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Monetary Policy in China (1994-2004): Targets, Instruments and their Effectiveness

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W. E. P.

Würzburg Economic Papers

No. 68

**Monetary Policy in China (1994-2004):
Targets, Instruments and their
Effectiveness**

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April 2006

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**Monetary Policy in China (1994-2004):
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*Michael Geiger**

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**Monetary Policy in China (1994-2004):
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Michael Geiger¹

Abstract

China's monetary policy disposes of two sets of monetary policy instruments: Instruments of the central bank, the People's Bank of China (PBC) and non-monetary policy instruments. Additionally, the PBC's instruments include price-based indirect and quantity-based direct instruments. The simultaneous usage of 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-monetary policy instruments question the approach of indirect monetary policy in general.

1 Preface

The analysis argues that the monetary policy in China in the last decade not only was conducted and influenced by the People's Bank of China (PBC), the Chinese central bank, but also by other authorities, mainly the central government. The PBC is neither goal, nor instrument independent. I.e. the PBC can neither set its final targets, nor its instruments without approval of the state council. Moreover, non-monetary 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.

Thus the description of the instruments of monetary policy in China incorporates both the instruments of the central bank and other non-monetary instruments. The instruments of the central bank are divided into two parts: Price-based and quantity-based monetary policy instruments. While the major Chinese particularities of the price-based instruments are described shortly, the main focus is on the quantity-based and non-monetary policy instruments.

The centrepiece of the work is the analysis of the effectiveness of the monetary policy in China. It is dedicated to the explanation of the interdependency and the interaction between the three types of instruments, the:

- Central bank's price-based instruments,
- Central bank's quantity-based instruments, and
- Non-monetary and non-central bank instruments.

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 grad-

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ual 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-monetary instruments that particularly helped to reach price stability throughout the decade.

2 Targets of the monetary policy in China

2.1 Intermediate targets

After 1985, along with the quiet transformation of the People's Bank of China into a central bank within a two-tier banking system and the starting transformation of the credit plan towards more market-related measurements, 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 have 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 und 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. Nowadays, after the abolishment of the credit plan as the major instrument in monetary policy in 1998, monetary base targeting and the usage of M1 and M2 as the intermediate targets for the monetary policy of the PBC is commonly accepted. Money supply is the most important monetary figure for the conduct of monetary policy under the rule of the People's Bank of China (Xia et al., 2001: 35; and Xie, 2004a: 2; Yu, 2001). Through its strong emphasis on monetary aggregate M2 the PBC indicates in its series of monetary policy reports and other publications on its webpage² that M2 represents the main intermediate target of its policy concept. Additionally, domestic loan increase serves as an intermediate target (Xie, 2004a; and Yu, 2001)

According to Bofinger (2001) 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 at the same time to be eligible to serve as intermediate target in the concept of monetary targeting. Chapter 4 analysis the effectiveness of the Chinese monetary policy, and deals with the question whether these two prerequisites can justify the usage of monetary aggregates and domestic loan increase to serve as intermediate targets in China. There it will be shown that a satisfactory relationship between monetary aggregate M2 and domestic loan increase with the inflation rate exists, but no full controllability of the intermediate targets is identifiable.

² Chinese: www.pbc.gov.cn/xinwen/; and English: www.pbc.gov.cn/english/xinwen/.

2.2 Final targets

The final targets of the PBC 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” (N.A., 1995; N.A., 2003). 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. (1996) interpret this as the insight of Chinese officials that long-term economic growth only can 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., 1996: 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 but only the first target. Only if the target of price stability is reached, he concluded, the central bank would help to pursue other targets, e.g. the promotion of economic growth.³ However, 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 banks’ decision process is not sufficiently independent from the State Council’s directive.⁴ And governments rather have an economic growth bias than a low-inflation bias.⁵ Thus, the interpretation of Mehran et al. (1996) can 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, a paramount economical target and a less important political target.

Additionally, between 1997 and 2005, China maintained a *de facto* peg of the RMB to the USD. According to Anderson (2003) the peg needed to have the add-on of *de facto* or *quasi*, since the official regulation allows 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. With predominating higher trading bands between 1994 and 1996 the crawling peg arrangement was literally used and the RMB showed an 18 months appreciation path from 8.7 RMB per USD in 1994 to 8.3 RMB per USD in 1996. Facing the outbreak of the Asian crises the

³ Interview with Mr. Huang, Secretary of the Monetary Policy Committee of the PBC on June 8, 2004.

⁴ 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” (N.A., 1995).

⁵ E.g. facing rising unemployment problems and sluggish growth in recent years European leaders repeatedly asked the ECB to lower interest rates. On February 27, 2004 the German speaking newspaper “Die Welt” headlines “Schroeder and Raffarin call for an ECB interest rate cut [own translation]”.

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 July 21, 2005. The RMB was not completely fixed, but the trading band was very narrow. However, the strictness of the *de facto* exchange rate peg to the USD leads to the conclusion that the *de facto* peg served as a final target of Chinese monetary policy.

The new exchange rate system introduced on July 21, 2005 does not lead to a different assessment. The main changes of the move were an immediate appreciation of the RMB against the USD of around 2 per cent, the change from a peg versus the USD solely towards a peg against a basket of currencies, and the reversion to the crawling peg system where 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). However, the first month of the new exchange rate regime showed that the scope of the trading band was not used at all. In fact, it appeared that the Chinese authorities revalued the exchange rate as a one-time effect without increasing flexibility. Governor Zhou Xiaochuan of the PBC made clear that that the expectation of more flexibility was a misinterpretation made mainly by foreign scholars (PBC, 2005b).

To sum up, one can conclude that since 1994 the Chinese monetary policy has three final targets:

- An inflation target,
- An economic growth target, and
- An exchange rate target vis-à-vis the USD.

2.3 Other tasks and targets

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). Beside those tasks the PBC has to pursue 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 2004,⁶ the PBC is responsible to maintain the profitability of the commercial banks (CB) within the Chinese financial system. This task results out of the fact that the interest rate liberalisation 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

⁶ Joint China-IMF Training Program, *High Level Seminar on China's Monetary Policy Transmission Mechanism*, April 12-13, 2004, Beijing.

funds at rates below the 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 of 90 per cent of the benchmark rate applies (PBC, 2004g). Those mixes of liberalised and non-liberalised areas make it increasingly difficult to manage the interdependent measures in a consistent and effective way.

3 Monetary policy instruments in China

The PBC classifies its present set of monetary policy instruments into four categories (Xie, 2004a: 19):⁷

1. Instruments with ratios, e.g. reserve requirements,
2. Instruments with interest rates, e.g. central bank lending rates,
3. Quantitative instruments, e.g. open market operations (OMO), and
4. Other instruments, e.g. central bank bills.

The classification used in this work somewhat differs from the four categories. First, two main categories of central bank instruments are distinguished: Price-based and quantity-based instruments. Second, all four above mentioned categories are subsumed under the category of price-based instruments.

Certainly, open market operations (OMO) are originally designed to control the monetary base and therefore could be counted as a quantity-based instrument. 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 no exception to this. For instance, the PBC carried out 24 repurchase operations (“repos”) in 2001.⁸ In 19 operations quantity tenders with a fixed interest rate were used. In the same year, in 26 reverse repos, solely quantity tenders with fixed interest rates were operated.⁹

Quantity-based instruments are those 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 they leverage on the quantity of capital and not on its price.

⁷ Xie also mentioned that the PBC introduced and tested 14 monetary policy instruments since 1983.

⁸ According to own calculations, based on data published on www.chinabond.com.cn

⁹ The ratio of fixed interest rate tenders diminished in recent years due to the emergence of central bank bills to sterilise exchange rate inflows. To sterilise certain amounts of money the focus is on the quantity rather than the interest rates. Still, the interest rate on the money market showed a rather stable course.

As a third kind of instruments price and wage controls as non-monetary instruments will be highlighted. Non-monetary instruments influence the final targets of the monetary policy in China without being primarily monetary policy instruments.

3.1 Instruments of the People's Bank of China as the central bank of China

3.1.1 Price-based indirect instruments

Monetary policy textbooks describe the transmission of monetary impulses, among others, via the interest rate channel of monetary policy transmission (cf. Bofinger, 2001). I.e. in the case of a too expansionary monetary stance the monetary authorities would increase their primary lending rate. In a completely market-based environment the stance of the lending rate will be displayed in the inter-bank money market and via the expectations channel transformed into all different maturities. Thus, the commercial banks' refinancing costs will increase due to the increase in the primary lending rate. The higher costs of financing for the commercial banks will lead to higher interest rates for outflowing credits to third parties. Higher interest rates in turn will lead to less 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 the interest rate channel of monetary transmission is blurred. Due to the partially interest rate liberalisation, price-based instruments in China have two different underlying mechanisms of action. First, there are instruments that transform the central bank's policy stance via the interest rate channel of monetary transmission, e.g. OMOs or minimum requirements. Second, there are instruments that are (a) not yet subject of full liberalisation and thus act under the disguise of price-based instruments, e.g. PBC lending and deposit rates. Additionally, whether PBC lending functions via the traditional interest rate channel may vary (b) for each of the commercial banks depending on their underlying circumstances:

In terms of (a), only some administered interest rates can have a price-theoretical influence as certain of them are used as benchmark rates. The PBC administers two different benchmark interest rates, the benchmark lending rate, which is the one year PBC lending rate and the benchmark rate of central bank lending that is the rediscount rate. The first benchmark gives the commercial banks a certain degree in setting their interest rates according to their assessment.¹⁰ The benchmark for the central bank lending rate gives the PBC the authority

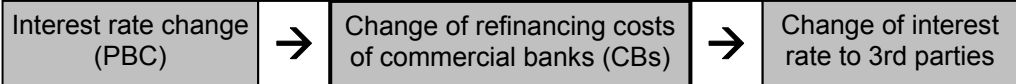
¹⁰ In the beginning of 2004 the upper limit of the lending rate for commercial banks and urban credit cooperatives was set to 170 percent of the PBC benchmark rate; the ceiling for rural credit cooperatives at 200 per cent, respectively. The lower limit of the lending rate for all financial institutions was installed at 90 per cent of the PBC's benchmark rate. In October 2004, the ceiling for commercial

to set the interest rates of certain maturities according to its assessment without necessary approval from the State Council (PBC, 2004e).

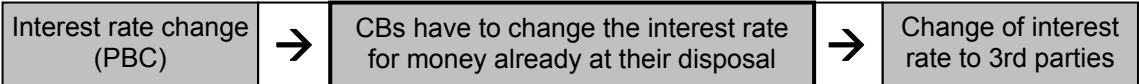
In terms of (b), the PBC lending rate has a price-theoretic influence when other instruments for financing are exhausted. Only then a commercial bank has to revert to the short-term financing instrument of the PBC lending facility as the last possibility to balance its liquidity. Thus, in this case the rate will influence the market interest rate via the costs of refinancing. For the case that a commercial bank has enough central bank funds available, e.g. through direct PBC lending, the PBC lending rate constitutes an order to the commercial bank to issue the available funds at a certain rate. In this case, the costs for financing the central bank money do not find consideration in the rate for credits to third non-bank parties.

To sum up, due to the not yet completed interest rate liberalisation there are two different ways of transmission of interest rate changes in China:

- 1. The transmission of interest rate changes according the textbook interest rate channel



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



3.1.1.1 PBC lending and deposit rates

In the case of the ECB commercial banks can use the ECB facilities, the marginal refinancing facility and the deposit facility to finance their short-term liquidity (Bofinger, 2001). They also can use funds from the money market to balance their positions. All credit businesses to non-bank third parties have to be backed-up by central bank money. If the operations expire the commercial banks have to get new funds via 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 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.

Xie (2004a) tries to show that the PBC lending and deposit rates work in a similar market-oriented way as the ECB facilities. Accordingly Xie argues that the PBC lending rate constitutes the upper limit of the money market rate since 1998 and that the lower limit of the

banks and urban credit cooperatives was abolished and the cap for rural credit cooperatives increased to 230 per cent. The lower limit for all financial institutions remained unchanged.

money market from 1998 to 2002 was defined by the interest rate on required and excess reserves (Xie, 2004a: 20).¹¹

While there is certainly progress towards a price-theoretic underpinning of monetary operations since the mid-1990s, the situation described by Xie (2004a) does not cover the whole financial system. As described above, 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 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).¹²

Indeed, the high ratios of voluntarily held excess reserves throughout the 1990s prove that there was a very high level of liquidity in the banking system. Excess reserve ratios have been well above the 10 per cent margin and just in recent years came down to 7.61 per cent in 2001; as of June 2004 they stood at 3.75 per cent (China Monetary Policy Reports, various issues; and Cheng et al., 1996). Cheng et al. explain the extensive supply of central bank money with the need to meet the ever rising credit plan in the 1980s and in the beginning of the 1990s. And still, after the abolishment of the credit plan in 1998 there are quantity-based instruments in place that prevent pure price-theoretic mechanisms to work.

But, if this is true, where does all the central bank money come from? The relatively high amount of central bank money permanently being in the financial system to a great extent came and still comes from long-term central bank loans that are subject to rather low interest rates without a link to the predominant monetary policy stance. Thus, 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 central bank money. The total amount of outstanding central bank lending was over 200 billion USD in 2002, which was about 9 per cent of the monetary aggregate M2 (Xie, 2004a: 20f.).

3.1.1.2 Discount and rediscount rate

Before 1998 the discount and rediscount rates were set within a floating range of 5 per cent to 10 per cent below the commercial banks' loan and PBC lending rates respectively. Since 1998, the rediscount rate was 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 central bank lending rates within a floating range around the rediscount rate without prior approval of the State Council. However, the turnover

¹¹ In fact, however, the money market rate was constantly below the interest rates on the reserves for the time from 1996 to 1999.

¹² The add-on problem that huge parts of credits are not negotiated according to project risks is not subject of this analysis.

of operations within the rediscount instrument itself is too small to have any 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.).

3.1.1.3 Reserve requirements

The PBC introduced minimum reserve requirements in the year 1984 in order to control the financial sectors liquidity. At first, the officials set different reserve obligations for the different deposits with regard to their origin and the institution actual holding the reserves.¹³ In 1985 the PBC combined all different reserve requirements and set one minimum reserve requirement at 10 per cent. But only since 1998 the instrument of the reserve requirement was more active and in a more westernised sense used.¹⁴ That year also marks the time when the PBC shift its monetary policy from direct control to more indirect control and made open market operations (OMO) the main instrument of its monetary policy. Since then, the reserve requirement ratio has undergone four major changes. In March 1998 the ratio was cut from 13 to 8 percent, in September 1999 it was decreased from 8 to 6 percent and in September 21, 2003 the ratio was adjusted to 7 percent for all financial institutions¹⁵ except the rural and urban credit cooperatives, which were still subject to 6 percent reserve requirement (cf. Wei, 1999: 145 f.; PBC, 2000; and PBC, 2003c).

The third rise was soon followed by a surprising fourth change of reserve ratios in April 2004, mainly aimed at dampening the expansionary Chinese economy in the 2003/2004 cycle. The PBC raised the required reserve ratio from 7 to 7.5 percent and at the same time introduced a policy of “differentiated required reserve ratio for different financial institutions” (PBC, 2004b). I.e. financial institutions with capital adequacy ratio below the 8 percent capital adequacy ratio of the Basel Accord are subject to an 8 percent required reserve ratio. For rural and urban credit cooperatives, the ratio remains at 6 percent (PBC, 2004c; and PBC, 2004d).

The Chinese reserve requirement regime has two 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 have been years where 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

¹³ 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 percent on deposits of companies, as well as 40 percent on money of urban and 25 percent of rural origin. The China Construction Bank (CCB) had a requirement of 30 percent regardless of the money's origin.

¹⁴ Excess reserves can be voluntarily hold only since 1998.

¹⁵ Such as the four big state-owned commercial banks (ABC, BOC, CCB, and 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.

the interest bearing component that it through this is able to constitute a lower limit for the money market rate (Xie, 2004a: 20). This, however, could not be constantly achieved (PBC, 2000).

Second, the financial system holds high ratios of excess reserves, as showed above. Interestingly, rural credit cooperatives (RCCs) hold the highest ratios of excess reserves amongst all financial institutions in recent years (PBC, 2004a: 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. Thus, the example of the RCCs shows clearly that that the administered command style PBC lending rates blur the price-theoretic interest rate channel of the Chinese financial system.

3.1.1.4 Open market operations (OMO)

In 1993, the PBC introduced the instrument of open market operations (OMO) 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 liberalised interest rates was not strong enough to establish well functioning OMOs. Thus, in the following years only few OMOs have been carried out and on a very low scale. Thus, the central bank decided to suspend OMOs in the year 1997.¹⁶

On May 26, 1998 the authorities officially re-introduced OMOs. Under new circumstances with a better institutional foundation, the operations were an immediate success. Ever since, OMOs represent a key instrument for the conduct of monetary policy in China.¹⁷ The following two years until mid-2000 were characterised by a constant operation of repurchase agreements to issue base money.

Since mid-2000, however, a major shift in the conduct of OMOs was recognisable: The PBC started to use repurchase agreements to withdraw base money from the financial system. This became necessary as increasing amounts of foreign exchange inflows had to be purchased with RMB to keep the *de facto* peg of the exchange rate. In turn, these foreign exchange interventions increased the amount of RMB base money. To cope with these inflows repurchase operations are one tool to withdraw these inflows.

In 2003, within the framework of open market operations, another tool to reduce the amount of RMB in the financial system was introduced: The central bank started to issue central bank bills. In 2004, the issuance of central bank bills was the major operation conducted within the OMO framework. In the 22 days with operations from January 16, 2004 to June 10,

¹⁶ Please refer to Mehran et al. for a detailed description for the early years of OMOs (Mehran et al., 1996: 47).

¹⁷ Please refer to Dai, who delivers a detailed explanation of the conduct of OMOs in China (Dai, 2003: 57).

2004 the PBC conducted 36 central bank bills operations, 1 repurchase business and 6 reverse repurchase deals (table 1).

Table 1: Open market operations in China, 4th January 2000 - 1st June 2004

Year	Total	Repos	Reverse repos	Central bank bills
2000	132	25	107	0
2001	50	24	26	0
2002	77	32	45	0
2003	73	18	6	49
2004	42	4	1	36
Total	374	103	185	85

Source: Own calculations, based on data from www.chinabond.com.cn.

3.1.2 Quantity-based direct instruments

Before the reform era, the credit plan acted as the financial framework for the state investment plan. Necessary credits to reach the given output targets have been summed-up. Since the 1980s, the instrument of the credit plan has been adjusted several times according to the new financial and economical environment. In 1996, still, the credit plan was the most important monetary policy instrument of the PBC (Mehran et al., 1996: 41f.). Only in 1998, when the credit plan was officially abolished and OMOs have been established the latter became the main monetary policy instrument in the PBC's toolbox.

Today preferential lending to certain areas and industries is still observable. Thus credit allocation in those 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 a nutshell, there still is a *quasi* credit plan in effect. However, 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. 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.

3.1.2.1 Window guidance

The PBC started to adopt the policy of "window guidance"¹⁸ in 1998. The framework for the Chinese window guidance was closely modelled according the Japanese system, which was in place for more than 40 years until its abolishment 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 consistent with national needs (N.A., 2004). A major point of the concept is the temptation to influence the market participants through words rather than strict rules. Despite the phrase

¹⁸ This is the translation of the Japanese expression. It is also known as "moral suasion" and "jawboning".

guidance, which implies a voluntarily aspect in the system, the PBC has a major influence on the lending decisions especially of the four state-owned commercial banks (Ikeya, 2002: 2ff.). A description of the attempts to curb the expansionary tendency in certain sectors, especially the real estate sector in the economic cycle 2003/2004 delivers a good way to illustrate the mechanism of window guidance. On June 5, 2003, the PBC started this guidance process with publishing a notice about "Further Strengthening the Management of Real Estate Credit Business". Following that, the PBC asked for window guidance meetings three times in the second half of 2003. In those meetings on July 18, August 11 and September 12 the PBC invited representatives of all Chinese financial institutions and 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, 2004a: 2). This was a rather strong urge to calm down the commercial banks lending for real estate businesses. 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, 2004h) have been added to the window guidance policy. Then, in monthly meetings credit guidance and information about risks were provided to the commercial banks as an outcome of the assessments (PBC, 2004i). Additionally, a large-scale window guidance meeting with all commercial banks took place on March 23, 2004, with the target to set up a credit restriction mechanism according to the commercial banks risk-control abilities and their capital adequacy (PBC, 2004h).

The reasons for 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 window guidance. However, the responsibility to provide window guidance is somehow unclear.

All of the mentioned measures have been defined for and carried out by the PBC itself. But, in April 2004 the China Banking Regulatory Commission (CBRC) and not the PBC advised 11 state-owned shareholding commercial banks¹⁹ to limit lending to certain sectors. This advice clearly is a measure 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 March 7, 2005 the CBRC stated, "in 2004, the CBRC enhanced its roles in providing window guidance and risk signaling for banks" (CBRC, 2005). However, with regards to the advice to limit lending in April 2004, the CBRC acted without

¹⁹ The 11 commercial banks account for about 10 percent of the total banking sector assets.

the approval of the PBC.²⁰ In a subsequent move to provide more transparent window guidance policy the PBC together with the CBRC and several ministries issued a joint guideline for bank lending by sector in May 2004 (Ma et al., 2004a: 3). This was a first important step since window guidance is currently one of the most actively used instruments of the PBC to pursue its monetary policy. For this, strict transparency about the authority for providing window guidance is necessary. To avoid future confusion about the central bank's influence over its instruments there is the need to install the PBC as the sole institution for the provision of window guidance.

3.1.2.2 Direct PBC lending

Direct PBC lending is an instrument in the legacy of the planned economy that is officially abolished but still appears to be present. Today's central bank lending occurs in very different ways: As indirect subsidy for rural credit co-operatives with very low lending rates to those institutions and as "lender of last resort" to bail-out financial institutions as well as lender to local governments, asset management companies and rural credit co-operatives to get rid of NPLs. The total amount of outstanding central bank lending was over 200 billion USD in 2002 (Xie, 2004a: 20f.).

3.1.2.3 Capital controls

A third instrument within the quantity-based instrument toolbox of the central bank is capital controls.²¹ However, 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 and guidance of financial flows between China and the rest of the world. The case for capital controls in China can be derived out of three 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

²⁰ Interview with Mr. Huang, Secretary of the Monetary Policy Committee of the PBC on June 8, 2004.

²¹ In fact capital controls in China are administrated by the *State Administration of Foreign Exchange* (SAFE), an institution that acts under the leadership of the PBC.

stigmatized, that hardly anyone has dared to suggest it. The unsayable words are ‘exchange controls’” (Krugman, 1998).

Second, various reports emphasise the importance of the extraordinary high Chinese savings rate in the countries' development story (cf. Worldbank, 1997: 4ff.). Based on this assessment a key concern for the Chinese authorities is to be to keep alive the peoples' confidence into the banking and financial sector. Preserving this confidence, however, becomes increasing difficult in a situation with mounting non-performing loans and significant implicit future financial burdens due to the absence of a pension scheme and ever increasing environmental destruction. Thus, for the time being a restricted capital account is favourable. A free capital account without a comprehensive reform of the financial sector is a risky operation. 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).

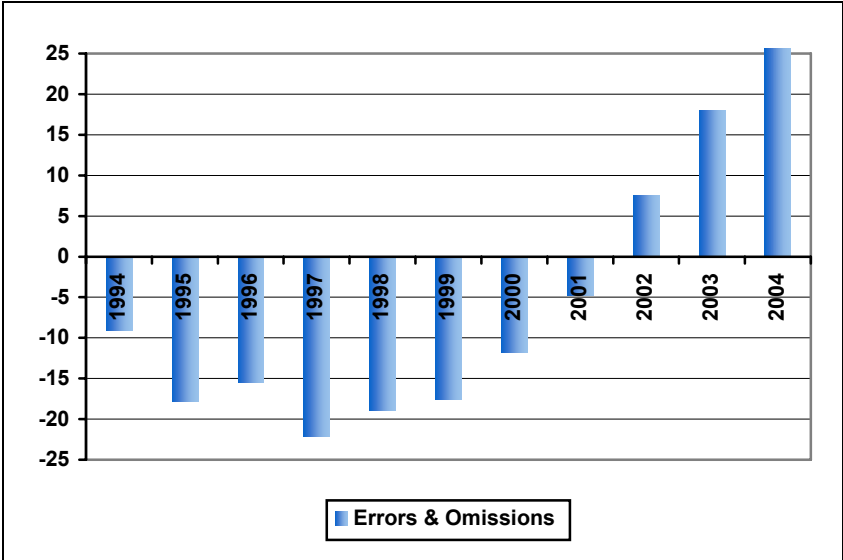
A third argument for capital controls in present China takes into account that the authorities follow a *de facto* fixed exchange rate target since the Asian crisis in 1998. Based on Padoa-Schioppa’s “inconsistency triangle” or “unholy trinity”, pursuing autonomous monetary policy in a fixed exchange 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.²² SAFE is in charge of managing and monitoring foreign exchange transactions under the capital account, including inward and outward remittance and payments. Additionally, SAFE’s responsibility is the supervision of transactions under the current account, which is fully convertible since 1996. According to SAFE’s Annual Report 2003, 50 per cent of the Chinese capital account transactions were lightly or not restricted, 30 per cent were more and 20 per cent tightly controlled. There are no exact definitions of the scopes. However, the figures show that there is no complete opaqueness of the Chinese control system, since some areas purposefully are not subject to controls. Adding to this is a certain porosity of the control system. However great efforts the

²² Thus, there are issues that SAFE is reporting to the PBC and other matters, which SAFE is directly reporting to the State Council. However, to bring SAFE’s policies in line with the PBC the head of SAFE is recruited within the vice-governors of the PBC.

Chinese authorities put into the establishment of impermeable capital controls it was never possible to set up a completely impervious system. Throughout the decade from 1994 to 2004 billions of dollars were able to cross the Chinese boarder. A good proxy for the porosity of the Chinese system of capital controls can be derived from the errors and omission figures in the Chinese balance of payments. Accordingly, around 170 billion USD of unrecognised capital in- and outflows occurred between 1994 and 2004 (figure 1).

Figure 1: Porosity of Chinese capital controls, 1994-2004 (billion USD)



Source: IMF, *International Financial Statistics*.

While the 1990s were characterised by huge amounts of capital outflows, the flows changed direction in 2002. Within the two years of 2003 and 2004 capital of over 44 billion USD came into the country. Large parts of this inflows can be accounted to rising expectations for RMB appreciation and thus constitute speculative inflows. The speculation for appreciation is also displayed by a shift in the prices for non-deliverable forward (NDF) 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 (cf. Anderson, 2003: 6; and Ma et al., 2004: 9).

The authorities decided to take a gradual approach for capital account liberalisation and, up to now achieved a certain degree of free capital account transactions. The reason for these liberalisation steps lies among others in the fact that these steps are thought to ease the net inflow of capital. According to Ma et al. (2004) the basic balance of payments became increasingly positive within the recent years. Under a fixed exchange rate, however, an increasing basic balance of payments boosts pressure on the fixed peg itself. To keep the peg at the fixed rate, the central bank has to use foreign exchange market interventions that in turn will increase the monetary base in China. The central bank has two possibilities to deal

with the problem: It can apply sterilised interventions or can try to trigger the outflow of capital via a partly liberalisation of the capital account. In 2003 and 2004, the authorities in China applied both measurements. However, Liu warns to not jeopardise the development story through an “ad-hoc and piecemeal approach to capital account liberalisation” (Liu, 2004: 15). It certainly is important to take into account the lessons learned from the Asian crisis that China survived very well. A capital account liberalization that does not consider the current problems of the financial system with its implicit future burdens is sentenced to fail.

3.2 Other non-monetary policy instruments

This chapter examines the role and the scope of two measures of the macroeconomic management toolbox in China, which are not monetary policy instruments in the traditional sense. None the less, they can have and have a certain influence on the achievement of the final targets of monetary policy. The two measures under consideration are price and wage controls. An assessment of the actual influence follows in the chapter about the effectiveness of the monetary policy.

3.2.1 Price controls

Since 1998, three kinds of prices are predominant in China (N.A., 1998a; and WTO, 2001):

- (a) *Market-regulated prices*, which are set by the market through supply and demand and are not faced with any intervention from authorities.
- (b) *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 percent.
- (c) *Government prices*, which are fixed prices set by the responsible government authorities and are unchangeable unless the approval of this authority.

There are prices that have to be set by the central government and others that can be set and controlled on 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.²³ Centrally controlled prices need the approval of the State Council and prices for the local catalogues need the approval of the government of the applicable level.²⁴ Governments below the province, autonomous region or municipality level cannot issue own

²³ 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.hebj.gov.cn.

²⁴ In fact it is not possible to distinguish the different price catalogues and show clearly which 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 contain centrally administered prices, too. Thus, the central and local governments’ price catalogues are fairly similar.

price controls. Goods, public utilities and services are only eligible when they fall in one of the categories of the following table (table 2).

Table 2: Criteria for government control of prices

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 (N.A., 1998a).

The report of the working party on the accession of China into the World Trade Organization (WTO) of October 1, 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 the classifications of government pricing and government guidance pricing (table 3). 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, 2001: 77ff.).

Table 3: Products, public utilities and services under government control

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

Source: WTO, 2001: 135ff.

As the eligible criteria show, one strong motive in favour of the introduction of price controls is the securitisation of the provision of goods and services of national importance.²⁵ For this work of importance is the question about the effect of price controls on the final targets of monetary policy, as well as whether the management of the general price level is a motivation for the listing at all. The first question will be subject to the next chapter. The answer for the latter question can be derived from the Price Law of the People's Republic of China. Article 26 of the law, which falls in the chapter "Control and Adjustment to General Price Level" states: "To stabilize the general price level is one of the major objectives of macro-economic policy." Without directly referring to price controls the law leaves no doubt that price controls are seen as one measurement of macro-economic policy to influence the general price level. And there is evidence of the government's active usage of the tool of price controls even in the post-WTO era. The recent threat of an overheating economy with growing inflation rates prompted the authorities to employ price-controlling measures more frequently again, for instance:

- The National Reform and Development Commission (NRDC) 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 applies if either the m-o-m local CPI growth reaches 1 percent or higher or y-o-y monthly local CPI reaches 4 percent or higher for three consecutive months (Wu, 2004b).
- Using a more indirect measure, the NDRC also asked local governments to set ceilings for profit rates for fertiliser wholesales, e.g. three per cent in Heilongjiang and two per cent in Hunan Province. Additionally, a 50 per cent rebate on VAT in the fertiliser industry was re-introduced. The move is aimed on raising the output of crop and thus to reduce the inflationary prices in the food sector (cf. People's Daily, 2004a; and Tan, 2004).

The recent development reminds of the call for more effective price controls during the high inflation period of 1994/1994. 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 that the lack of price controls in the market economy had a strong influence to the increasing inflation during that time. This was the begin of a discussion that ended with 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 the 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 deflation-

²⁵ It is arguable if price controls can pursue such a target at all. Please refer to Rockoff's "Price Controls" at www.econlib.org/ for a detailed discussion.

ary pressure. In 1998, for instance, 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). The results have been moderate; the deflationary environment lasted for four years. This fact might indicate the limitations of the instrument of price controls.

To sum up, the instrument of price controls in China is a comprehensive tool that is actively used during phases of price instability. While the tool certainly has the power to influence the general price level in the Chinese economy, the exact effects on the inflation rate are hardly to specify. This is, among others, due to unclear responsibilities of central and local governments and the uncertainty about the strictness of government guidance prices. As a result, the standing of the instrument within the macroeconomic management toolbox remains blurred.

3.2.2 Wage controls²⁶

Historically, in 1978, China's wage regime was characterised by a centrally regulated salary system that, among other things determined the wages according 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 1978 the wage regime has undergone three sets of reforms in 1985, 1992 and 1994/1995, respectively (Yueh, 2004). In the context of this paper, the main focus will be on the latter reforms in 1994/1995. However, a short explanation of the prior reforms helps to apprehend the 1994/1995 reform more comprehensively.²⁷

The two reforms in 1985 and 1992 had one important thing in common: They both had, in different kind and degree, any sort of indexation to the development of inflation. The 1985 reform, for instance, introduced profit-oriented factors to the existing system. Thus, the centrally planned budget for the allocation of wages became subject to regional differences in economic conditions: And the local consumer price index constituted one of these important regional factors. Then, in 1992, enterprises got more authority in setting their wages accord-

²⁶ Parts of this section were published earlier in Flassbeck et al. (2005).

²⁷ It is important to point that the issues to be discussed in the 1994/1995 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 instance, 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 have been laid-off within the state-owned sector have been subject to "xiagang", i.e. affected employees are still registered at their work unit but do not go to work and do not receive any wages.

The remarks show that any discussions of the impacts of the reforms on the price level have to be seen as potential impacts.

ing their own needs within the centrally planned budget through two possibilities: First, the degree of discretionary wage setting was connected to the economic performance of the certain enterprise. Second, the more active option, which enabled the enterprises to propose a wage budget based on their own calculations. The central authorities then had to review the proposal in terms of inflation and the context of local wages (Yueh, 2004). Thus, since both reforms incorporated an indexation of wages to the development of the consumer price index, high inflation had an impact on the wage level setting; higher wages, in turn triggered higher inflation rates. This constituted circles that easily lead to an inflationary spiral via ever-increasing inflationary expectations.²⁸

In 1994/1995, the authorities decided to undergo a wage reform that uncoupled the wage setting from the inflation rate and thus attempted to burst the circle of accelerating inflation expectations during the high inflation period of the early 1990s. The reform can be divided into a stricter rules-based (1994/1995 I) and a more blurred recommendation-based part (1994/1995 II). Companies eligible to set their wages according the rules-based component could use their discretion within the framework of two standards: First, the growth rate of the total salaries of an enterprise had to be below the growth rate of after-tax profitability. Second, the growth rate of per-capita wages ought to be less than the growth rate of labour productivity. Within the second, the recommendation-based part of the reform the “MOL [Ministry of Labour (by MG)] suggested to enterprises that wages are set not only according to occupation and rank, but also based on skills and productivity” (Yueh, 2004: 153).

Eligible companies for the 1994/1995 I reform are those companies that are publicly listed on the Shanghai or Shenzhen stock exchange. There was no distinction made between private and state ownership. However, it can be argued that private companies would welcome any productivity related discretion in their wage setting and therefore apply to set their wages according to the reform scheme. As will be shown later, a great part of the publicly listed companies were and still are subject to state control. Thus, the impact of the reform scheme heavily depends on the state's capability in enforcing its' rules.

Companies eligible for the 1994/1995 II reforms are those SOEs that underwent a partly ownership-transformation without being listing on the stock exchange (Yueh, 2004). It will be argued that the number of companies and their employees falling under the 1994/1995 II wage scheme is much higher than it is in the case of the 1994/1995 I reform.

The two reform approaches differ fundamentally in terms of the content as well as the scope of companies eligible. The second part of the reform represents a guideline, which enter-

²⁸ 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).

prises are suggested to follow rather than it stands for a strict rule. Due to data constraints the number of companies that actually follow the guideline is hardly to be figured out. Additionally, it is not clear how many employees do fall under the reform agenda at all. Thus, the next step is to assess the approximate number of employees that are subject to the reforms as well as the rough dimension of their income.

The 1994/1995 wage setting reform

Any assessment of the impact of the wage reform of the mid-1990s has to estimate the number of employees the reform can cover as well as the amount of their wage bills relative to the total Chinese wage bill.²⁹ Table 4 shows the share of the state-owned wage bill in the total Chinese wage bill from 1991 to 2001. Particular emphasis is put on the years 1995 and 2001.

Table 4: State-owned industrial enterprises and their share of the Chinese 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: Own calculations, based on 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. The relation declined along the decreasing trend of people employed in the state-owned sector in the course of the 1990s. The declining share constitutes the upper limit of the wage reform's impact: In case that the wage reform had a guiding influence on all state-owned units in the industrial sector the impact was 30.5 per cent in 1995 and 17.2 per cent in 2001. However, since the wage reform did not apply to all state-owned units, in the next step the number of the actually effected companies and their employment level has to be assessed.

²⁹ Even though the 1994/1995 I reform scheme affects state-owned as well as privately owned companies, all companies are lumped together. This is justified by the fact that the share of purely private enterprises within the public listed companies is between 16 and 35 per cent only, that the overall impact of the 1994/1995 I wage reform is very limited in general and that the reported wage spread of private and state-owned companies is a mere 8 per cent.

1994/1995 I wage reform

Table 5 shows, there were 323 and 1160 listed companies on China's stock exchanges in 1995 and 2001, respectively.³⁰ In 2001, 415 out of 1,160 companies had no state shares or no shares subscribed by the state, which account for around 36 per cent of all listed companies (China Internet Information Center, 2003).³¹

Table 5: Potential scope of the 1994/1995 I wage reform

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: Own calculations, based on data from China Security Regulatory Commission, Statistical Information Online Database; China Statistical Yearbook, various issues; and Thomson ONE Banker.

Note: (a) The sample covers 1,137 companies as data is provided by Thomson ONE Banker.

By assumption, non-state controlled public listed companies welcome any increase in productivity-linked discretion in their wage setting. And, it is supposed that the state is able to enforce its rules and all state-controlled public companies adhere to the 1994/1995 I wage reform scheme.³² Thus, an estimation that covers all listed companies has to be carried out. Employment data is available for 1,137 companies that on average employed 2700 employees each. This makes around 3.1 million people in 2001 for the sample. The figure of 3.1 million employees is also taken as the proxy for the projection of 1,160 companies (table 5). Multiplying 3.1 million people with the average wage of RMB 11,178 in 2001 results to RMB 35.1 billion, which represented around 3 per cent of the total Chinese wage bill in that year. For 1995, there is employment information available only for 47 listed companies. Therefore, due to data constrains, an assessment of the reform's effect on employment and wage bill in 1995 is impossible. However, with only 323 listed companies in 1995 the effect should be less than the 3 per cent impact in 2001.

1994/1995 II wage reform

In the mid-90s around 40 per cent of the state-owned enterprises fell under the category of the recommendation-based wage regime 1994/1995 II (Yueh, 2004). In 2001 around 65 per cent of all state-owned enterprises have undergone (partly) ownership transformation without being listed on one of the stock exchanges (China Internet Information Center, 2003). Based

³⁰ Cf. China Securities and Regulatory Commission, Statistical Information Online Database (www.csrc.gov.cn).

³¹ In contrast, Qu (2003) argues that only around 16 per cent of all public listed companies were non-state controlled.

³² The reported average wage level of state-owned units and non-state-owned units is rather similar at RMB 11,178 and RMB 12,140 in 2001. For simplification RMB 11,178 is underlying this calculation.

on these two figures table 6 derives an estimation of the 1994/1995 II impact in percentage of the total Chinese wage bill in 1995 and 2001.

Table 6: Potential scope of the 1994/1995 II wage reform

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	n.a.	n.a.	332,390	n.a.
1992	45.2	2,878	130,114	n.a.	n.a.	393,920	n.a.
1993	45.0	3,532	158,869	n.a.	n.a.	491,620	n.a.
1994	43.7	4,797	209,581	n.a.	n.a.	665,640	n.a.
1995	44.0	5,625	247,331	17.6	98,933	810,000	12.2%
1996	42.8	6,280	268,658	n.a.	n.a.	908,000	n.a.
1997	40.4	6,747	272,579	n.a.	n.a.	940,530	n.a.
1998	27.2	7,668	208,646	n.a.	n.a.	929,650	n.a.
1999	24.1	8,543	206,057	n.a.	n.a.	987,550	n.a.
2000	21.0	9,552	200,210	n.a.	n.a.	1,065,620	n.a.
2001	18.2	11,178	203,887	11.9	132,526	1,183,090	11.2%

Source: Own calculations, based on data from China Statistical Yearbook, various issues; and Thomson Datastream.

Table 6 shows that in 1995 around 17.6 million employees fell under the category of the recommendation-based part of the wage reform. By multiplying 17.6 million employees with the average wage of 5,625 RMB in 1995 one can derive a wage bill of around 99 billion RMB that was affected by 1994/1995 II. Compared to a total wage bill of 810 billion RMB in 1995 this translated into a share of 12.21 per cent of the total Chinese wage bill in 1995. Accordingly, in 2001 around 11.9 million employees with a total wage of 132 billion RMB represented 11.20 per cent of the total Chinese wage bill.

The combination of tables 5 and 6 leads to a potential impact of 12-15 per cent in 1995 and around 14 per cent in 2001 for both parts of the reform together (table 7).

Table 7: The potential impact of the 1994/1995 wage reform on China's total wage bill

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

Source: Own calculations, based on data from China Security Regulatory Commission, Statistical Information Online Database; China Statistical Yearbook, various issues; and Thomson Datastream.

The crucial question to assess the actual impact of the reform is in the actual degree of adherence to the reform scheme of the eligible companies.³³ For that an evaluation of the ac-

³³ For instance, it is unclear if companies falling under the recommendation-based part are following the suggestion of the authorities and if the degree of obedience changes over time.

tual development of wages in the period under consideration has to be carried out. Section 4.3.2 below deals with this question.

4 Effectiveness of the Chinese monetary policy

4.1 Intermediate targets

Chapter 2 of this work argued briefly that a measurement has to show two important characteristics to serve as an intermediate target of monetary policy: There has to be a sufficient controllability of the variable itself and at the same time the variable needs to show the existence of a relationship to the final target (of price stability). This section deals with both factors for the two intermediate targets of the Chinese monetary policy, the monetary aggregates as well as the domestic loan increase.

4.1.1 Monetary aggregates

The monetary aggregates M1 and M2 are the most prominent intermediate targets of the PBC. The authorities started to set up target values for M1 and M2 in 1994. Today, these values are published in the annual monetary policy report for the subsequent year online in Chinese and English.³⁴

Unlike the ECB, which derives its target for its reference value M3 via the quantitative equation for money ($M \cdot V \equiv P \cdot Y$)³⁵ and its derivation of a “potential formula” ($\Delta M = \pi + \Delta Y - \Delta V$ and $\Delta M3^* = \pi^{\text{target}} + \Delta Y^{\text{potential}} - \Delta V^{\text{trend}}$)³⁶, the PBC apparently is not using such a formula (table 8).³⁷

In fact, for the time being, the PBC is formulating its monetary target values via a projection in a rather normative way. For instance, in its Monetary Policy Report 2003 the PBC published its monetary targets for 2004 as follows: “Taking into account the time-lag effect of the faster than desired growth of money and credit in 2003, the growth of money supply and loan increase in 2004 **should** [bold by MG] be controlled lower than that of 2003. M2 and M1 are **projected** [bold by MG] to grow by 17 percent respectively and RMB loans to increase by RMB 2.6 trillion yuan” (PBC, 2004a).

Another way to show the projection character of the monetary targets is in calculating monetary targets according to the quantitative equation of money for a comparison. This is done in table 8, where the “potential formula” is applied to the Chinese situation to calculate the theoretical optimal growth rates for M1 and M2 from 1995 to 2003. Then, these rates are com-

³⁴ Chinese: www.pbc.gov.cn/xinwen/; and English: www.pbc.gov.cn/english/xinwen/.

³⁵ M stands for the quantity of money, V for the velocity of circulation, P the price level, and T for the transaction volume.

³⁶ $\Delta M3^*$ represents the optimum growth rate of M3, π^{target} the target inflation rate, $\Delta Y^{\text{potential}}$ the potential output growth rate, and ΔV^{trend} the trend rate of change in the velocity of circulation of money.

³⁷ For a detailed explanation of the concept of monetary targeting of the ECB please refer to Bofinger (2001).

pared to the targets set by the Chinese authorities. Similarity of the values implies a set up of the Chinese monetary targets according the quantitative equation for money. Table 8 shows that the monetary targets of the PBC were rather close to the quantitative equation for money in 1995 and ever since fell significantly apart up to 2003.

Table 8: Testing the ECB potential formula for the PBC, 1995-2003

Year	Target inflation (π)	+ Output potential (Y)	- Velocity of money (V)		= Optimum monetary growth (M*)		PBC targets	
			VM1	VM2	M1*	M2*	M1*	M2*
1995	15.0	8.5	-0.11	-0.05	23.6	23.6	21-23	23-25
1996	10.0	8.0	-0.11	-0.05	18.1	18.1	18.0	25.0
1997	6.0	8.0	-0.11	-0.05	14.1	14.1	18.0	23.0
1998	5.0	8.0	-0.11	-0.05	13.1	13.1	17.0	16-18
1999	2.0	8.0	-0.11	-0.05	10.1	10.1	14.0	14-15
2000	1.0	8.0	-0.11	-0.05	9.1	9.1	15-17	14-15
2001	1.5	7.0	-0.11	-0.05	8.6	8.6	13-14	15-16
2002	1.5	7.0	-0.11	-0.05	8.6	8.6	13.0	13.0
2003	1.0	7.0	-0.11	-0.05	8.1	8.1	16.0	16.0

Source: Own calculations, based on data from Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 1995; PBC, 2003b: 2; and Xie, 2004a: 2.

Note: Output potential: GDP targets as set up in the corresponding Chinese five-year plans are taken as a proxy.

Velocity of money: Nominal GDP divided by money M1 (for velocity VM1) and M2 (for velocity VM2). The velocity was declining between 1995 and 2003; to get the trend decline rate the average rates of changes of VM1 and VM2 were taken.

The question is why the PBC publishes a monetary targeting strategy with monetary targets, while the targets are not theoretically derived. The main reason for this might be in the charming character of disposing of a simple rule that is “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 just gets into the position to apply this rule. In fact, it might be secondary how the targets are derived but most important that they are installed. However, today, the concept of monetary targeting is under criticism in general, primarily due to the questionable controllability of monetary targets and an insufficient relationship to inflation (Bofinger, 2001: 248ff.).

Thus, an important reason for the use of monetary targeting in China certainly is 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 once it was established (Mishkin, 2002).

However the reasons for the decision for the implementation in China and the academic arguments pro and contra monetary targeting, this paper takes a more pragmatic approach to judge the current strategy in China. Two main questions will be dealt with: Are monetary ag-

gregates in China controllable and is there a sufficient relationship between them and the inflation rate observable?

4.1.1.1 Controllability

Table 9 shows the comparison of the targeted and actual values of the Chinese monetary aggregates M1 and M2 from 1994 to 2004. The targeted and the actual values fell together only three times in the case of M1 and only four times in the case of M2 aggregate. 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 and 2001. Obviously, targets have been met easier when target bands have been formulated. Only in the year 1996 the precise targets of 18 and 25 percent growth for M1 and M2 have been met fairly accurately. Strong deviations of more than four percentage points occurred three times for both aggregates M1 and M2. The rather strong deviations particularly arouse in the early phase of the formulation of monetary targets, after the high inflation rate of 24 percent in 1994. Since 1999 a more stable control in terms of lower deviations from the targets was realised (table 9). However, only two out of six targets have been met with deviations of less than one percent between 1999 and 2004.³⁸ 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 9).

Table 9: Targeted and actual values for the PBC's monetary aggregates, 1994-2004

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

Source: Cf. Ikeya, 2002: 2; PBC, 2001: 181; PBC, 2003b: 2; PBC, 2005a; Thomson Data-stream; Wu, 2004a; Xia et al., 2001: 35; and Xie, 2004a: 2.

Note: There was no target value for monetary aggregates before 1994. For 2000, Xia et al. (2001) speak of M1 and M2 targets of 14 per cent each. In this table, the PBC figures cited by Xie (2004) are included.

³⁸ In this respect the PBC is in good company. The Bundesbank reached only 11 of its 24 monetary targets in the time from 1975 to 1998, despite occasionally very broad corridors of up to 3.9 percent. The ECB never reached its set target of 4.5 percent as the reference value of M3. Nevertheless, there is no doubt that both Bundesbank and ECB performed very well in terms of low inflation.

Whether the monetary targets have been met is important as the performance record indicates the central bank's ability to control the aggregates. In the case of the PBC the comparison of the projected targets with the actual values in table 9 casts doubts of this controllability.

In general, the literature ascribes the uncontrollability of monetary aggregates primarily to the lack of stability of the demand for money, which is "notoriously unstable in the short run" (Bofinger, 2001: 296). As a consequence, it is very difficult (if not impossible) to steer monetary aggregates with short-term interest rates. In the case of the PBC there is also a difficulty observable to influence the monetary aggregates with interest rates. Section 4.2.1 of this work is subject to a detailed analysis of this problem.

In China, in particular, two main problems are associated with the controllability problem of monetary targets: Constraints induced through the exchange rate regime and an unstable money multiplier:

First, some scholars claim that the exchange rate regime with its *de facto* peg of the RMB to the USD is the main source of uncontrollability of the Chinese money supply. While Chinese scholars observed this problem for the 1990s rather than for the current time (Xia et al., 2001; and Yu, na), other proponents see it mainly due to the undervaluation of the RMB of the recent years (Goldstein, 2004; and McCallum, 2004). Accordingly, the *de facto* and undervalued peg of the recent past lead to increasing foreign exchange inflows, which have to be converted into RMB and thus increase domestic money supply in China.

This is true. However, "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 increases in the reserve requirement" (Goldstein, 2004: 25). In short, sterilization measures are those operations that are able to keep the money market under control through offsetting "the expansion in the monetary base caused by foreign currency inflows by means of compensating measures" (Bofinger, 2001: 331ff.). Within the recent years, the PBC used all three mentioned operations at the same time. According to Goldstein (2004), the PBC sterilized almost half of the increase in base money in 2003. If there is the possibility to sterilise foreign exchange inflows, where does the argument against the controllability of monetary aggregates comes from?

The problem of sterilisation operations is that they have a cost. This sterilisation costs are 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* [original *italics*] exchange rate (...) in a situation where the domestic interest rate is higher than the foreign rate, it is not able to defend its currency against strong appreciation pressure for long” (Bofinger, 2001: 390).

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 usually argue in this way: They claim that the costs of sterilisation are too high to be maintained over an extended period (Goldstein, 2004: 27).³⁹

Apparently, this is not correct. Currently, the sterilisation costs in China are either very low or even negative, i.e. the PBC is likely to make money on its *de facto* exchange rate peg (cf. Anderson, 2005; Green, 2005; and Qu, 2005). For instance, Green (2005) calculates that the PBC received a net income of the exchange rate peg of “at least (...) USD8.4bn (...) and possibly as much as USD 15.4bn” (Green, 2005: 25). The author points towards two main reasons for this surprising result: First, low domestic interest rates vis-à-vis foreign interest rates, and second and more importantly, extraordinary stocks of foreign exchange reserves. It is crucial for the computation of the costs to compare the interest rate expenses of the outstanding debts for sterilization purposes with the whole stock of foreign exchange reserves. As Anderson (2005) put it, one has to compare interest payments for around USD 200 billion domestically with interest gains for around USD 700 billion. In this situation, the lack of the exact knowledge of the interest rate returns matters far less than Goldstein (2004) argues. The sheer size of the dollar stocks makes it apparent that there is a profit.

While there are no direct costs of sterilisation recognisable, there might be opportunity costs arising. For instance, if banks invest their money into central bank bills rather than in financing investment projects the certain bank might have lost opportunity.⁴⁰ This is certainly true in general, but not true currently in China where commercial banks dispose of huge amounts of excess liquidity.⁴¹ In fact, due to the existing excess liquidity, sterilization operations do not hinder commercial banks to lend into investment projects.

To sum up, the analysis showed that there were increasing inflows of foreign capital into China from 1994 to 2004. The inflows and their associated increase in monetary base, however, were successfully sterilised through the monetary policy instruments of the PBC. Moreover, since 2000 when sterilisation operations increased dramatically there were no significant costs of sterilization. Neither are such relevant costs to be expected in the medium-term

³⁹ Yu Yongding, Professor at the Chinese Academy of Social Sciences as well as member of Monetary Policy Committee at the PBC argues in a same way: According to an article of the Financial Times from April 14, 2005 he “thinks sterilisation can continue for ‘quite a while’ but says the cost is getting higher” (Balls et al., 2005).

⁴⁰ This argument goes back to Goldstein, 2004: 27.

⁴¹ This can be seen in the high holdings of excess reserves, for instance.

future. Thus, the exchange rate regime does not represent a major factor for the controllability of the money supply.

Second, Xia et al. (2001) as well as Yu (2001) argue, among other factors that an unstable money multiplier is a major cause of uncontrollability of monetary aggregates in China. The money multiplier describes the relationship between monetary base and monetary aggregates (Bofinger, 2001: 50). Thus, the instability of the money multiplier would lead to 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 a very difficult one.

Indeed, table 10 shows that the money multiplier was unstable in the period from 1994 to 2004. Money multiplier m1 decreased from 1.14 in 1994 to 1.03 in 1996. Then, from 1996 to 2004 the multiplier m1 was on a stable increasing path and stood at 1.59 in 2004. Thus, in the 10 year perspective the development of the multiplier m1 shows an unstable and up-and-down path. Money multiplier m2 had a one-year break (1995 to 1996) of its' 10 year ascending path only, and stood at 2.73 and 4.11 in 1994 and 2004, respectively. The standard deviation of m1 was 0.21 with an average value of 1.32. m2 showed a standard deviation of 0.52 with an average of 3.42. Thus, table 10 supports Xia Bin's observation of an unstable money multiplier.

Table 10: Monetary base, monetary aggregates and the money multiplier, 1994-2004

Year	Monetary Base	Monetary Aggregates		Money Multiplier	
	(B)	M1	M2	m1	m2
		billion RMB		m=M/B	
1994	1,722	1,967	4,692	1.14	2.73
1995	2,076	2,308	6,074	1.11	2.93
1996	2,689	2,756	7,610	1.03	2.83
1997	3,145	3,481	9,187	1.11	2.92
1998	3,234	3,869	10,556	1.20	3.26
1999	3,479	4,698	12,104	1.35	3.48
2000	3,791	5,454	13,596	1.44	3.59
2001	4,171	6,169	15,641	1.48	3.75
2002	4,692	7,267	18,679	1.55	3.98
2003	5,517	8,645	22,355	1.57	4.05
2004	6,235	9,931	25,654	1.59	4.11

Source: Own calculations, based on data from IMF, International Financial Statistics.

In my view, however, it is difficult to argue that this is a particular problem of the Chinese monetary system. The German Bundesbank's money multipliers were far from stable either: Between 1975 and 1989 the multipliers for M1, M2 and M3 (m1, m2, m3) had standard de-

viations of 0.05, 0.28 and 0.30 with average values of 2.59, 4.41 and 7.60.⁴² Moreover, Germany's most prominent monetary aggregate M3 had a far unsteadier pace of change than China's aggregate M2, which had a trend ascending path between 1994 and 2004.

Even though China's money multiplier m_2 was unstable it was rather predictable. Through an extrapolation the multiplier's future path still could be incorporated into the set up of the monetary targets. Thus, the conduct of monetary targeting in China was and is not particularly distorted through an unstable money multiplier.

To sum up, neither the exchange rate regime nor the unstable money multiplier serve as the main source of uncontrollability of the Chinese approach of monetary targeting. So where does the controllability problem come from? In my view, the main reason is in the fact that the interest rate channel as a transmission mechanism of monetary impulses is distorted (section 4.3.1). The distortion mainly comes from the transition economy with the simultaneous usage of price- and quantity-based monetary instruments. To add on the problem, existing quantity-based instruments fail the task of monetary fine-tuning.

4.1.1.2 Relationship to inflation

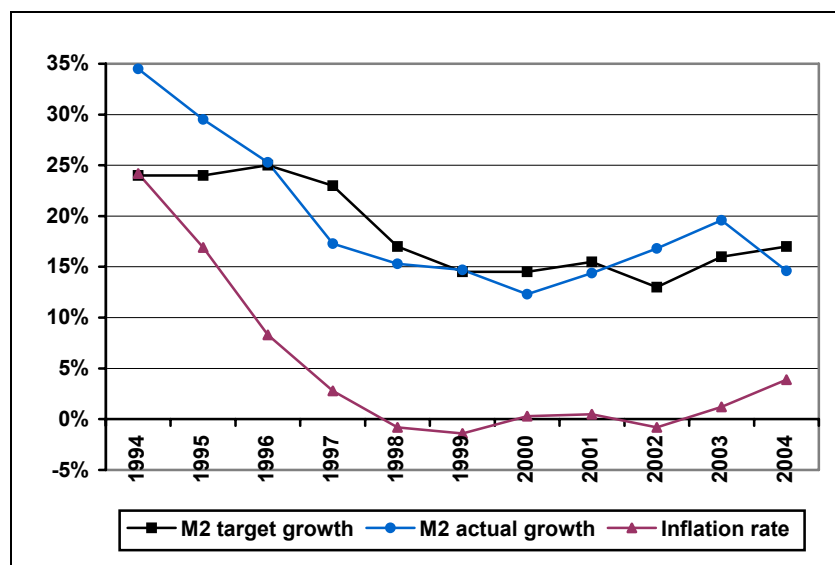
The second condition for a factor to be suitable as an intermediate target of monetary policy is a significant relationship to the overall goal of price stability. In this section the focus is laid solely upon the analysis of the relationship of monetary aggregate M2 to inflation.⁴³ This is justified through the prominence of M2 within the monetary policy set up of China.

Figure 2 displays M2 target growth rates, M2 actual growth rates and inflation rates from 1994 to 2004. On first sight, there is a parallel run of M2 growth rates and the inflation rate recognizable. Over the whole period from 1994 to 2004 the actual M2 growth rates are mirrored by the inflation rate fairly well. Since 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 projection based on adaptive expectations rather than as a theoretical derivation.

⁴² Own calculations, based on IMF, International Financial Statistics.

⁴³ In any case, M1 does not show a significant relationship to the inflation rate, mainly due to the unsteady course of M1 growth rates.

Figure 2: Inflation rate and targeted and actual values of money M2 in China, 1994-2004



Source: Cf. Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 2001: 181; PBC, 2003b: 2; PBC, 2005a; 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, e.g. 24 per cent.

In figure 2 five phases of monetary developments can be distinguished:

1. 1994 – 1996: $M2\ actual > M2\ target$

According to the monetary targeting approach, a situation in which the actual monetary growth is higher than the target, inflationary pressure would be prevalent. And indeed, inflation was rather high during the three years under consideration. But in fact, 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.

2. 1996 – 1999: $M2\ actual < M2\ target$

The four years of 1996 to 1999 show actual M2 growth rates that are lower than target M2 growth rates. According to the monetary targeting 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.

3. 1999 – 2001: $M2\ actual < M2\ target$

After a short time of fitting of the actual and target M2 growth rates in 1999, again the actual values were running below the target values 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 changed fundamentally for the first time since 1996. The actual growth rates of M2 developed on a higher course than the targeted values, which sig-

nalled inflationary pressure. And, 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 – current: $M2$ actual < $M2$ target

To fight the inflationary pressures, restrictive policy measures in 2004 lead to decrease of the actual monetary growth and a drop below the initially targeted rate. Due this measures inflation stabilised at a level below 5 per cent at the end of 2004 and stood at 2.4 per cent in December.

To sum up, the description of the five phases and the visualisation of figure 2 demonstrate a fairly close relationship between money $M2$ and the inflation rate. Moreover, in phases with higher (lower) actual than targeted $M2$ growth rates, inflationary (deflationary) tendencies were prevalent. Thus, it appears that by manipulating monetary growth the PBC could actually influence the course of inflation. However, there is a controllability problem of monetary aggregates that makes an exact steering difficult and therefore involves the risk of overshooting monetary reactions.

4.1.2 Domestic loan increase

Ever since its existence as the central bank in a two-tier banking system in China the PBC 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 that provided the economy with the necessary credits to reach the given output targets. In 1998, without the credit plan system in place domestic loan increases had been incorporated into the rather indirect monetary policy concept. Accordingly, since then domestic loan increase has to be seen as an intermediate target in addition to monetary aggregates (Xie, 2004a: 2). Nowadays, growth targets of domestic loans are published together with the monetary aggregates in the PBC's monetary policy reports, available on its webpage. In the following, the focus of the analysis will be laid upon the period of time between 1998 and 2004.

4.1.2.1 Controllability

Table 11 shows the comparison of the targeted and actual values of domestic loan increases from 1998 to 2004. Similar to the observation about the monetary targets one can see that the domestic loan targets have been missed in the majority of years. In fact, only in 2001 the target has been met accurately. The remaining seven targets were missed in the range of 2.8 (in 1998) and 7.4 percentage points (in 2003).

Table 11: Targeted and real values for domestic loan increases in China, 1998-2004

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

Source: Own calculations, based on data from PBC, 2001; PBC, 2003b; PBC, 2004a; 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.

As discussed in detail in the chapter about the monetary targets the misconduct of targets indicates the existence of problems in controlling the domestic loan growth rate by the authorities. Generally, the problem in the control of domestic loan growth in China lies in its interest rate inelasticity (section 4.3.1 will deal with this problem in detail). This limited influence of interest rate changes comes mainly from the mix of price- and quantity-based monetary instruments that prevent either of them working properly. In particular, a Moody's report from May 2004 analysed the problems the authorities faced in 2003 and the beginning of 2004 to gain control over the domestic loan increases (Wei, 2004). Accordingly, in the recent situation of an overshooting credit expansion several important factors that jeopardise the controllability of the loan growth can be exemplified:

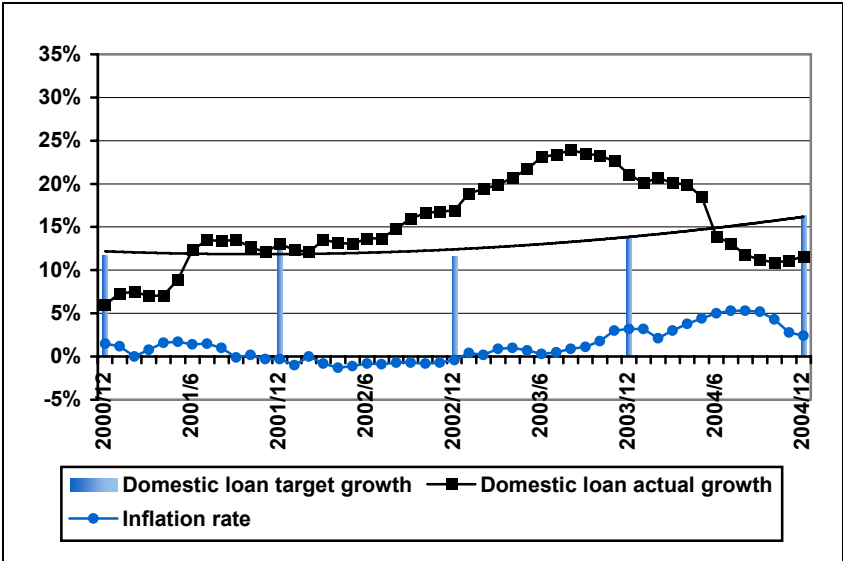
- Local governments do not dispose of the necessary global perspective but do often pursue self-interests. Moreover, they dispose over the power to influence lending decisions of local commercial banks. Thus, there is a shift from former centrally managed policy loans to more locally administered policy loans pursued by local governments.
- Corporate borrowers from the manufacturing sector are faced with rising raw material prices and dispose of huge capacities that have been built up in recent years. The consequences are relatively low profit margins. An exit-option of this dilemma is an add-on investment on capacity in the hope of increased output and sales and an increased profitability. Such expansion is usually financed by bank loans.
- The credit system of the banks still does not sufficiently apply risk related credit policies that price the credits according the underlying risks. Most loans are still priced around the central bank's benchmark rates. The price as a tool to regulate the amount of credits cannot apply and thus the total amount of granted loans is higher than the efficient level would be. However, under the new guidance of the China Banking Regulatory Commission the Basel Accord capital adequacy ratio is a subject of special consideration and all banks have to comply with the Basel standards by 2006. Thus, the overall lending mentality will veer towards more risk related credit policies.

Recently and due to the interest rate inelasticity of domestic loans the most important tool to deal with their expansion is the instrument of window guidance. However, since window guidance is a centralised used instrument the effect on the local governments are limited. The problem of the recent credit boom is a rather complex pattern that is not sufficiently dealt with one instrument. A sustainable transition towards a common-interest oriented behaviour has to deal with the roots of the problem - e.g. corruption and/or the wish of local officials to stand out and thus be considered for further jobs - rather than with healing the symptoms. To this extent, cutting down oversized projects might be a way to deal with the problem in the short run,⁴⁴ but it is insufficient for a sustained solution.

4.1.2.2 Relationship to inflation

This section is dedicated to the question whether domestic loan developments show a relationship to the inflation rate. The focus will be on the period of time of from December 2000 to December 2004 due to the simple reason of data availability.⁴⁵ Thus, figure 3 displays the development of the actual and targeted loan growth in comparison to the inflation rate for the four years.

Figure 3: Inflation rate compared to targeted and actual values of domestic loan increase, December 2000 - December 2004



Source: Own calculations, based on data from PBC, 2001; PBC, 2003b; PBC, 2004a; 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.

⁴⁴ E.g. Qu (2004) shows that after the dismissal of Zhangzhou’s mayor in April 2004, which was a punishment for his imprudent authorising of investments in the steel industry, fixed-asset investments growth rates in the sector declined sharply from 30 per cent in April to 18 per cent in May.

⁴⁵ Since December 2000 the PBC publishes monthly data for domestic loan developments (cf. PBC Statistics Database Online).

The actual loan growth shows an upward trend for the whole period until the peak of almost 24 per cent monthly y-o-y increase in domestic loans in August 2003 (figure 3). The decline in growth figures from 2003 onwards indicates the efforts of the Chinese authorities to implement a more restrictive monetary stance to face the expansionary economic cycle of 2003/2004. On the 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 on four phases might be helpful:

- *Phase 1*, with moderate loan increases of 6 to 9 per cent from December 2000 to May 2001.

In response, the inflation rate drifted into 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 on.

- *Phase 3*, with volatile growth rates between 16 and 24 per cent between September 2002 and May 2004 with the culmination of 23.9 per cent in August 2003.

Consequential, 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 11 and 14 per cent from June 2004 to December 2004.

In reaction, five months after the loan growth rate calmed down 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.

The short analysis above leads to one strong conclusion: There seems to be a “neutral stance” of domestic loan increases of 10 to 15 per cent that leads to an inflation rate of around 1 to 3 per cent.⁴⁶ Furthermore, the transmission of the development of the loan increases shows a time range of 5 to 12 months. There are three arguments for such a “neutral level” of domestic loan growth:

First, the actual development of the inflation rate towards the end of 2004: Five months after the loan growth came down to levels lower than 15 per cent, the inflation rate started to stabi-

⁴⁶ This finding can be backed by an “inefficiency stance” of 15 to 20 per cent that is displayed in the gap between the rates of the producer price index (PPI) and the consumer price index (CPI).

lise at the “neutral level” of 1 to 3 per cent. The positive developments of the first 4 months of 2005 with domestic loan growth rates of 10 to 11 per cent and inflation rates between 2 and 3 per cent further support the concept.

Second, the loan growth target rates of the PBC show levels within this margin, too.⁴⁷ Thus, the PBC is aware of the close relationship and the “neutral stance”. Just the controllability is not perfect as for the time being fine-tuning seems not to be possible.

Third, some simple econometric tests confirm that finding and show a significant correlation between the domestic loan increases and the development of the inflation rate. For the time of December 2000 to December 2004 this relationship is manifested with a time lag of 8 months with a probability of 90 percent.

However, the relative short period of time covered leaves a certain degree of insecurity. Thus, it is important to state that the results have to put into light within the limited time period of four years.

4.2 Final targets

After the discussion of the intermediate targets of the PBC with the description of their reasonably relationship to the inflation rate on the one hand but their relative uncontrollability on the other hand the explanation of the development of the final targets will show unexpected positive surprises.

Table 12: Targeted and real values for the inflation rate and GDP growth, 1994-2004

Year	Inflation rate (%)		GDP growth rate (%)	
	Target	Actual	Target	Actual
1994	10	24.2	9	12.6
1995	15	16.9	8-9	10.5
1996	10	8.3	8	9.6
1997	6	2.8	8	8.8
1998	5	-0.8	8	7.8
1999	2	-1.4	8	7.1
2000	1	0.3	8	8.0
2001	1-2	0.5	7	7.5
2002	1-2	-0.8	7	8.0
2003	1	1.2	7	9.3
2004	3	3.9	7	9.5

Source: Cf. EIU Country Report China, (several issues); Ikeya, 2002: 2; IMF, International Financial Statistics; PBC, 1995; PBC, 1996; PBC, 1997; PBC, 2003b; and Xie, 2004a: 2.

Note: The GDP growth targets for the time 1996-2000 and 2001-2004 are defined in the 9th and 10th five-year plan, respectively.

The targets under consideration are the three final targets of monetary policy that were affiliated in chapter 2.2, which are inflation rate, the GDP growth rate, and the exchange rate. For

⁴⁷ The targets for 1998 to 2002 are from Xie (2004a); the targets for 2003 and 2004 are from PBC (2003b) and PBC (2004a).

the analysis their targeted values are contrasted with their actual values. To start with there is the discussion about the inflation rate and the GDP growth (table 12).

4.2.1 Inflation rate

The years 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 (table 12). From today's perspective these targets have been 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 rather sharp decline of the inflation rate. The quick 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.⁴⁸ Adding to the difficult problem of fine-tuning was the generally deflationary environment between 1998 and 2002. This was mainly 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 of that time was a structural rather than a monetary policy induced problem. However, starting in 2000 the actual inflation rate stabilised on a very low level supported by very low target inflation rates. The actual rates went up to 1.2 per cent in 2003 and 3.9 per cent in 2004, as did the targeted inflation rates (table 12). 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 low and stable monthly inflation rates of the year end 2004 and the beginning of 2005 show a clear picture of this tension release.

To sum up, the authorities in China were able to control the inflationary pressures after the overheating economy of 1993/1994 and to subsequently keep stable prices until 2002. Moreover, the inflationary pressures of the 2003/2004 economic cycle have been brought under control. Both achievements have to be assigned to a mix of orthodox and non-orthodox measures. Thus, for the decade from 1994 to 2004 the conclusion has to be that the Chinese authorities have done pretty well.⁴⁹

⁴⁸ For a more detailed discussion of the 1993-1995 economic cycle and a comparison to the 2003-2004 economic situation please refer to Ma et al. (2004).

⁴⁹ Flassbeck et al. (2005) state the same not only for the inflation rate but also for the macroeconomic management in general.

4.2.2 GDP growth rates

The GDP growth rates in table 12 illustrate the two expansionary economic cycles of the mid-1990s and 2003/2004. It was GDP growth rates of 12.6 and 10.5 per cent in 1994 and 1995 that lead to inflationary pressures. In 2003 and 2004 GDP growth rates just under 10 per cent characterise the expansionary cycle. In between, from 1997 to 2002, GDP growth rates of 7 to 8 per cent could be realised and the targets of 8 and 7 per cent met. Thus, in terms of GDP growth rates the Chinese authorities met their targets or could even exceed them.

Throughout the last decade, there was a change in the assessment of GDP growth targets in China. Instead of solely focussing on GDP growth at all costs, more recently the concern of quality growth and its sustainability was put into the frontline (Bi, 2005). This change can be seen in several ways: First, GDP targets of the 10th five-year plan were set one percentage point below the targets of the previous plan at 7 per cent growth. Second, during the economic cycle of the mid-1990s the authorities allowed GDP growth rates of over 10 per cent, while in 2003/2004 rates have been carefully kept below the 10 per cent threshold. Moreover, in the 1990s and the first years of the new millennium the main suspicion of Chinese statistics was that growth rates were lower in reality than officially published (N.A., 1998b; and *The Economist*, 2002). More recently, it was suspected that GDP growth rates in China could be underestimated (MOFCOM, 2003; and Wolf, 2005). In fact, in December 2005, the National Bureau of Statistics announced the results of the first nationwide economic consensus that lead to a 0.2 percentage points upward revision of the average GDP growth rates for each of the years between 1993 and 2004 (EIU, 2006: 32f.).

However impressive the Chinese growth rates are, they cannot belie that not all people in China participate in the growth story equally. According to the Worldbank, the Gini-coefficient of income inequality, for instance, was rising from 0.18 in 1981 to 0.33 in 2001 in urban areas and from 0.25 in 1981 to 0.36 in rural China, respectively (UN China Common Country Assessment, 2004). The problem of disparity and unequal income distribution also attracts more and more public attention. 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 the article the new leadership around Hu Jintao and Wen Jiabao is well aware of the problem and "urging coordinated development between rural and urban areas as well as between western and eastern areas" (*People's Daily*, 2004b). While the issue of inequality is very important for the future development prospects of China, it is not subject to this work.⁵⁰

⁵⁰ For a detailed discussion of this and other development issues in China please refer to the 2003 UNDP report "Millennium Development Goals: China's Progress" available at www.undp.org.cn.

4.2.3 Exchange rate

China maintained a unilateral *de facto* peg between 1997 and 2005. Since the arrangement was not subject of any official agreement there were no target values available. During that time, the trading volatility and the direction of the exchange rate path were at the discretion of the Chinese authorities. However, with the exchange rate reform of July 21, 2005 and the reversion to a crawling peg regime the authorities' discretion was restricted.⁵¹

In its China Monetary Policy Report 2002, the PBC describes the development and the outcome of the exchange rate since 1994 (PBC, 2003b). Accordingly, the exchange rate 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. 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, 2003b).

In the Chinese perspective this assessment is certainly true. China's *de facto* peg played a unique and positive role in the economy's development of the last decade (Flassbeck et al., 2005). Additionally, foreign exchange reserves have been piled up massively and at the end of 2004 stood at USD 614.5 billion (IMF, International Financial Statistics), a value that certainly exceeds the need to safeguard the currency. Additionally, China was subject to the highest FDI inflows in the world in recent years (UNCTAD, 2004a). And as the UNCTAD Trade and Development Report 2004 points out, stability of monetary conditions in general and the exchange rate in particular are rewarded with increasing faith and thus increasing international long-term capital inflows (UNCTAD, 2004b). Thus, the international good reputation of the *de facto* peg, i.e. trust in its sustainability, played a crucial role in attracting international businesses.

Regarding the international status of the exchange rate policy the international community sent out ambiguous signals over the last decade. While the exchange rate peg played a crucial role in attracting foreign investors, since 2002 the international community and the developed countries in particular repeatedly urged China to abandon the peg.

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 World Bank], 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

⁵¹ Please refer to the definition of the final targets of monetary policy for a more detailed explanation of the exchange rate regime.

appreciation vis-à-vis China's neighbours. Xu (1999) asked: "Should or will the yuan depreciate?" The vice-president of 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).

In December 2002, the international opinion changed direction and first calls for an exchange rate appreciation arose. 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 onto the boat and supported the call for an RMB revaluation.⁵² The discussion culminated in China's announcement of an exchange rate reform with an initial (and for the time being one-time) appreciation of around 2 per cent in July 2005.

Recalling the variety of policy recommendations illustrates the difficulty of the task to pursue an internationally accepted and simultaneously domestically orientated exchange rate regime for the authorities. In retrospect, however the principle to pursue a stable policy to attract foreign investors by ignoring the ambiguous international academic and policy advises for several years was the right strategy for China. UNCTAD's Trade and Development Report 2004 points out that based on a stable and favourable exchange rate, China was able to attract large amounts of international long-term investors without giving speculators room for short-term gains on the capital markets. The report concludes that this is 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).

4.3 Monetary policy transmission process

4.3.1 Ineffective interest rate channel

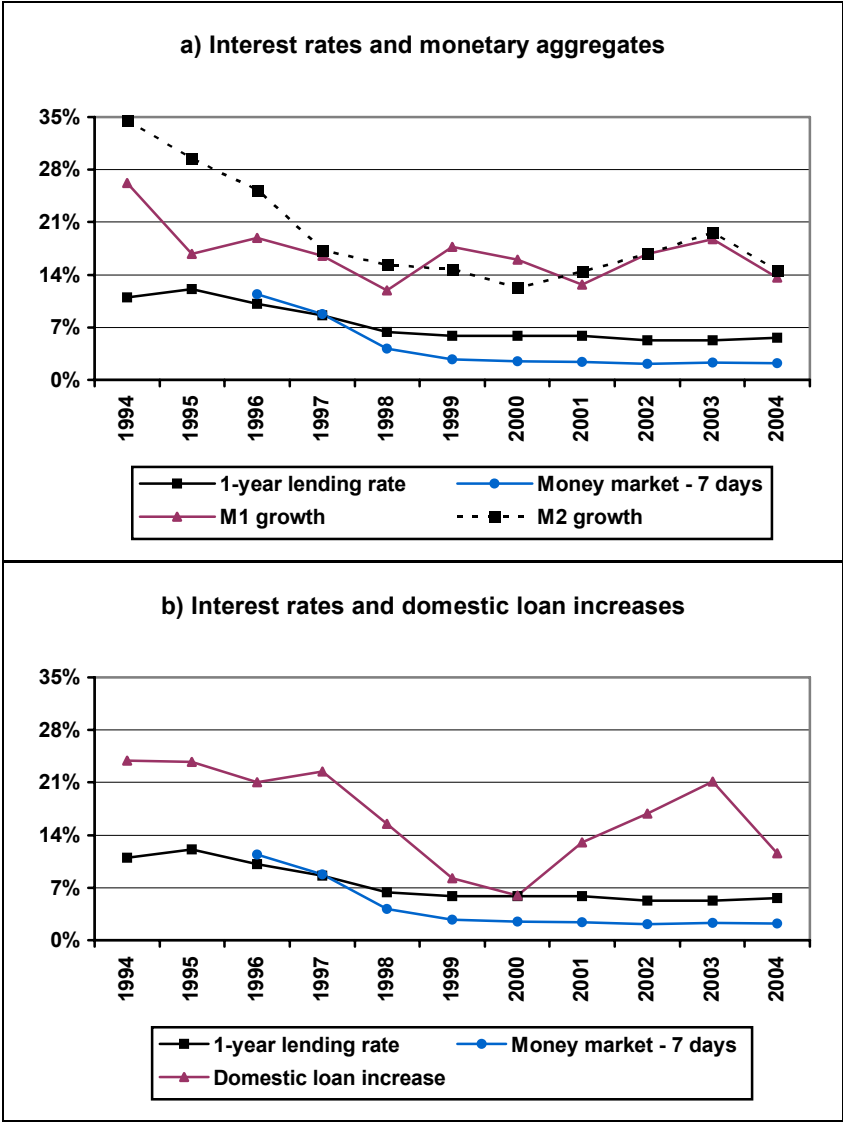
In this section it will be analysed whether the interest rate channel can function as a transmission channel of monetary impulses in China. To do so, first a consideration of the link between the interest rate and the intermediate targets - monetary targets and domestic loan growth targets - is necessary. Second, it will be of interest to explore whether the PBC changed its interest rate according to the concept of monetary targeting. Third, a closer look on the effects of the simultaneous usage of price- and quantity-based monetary instruments can demonstrate certain problems of the economy under transition.

Interest rate inappropriate to steer intermediate targets

⁵² Please refer to Woo (2003) to have an overview of the build up of the pro-appreciation front.

Figure 4 shows the development and relationship of interest rates and intermediate targets in China. The displayed interest rates are the one-year lending rate that 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 left part of the figure (a) presents the comparison of the interest rates with the monetary aggregates growth and the right part (b) with the domestic loan growth rate.⁵³

Figure 4: Interest rates, monetary aggregates and domestic loan increases in China, 1994-2004



Source: Own calculations, based on data from IMF, International Financial Statistics; Li et al., 2002: 8; 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 (cf. N.A., 2004c; and Liu, 2004). 7 days maturity data is chosen since this maturity has the highest trading volumes on the interbank market.

⁵³ There is no relationship of the M1 growth rate and the interest rate, mainly due to the unsteady course of M1 (figure 4a). Whatsoever, as before, the main focus shall be on monetary aggregate M2.

M2 growth and the inflation rate have a somehow ganging development (figure 4a). One can figure out that both M2 growth and inflation were on a decreasing path throughout the years from 1994 to 2000. This finding is surprising, since, according to textbook theory, the growth rates of monetary aggregates should increase with declining interest rates. A similar pattern applies to domestic loan increase and the interest rates from 1994 to 2000 (figure 4b), which is also surprising as domestic credits should increase with declining interest rates.

The year 2000 marks a major turning point of the run of the curves of both M2 and domestic loan growth (figures 4a and 4b). M2 growth rates started to increase significantly from 2.3 per cent in 2000 to 19.6 per cent in 2003. And domestic loan increase rose from 6 per cent to 21.1 per cent, respectively. During this period of time, however, interest rates remained stable. Theoretically, unchanged interest rates should leave M2 and domestic loan growth stable.

From 2003 to 2004 monetary aggregate M2 and domestic loan decreased again, while the interest rate remained stable almost the whole year 2004 until late October. On October 29 the benchmark lending rate was increased from 5.31 to 5.58 per cent. The modest increase at the year end apparently cannot serve as the main source of the decrease of M2 and credits.

To sum up, figure 4 illustrates that there is no textbook style relationship between the intermediate targets of money M2 growth and domestic loan increase on the one hand and the interest rate on the other hand. The rectified and not reverse relationships of the intermediate targets and the interest rate suggest that there is no functional interest rate channel as the transmission mechanism of monetary impulses in China. This is one reason for the frequent application of window guidance during the 2003/2004 economic cycle as described in section 3.1.2.1.

Another interesting point is the question, whether the PBC followed the “implicit rule” of the quantity theory based monetary policy approach that has its charm in its simplicity (section 4.1.1). The simple rule of monetary targeting states: If $M2_{actual} > M2_{target}$ the central bank has to increase its interest rates; and if $M2_{actual} < M2_{target}$ the authorities have to cut the interest rates. Table 13 summarises the PBC’s behaviour in terms of interest rate changes as compared to the theoretical suggestion. Analogue to section 4.1.1.2 four periods have to be distinguished: In the two phases between 1994 and 1998, the PBC reacted according the proposals of the quantity theory. In the situation of the actual M2 growth exceeding the targeted growth between 1994 and 1996, the PBC increased its interest rate accordingly. From 1996 to 1998 the actual value ran below the targeted value. As a response, the central bank cut its interest rate in 1997 and 1998 (table 13).

Table 13: Monetary targeting policy reaction and actual PBC reaction, 1994-2004

Years	Actual and targeted growth rates (a)	Textbook policy reaction (b)	Actual PBC reaction	PBC move according theory?
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.
1996 – 1999	M2 actual < M2 target	Interest rate cut.	Subsequent interest rate cuts 1997 and 1998.	Yes.
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.
2001 – 2003	M2 actual > M2 target	Interest rate increase.	No move within the period.	No.
2004 – current	M2 actual < M2 target	Interest rate increase.	Interest rate increase in October 2004, two years after M2 actual started to exceed M2 target.	No, move too late.

Note: (a) The five phases are derived from section 4.1.1.2.
(b) 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 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 actual value of monetary growth exceeded the targeted value. I.e. the late move reinforced the overall change towards inflationary pressure rather than fighting deflationary pressures of the late 1990s. Table 13 shows further, for the period from 2001 to 2003 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 already came down to levels below the target levels at the end of 2004. Thus, the interest rate move came too late again.

The results of the discussion around table 13 lead to two immediate questions: First, why did the PBC not act according its monetary indicators? Second, are there any other factors that influence the development of monetary aggregates that make an interest rate move unnecessary?

An answer frequently stated to face the first question is that due to the *de facto* peg increasing interest rates would trigger capital inflows (Goldstein, 2004; and McCallum, 2004). Thus, under the current exchange rate regime it would not be possible to pursue an autonomous monetary policy. This argument, however, ignores the fact that China maintains a certain degree of capital controls, and moreover disposes of a huge and for the time being unlimited

sterilisation potential⁵⁴ (cf. section 4.1.1.1). In my view, the exchange rate peg was and is no major source of distortion in the Chinese monetary targeting approach. Thus, there must be other factors that influence the monetary aggregates.

For this a closer look on the discussion about the instruments is necessary. Sections 3.1.2 and 3.2 described the quantity-based and non-monetary monetary policy instruments of the Chinese monetary policy system. The analysis showed that there were various such instruments in work within the last decade: In the mid-1990s wage- and price- controls were important parts of the macroeconomic steering mechanism. Towards the end-1990s and beginning of the new millennium the instrument of window guidance gained importance, particularly within the 2003/2004 expansionary economic cycle.

In fact, the experiences of the last decade show that, while the interest rate liberalisation gained momentum,⁵⁵ interest rates played and still play a limited role in the overall steering of the economy. To this end the outcry of the press⁵⁶ and international market reactions⁵⁷ about the interest rate hike of October 29, 2005 have to be put into perspective. Considering the above “the interest-rate hike was symbolically important” (EIU, 2004) for China’s economy, but nothing more. Adding to the limited role of interest rates in China in general is the distorting influence of the instrument of direct PBC lending in particular. 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 changes at all (cf. sections 3.1.1.1 and 3.1.2.2).

Hybrid character of the Chinese monetary policy system

The thread of the paper so far repeatedly emphasised the hybrid character of the Chinese monetary policy system. The hybrid system is characterized through the usage of both market-based (price-based instruments) and centralised planned-economy style policies (amount-driven instruments). This finding reflects the fact that China is an economy under transition that is not yet completely market-based but by no means entirely centrally planned either. Despite the efforts for an interest rate liberalisation and the introduction of a market based indirect monetary policy anchored around open-market operations (OMOs) as the key in-

⁵⁴ The latter point is the more important point of the argument since it was never possible to set up a completely impervious system of capital controls. Throughout the last 10 years from 1994 to 2003 billions of dollars were able to cross the Chinese boarder. A good proxy for the porosity of the Chinese system of capital controls can be derived from the errors and omission figures in the Chinese balance of payments. Accordingly, around 143 billion USD of unrecognised capital in- and outflows occurred within that period of time (IMF, International Financial Statistics).

⁵⁵ The PBC in January 2005 published the “Report on Steady Progress in Market-based Interest Rate Reform” that gives an overview of the progress of interest rate liberalisation (cf. PBC, 2005c).

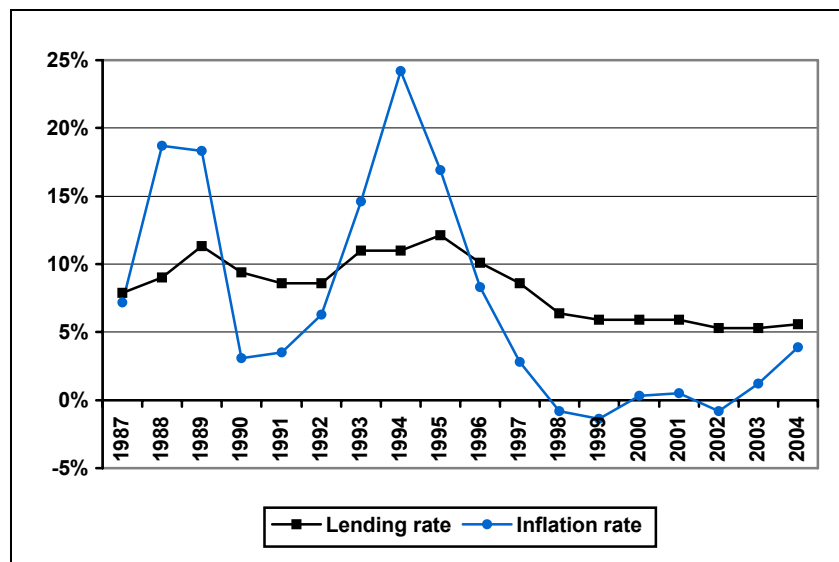
⁵⁶ For instance, the South China Morning Post headlined on 30 October 2004: “China shows it can move markets; Global reaction to interest rate rise underscores growing economic might” (SCMP, 2004b).

⁵⁷ Cf. “China springs surprise with interest rate rise; First increase in nine years rattles stock and currency markets” (SCMP, 2004a).

strument, there is still the need for non-market based but quantity-based measures of monetary policy.

It is difficult to quantify the influence of the quantity-based instruments. To do so in a general perspective, 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 5) and draw conclusions of the role of quantity-based instruments for this. For the period 1987 to 1999, figure 5 shows that the inflation rate tends to be lower in phases with lower interest rates and higher in periods with higher interest rates. From 2000 onwards, this kind of reinforcing relationship between interest and inflation rates somehow faded. This fact might indicate the relative higher degree of marketization of the financial system in recent years.

Figure 5: Development of the lending rate and the inflation rate in China, 1987 to 2004



Source: IMF, International Financial Statistics.

In the context of a simultaneous usage of price- and quantity-based instruments the interest rate channel fails. For instance, 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 is distorted. 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 of figure 4 between 1994 and 2000 are part of this phenomenon.

Xie et al. (2003) published an econometric analysis about the effects of the interest rate policy in China. For this, they examined the relationship between the inflation rate and the inter-

est rate from 1996 to 2002. As a result, they found that there is only a vague relationship between the two. But if there are any effects at all, they conclude, there might be a dampening effect of raising interest rates but not a stimulating effect of falling rates. Thus, their findings deliver another example to show that in a period where price- and quantity-based instruments are applied simultaneously, certain degrees of inconsistency to textbook economics are observable. Additionally, Xie et al. (2003) point to the important factor of time lags within the monetary policy transmission process. Accordingly, the decision lag of monetary policy would be between six and ten months, with an overall time lag of interest rate effects of at least 18 months that is very volatile in different periods of time. The latter point makes it the more astonishing that the PBC opted for the late interest rate moves in 2001, 2002 and 2004 (table 13).

Figure 5 confirms parts of the observations. There are no stimulative effects but there might be certain inflationary dampening effects of the interest rate, particularly during the inflation peaks of 1989 and 1995. However, the inflation rate in both periods the late 1980s and the mid-1990s have been driven down mainly through non-interest rate induced measures: A policy induced recession after the 1989 Tiananmen incident in the beginning of 1990 and an administrative induced slowdown of the overheating economy in the middle of the 1990s. In fact, the results of the analysis of Xie et al. (2003) support the argument that the interest rate channel is highly distorted and the interest rate policy cannot play the important and dominate role it is playing in purely market-based economies. But certainly, the role of price-based indirect instruments is ever increasing along the advancement of the market-based interest reform.

4.3.2 Distortions through an unsound banking sector and a lack of competition

During a Joint China-IMF Training Program in April 2004 in Beijing, with the discussion about the Chinese monetary transmission process as the centrepiece, certain distortions in the transmission process have been stressed repeatedly. Accordingly, the main problems lie in the uncompetitive and unsound banking environment with four major culprits (Xie, 2004b):⁵⁸ First, there is a huge amount of non-performing loans (NPL) within the Chinese financial system. Officially the central bank speaks of a NPL ratio of 20.36 percent of all assets held by the four state-owned commercial banks (SOCBs), which amounted to around 230 billion USD in 2004.⁵⁹ Second, most of the commercial banks lack capital adequacy. PBC officials speak about substantial deviations of the actual ratios and the eight percent capital adequacy

⁵⁸ This section is mainly based on a comment of Xie Ping, the then Director of the Financial Stability Department of the PBC and the subsequent discussions during the mentioned China-IMF conference.

⁵⁹ This figure might even be too small. E.g. Ernst & Young (Non-performing loan report: Asia 2002) estimate the NPLs in China to amount to USD 500 billion (RMB 4,139 billion) at the end of 2002; and a decrease of 50 per cent in 2 years seems very difficult.

ratio stated in the Basel Accord. Third, the four state-owned commercial banks have a quasi monopoly in China's financial market. They possess more than 80 percent of the whole banking sector's assets and liabilities and they account for around 80 percent of the lending and 70 percent of the deposit business. Furthermore, the "Big Four" still do not compete in all business and geographic areas with each other. The original tasks assigned to each of them, which also expand into the banks' names, still segregate parts. Fourth, interest rates are still subject to control of the authorities. Despite great steps towards interest rate liberalisation there is still not sufficient competition and not enough room for credit-risk related credit decision-making.⁶⁰

The situation of an unsound banking system with high NPL ratios, insufficient capital adequacy, a de facto monopoly of the SOCB and high political influence within the financial system may lead to major impacts on the financial transmission process of the economy. Several issues have to be considered: First, there is a distorted behaviour of the SOCB in terms of their risk assessment recognisable since the monopolising SOCBs tend to be risk adverse. Through the strong position in the system their restrictive behaviour can influence the overall impact of the central banks policy. For instance, one might think of a situation where the central bank wants to pursue a neutral stance of monetary policy. Due to the SOCBs obligation to meet capital adequacy requirements⁶¹ the central bank induced neutral stance might actually turn into a de facto restrictive stance against the central bank's will.⁶² Second, the state-owned commercial banks are not profit-driven.⁶³ Resulting in long time lags for the implementation of interest changes, Xie Ping argues that "the weak motive of making profit of the four state-owned commercial banks makes monetary policy ineffective" (Xie, 2004b: 4). Third, a desired expansionary policy of the central bank can be absorbed via an increase of excess reserves of the SOCBs.⁶⁴ Fourth, through monopolised 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. Fifth, a strong lobby of state-owned commercial banks can 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

⁶⁰ The market for bank deposits is yet completely controlled, while the ceilings on the lending market are abolished for all institutions but the rural credit cooperatives since October 2004.

⁶¹ Capital adequacy is subject to ever-tighter surveillance via the newly established China Banking Regulatory Commission (CBRC).

⁶² While such a situation was observable during the deflationary phase of the late 1990s, the recent past showed the contrary. In 2003, bank lending increased with higher ratios than the PBC was willing to accept. 60 percent of the granted loans have been granted by the four SOCBs. As a reaction, the PBC enforced its' window guidance policy.

⁶³ Other scholars, like Dai (2002) are of the opinion that the desire for profit as early as in 2002 already played a prominent role in commercial banks' business operations.

⁶⁴ This is true for the deflationary phase of 1998 to 2002 with an excess reserves ratio of 7.61 per cent in 2001. Having realised this problem the PBC decreased the interest rate on excess reserves to 1.62 per cent, lower than the interest on the excess reserves that stands at 1.89 per cent currently.

banking related decisions that affect their own business operations. Additionally, the commercial banks are represented in the Monetary Policy Committee of the PBC. Indeed, the committee has no decision making authority, but it is consulting the PBC in various financial and monetary policy related issues.

Finally, the central bank disposes of insufficient instrument independence. The PBC cannot decide independently about the level of the interest rates. Moreover, according to Xie Ping, the PBC has to take into consideration an additional and purely political target, which is 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. “We can say that each adjustment was decided through bargaining of concerned parties, and the complicated process 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).

4.4 Influence of quantity-based monetary and non-monetary policy instruments

4.4.1 Window guidance

In section 3.1.2 window guidance was introduced as the most prominent quantity-based monetary instruments of the PBC. The discussion showed that to face the recent expansionary cycle window guidance was and still is one of the main instruments in use. The increasing emphasis on window guidance in the PBC’s monetary policy reports expresses the current importance of the instrument (cf. PBC, 2004i; and PBC 2005a). Stephen Green goes 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, domestic loan increases calmed down significantly from 2003 to 2004 (cf. table 11; and section 4.1.2.2). After a peak of almost 24 per cent in August 2003 growth rates showed a declining path and reached a rather sustainable level of below 15 per cent in June 2004. Towards the end of 2004 the domestic loan growth rates were stable at around 11 per cent.

The exact scope of window guidance meetings and the application of suasion in the meetings is publicly unknown. However, apparently the instrument incorporates guidelines for lending volumes.⁶⁵ Still, due to information constraints it is not possible to estimate the impact of window guidance on the inflation rate in detail. Considering the discussion of section 4.3.1 that argues that the interest rate is inappropriate to steer monetary aggregates and domestic loan increases leads to the conclusion that other instruments have to step in. Certainly, at the moment window guidance in China is the main instrument to compensate for the insufficient

⁶⁵ Green (2005) is of the same opinion and proves it with reference to participants of window guidance meetings (Green, 2005: 21).

interest rate channel of the monetary policy framework. But there is a price to pay in terms of a lack of fine-tuning ability as well as allocative distortions through direct credit guidance.

4.4.2 Price controls

This section aims at an assessment of the power of price controls as a means of inflation control. Due to data constraints an assessment is only possible for the recent period of time of 2001 and 2002, but not for the mid-1990s. Table 14 shows the shares of government guidance and government prices in 2002 according to three areas: Social retailing (A), agricultural products (B) and production inputs (C).⁶⁶ 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 14: Approximate share of government controlled prices in China, 2001/2002

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%
Government controlled prices	5,2%	16,2%	14,0%

Source: WTO, 2001: 11.

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

The first two columns of table 15 display the definition of the basket of goods that is underlying the Chinese consumer price index (previous year=100; Paasche index) since January 2001. The weights defined in 2001 did only change marginally and can be regarded constant between 2001 and 2004.⁶⁷ Additionally, official statistics in China publish a fixed-base index with 1985 as basis period (Laspeyres index).⁶⁸ The Laspeyres index (1985=100) leads to the exact 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.

The basket consists of 600-700 goods and services that are aggregated into 251 headings and 8 major categories (China Statistical Yearbook, 2004). The 8 categories include prices for food; alcoholic beverages and tobacco; clothing; household facilities and articles; medi-

⁶⁶ For simplicity 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 (section 3.2.1: 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.

⁶⁷ For this, the difference of the monthly CPI values published by the National Bureau of Statistics of China and the results of a (own) calculation of the monthly values using the weighting scheme of 2001 was calculated. The computations lead to no deviation in 2002 and 2003 and to a mere 0.1 percentage point deviation in 2004.

⁶⁸ The weighting of the basket (1985=100) is not available.

cine and medical articles; transportation and communication; recreation, education and cultural articles; and residence (table 15). The three items weighing the most are food (34.4 per cent); residence (14.8 per cent); and recreation, education and cultural articles (14.3 per cent). Together the three largest groups comprise 63.5 per cent (Shuai et al., 2001).

Table 15: Consumer Price Index and the potential impact of price controls in China, 2001/2002

Item	Basket weight [a]	Area of control (acc. table 14)	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%
CPI total	100.0%			24.1%

Source: Own calculation, based on data from Shuai et al., 2001; and WTO, 2001: 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 14 (A = 5.2%, B = 16.2%, and C = 14%).

The remaining columns of table 15 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 14. The assessment about the potential scope of the price controls on the total CPI basket is derived as follows:⁶⁹ First, in the 3rd column *area of control* it is assessed whether the eight categories of the basket do fall under one or more areas of table 14. 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 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 constrains, the calculated impact represents the maximal possible influence on the CPI basket. And the impact is likely to be overstated.⁷⁰ Second, the potential impacts of each of the 8

⁶⁹ It is assumed that the impact on the CPI basket equals the influence on the CPI.

⁷⁰ For instance, the assessment cannot consider the case where only one component of a category falls under social retailing, but five components fall under the category agricultural products. In this

categories are summed up to the potential impact of price controls on the whole CPI in China, which is around 24 per cent. 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, in my view, the influence is probably between 15 and 20 per cent.

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 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, on which factors the estimation is based on.

However high the actual impact might be, price controls have one major macroeconomic downside, which could be observed in the 2003/2004 economic cycle. They prevent the automatic stabiliser of increasing prices from working properly: Increasing prices in a situation of an expansionary economy would lead to decreasing demand and thus have a dampening effect on the economy. Reports about shortages in certain sectors and energy black-outs in 2003 and 2004 suggest that price controls in those sectors prevented the build-in stabiliser to be effective (Aredy, 2004; and Qu 2004: 5).

4.4.3 Wage level controls⁷¹

One way to assess the wage level reforms in 1994/1995 in terms of its impact on the inflation rate is to compare the slope of nominal wages with the slope of the inflation rate. Per definition nominal unit labour cost⁷² are very closely linked to the development of nominal wages. Thus, figure 6 displays nominal unit labour costs as the measure for nominal wages and the inflation rate, which show a striking parallel run. The development of unit labour costs in the mid-90s culminated in a more than 20 per cent increase in 1994. The inflation rate mirrored this movement and peaked with just less than 25 per cent in 1994. In the subsequent years, unit labour cost growth came down to 4.4 per cent in 1996 and to -3 per cent in 1997. The inflation rate again mirrored this run and decreased to 8.32 and 2.81 per cent in 1996 and

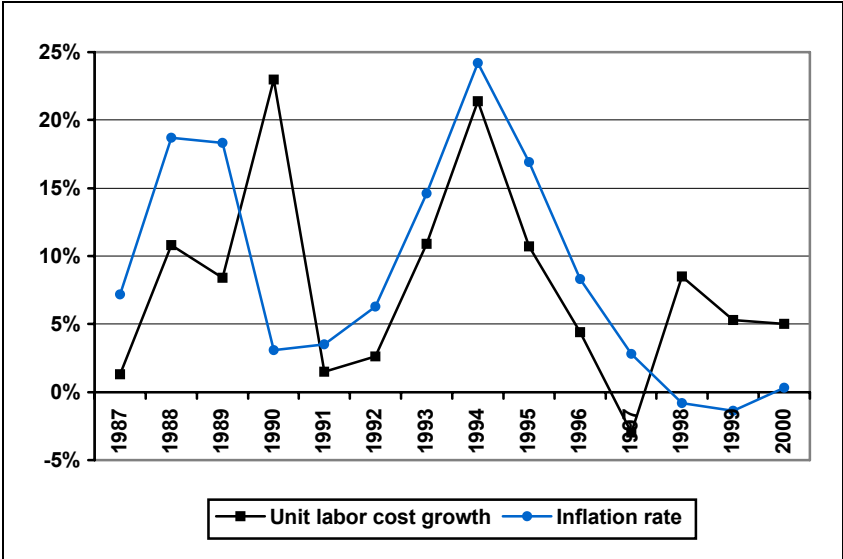
case, the whole category will be applied to social retailing and agricultural products. Additionally, a lack of exact definitions of the three areas of government controlled prices might lead to a wrong categorisation of components of a category.

⁷¹ Parts of this section were published earlier in Flassbeck et al. (2005).

⁷² Change rate of gross income of employed population divided by the real GDP in RMB.

1997, respectively. In 1997 and 1998 unit labour cost growth jumped up well above the inflation rate again, with rates of almost 10 percent. In fact, 1998 can be seen as a turning point in the determination of the inflation rate. From that year onwards, the deflationary pressure was a primarily supply induced phenomenon that decoupled the inflation rate from the development of the unit labour costs and the nominal wage growth rate, respectively.⁷³ However, figure 6 might prove the fact that the authorities indeed have been able to influence the inflation rate through the wage level regime between 1994 and 1998.

Figure 6: Unit labor cost growth and the inflation rate, 1987-2000



Source: Own calculation, based on data from ILO LABORSTA Internet Database; and IMF, International Financial Statistics.

The question is whether figure 6 serves as a proof of the effectiveness of the wage reform. One crucial point is the clarification whether the circumstances of the time could deliver a plausible explanation for the correctness of the assumption that the majority of all companies actually adhered to the authorities' suggestions within the framework of the recommendation-based wage reform 1994/1995 II.

Indeed, it can be argued that the state of the Chinese economy then was in a severe situation that called for serious measures. The inflation rate stood between 15 and 25 per cent in 1993, 1994 and 1995. At the same time rising unemployment due to increasing numbers of migrant workers and ever increasing laid-off workers in state-owned enterprises added to the problems (Zhang, 1995). The mix of social insecurity and high inflation rates lead to increasing cases of social unrest. According a report conducted by the Chinese Academy of Social Sciences and the National Statistical Bureau of China in 1995, 84 per cent of the polled people stated inflation as the main reason for people being unsatisfied (Cheng, 1996). In a way, the situation was comparable with the 1988/1989 conditions of rising unemployment of state-

⁷³ Please refer to section 4.2.1 for a discussion of the development of the inflation rate.

owned workers, stagnating social benefits and inflation rates between 10 and 20 per cent (Wang, 2002). “One explanation why workers joined the huge demonstrations that China saw in 1989 (...) is unhappiness over inflation” (Aredy, 2004). The comparison shows that the situation was serious and the government authorities were in urgent need to effectively fight inflation.⁷⁴

In such an emergency situation, one can argue that the 'suggestion' of the recommendation-based part of the wage reform in 1994/1995 was more than just a proposal to follow or not. Thus, the three early years of the reform can be characterised by a very high proportion of adherence to the wage scheme within the companies eligible for the reform. The severity of the social circumstances of the mid-90s certainly contributed to the enforcement of a low inflation wage regime that brought the nominal and real wage growth down significantly. Thus, in the viewpoint of the author, the identified potential impact of the wage regime of 12-15 per cent on the total Chinese wage bill can be seen as being the actual impact.

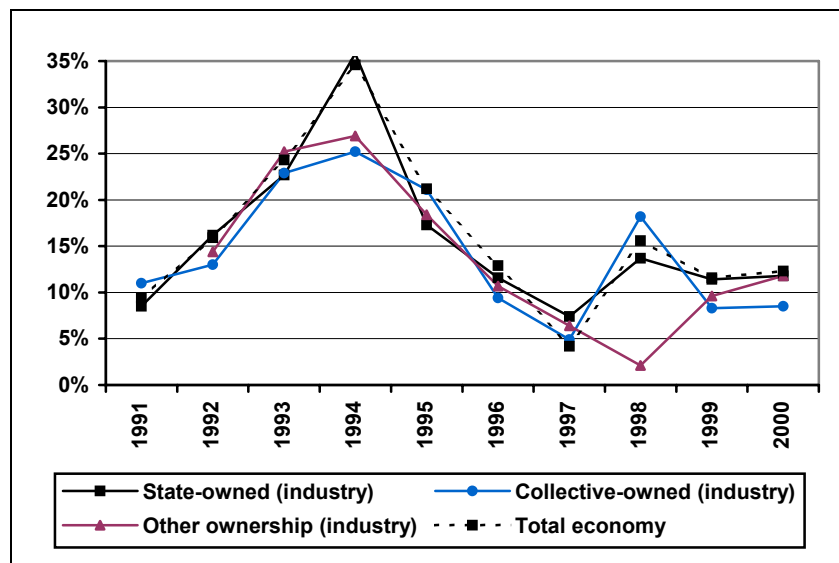
If this is true, however, it is to question whether an influence of 12-15 per cent over the total wage bill was sufficient to control the development of wages in the way figure 6 indicates. For this, the guiding role of changes of incomes of state-owned employees in the industry sector on companies of other ownership structures and of other sectors has to be explored. Figure 7 compares the wage growth in the state-owned industrial sector (reported by the National Bureau of Statistics of China) and the wage growth for the whole economy (reported by the International Labour Organisation).⁷⁵ Accordingly, the wage growth of the whole economy and the state-owned industrial sector is rather parallel from 1991 to 2000. The same is true for the collective-owned and non-state/non-collective-owned (other ownership) sector for 1991 to 1997, but with less pronounced peaks in 1994. Between 1998 and 2000, the wage growth of the "other ownership" sector was much less than in the other sectors. In this case, however, official statistics do not show the whole picture. Experiences show that free edibles and free dinners sometimes constitute an important part of the bonus programs of companies. Thus, despite the fact that official statistics show quite similar developments of wages in the state-owned and the non-state-owned sector in reality there is a widening gap of wages (in favour of the non-state sector) observable (cf. Coady et al., 2000 who analyse the dependency of households of bonus programs in the late 80s and beginning 90s in general;

⁷⁴ The negative inflation bias of Chinese decision makers might as well go back to the hyperinflation experience of the second half of the 1940 (cf. Burdekin et al., 2001: 4).

⁷⁵ The underlying data for the calculation of the wages for the whole economy incorporates “state-owned units, urban collective-owned units and other ownership units” (ILO LABORSTA Internet Database). It is sometimes argued that this definition does not cover the whole economy, as it might exclude the rural segment. In any case, the figures provide the best possible proxy to show the development of nominal wages on the level of the whole economy.

and Chen (2000) who focuses on the special case of management contracts in Township and Village Enterprises.

Figure 7: Wage growth in different ownerships and sectors, 1987-2000



Source: Own calculation, based on data from ILO LABORSTA Internet Database; and China Statistical Yearbook, various issues.

On first sight, the rather parallel run of wage growth of the whole economy and the state-owned industrial sector indicate a stringent guiding role of the state-owned sector for the whole economy wage development. But, a closer look on the development in the non-state/non-collective wages ("other ownership") that includes the private industrial sector leads to a different assessment: While the culmination point of wage growth in 1994 (total economy and state-owned industrial sector) was followed by the "other ownership" sector with a difference of 10 per cent, the bottom point was protracted one year to 1998 and 5 percentage points lower than in the case of the state-owned wages in 1997 (figure 7).

It is naturally to see decreasing wages in all sectors of the economy when economic growth decreased from 14.2 per cent in 1992 to 8.8 per cent growth in 1997. And the more uneven development of the run of the curves since 1997 can be explained with the increasing degree of profitability thinking in the non-state/non-collective sector. Not surprisingly the wage restraints were higher in the non-state than in the state sector.

To sum up, the discussion of this section pointed out that there is a rather strong relationship between nominal wage developments and the inflation rate. On search for evidence various factors have been considered: First, the overall economical and social situation of the mid-90s led to a strong enforcement of the regulations and suggestions of the wage reform. Thus, the potential impact of the wage scheme of about 12-15 per cent of the total Chinese wage bill was identified as being the actual impact in the mid-90s. Second, the similarities in wage growth rates of different sectors indicated that the state-owned sector acts has a guiding role

for the whole economy. Third, while there certainly was a guiding role of the wage development of the state-owned companies, the overall path of wage development was also determined by the Chinese economic cycle of the 1990s.

More recent developments on the job market in parts of China increasingly undermine the wage regime in terms of inflation control. 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. Thus, there was the threat of higher wages through the increasing bargaining power of workers in a tight labour market.

5 Concluding remarks

The analysis has three key findings: First, the central bank's intermediate targets of monetary aggregates and domestic loan increase were missed frequently. Second, there is no reverse relationship between the intermediate targets and the inflation rate. Third and nevertheless, the final target of inflation control and the establishment of price stability could be reached and supported amazingly well.

The three findings lead to the conclusion that there are distortions that prevent an ineffective interest rate channel of monetary transmission from functioning. Moreover, it was explored that three main non-monetary and quantity-based instruments provided a steering mechanism to the monetary authorities during the last decade in varying intensities:

First, mainly wage level controls helped to fight inflation in the mid-1990s. More recently, however, wage increases due to labour shortages in certain regions threatened to undermine the low inflation wage set up. Even though labour shortages mostly occurred in the private sector spillover effects might lead to rising wages in the state sector. As the marketization of the Chinese economy proceeds a way back to the strong wage regime of the mid-1990s is unfeasible. Thus, to avoid that rising wages in certain areas jeopardise the target of price stability further liberalisations of the labour market have to be carried out; for instance loosening the barriers for migrant workers to enable the inter-regional exchange of the workforce to better balance shortages.

Second, price controls were actively used throughout the last decade. Based on data from 2001 it was estimated that up to 24 per cent, but more likely 15 to 20 per cent of the con-

sumer price index can be influenced through price controls. Despite the power of price controls and its importance the dangers have to be considered. Price controls prevent the automatic stabiliser of rising prices come into play. This might be temporarily acceptable within the transition period where emergency situations might call for the instrument. However, in the long run and on the way towards a fully marketized economy the authorities need to become less dependent on the tool, a process that finally should lead to the tools abolishment.

Third and more recently the instrument of window guidance was introduced. It came into its prominent role in the fight of the 2003/2004 expansionary economic cycle. In the absence of a well-functioning interest rate channel of monetary transmission window guidance is the main instrument to successfully steer the economy. Despite its success, however, it is important to point out that window guidance is non-conform to a marketized economy. The guidance of credits through other than the profitability criteria tends to lead to macroeconomic distortions in terms of miss-allocations of funds. Thus, while the instrument plays an important role in the current policy set-up, in the long run window guidance has to be replaced by a comprehensive usage of indirect price-based monetary instruments. Obviously the way towards a fully market-based economy needs time - a time where both price-based and quantity-based instruments are in play simultaneously.

Thus, for the time being quantity-based and non-monetary instruments are of prominent importance for the monetary set-up of China. However, in the light of the vague relationship of the interest and the inflation rate, the interest rate has to be considered as a supportive instrument rather than as the leading one.

Recently, observers argued that the fear of capital inflows was the main reason for the late interest rate move of the authorities in the 2003/2004 cycle. This analysis shows, given the de facto unlimited possibility of sterilisation of inflows currently, the main reason has to be found in the fact that interest rate increases 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 (Flassbeck et al., 2005). However, given

the achievements made, to reach another level of (institutional) development and to overcome the inefficient interest rate channel of monetary impulses a sudden change with the abolishment of all quantity-based instruments is necessary at one point in time. Only then price-based monetary instruments can come into full play. And merely then, the set up of a monetary strategy anchored around indirect price-based instruments, as it was officially introduced in 1998, can be successful.

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