productivity-levels into the factors determining their wage-setting decisions. This is true not only for the state-owned industrial sector, but also for the other ownership types. Nevertheless, the overall pattern of the wage development was also strongly influenced by the economic cycle with rising wages in phases of higher growth rates and vice versa (Figure 27).

**Figure 27: The Economic Cycle and the Wage Developments in China, 1991-2000**



**Source:** Author’s own calculations, based on data from ILO LABORSTA Internet Database; IMF, International Financial Statistics; and National Bureau of Statistics of China.

One of the main reasons for the success of the reform was the general unease with inflation at that time. The official inflation rate in 1994 had reached 24 percent. At the same time, unemployment was rising due to growing numbers of migrant workers and accelerating lay-offs in state-owned enterprises (Zhang, 1995). The mix of social insecurity and high inflation rates led to increasing cases of social unrest in the mid-1990s. According to a report conducted by the Chinese Academy of Social Sciences and the National Statistical Bureau of China, 84 per cent of the polled people found inflation to be the main reason for people being unsatisfied (Cheng, 1995). For the government the situation must have been comparable with 1988/89 when rising unemployment of state-owned workers, stagnating social benefits and high inflation rates between 10 and 20 per cent led to noticeable social unrest (Wang, 2002). As an observer of that time put it: “One explanation why workers joined the huge demonstrations that China saw in 1989 (...) is unhappiness over inflation” (Wang, 2002). In 1994 the situation was as serious, and the government authorities were looking for means to fight inflation,



which would not magnify the unemployment problem.<sup>80</sup> It must have been due to that constellation that the choice was made to use non-monetary instruments to tackle inflation and to fix the exchange rate at a competitive level to avoid dependence on the international capital market.

There are developments on the job market in some parts of China that are increasingly undermining the wage regime in terms of inflation control. For instance in 2004, unexpectedly, some provinces started to claim shortages of labour. The Economist reported in October 2004 that the province of Guangdong in the Pearl River Delta was short of 2 million migrant workers (The Economist, 2004). It was further reported that the shortage of workers was evident throughout the manufacturing sector of the east coast from the Pearl River Delta up to Shanghai. This shortage puzzled experts since it had been previously thought that China's labour force would be able to provide seemingly endless supply of workers. But in fact, ever since 2004 more reports had been made public of shortages of mostly migrant workers along the East coast (China Daily, 2004). This was often associated with China's household registration scheme "hukou"<sup>81</sup>, which in many cases represented (and still largely represents) a legal barrier to move to the cities (World Bank, 2007: 18-24; World Bank, 2008: 76; and Economist, 2008a). This is the more so as the economic situation is changing rapidly and rural opportunities are rising; in turn this makes the static "hukou" system relatively more a barrier to move than in earlier years of the reform period. Initially a response for companies was to relocate to inland locations, where salaries were paid at huge discounts compared to coastal wages; but later on, through adjustments of inland wages, wages across China had started to increase significantly (Business Week, 2006; and Barboza, 2006). Subsequently it became also clear that the issue was not restricted to low-skilled migrant workers but increasingly it was and is a problem observable in higher valued job categories, too. For in-

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<sup>80</sup> The negative inflation bias of Chinese decision makers might as well go back to the hyper-inflation experience of the second half of the 1940 (Burdekin et al., 2001: 4).

<sup>81</sup> The "hukou" system is a legacy from the centrally planned economic system introduced in the 1950s. It is closely linked to the "danwei" system. Both concepts remain influential, yet decreasingly so ever since the reform policy started in 1978 (World Bank, 2008: 154-155). (1) The "danwei" represents the unit, in which one works and its services cover the employee and his/her family. A "danwei" could be a village, a company, a factory, an authority, a university. But the "danwei" is not only the work place, it is much more a social institution. For example, the "danwei" usually provides education and health care to its members. (2) The "hukou" is the means through which an individual is registered and assigned to a "danwei". Without permission of the authorities no one can leave or change the place of the "danwei". To legally do so, the "hukou" needs to be adjusted and officially registered with the new "danwei". Without a "hukou" no legal residence can be claimed at a new place and no social benefits would be available. Those who live in a "danwei" without "hukou" act illegally (Heilmann, 1997: 35). Thus, the hukou system actually reduces internal migration in China (World Bank, 2008: 76). While the concept remains unchanged, the actual enforcement is changing over time. In fact, most Chinese migrant workers do not fully comply to the "hukou" system and are in temporary status (World Bank, 2008: 154-155).

stance, a McKinsey study of 2005 identified a “looming talent shortage” in China, highlighting the problem of an insufficient high skilled young work force in China (Farrell et al., 2005).

Not all studies and articles come to the conclusion of immediate labour shortages across China, though (Lemoine, 2006; French, 2006; World Bank, 2007: 18-24; and Economist, 2008a). Indeed, changing demographics will result in a decline of the young labour force entering the job market every year, a basis of rapid economic growth in the past, but not before 2015 or 2020 (Lemoine, 2006; French, 2006; and Economist, 2008b). As available labour is getting scarcer the wages will rise. While this effect is certainly significant and valid, “labour supply is determined by more than demographics” (Economist, 2008a). In fact, easing of the household registration scheme and inclusion of migrant workers into the urban Chinese social security system would certainly facilitate the movement of migrant workers and broaden the benefits of urban employment thereby easing upward pressures of wages. Broadly distributed and better education as well as vocational training opportunities combined with incentives to retire later would further increase the labour supply, particularly in the higher skilled industrial sector (World Bank, 2007: 18-24; and Economist, 2008a).

Regardless where labour shortages may come from, rising wages in recent years have supported the assessment that the wage regime’s role on inflation controls has diminished ever since 1997/98, when the development of the inflation rate decoupled from ULC growth (Figure 25). As mentioned in section 5.2.2 on the design of the wage controls, the wage regime had a potential impact on 12 to 15 per cent of the total Chinese wage bill in 1995 and around 14 per cent in 2001 (Table 21). But given developments on the labour market over the last decade, the forecasted further tightening of labour supply over the next decade and the ever increasing share of private enterprises in the Chinese economy, the wage regime established in the 1990s virtually has no impact in today’s China. Thus, monetary policy needs to be prepared for a period of rising wages without possibility to revert back to the wage controlling tools of the past. But rising wages “should [still] be cause for cheer not fear (...) because it will lead to bigger gains in income and consumption. That, after all, is the whole point of development” (Economist, 2008a).

### **6.3.3 Distortions through an unsound banking sector and a lack of competition**

There are a series of specific distortions negatively impacting the functioning of the monetary policy transmission process in China. These distortions come about mainly on the grounds of an unsound banking sector and a lack of competition (Xie, 2004b). Among the most pressing issues over the past two decades have been the twin-issues of high NPLs in the banking system and low CARs of the commercial banks as well as limited competition in the financial

sector at large. There was progress in the years after 2004 so that a refined assessment is needed. *First*, the issues of NPLs in the financial system: As noted earlier NPL performances of commercial banks improved significantly between 2000 and 2007, but still the good developments regarding NPLs need to be handled with care. The performance increases in some of the best-performing banks was mainly the result of a political-driven process with capital injections and outsourcing of bad assets. *Second*, the lack of CAR of commercial banks was a major feature of the Chinese financial market until as recently as 2003, when only eight institutions complied to the CAR requirement of 8 per cent. But by mid-2008, 175 institutions, which reportedly represented more than 84 per cent of all bank assets in China complied with the minimum capital adequacy requirements of 8 per cent (Figure 4). *Third*, the four state-owned commercial banks have a quasi-monopoly in China's financial market. While rapidly declining market shares for the "Big Four" indicate stronger competition over time – their shares declined from around 75 per cent during the latter half of the 1990s (EIU, 1999a: 19) to 58.7 per cent in 2003 and 51 per cent in 2008 (Table 5) – their combined market force still dominates and rules the financial market. Furthermore, the "Big Four" have yet to compete in all business and geographic areas with each other. The original tasks assigned to each of them, which also appear in the banks' names, still segregate some parts of their businesses. *Fourth*, interest rates are still subject to the control of the authorities. Despite great steps towards interest rate liberalization, there is still not sufficient competition and not enough room for credit-risk related credit decision-making.<sup>82</sup>

The situation of an unsound banking system with an adhoc but not fully systemic and enduring resolving of the NPL problem, a de facto monopoly of the state-owned commercial banks (SOCBs) and high political influence within the financial system has major impacts on the financial transmission process in the economy (Xie, 2004b): A) SOCBs tend to be risk adverse, so their combined monopolizing power may jeopardize the overall policy stance. Through their strong position in the system, their restrictive behaviour can influence the overall impact of the central bank's policy. For instance, one might think of a situation where the central bank aims to pursue a neutral stance of monetary policy. Due to the SOCBs tendency to hold higher ratios of capital, the central bank induced neutral stance might actually turn into a de facto restrictive attitude against the central bank's will.<sup>83</sup> B) The state-owned com-

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<sup>82</sup> The market for bank deposits is still completely controlled, while the ceilings on the lending market have been abolished for all institutions but the rural credit cooperatives since October 2004.

<sup>83</sup> While such a situation was observable during the deflationary phase of the late 1990s, the experience after 2002 showed the contrary. In 2003 and from 2006 to 2008, bank lending increased with higher ratios than the PBC was willing to accept. As a reaction, the PBC re-enforced its window guidance policy.

mercial banks were and still largely are not profit-driven.<sup>84</sup> Resulting in long time lags for the implementation of interest changes, Xie argues that “the weak motive of making profit of the four state-owned commercial banks makes monetary policy ineffective” (Xie, 2004b: 4). C) Through monopolized open market operations, where the four SOCBs’ represent half of the total size of the Chinese operations, the SOCBs can manipulate the money market interest rates. D) A strong lobby of state-owned commercial banks can formally undermine the central bank’s policies. Since the PBC functions under the influence of the government, the SOCBs can lobby the government to influence financial and banking related decisions that affect their own business operations. Additionally, the commercial banks are represented in the Monetary Policy Committee of the PBC through the President of the China Banking Association. Indeed, the committee has no decision-making authority, but it is consulting the PBC in various financial and monetary policy related issues. E) The central bank has insufficient instrument independence. The PBC cannot decide independently about the level of the interest rates (see chapter 3 above).

Eventually, at least up to 2004, but likely beyond, the PBC has to take into consideration an additional and purely political target, i.e the reallocation of national income. This makes the instrument of the interest rate partially ineffective since interest rate adjustments are not necessarily consistent with the predominant monetary policy stance. Recalling his experiences from 1998 to 2004, Xie Ping told the Joint China-IMF Conference in Beijing in 2004: “We can say that each adjustment was decided through bargaining of concerned parties, and the complicated process and long time lag of decision-making greatly decrease the effectiveness of interest rate, and even probably produce opposite effect to monetary policy goal” (Xie, 2004b: 5).

#### **6.4 Descriptions of the PBC monetary policy approach**

It was noted in the beginning of this chapter that monetary policy decision makers and related academics and researchers are on the constant search for strategies and “simple rules” to sort the plethora of available information on economic and monetary indicators and to receive guidance on the proper stance of their central bank’s operating target(s). It was laid out that the use of the notion “simple rule” in this work follows Bofinger’s definition of a “heuristic”, i.e. a “simple, generally applicable rule which allows decisions to be taken even under difficult situations in a reliable and fast way” (Bofinger, 2001: 243). Subsequently, the study identified monetary targeting and domestic loan targeting as official domestically oriented strategies (at the same time, the PBC pursues an exchange rate target through foreign ex-

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<sup>84</sup> In contrast to Xie (2004b), other scholars like Dai (2002) are of the opinion that the desire for profit played a prominent role in commercial banks’ business operations as early as 2002.

change market interventions). But this chapter 6 also showed that the domestic approaches are prone to difficulties and that the PBC often did not follow the rules prescribed by its official monetary targeting approach (Table 25).

Many recent studies have tried to analyze the policy rule(s) that the PBC has actually followed over the past 10 to 20 years. While some of these studies have looked into the possible applicability of a series of rules (cf. Kong 2006; and He et al., 2008), others have focused on one or few rules to analyze the Chinese monetary policy in search of alternative monetary policy rules. The most prominent rules that have been discussed in the recent literature are *nominal GDP targeting* (Burdekin et al., 2008; and Koivu et al., 2008), the *Taylor rule* (cf. Xie et al., 2002; Lu et al., 2003; Liu, 2003; and Kong et al., 2006) and *inflation targeting*, (cf. Goodfriend et al., 2006; Laurens et al., 2007; and Zhang, 2007). It is noteworthy to distinguish between those attempts that identify existing concepts that would allow describing the recent or current monetary policy reactions of the PBC (usually the case for analyses of nominal GDP targeting and the Taylor rule) and those studies that provide suggestions for a future monetary policy approach for the PBC (usually the case in studies in favour of an inflation targeting approach for the PBC). This section will try to do both: First, it will review recent literature to judge whether the three approaches are suitable to describe the monetary policy of the PBC between 1994 and 2008. Second, if no suitable existing approaches are found to describe the current policy of the PBC, it will be attempted to expand those concepts in search of a better description.

#### 6.4.1 Nominal GDP targeting (McCallum rule)

The explicit rule of nominal GDP targeting as described by McCallum, defines the target value of nominal GDP growth as the rate that “equals the economy’s prevailing long-term average rate of real output growth” (McCallum, 1987: 13). The rationale for this target path comes from the expectation that “keeping nominal GNP growth at the appropriate value (...) should yield approximately zero inflation over any such period” (ibid.). For the United States McCallum estimates this neutral rate to be around 3 per cent.

McCallum derives his implicit rule through the quantity equation. Unlike monetary targeting, however, McCallum’s rule is designed for the monetary base as:

$$\Delta B_t = \pi_t^{\text{target}} + \Delta Y_t^{\text{potential}} - \Delta V_{t-4}^{\text{average}}$$

With  $\pi_t^{\text{target}}$  equals zero,  $\Delta Y_t^{\text{potential}}$  is 3 per cent (for the United States) and  $\Delta V_{t-4}^{\text{average}}$  is the average growth rate of the velocity of the monetary base over the last four years (Bofinger, 2001: 279-280; and McCallum, 1987: 13-14). From this, McCallum defines his rule on a quar-

terly basis<sup>85</sup> and with a countercyclical component. The countercyclical effect is added through the weighted difference of the target value (log) of nominal GDP in the previous period calculated with the target growth rate ( $\ln Y_{t-1}^{\text{target}}$ ) and the actual value (log) of GDP for the previous period ( $\ln Y_{t-1}^{\text{actual}}$ ). Thus, the original McCallum rule is:

$$\Delta B_t = 0.0074 - \frac{1}{16} \sum_{i=1}^{16} \Delta V_{t-1}^B + \lambda (\ln Y_{t-1}^{\text{target}} - \ln Y_{t-1}^{\text{actual}})$$

In the original version McCallum defines  $\lambda$  with 0.25 on quarterly basis, which “implies an extra 1 percent base growth per year [original italics] for each 1 percent deviation of nominal GNP from its target path” (McCallum, 1987: 14). In reality McCallum’s rule does not play an important role in central bank decisions, whereas in fact Bofinger shows that “in the United States the actual growth rate of the monetary base is not too different from the path prescribed by the McCallum rule” (Bofinger, 2001: 281). But the rule is difficult to apply in reality, mainly due to its focus on the monetary base with substantial deviations in base velocity. With the hybrid character of the PBC monetary policy approach and a strong emphasis on quantity-based monetary policy measures, monetary aggregates and domestic loans, however, the logic of McCallum’s rule may actually be suitable in the case of China. This is particularly possible for McCallum’s rule applied to monetary aggregates as the main gauge of money supply adjustments.

This study refers to the two recent works of Burdekin et al. (2008) and Koivu et al. (2008) to analyze the applicability of the McCallum rule in China (due to data constraints in this work). Both studies apply the logic of the rule to the monetary aggregate M2 based on the knowledge of the prominence of monetary aggregate targets in China’s monetary policy set-up. To this end, Koivu et al. (2008) compare the McCallum-derived M2 targets with the PBC monetary aggregate M2 targets and the actual growth rate of M2 in China. This is displayed in Table 32 for the period from 1995 to 2006. The table shows that the values suggested by the McCallum rule were significantly higher than the actually set PBC targets from 1995 until 1999, thereby indicating a contractional monetary policy stance for that time in the sense that the PBC target foresaw lower money supply growth than suggested by the McCallum rule. Since actual monetary growth was either close to the PBC target rates or fell behind, the actual monetary policy stance judged by a comparison to the McCallum rule was outright tight up until 1999. And in fact, inflation was very low towards the end of the 1990s and turned negative in 1998.

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<sup>85</sup> Thus,  $\Delta Y_t^{\text{potential}}$  of annually 3 per cent changes to 0.74 per cent per quarter.

In the seven years from 2000 to 2006 the McCallum-derived and the PBC target rates showed a closer aligned development path. During that period in all but two years (2002 and 2004) the PBC target rates had less than two percentage points deviations to the McCallum-derived target rates (Table 32). The actual monetary stance stayed tight from 2000 to 2002 with actual M2 growth below the suggested values of the McCallum rule; the inflation rate was very low at around zero percent. But the monetary stance changed its direction in 2003 when the actual M2 growth rates reached a higher level than suggested by the rule, which continued to be the case until 2006. Inflation rates picked up in this period compared to the years before with almost 4 per cent in 2004. Much more, this period of lax monetary policy may have also played its role in the build up of the inflationary threat in 2007 and 2008.

**Table 32: McCallum-derived M2 targets in perspective, 1995-2006**

Year	McCallum-derived M2 target (%)	PBC M2 target (%)	Actual M2 growth (%)	Inflation rate (%)
1995	28.5	23-25	29.5	16.9
1996	28.5	25	25.3	8.3
1997	26.3	23	17.3	2.8
1998	24.0	16-18	15.3	-0.8
1999	23.0	14-15	14.7	-1.4
2000	16.5	14-15	12.3	0.3
2001	16.3	15-16	14.4	0.5
2002	17.6	13	16.8	-0.8
2003	15.0	16	19.6	1.2
2004	10.3	17	14.6	3.9
2005	15.5	15	17.6	1.8
2006	15.5	14	16.9	1.5

**Source:** Author's own compilation with data from Koivu et al., 2008: 13; Table 22; and Table 29.

Both works of Burdekin et al. (2008) and Koivu et al. (2008) go further and analyze the ability to apply the logic of McCallum's rule to assess inflationary tendencies and specifically forecast future inflation rates. Koivu et al. (2008) test whether "deviation of actual money supply growth from the value specified by the McCallum rule" (Koivu et al., 2008: 14) could serve as a good measure. Alternatively, Burdekin et al. (2008) choose to "estimating a money demand function and comparing the estimates with the actual money supply data in order to derive the gap between the actual and predicted values" (Burdekin et al., 2008: 856). This "money gap" is thought to be a good indicator for inflationary pressure. As conclusion, Burdekin et al. (2008) in their analysis for the period 1990 to 2003 find that the money gap concept is indeed able to track both inflationary and deflationary tendencies in the Chinese economy. Likewise, Koivu et al. (2008) find that the results derived through the McCallum rule can provide information about inflationary pressures in conjunction with other methods for inflation forecasting, but that the results of the rule alone are not able to serve as a benchmark to judge the inflation stance of the economy.

### 6.4.2 Taylor rule

The monetary policy rule proposed by John Taylor in 1993 aims to determine a concrete value to the short-term interest rate of a central bank under consideration of the current economic environment (Bundesbank, 1999: 48). The implicit rule says “keep the real-short-term interest rate constant as a neutral policy stance, and make a surcharge (discount) when the output gap is positive (negative) and/or inflation is above (below) a target rate” (Bofinger, 2001: 268). The implicit rule can be described with the following formula (Bofinger, 2001: 269):

$$i_t - \pi_t = R + \alpha(\pi_t - \pi^*) + \beta\left(\frac{Y_t - Y^*}{Y^*}\right)$$

$i_t$ :	Nominal interest rate	$\beta$ :	Weighting factor output gap
$\pi_t$ :	Actual inflation rate	$\pi^*$ :	Target inflation
$R$ :	Neutral real short-term interest rate	$Y_t$ :	Actual output
$\alpha$ :	Weighting factor inflation gap	$Y^*$ :	Potential output

The explicit rule of the Taylor rule assumes that there exists a neutral real short-term interest rate. It also assumes that an output gap (potential output subtracted from the actual output) close to zero leads to a non-inflationary environment and that there is a target value of the inflation rate. In the original version of 1993 for the monetary policy of the US Federal Reserve, Taylor set the neutral interest rate ( $R$ ) at 2 per cent, the potential output growth ( $Y^*$ ) at 2.2 per cent and the inflation target ( $\pi^*$ ) at 2 per cent. Taylor noted that the neutral interest rate is close to the growth rate of potential output. Taylor set the weighting factors  $\alpha$  and  $\beta$  at 0.5, indicating a similar influence of inflation and output gaps on the final target (Taylor, 1993: 202; and Bundesbank, 1999: 49). Bringing the implicit rule and the definition of the target values together the original Taylor rule for the US Federal Reserve is:

$$i_t - \pi_t = 2 + 0.5(\pi_t - 2) + 0.5\left(\frac{Y_t - Y^*}{Y^*}\right)$$

Despite its simplicity, the interest rate generated through the Taylor rule comes rather close to the reality of central bank (re)action. Taylor was surprised of the accurateness of his rule. For the period of 1987 to 1992 he concluded for the US Federal Reserve: “What is perhaps surprising is that this rule fits the actual policy performance during the last few years remarkable well” (Taylor, 1993: 202). And also for the longer period of time from 1987 to 2003 “the Taylor rule seems to track, very successfully, broad policy moves since 1987. This success seems remarkable because Taylor’s rule is so simple” (Carlstrom et al., 2003). For Germany, the Bundesbank concludes for its monetary policy from 1979 and 1998: “Overall, the behaviour of the day-to-day money market rate and the Taylor interest rate are quite similar”



(Bundesbank, 1999: 52).<sup>86</sup> However, Taylor pointed out that in a complex world policymakers “cannot and should not” mechanically follow simple rules like his rule (Taylor, 1993: 213). And in fact the Bundesbank and the Federal Reserve confirm this view of the Taylor rule as a potential “guidepost” among others rather than a strict rule (Carlstrom et al., 2003; and Bundesbank, 1999: 61).

Is there a role to be played by the Taylor rule for the description and formulation of monetary policy in China? There are studies about the applicability of the Taylor rule in the Chinese literature (Xie et al., 2002; Lu et al., 2003; Liu, 2003; and Kong et al., 2006). Most of those studies come to the conclusion that the Taylor rule does not serve as a “simple rule” for Chinese monetary policy, but is indeed able to serve as a means to judge the policy stance in China. For instance, Xie et al. (2002) conclude that the “Taylor rule can be used as a reference value of the Chinese monetary policy to judge the policy stance.”<sup>87</sup> And the observation is based on the comparison of the short-term interbank interest rate as “benchmark” to the Taylor rate. The reasoning of such an approach is the assumption that in an interest rate driven market system changes in the central bank’s prime lending rate are transmitted into changes in the interbank market rates. Likewise, in his original version Taylor compared the Federal Funds Rate, which is the interest rate on overnight interbank loans, with the calculated Taylor rate (Taylor, 1993: 204).

But in China, the transmission of interest rates is distorted due to prevailing interest rate controls. Thus, in above-mentioned studies it is usually argued that a comparison with the PBC lending rate would be inappropriate. While this is true, the approach neglects the problem of choosing the “right” interest rate for the comparison in China. And there are data constraints with regard to the interbank interest rate in China. Much more, realizing the problem of interest controls and their adverse effects on the application of the Taylor rule makes a strong case against the applicability of the rule as such. For these reasons and since simple rules should be designed to provide practicable guidance to determine the needed level of the operating target of a central bank, this study focuses on a comparison of the original Taylor rule proposed for the US Federal Reserve with the PBC benchmark lending rate. This is shown in Table 33, which also contains a control reference to the interbank rate.

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<sup>86</sup> Long-time analyses of the Taylor rule in the Euro-Area after the ECB took over the monetary policy of the area in 1999 do not exist, yet.

<sup>87</sup> Original: “泰勒规则能够为中国货币政策提供一个参照尺度, 衡量货币政策的松紧。” (Xie et al., 2002: 11)

**Table 33: The Taylor rule in China: Nominal Taylor rate vs. lending rates, 1994-2008**

	Actual inflation	Target Inflation	Inflation gap	Potential Output	Actual output	Output gap	Taylor rate	PBC rate	7-day rate
1994	24.2	2.0	22.2	8.5	13.1	4.6	<b>39.6</b>	11.0	na
1995	16.9	2.0	14.9	8.5	10.9	2.4	<b>27.6</b>	12.1	na
1996	8.3	2.0	6.3	8.0	10.0	2.0	<b>14.5</b>	10.1	11.4
1997	2.8	2.0	0.8	8.0	9.3	1.3	<b>5.9</b>	8.6	8.8
1998	-0.8	2.0	-2.8	8.0	7.8	-0.2	<b>-0.3</b>	6.4	4.2
1999	-1.4	2.0	-3.4	8.0	7.6	-0.4	<b>-1.3</b>	5.9	2.7
2000	0.3	2.0	-1.7	8.0	8.4	0.4	<b>1.7</b>	5.9	2.5
2001	0.5	2.0	-1.5	7.0	8.3	1.3	<b>2.4</b>	5.9	2.4
2002	-0.8	2.0	-2.8	7.0	9.1	2.1	<b>0.9</b>	5.3	2.1
2003	1.2	2.0	-0.8	7.0	10.0	3.0	<b>4.3</b>	5.3	2.2
2004	3.9	2.0	1.9	7.0	10.1	3.1	<b>8.4</b>	5.6	2.3
2005	1.8	2.0	-0.2	7.0	10.4	3.4	<b>5.4</b>	5.6	1.7
2006	1.5	2.0	-0.5	7.5	11.6	4.1	<b>5.3</b>	6.1	2.4
2007	4.8	2.0	2.8	7.5	11.9	4.4	<b>10.4</b>	7.5	3.2
2008	5.9	2.0	3.9	7.5	9.0	1.5	<b>10.6</b>	5.3	3.0

**Source:** Author's own calculations, based on data available from Table 22, Table 29 and IMF, International Financial Statistics.

**Note:** The following original parameters suggested by Taylor for the United States are underlying the calculation of this table (Taylor, 1993):

$$i_t = 2 + \pi_t + \alpha(\pi_t - 2) + \beta\left(\frac{Y_t - Y^*}{Y^*}\right)$$

Potential output: GDP targets of the respective five-year plan of China are taken as proxies for the potential output growth (1991-1995: 8.5 per cent; 1996-2000: 8 per cent; 2001-2005: 7 per cent and 2006-2010: 7.5 per cent). This seems to be a good proxy since estimations for China's potential output growth are usually between 8 and 9 per cent for the period under consideration (Gerlach et al., 2006: 25; and Kuijs et al., 2005: 11).

PBC rate: This refers to the PBC benchmark lending rate (one-year) as reported by the IMF, International Financial Statistics.

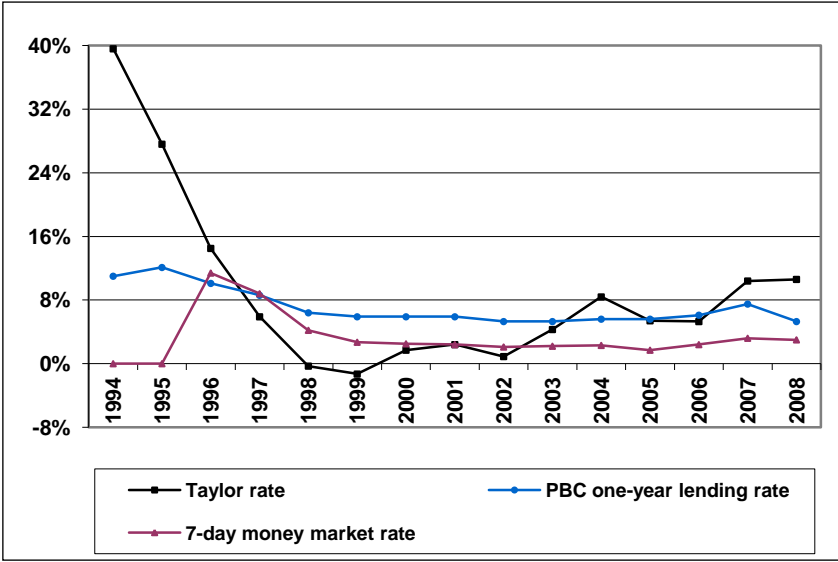
7-day rate: While the Chinese interbank market came into existence in the 1980s, institutional requirements for a functioning interbank market were introduced only in 1996. Thus, meaningful money market interest rates are available from 1996 onwards only (Xie, 2002; and Liu, 2004). The 7-day maturity data is chosen since this maturity had the highest trading volumes on the interbank market between 1996 and 2005; since then 7-day maturities come second just after overnight trades. Thus, over the whole period under consideration, the 7-day money market rate is a good gauge for the money market at large.

Table 33 shows the Taylor rate for China for the period from 1994-2008 and its underlying calculation based on the original Taylor rule in comparison with the PBC benchmark lending rate and the 7-day money market rate. Apparently, there is no close relationship recognizable as it was the case for the Bundesbank (Bundesbank, 1999: 52) and the Fed (Carlstrom et al., 2003). In fact, the average deviation of the Taylor and the central bank lending rate was 6 percentage points in China between 1994 and 2008. When the inflation peaks of 1994 and 1995 are excluded, the average deviation of the Taylor rate and the central bank rate between 1996 and 2008 still reaches 3.6 percentage points (7-day money market rate: 3.6). To put that into perspective, in Germany the deviation with the central bank discount rate

amounted to merely 2.1 percentage points for 1970 to 1998 (Interbank rate: 1.9) and for the same period in the US the deviations were 2.7 and 2.6, respectively.<sup>88</sup>

Visualizing the figures in Table 33 reveals the dynamics in the Taylor rate over time and Figure 28 shows clearly that ever since 2003 the Taylor rate has come towards a closer and more parallel movement with the PBC benchmark rate. This is confirmed by a lower standard deviation of the PBC benchmark rate to the Taylor rate over the period 2003 to 2008, which was only 2.2 percentage points and with that somewhat close to the rates observed for Germany and the US above. The caveat of this observation of course lies in the fact that the observation period for China is only 5 years from 2003 to 2008 (compared to almost three decades observation periods for Germany and the US). A second caveat comes from the observation of a standard deviation of 4.9 percentage points for the money market rate from 2003 to 2008. This is yet another sign that the prevalent interest rate controls do not allow the central bank rate to reach through to the money market rate with its central benchmark rate; this again questions the applicability of the Taylor rate at large.

**Figure 28: Nominal Taylor rate in China vs. PBC lending and the money market rate, 1994-2008**



**Source:** Author's own calculations, based on data available from Table 22 and Table 29 and IMF, International Financial Statistics.

An additional important factor plays a role in the assessment of the Taylor rule for China. This is in the fact that quantity-based instruments are utilized alongside price-based monetary policy instruments. It was assessed earlier that quantity-based instruments exert significant influence on the monetary policy stance in China. But these influences cannot be cap-

<sup>88</sup> This analysis uses the Taylor rate as provided by Bofinger, 2001: 299 and 311.

tured in the Taylor rule, which is based on the assumption of a fully functioning interest rate channel. It might nevertheless be possible to augment the existing Taylor rule by a credit component to account for the fact of China in transition. This is a concept broadly applied in a few recent studies on monetary policy rules for China, but not specifically for the Taylor rule (cf. Bu et al., 2004; Peng et al., 2005; and Liu et al., 2007). For instance, Liu et al. (2007) simulate a hybrid policy rule that combines both quantity and price instruments of monetary operations in China. In conclusion they show that indeed the “hybrid rule that relies on both interest rate and quantity of money to conduct monetary policy appears to be more suitable than its alternatives at the current stage of economic and financial market development” (Liu et al., 2007). Somewhat similar, in their analyses on monetary conditions indices for China, Bu et al. (2004) try to capture the quantity-component through monetary aggregates and Peng et al. (2005) focus directly on changes in credit supply as determining factor for monetary conditions.

Applying the logic of a quantity-based credit component to the original Taylor rule, the following could be an intuitive nominal credit-augmented Taylor rule for China:

$$i_t = R + \pi_t + \alpha(\pi_t - \pi^*) + \beta\left(\frac{Y_t - Y^*}{Y^*}\right) + \gamma(cr_t - cr^*)$$

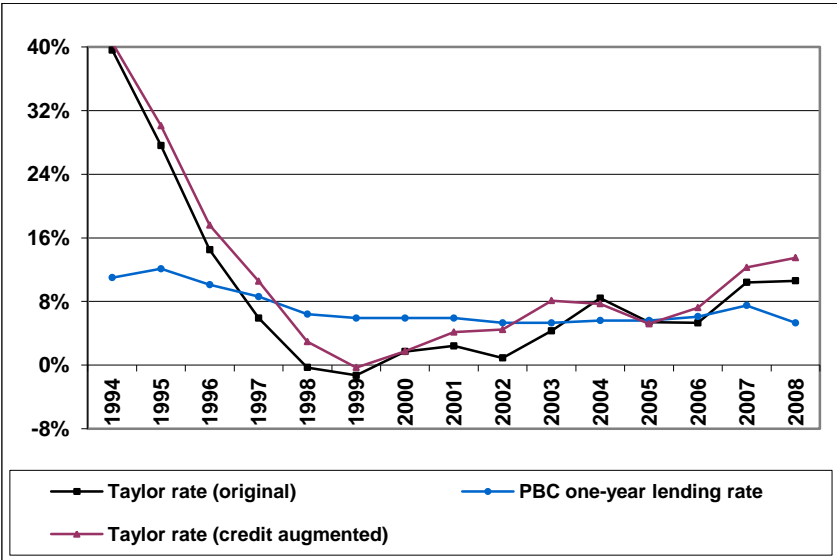
$i_t$ :	Nominal interest rate	$Y_t$	Actual output
$R$ :	Neutral real short-term interest rate	$Y^*$	Potential output
$\pi_t$ :	Actual inflation rate	$\gamma$	Weighting factor credit gap
$\alpha$ :	Weighting factor inflation gap	$cr_t$	Actual credit growth
$\pi^*$ :	Target inflation	$cr^*$	Target credit growth
$\beta$ :	Weighting factor output gap		

In such a credit-augmented Taylor rule the weighting factors would need to be put equally at 0.33 to account for the relatively equal importance to monetary policy of deviations from the inflation gap, the output gap and the credit gap, i.e. the difference between actual and targeted domestic loan increases. Signs of the three components with the weighting factors are all positive as they follow the similar logic, namely that positive deviations from the target values would need to lead to interest rate increases and negative deviations of target values would trigger interest rate cuts. This version of the Taylor rule would also depart from the target inflation rate  $\pi^*$  of 2 per cent suggested by Taylor (1993) and would instead set the average inflation rate from 1994 to 2008 as the target inflation rate of 4.6 per cent. As a consequence, the neutral interest rate  $R$  would be increased to the similar value of 4.6 per cent. The data side of the credit gap is of crucial importance and unfortunately unsatisfactory. No reliable target rates for domestic loan increases are available for the time before 1998, and the PBC has stopped to publish target values for 2007 and 2008. To fill the gap of data, the

insight into the “neutral stance” of domestic loan growth identified in section 6.1.2.2 is utilized and 12.5 per cent set as target rate before 1998 and after 2006.

Figure 29 shows the result of the credit-augmented Taylor rate and compares it to the original Taylor rate calculated for China as well as the PBC lending rate. The credit augmented does not fundamentally differ from the original Taylor rate for China. In fact, in terms of standard deviation from the PBC benchmark rate, it even performs less well with an average deviation of 6.2 percentage points from 1994 to 2008 and 3.2 percentage points from 2003 to 2008. These differences may come from the problem of insufficient target values for domestic loan increase. It may also just reflect a wrong modelling of the credit-augmented Taylor rate. In fact, both the original and the credit-augmented Taylor rule for China fail to follow the monetary policy reaction of the PBC. They do, however, at times seem to provide very good guidance on the required monetary policy stance. Look at the 2003/04 and 2007/08 expansionary and inflationary cycles, for instance, where the augmented Taylor rule clearly indicated rising interest rates for the PBC. To this end, the credit-augmented Taylor rule is advantaged to the original Taylor rule as it captures both cycles much more pronounced than the original one, mainly because domestic loan increase played crucial roles in both cycles.

**Figure 29: Credit-augmented and original Taylor rate vs. the PBC lending rate, 1994-2008**



**Source:** Author’s own calculations, based on data available from Table 22 and Table 29; PBC Statistics Database Online; and IMF, International Financial Statistics.

In conclusion of this section, it is clear that neither the original nor the credit-augmented Taylor rule can be used to explain the monetary reaction of the PBC from an ex post perspective. Both can, however, be utilized as forward-looking policy guides with some advantages to the credit-augmented version of the rule. As such, the conclusion brought forward by Xie et al.

(2002) that the "Taylor rule can be used as a reference value of the Chinese monetary policy to judge the policy stance" represents a valid observation.

### 6.4.3 Inflation targeting

From a general standpoint, the inflation-targeting approach is quite straightforward. The central bank forecasts the future rate of inflation. Then the forecasted inflation rate is to be compared to the target inflation rate, which was set before. If there is a substantial difference between the forecasted and the target rate, the central bank responds through adjustments in its monetary policy stance, i.e. through the interest rate (Debelle, 1997; and Svensson, 1997). But many different criteria are underlying the forecasting framework, which make the set-up of an efficient approach more daunting. Not only is there a need for comprehensive historical data to estimate reliable relationships, but "other information from leading indicators should also be considered even if they cannot directly be incorporated into an inflation forecasting model" (Debelle, 1997: 20). In the words of Bernanke et al. (1999), inflation targeting seems to be much of a "look at everything' strategy, albeit one with a focused goal" (Bernanke et al., 1999: 22). To this end, Bofinger argues that inflation targeting is a monetary policy framework, but not a simple rule (Bofinger, 2001: 264). Bofinger further refers to Svensson's definition of "inflation targeting as 'inflation forecast targeting', which (...) is completely different from monetary targeting" (Bofinger: 2001: 259, referring to Svensson, 1999). The main elements of Svensson's inflation targeting framework are shown in Table 34 and their application is assessed against the approach used in China. It is obvious that the PBC is not following this strategy in China.

**Table 34: Elements of inflation targeting and their application in China**

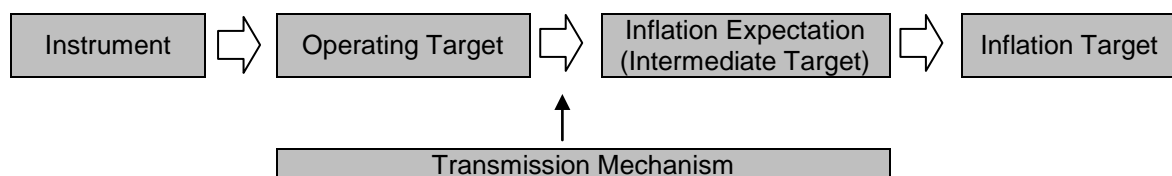
Criteria	Application in China
Price stability as main target of monetary policy	Yes ( <i>Paramount Target</i> )
Announcement of a numerical target	Yes ( <i>Central Economic Work Conference</i> )
Medium-term target	Yes ( <i>Five-Year Plans</i> )
Intensive communication with the public	No
Inflation forecast targeting	No
Published inflation and output forecasts	No
Instrument independence	No

**Source:** Author's own visualization; and Svensson (1999), as described in Bofinger (2001).

A key issue within the inflation targeting framework is that the central bank tries to reach the final target of price stability without using traditional intermediate targets like exchange rate pegs and monetary targets. Still, the central bank needs to conduct its monetary policy via its

operation targets in order to reach the target for the inflation rate through the utilization of the monetary transmission mechanism of expectations. But to ensure timely reaction of the central bank the decision-makers need some alternative measures to the traditional intermediate targets. Bernanke et al. (1999) call this the "need for a nominal anchor" that would allow "to tie down the price level to a specific value at a given time" (Bernanke et al., 1999: 19). Such a concept was first established by the Bank of England, where quarterly inflation reports are utilized to forecast the inflation rate for the next two years. And indeed, some authors argue that the practice of inflation reports as nominal anchor involves all required prerequisites of an intermediate target (Haldane, 1995: 252). But Bofinger et al. (1996) pointed out that there is no agreement between Haldane's result and the commonly used criteria regarding intermediate targets. Instead, Bofinger (2000a) suggests inflation expectations to serve as the intermediate target within the inflation targeting concept (Bofinger, 2000a: 19). As such, the theory of expectations can be seen as the theoretical basis for inflation targeting, but only if indeed there is a link between the expected inflation rate and the actually measured inflation rate and if at the same time the central bank is able to influence these expectations. This is when Bofinger reverts to the theory of expectations, the mechanisms of which are displayed in Figure 30. In this simplified display the inflation expectations are the link between any adjustments of the operating targets and the actual inflation rate (Bofinger, 2001: 265-268).

**Figure 30: Simplified transmission mechanism in an inflation targeting strategy**



**Source:** Bofinger, 2001: 266.

On short-term basis the connection between the inflation expectation and the actually measured inflation in Figure 30 comes from sticky prices, i.e. nominal wages are usually contracted for one year. The inflation expectation for that period influences the negotiating results: "If the public suspects that the authorities will renege on their commitment of price stability, expectations of inflation will cause nominal wages and interest rates to rise immediately" (Laussel et al., 1988: 151-152). It is also of importance for the central bank to recognize what theory of expectation mainly applies to the private households in its jurisdiction. The hypothesis of rational expectations says that a market participant's expectation errors are uncorrelated over time. The theory of adaptive expectations could also apply, i.e. "each period's change in the expectational variable (is) proportional to the most recent expectational error" (McCallum, 1992). Finally there is the hypothesis of extrapolative expectation,

which says that the inflation rate for the next period is the same as the actual rate of inflation in the recent period (Bofinger, 2001: 105-108; and McCallum, 1992). The distinction is important as a central bank may actually be able to exploit the expectations channel much better if extrapolative expectations are prevalent compared to other forms.

To see how the central bank is able to influence the expectations for inflation a short example is needed: In an equilibrium situation of the economy with low inflation rates, inflation expectation will be low and create a self-stabilizing process. But imagine a massive exogenous inflationary shock. Then the central bank has to increase interest rates substantially. This would show the public the strong commitment to price stability, therefore the inflation expectations will be kept on a low level (Bofinger et al., 1996: 370-371). Similar insight can be gained by looking into the global financial and economic crisis. During the last quarter of 2008, central banks around the world acted timely and in a coordinated way to counter the crisis. The US Federal Reserve did not only provide liquidity into the interbank market, but also cut interest rates by large margins to provide monetary stimulus for the real economy. While initially focusing on the active provision of liquidity to the system, the European Central Bank, too, provided the necessary monetary stimulus by lowering interest rates. Thus, by the end of 2008 the United States had virtually zero interest rates after a rate cut on 16 December 2008 to 0.125 per cent. Likewise, Japan had an interest rate of 0.1 per cent. By that time, the ECB and the Bank of England had still small room for manoeuvre left with 2.5 and 1.5 per cent interest rates, respectively, but this was utilized quickly at the beginning of 2009 (UNCTAD, 2009: 56). While the need for central banks exit strategies from the massive stimulus packages was widely discussed during much of 2009 (cf. Atkins et al., 2009; and Economist, 2009b), medium-term and large-scale inflationary shocks were not seen as a likely result of these policies (for Germany, see Bernau, 2009). The main factor in this context is the central bank's credibility, "i.e. the public's belief that a central bank is able and willing to achieve price stability" (Bofinger, 2001: 114). And to reach credibility, transparency is needed. If a central bank is credible and has a good track record of successfully fighting inflation – simply, when a central bank has a good reputation – the public may be ready to keep its inflation expectations low, even in an unsteady environment as witnessed in the global financial and economic crisis.

How do the Chinese authorities influence and guide the inflation expectations? The example above showed the mechanism in a fully market-based economy, where the central bank uses its interest rate instruments to signal its ability to control inflation in certain situations so that the public expectations over inflation will be formed the way the central bank intends to. The hybrid monetary policy set-up of the PBC, however, does not currently allow the PBC to sig-



nal its controllability via the interest rate channel. Given the limited role of the “market” and interest rates in the lives of people in China and at the same time the overarching exposure to a strong state, it could be argued that stronger direct mechanisms are needed to convince the public to believe in its central banks actions. Take the 2007/08 inflationary threat as an example. The authorities took many steps associated with direct control and did indeed promote them. On 15 January 2008 so-called temporary price controls were introduced to face the then runaway inflation, and the NDRC was tasked with following up on their implementation as well as monitoring and publishing progress (NDRC, 2008a; and NDRC, 2008b). Similar measures had been implemented in earlier inflationary cycles such as in 2003/04 and 1993/94. Section 5.2.1 above gives good accounts of them.

But price controls have major macroeconomic downsides, as they prevent the automatic stabilizer of increasing prices from working properly. Increasing prices in a situation of an expansionary economy would lead to decreasing demand and have a dampening effect on the economy. Reports about shortages in the 2003/04 cycle indeed do suggest that price controls in China at times prevented the effectiveness of the build-in stabilizer (Areddy, 2004 and Qu, 2004: 5). And the authorities most certainly had to consider similar tradeoffs in the 2007/08 cycle (Bradsher, 2008). Still, authorities in China seem to stick to price controls as an important means to fight inflation. The answer could be that price controls signal activism of the authorities and the ability of the government to consciously fight inflation through direct measures. To this end, it may actually not even matter whether the price controls are permanent or temporary and effective or not, but the pure announcement and public monitoring of progress may be sufficient to convince people that the government is ready and capable of fighting inflation. This is an interesting thought that goes back to Rothman, who reviewed the price controls in early 2008 and concluded that “what they (the Chinese authorities) are doing is what governments always do – try and talk down inflation expectations” (AFP, 2008). Likewise, the PBC has the instrument of window guidance that was particularly featured in the 2003/04 cycle and its application – apart from direct effects on bank lending – certainly showcased the PBC’s activity and ability to keep inflation under control to the public.

Despite the attempts of the Chinese authorities to influence the inflation expectations of the public to achieve their target of price stability, it needs to be doubted that the Chinese monetary policy approach currently utilizes inflation expectations as an intermediate target in an inflation targeting framework. In Svensson’s terminology used in Table 34, this means that China is currently not pursuing inflation forecast targeting as a rule for its monetary decisions. This assessment does not come so much from an inability to influence inflation expectations, but much more from the lack of an institutional framework to form inflation expectations. Me-

dium-term inflation forecasts from the PBC, other domestic authorities or independent organizations and institutions are rare. The important inflation indicators of wage settlements, still largely under control in the 1990s not least through the 1994/95 wage reform, seem nowadays not centrally monitored with the prevalence of a thriving private sector, millions of unregistered migrant workers and steadily rising wages.

At the same time, short-term inflation forecasts and inflation targets for up to one year have often to be seen as political rather than monetary targets derived from economic forecasts. For instance in 2008, no inflation target was announced until March, when the Chinese Premier Wen Jiabao addressed the First Session of the 11th NPC and announced the Chinese inflation target for 2008 as set to 4.8 per cent (Zhao, 2008b). And this target equalled the actual inflation of 2007, indicating that the target was primarily a political target. Likewise, insufficient central bank independence does not allow the PBC to set its monetary policy stance autonomously to influence inflation expectations; much more, one of the main tools to show government activity in times of crisis is the introduction and strengthening of price controls, which is a non-central bank instrument implemented by other authorities than the PBC.

The inflation targeting regime connects operational independence with accountability of a central bank to the public in that the inflation targets provide measures against which the central bank can be held accountable. Again, the failure to consistently announce inflation targets derived from economic judgement rather than political instinct does not allow for accountability of the PBC. This is the more so if the targets as such are not set by the PBC itself. Still, insufficient accountability does not mean that a central bank is unable to build credibility. To this end, the experiences of the 1993/94 high inflation and the ability to gradually bring it down over a few years, certainly helped the PBC and other authorities at large to establish a credible anti-inflation bias. Likewise, the 2003/04 cycle, which had inflation rates picking up to 3.9 per cent in 2004, but was reined to 1.8 per cent in 2005, did contribute to the reputation of the PBC. The cycle of 2007/08, largely fuelled by high food and energy prices did initially not appear to be a large-scale success for the PBC. But with the advent of the global financial and economic crisis inflation concerns abated and monthly inflation rates decreased rapidly towards the end of 2008. In the end, single digit inflation rates could be maintained. Over the whole year 2008 inflation stood at 5.9 per cent, after 4.8 per cent in 2007. So looking at the whole period under consideration, i.e. from 1994 and 2008, the PBC was actually able to establish a sound reputation of bringing down inflation and keeping at in single digit levels<sup>89</sup> – at the background of often double digit growth rates. Considering the

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<sup>89</sup> Prices picked up again as a result of the fiscal stimulus measures implemented in China in response to the financial and economic crisis in 2008, but did not exceed 5 per cent in 2009 and 2010.

non-inflationary reputation that the PBC has thus acquired over the past one and a half decades, it may be the right time to think over the establishment of an inflation targeting framework for China.

## 7 CONCLUSION

This study looked at China's monetary policy set-up from 1994 to 2008. As a start, the analysis explored the Chinese financial sector and the institutional arrangements of the People's Bank of China (PBC) and its position and role therein as the central bank of China. The author found that China's monetary policy aims to reach two final targets: a paramount economic target (i.e. price stability) and a less important political target (i.e. economic growth). The main actor of monetary policy is the PBC, which operates under the circumstances of a non-independent central bank. This is manifested in the State Council's approval right for the goals of monetary policy, in the very limited instrument independence of the PBC, which means that interest rates cannot be set at the central bank's discretion, and in the insufficient personal independence of its actors, which makes it impossible to insulate central bank officials from political influence.

Monetary policy in China applies two sets of monetary policy instruments: (i) instruments of the PBC; and (ii) non-central bank policy instruments. The instruments of the PBC include price-based indirect and quantity-based direct instruments. Non-central bank policy instruments include price and wage controls. The simultaneous usage of all these instruments leads to various distortions that ultimately prevent the interest rate channel of monetary transmission from functioning. Moreover, the strong influences of quantity-based direct instruments and non-central bank policy instruments bring into question the approach of indirect monetary policy in general. Still, monetary policy in China, for the period between 1994 and 2008, by and large achieved its two main final targets of price stability and economic growth.

The financial sector in China and with it the monetary policy operations have come a long way since the start of the reform period in the late 1970s and early 1980s. Step by step, the PBC has evolved from a planned economy style mono- or unibank to a central bank within a two-tier banking system, where central and commercial banking roles and activities are clearly split. By 1984, the PBC was freed from its commercial activities and four major state-owned commercial banks – the “Big Four” – were created to resume the commercial tasks previously under the responsibility of the PBC. The modern financial sector was largely established following the “Mishkin framework”, based on Frederic S. Mishkin's book “The Economics of Money, Banking and Financial Markets”, which itself is largely influenced by the United States Federal Reserve System. This can be simply, but most visually recognized in the 1998 effort to break the links between local politics and the central bank functions and the establishment of nine trans-provincial PBC branches in 1998 instead of the then 31 existing provincial branches.

China's economic reforms, initiated by Deng Xiaoping in 1978, followed a sequenced approach characterized by a mentality of trial and error. This was once described by Deng when he reportedly mentioned that in its modernization program China would be "crossing the river by feeling the stones." By and large, the authorities followed a gradual transition towards a market economy, rather than choosing the "Big Bang" approach of economic reforms. In the initial years reforms were targeted to the agricultural sector and the rural economy, with the industrial reforms following during the latter part of the 1980s. This focused on the development of the then rapidly emerging Township and Village Enterprises, the opening-up of the economy to and for foreign trade, as well as financial sector reforms.

Financial sector reforms are a good example of the detailed and sequenced approach applied. As was seen in this analysis, foreign institutions on the Chinese financial market were allowed only in 2006 as part of the WTO commitments and after the domestic market infrastructure with domestic regulations and financial institutions had been developed. Likewise, the PBC's grip over its so-called benchmark interest rates – of which the PBC administers two kinds – was reformed step by step. Since the start of "market-based interest rate reform" in 1993, the PBC lending rate has given commercial banks ever-increasing degrees in setting their interest rates autonomously around the benchmark rate with a significant widening of the freedom in 2004. But interest rate liberalization did neither start nor end with reforming the PBC benchmarking rates. In fact, the "market-based interest rate reform" embarked on a comprehensive undertaking and addressed a whole variety of measures: i) interest rates in the inter-bank markets; (ii) the issuing rate of treasury bonds and policy financial bonds; (iii) the interest rate on foreign currency loans and large-value foreign currency deposits; (iv) and interest rates on long-term large-value RMB negotiated deposits (Box 1).

Still, a fully market-based financial system with competition among its actors is yet to be established, leaving the implementation of the "Mishkin framework" largely incomplete. Section 2.3.1 found that low competition in the banking system with a clear dominance of the "Big Four" commercial banks, non-market conform lending practices in the form of policy lending, and a still not fully resolved issue of NPLs pose several challenges to the conduct of monetary policy in China. In fact, the "Big Four" are able to influence monetary policy operation when it suits their interests; for instance they can monopolize open market operations and thereby manipulate the money market interest rates in a way not intended by the PBC. Likewise, the practice of policy lending undermines the effectiveness of the market-based indirect monetary policy approach as does the simultaneous usage of quantity-based and price-based monetary policy instruments, which hinders the interest rate channel of monetary transmission to function. Eventually, high ratios of NPLs threaten the solvency of the financial

system at large and pose a threat to the central bank to come into the position to fulfil its lender-of-last resort function or give rise to central bank financed government bail-outs, both of which could mean potential loss of monetary control.

Non-bank financial institutions (NBFIs) and within it the Trust and Investment Companies (TICs) and Asset Management Companies (AMCs) were largely seen as suitable vehicles to address some of these pressing challenges. While TICs were introduced early in the reform process to increase competition and foster the distinction between commercial and investment banking activities, AMCs followed in 1999 with the task to solve the NPL problems in the banking system and particularly of the “Big Four”. But the review of the performance of TICs and AMCs as the most prominent examples of non-bank financial institutions in China showed a mixed performance of both groups over the past decades of reform. TICs were widely used by commercial banks and provincial governments to circumvent central government regulations to channel foreign investments following their own interests. Hasty investments by foreign investors misled by the believe of central government guarantees led to excessive, sometimes deadly exposure to foreign exchange and other risks, which had to be partly bailed out by the government. Today, TICs are acting as trust companies and are relatively insignificant. AMCs were introduced to solve the problem of NPLs in China, but recovery rates were and are low; financing for the operations is fragile and largely covered by central bank credit. Given these records, NBFIs did not live up to the expectations. In fact, their operations and performances are too closely linked to the commercial banking system to be able to change the systemic dynamics at large. In this case again, the PBC’s ultimate promise of being the lender-of-last resort and financier of government bail-outs for NBFIs is bad news to a long-term and price-stability oriented monetary policy approach.

The situation of an unsound banking system with a de facto monopoly of the state-owned commercial banks (SOCBs) also has major impacts on the financial transmission process in the economy: Through their huge position in the system, the risk averse SOCBs distort risk assessments in the system at large, undermining the effectiveness of the central bank’s policy. Likewise, SOCBs often monopolize open market operations and can manipulate the money market interest rates with their power. Eventually, due to their standing the SOCBs can effectively lobby the government to influence financial and banking related decisions that affect their own business operations. Much more, the commercial banks are represented in the Monetary Policy Committee of the PBC, which advises the PBC in financial and monetary policy related issues. These effects are further fostered by an insufficient degree of central bank independence, which leaves the PBC and its policies vulnerable to political influences.

## **7.1 Central bank legislation**

Chapter 3 showed that China's central bank, the People's Bank of China is a non-independent central bank. The analysis found that the PBC and its senior decision makers do neither possess goal, nor instrument, nor personal independence in their monetary operations. The qualitative result of this study is confirmed through a recent central bank independence ranking. Ahsan et al. (2007) find in their study of 36 central banks in the Asia and Pacific region that China ranks number 16, just behind India (15) and Sri Lanka (14). The ranking is topped by Australia.

Using the European Central Bank (ECB) as benchmark and assuming that the ECB is an almost completely independent central bank – while the above analysis revealed that the PBC is nearly completely dependent – the question arises, if the PBC at all is able to carry out successful monetary policy that is aimed at price stability. But things do not look that bleak in China. Inflation rates in fact have been relatively low over the past two decades, particularly at the backdrop of a very fast growing economy of 10.5 per cent (real GDP growth) on average between 1990 and 2008. In fact, political decision makers in China show a low inflation bias, something that can be traced back to the *inflation-cum-instability* periods of the second half of the 1940s (Burdekin et al., 2001: 4) and the time around the student protests of 1989, where rising unemployment and high inflation rates triggered social unrest. As a result the Chinese authorities in the 1990s achieved to establish low inflation pro-growth monetary conditions through the introduction and utilization of a non-orthodox mix of monetary policy instruments. But with an ever more marketized economy the authorities cannot rely on these instruments forever. Under these circumstances a move towards more central bank independence would be an important factor to ensure monetary stability over the long term. Three main and immediate recommendations should be considered:

*First*, the PBC needs to be brought into the position to be independent in the decisions on its instruments, a necessity already stressed by Goodfriend et al. (2006). They argue rightly that “operational independence is necessary because the PBC must have the authority to move its policy instruments aggressively on short notice without permission from other government Agencies” (Goodfriend et al., 2006: 26). At the same time, instrument independence should not be seen as a standalone prerequisite, but should be complemented by “strategic guidance from the government”. “Strategic guidance” is a way for the government to support the PBC's operational (i.e. instrument) independence, thereby allowing the central bank to conduct its monetary policy and defend its long-term goal of price-stability even in difficult times and when unpopular actions may be required (Goodfriend et al., 2006: 26). Strategic guidance, in the author's view, is necessary, but can only be successful when it is based and

framed within a strong central bank law defining both the roles of the PBC and the responsibilities of the government.

*Second*, the decision-making process needs to be properly diversified and personal independence of the decision makers has to be strengthened through increasing the terms of office for the governor from 5 years to 10 years. Much more, strict rules should be established that prevent the central bank governor from pursuing other government positions. Reaching out to non-political candidates does not only minimize potential conflicts of interest, but would almost certainly lead to a broader base of candidates for the top position in the central bank.

*Finally*, a higher degree of central bank independence needs to go hand in hand with more transparency and accountability of central bank operations. Independence without accountability would surely not be able to fully deliver the promising results of more independent monetary policy frameworks. Public hearings, suggested by Goodfriend et al. (2006), may indeed serve as a good means to increase accountability and to provide a forum for the government to voice its guidance, if properly instituted and enshrined into the scope of the central bank law.

## **7.2 Internal strategy**

From a domestic monetary policy perspective, the analysis has two key findings. *First*, the PBC's intermediate targets of monetary aggregates and domestic loan increase have been missed frequently. *Second*, the final target of inflation control and the establishment of price stability could nevertheless be reached alongside persistent high GDP growth. Admittedly, for economic growth there are a few caveats to this assessment. Pro-growth monetary conditions with low real interest rates, expansive money supply, and high rates of increase of domestic loans have induced vigorous growth, which has taken its tolls. On the one hand disparities of growth and wealth have risen across the nation. On the other hand boom and bust developments on the stock and on the real estate markets mean and have meant heavy burdens for investors and home-owners alike. Still, the final targets of monetary policy by and large were reached between 1994 and 2008. This overall good achievement has been the product of the application of the heterodox mixture of monetary policy instruments in China since 1994. This mix is characterized by the simultaneous application of instruments of the central bank (categorized into price-based indirect and quantity-based direct instruments) and non-central bank policy instruments.



### 7.2.1 Reforming monetary policy instruments

Mainly *wage level controls* helped to fight inflation in the mid-1990s. A decade later, however, wage increases due to labour shortages in certain regions have threatened to undermine the low inflation wage set-up. As the marketization of the Chinese economy proceeds, a way back to the strong wage regime of the mid-1990s is unfeasible. On the bright side, further liberalization of the labour market may have an easing effect on wages, e.g. loosening barriers for migrant workers would enable better interregional exchanges of the workforce. *Price controls* have been actively used throughout the past decades. Based on data from 2001, it was estimated that between 15 and 20 per cent of the consumer price index could be influenced. However, pursuing price controls has significant dangers that merit caution. Price controls prevent the automatic stabilizer of rising prices from coming into play. Thus, in the long run and on the way towards a fully marketized economy, the authorities need to become less dependent on the tool, which is a process that finally should lead to the suspension of the tool.

The instrument of *window guidance* has been introduced in 1998. It came into its prominent role in the fight of the 2003/04 expansionary economic cycle and in the subsequent high-growth years of 2005 and 2006. Ever since, window guidance is the main monetary policy instrument available. But an intriguing shift in reporting took place, later reversed, during summer 2007 (Section 5.1.2.1). The authorities held a meeting in September with the aim of analyzing the then current economic and financial situation, a meeting that somehow resembled the scope of window guidance meetings. Yet, the PBC did not classify this third meeting in 2007 as a window guidance meeting and since then has not referred back to window guidance. This probably reflected the discussion around and the problems associated with the utilization of non market-based monetary policy instruments. The guidance of credits through other than the profitability criteria tends to lead to misallocation of funds, and thus, to efficiency losses and macroeconomic distortions. While, for instance, window guidance plays a crucial role in the current policy set-up that seems to be relatively effective; in the long run, window guidance needs to be substituted by a comprehensive usage of fully price-based monetary instruments. Simply stopping the reference to window guidance, while continuing doing business as usual, will certainly not suffice. Realizing this, the authorities apparently reversed their stance vis-à-vis window guidance and started to use the terminology again in the wake of fighting the financial and economic crisis in 2009 and 2010. The longer term issue remains of course, i.e. to find a time to fade out and truly substitute window guidance with price-based instruments.

At the same time, the current *price-based monetary policy instruments* need to be strengthened to support this transition. Interest rate liberalization has yet to be fully achieved with up to 30 types of administrative controls still in existence today on interest rates. Of these, commercial banks yet have to be granted the right to freely set their interest rates, based purely on their risk-based analysis of lending projects. To this end, a pressing issue is to fully abolish all limits on setting the interest rates for commercial banking activities across all types of financial institutions. Additionally, the role of the instrument of reserve requirements needs to be rethought. While this is an effective tool to support the general stance of monetary policy – and currently for absorbing foreign exchange inflows into China – reserve requirements are not well-suited for fine-tuning operations. Still, the frequency of its deployment, a total of 18 recorded adjustments in 2007 and 2008, shows clearly that the authorities in China try to utilize the reserve requirements for fine-tuning of monetary policy. A second issue in the reserve requirements comes from the fact that both required and excess reserves are interest bearing. Over the period under consideration and particularly through the 1990s, at times, the interest paid on the excess reserves was so high that the dominant strategy for a bank was to hold reserves at the central bank instead of granting a (more risky) loan to an enterprise. Acknowledging this problem, the PBC argued in favour of the interest-bearing component for excess reserves as it would constitute the lower limit for the money market rate; but this was not the case, as this analysis showed. Nowadays, interest rates on excess reserves are very low so that there seems to be no danger of distorting the lending behaviour of banks. Still, to show that authorities react to lessons of past experiences if needed, and to be prepared for a time of higher interests in the future, a departure from the current practice of paying interest on excess reserves is indeed needed. As for the constitution of the lower limit of the money market rate, in an environment where interest rates are fully liberalized the PBC lending rate for overnight operations (standing facility) could take on this role.

This study shows that the simultaneous usage of two sets of instruments leads to various distortions that ultimately prevent the interest rate channel of monetary transmission from functioning. In fact, in the current set-up, the interest rate has to be considered as a supportive monetary instrument rather than the leading one. For instance, observers argued repeatedly that the fear of capital inflows was the main reason for the late interest rate moves of the authorities. While such considerations certainly play a role, the main reason for not moving the interest rate needs to be attributed to the fact that interest rates are just not as effective as administrative and quantity-based measurements. In a way, there is a vicious circle prevalent in the usage of price- and quantity-based instruments. The full effect of price-based instruments can only come into play when there are no quantity-based influences involved. But as long as price-based instruments alone cannot deliver the desired effects of inflation control,

the authorities still have to rely on quantity-based measures. There is no doubt that the overall strategy of a gradual transition of the Chinese economy and its financial system with the employment of a heterodox policy mix was one of the success factors for China's recent rapid development. However, given the achievements made, to reach another level of (institutional) development and to overcome the distortions faced by the price-based monetary policy instruments of the PBC, a sudden change with the suspension of all quantity-based instruments will be necessary in the future. Only then, price-based monetary instruments can come into full play, and the set-up of a monetary strategy anchored around indirect price-based instruments, as officially introduced in 1998, can be successful.

### **7.2.2 Refining the monetary policy approach**

The PBC officially follows the policy approach of monetary targeting with the definition of monetary aggregates as intermediate targets. This study revealed that the actual PBC reaction did not follow the actions prescribed by the monetary targeting approach in four out of seven phases identified between 1994 and 2008 (Table 25). This comes at the background of significant problems in controlling monetary aggregates: The PBC missed the vast majority of its targets between 1994 and 2008. At the same time there is a close relationship between the developments in monetary aggregates and the inflation rate. This close relationship makes monetary aggregates an important measure for any set of indicators used to assess and forecast the inflationary outlook in China. It is often argued that the exchange rate peg does not allow the authorities to set interest rates consistent to a domestically oriented monetary policy stance. It is true that the exchange rate peg creates challenges to the PBC, foremost to absorb excess liquidity. However, China did not only maintain and still maintains capital controls, but it also successfully sterilized foreign exchange market interventions to successfully absorb the incoming liquidity associated with the peg up to 2008. The main reason for not utilizing the interest rates, as would have been normally indicated, lies in the fact that the interest rate still plays a minor role in Chinese monetary policy.

The PBC also pursues domestic loan targeting as part of its operational guidance. To do this domestic loans are defined as a monetary policy intermediate target in China since 1998. Prior to that domestic loans targets were embedded into the credit plan system; consistent targets are available for the time from 1998 through 2006, the PBC did not announce target values in 2007 and 2008 (Table 26). The study showed that the controlling of domestic loan growth and particularly the fine-tuning of the rate of increase represents a significant challenge for the authorities. But domestic loan increases have a particularly pronounced relationship with the inflation rate. This manifests itself in a "neutral stance" of 10 to 15 per cent, which leads to an inflation rate of 1 to 3 per cent. The relationship is most significant with a

time-lag of 10 months (Table 27). And indeed most target increases for domestic loans set by the central bank are within this 10 to 15 per cent bandwidth. As such, domestic loans and their development are indispensable measures for any set of indicators used to assess and forecast the inflationary outlook in China.

Despite the prominence of monetary aggregates and domestic loans in the Chinese policy approach, the authorities do not link them together in a coherent strategy. For example, it is not clear what role each measure plays for the decision-making on monetary policy. In fact, two intermediate targets do not make a monetary policy strategy, let alone a transparent one. That is why this study explored additional “simple rules” – which serve as policy frameworks in theory and practice – and their influence on monetary policy formulation in China. Searching for a way to describe monetary policy in China, the work considered nominal GDP targeting, the Taylor rule and inflation targeting. Section 6.4.1 compared monetary targets derived from the McCallum rule with the actual monetary targets in China. Putting the target values into perspective of the actual monetary aggregate growth and the inflation rate showed that over much of the period the McCallum rule was able – ex post – to indicate inflationary pressures in the economy. The review of recent literature also showed that nominal GDP targeting could be used to serve as a forward-looking guide for China’s monetary policy, but preferably within a broader set of indicators to forecast inflationary pressures in the economy.

Section 6.4.2 looked into the Taylor rule and a possibility to apply and use its logic as a guide for monetary policy in China. To start with, the work calculated the Taylor rate following the original rule proposed by Taylor in 1993 (Table 33). By comparing this to the PBC lending rate and the 7-day money market rate, the analysis did not find a close relationship between the Taylor prescribed rate and the interest rates. The study concluded that the original Taylor rule, calculated for the period 1994 to 2008, does not serve as a good indicator to explain monetary policy reaction from an ex-post perspective; it may, however, be used as a “reference value” to judge the overall monetary policy stance in China within a broader set of indicators. Accounting for the influence of quantity-based monetary policy instruments and the prominence of domestic loan growth as intermediate target, this work developed a credit-augmented Taylor rule, which does not only consider an inflation and output gap, but also a credit gap. It was shown that this credit-augmented Taylor rule does not fit much better than the original version in describing monetary policy reactions of the PBC from an ex-post view. The credit-augmented version, however, is better suited than the original Taylor rule as a forward-looking guide of the monetary policy stance in China. As such, like in the case of the McCallum rule (nominal GDP targeting), the credit-augmented Taylor rule should be used within a broader set of indicators to judge future inflation in China.

As a third approach inflation targeting was analyzed in the last section of chapter 6. It was found that inflation targeting was not pursued as a monetary policy approach of the PBC. At the same time, it is argued that the authorities have ways to influence inflation expectations even though interest rate decisions do not send the strong signals usually needed to keep expectations low. Instead, the authorities revert back to more direct mechanisms such as price controls, which send strong signals of exercising policy to the public at large. Section 6.4.3 then argued that the time is right to start implementing an inflation targeting framework. To support such a policy change, the relative weight of measures to influence inflation expectations would need to be changed over time away from utilizing quantity-based and non-central bank monetary policy instruments to a broader focus on price-based instruments. Much more, recent developments and the ability of the authorities to rein three inflationary cycles over the last one and a half decades have made the PBC a very credible central bank in terms of fighting inflation. Considering this non-inflationary reputation that the PBC has acquired since the mid-1990s, it is indeed the right time to think over the establishment of an inflation targeting framework for China. But any such consideration needs to be initiated and supported by a selection of key reforms to strengthen the present central bank operations.

To establish inflation expectations as an intermediate target of PBC monetary policy, the institutional framework for the public to form inflation expectations needs to be strengthened. The PBC needs to start publishing medium-term inflation forecasts. Other private and public institutions as well as academia and think tanks have to be enabled and mandated to publish independent views on the future inflation outlook. At the same time, short-term inflation forecasts and inflation targets need to be de-politized and reproducible based on economic considerations. This study showed that four particular measures could make a well-balanced contribution in any such set of monetary indicators. It is recommended for the PBC to look at and publish the analysis of the combination of monetary aggregates, domestic loan increases, nominal GDP targets and the credit-augmented Taylor rule. In parallel, the notion of pursuing monetary targeting, which in fact is not done in practice, should be faded out and replaced by official acknowledgements of inflation targeting. Transparency and independence of the central bank in conducting monetary policy are hallmarks of the inflation targeting approach. Transparent production of inflation forecasts would be a first step for a transition, but more is needed. Deliberations of the Monetary Policy Committee would need to be fully disclosed, too, and the role of the committee as a decision-making body strengthened. At the moment, the PBC cannot set its monetary policy stance autonomously, so that the Monetary Policy Committee can only function as an advisory body. But the PBC needs instrument independence to act efficiently in an inflation targeting approach, and the role of the monetary policy committee, after reviewing the membership structure of the committee, would then be

decision-making rather than advisory. In the transition, the PBC needs to be brought into the position to coordinate any price controls aimed at influencing inflation expectations – until their full abolishment.

### **7.3 External strategy**

The exchange rate regime was a critical factor in China's unique policy mix, which not only allowed to realize high economic growth rates, but also to keep the inflation rate relatively low. The pegged exchange rate established in 1994 served as nominal anchor in China with significant contributions to the achievement of domestic price stability. Since the mid-2000s, however, rising capital inflows into China have triggered doubts over the extent that the exchange rate regime helps to keep inflation rates under control in China. Rising inflows have had to be absorbed by the authorities and foreign exchange reserves skyrocket (Figure 7); sterilizing capital inflows became a major operation for the PBC. In fact, many scholars believe that since the mid-2000s the exchange rate regime has not anymore been a factor to keep inflation under control, but a critical contributor to jeopardizing the internal equilibrium with rising inflation and the build-up of stock market and housing bubbles. The inability to sterilize foreign exchange inflows, so the argument goes, led to a loss of independence in the conduct of monetary policy. Others do not subscribe to this view. This study confirmed their views and found that the authorities indeed were in the position to fully sterilize foreign exchange inflows between 2002 and 2008 (Table 28). Much more, there is no reason to believe that sterilization measures may not work in the near future. This assessment comes from the relatively low sterilization cost paired with available measures to incite commercial banks to buy and accept the PBC sterilization instruments.

Still, pressure is on for rethinking the exchange rate peg to increase flexibility in order to adjust to both external and internal shocks and to respond to international demands. The potentially positive contributions of more flexibility are also reinforced by recent research on the effects of RMB appreciation for inflation control through the concept of exchange rate pass through (EPRT). For instance, recent studies found that a 10 per cent appreciation of the nominal effective exchange rate would slow CPI inflation by 1.1 per cent within one year and by 2.0 per cent over a period of two years. This means that the 20 per cent appreciation between July 2005 and December 2008 likely helped significantly to keep the then relatively high inflation rates at the levels of 4.8 per cent and 5.9 per cent in 2007 and 2008.

Following the recommendation to introduce the inflation targeting approach would have significant implications for the PBC's external monetary policy strategy. Inflation targeting based on transparent and independent policy operations can serve as a strong nominal anchor for

monetary policy. Capitalizing on the reputation in fighting inflation between 1994 and 2008, the introduction of inflation targeting would thus very likely produce a policy set-up clearly anchored to achieve price-stability. In that case, the PBC could afford to abolish its long-term nominal anchor of the exchange rate target through more flexibility in the exchange rate. To this end, the call is on for fully re-establishing the crawling peg arrangement similar to the ones used between 1994 and 1996 as well as 2005 and 2008 (the exchange rate was de facto pegged again in October 2008 until June 2010<sup>90</sup>), rather than a fully free-floating arrangement. The financial and economic crisis showed yet again that China was served well by the limited convertibility on the capital account and the peg arrangement in place in 2008, which insulated the economy from the financial turmoil (but not from the economic crisis unfolding thereafter). Yet an again more actively used crawling peg arrangement could bring with it many advantages such as increasing the potential to address inflationary shocks through a managed appreciation to fight inflation (in the unlikely event that this may be needed notwithstanding the inflation targeting approach then in place). If the actively used crawling peg were to lead to more appreciation of the Renminbi vis-à-vis the US Dollar, China's foreign exchange inflows should also slow down thereby removing sterilization pressures on the PBC. An appreciation would also fend off the notion of China manipulating its currency for exports, and it could eventually help to refocus the economy away from the export-led growth model towards an economy more reliant on domestic demand.

In the longer run – with the completed liberalization of interest rates across all types and maturities, the switch away from quantity-based monetary policy instruments, and the transition towards a fully marketized financial system – further reforms in the exchange rate regime may be introduced, including the abolishment of capital controls. These would preferably come within an international financial framework where the Renminbi serves as an adequate partner to the Euro, the US Dollar and the Japanese Yen, designed to prevent future financial crises in an international financial system based on symmetric intervention responsibilities across all its members.

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<sup>90</sup> The exchange rate was allowed more flexibility again starting July 2010, but the pace of appreciation was slow compared to the time of the actively used crawling peg from 2005 to 2008: currency appreciation in the six remaining months of 2010 only reached 2.5 percent.

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