WP/06/71

IMF Working Paper

Progress in China's Banking Sector Reform: Has Bank Behavior Changed?

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INTERNATIONAL MONETARY FUND

 WP/06/71

IMF Working Paper

Monetary and Financial Systems Department

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Authorized for distribution by Abdessatar Ouanes

March 2006

Abstract

Substantial effort has been devoted to reforming China's banking system in recent years. The authorities recapitalized three large state-owned banks, introduced new governance structures, and brought in foreign strategic investors. However, it remains unclear the extent to which currently reported data reflect the true credit risk in loan portfolios and whether lending decisions have started to be taken on a commercial basis. We examine lending growth, credit pricing, and regional patterns in lending from 1997 through 2004 to look for evidence of changing behavior of the large state-owned commercial banks (SCBs). We find that the SCBs have slowed down credit expansion, but that the pricing of credit risk remains undifferentiated and banks do not appear to take enterprise profitability into account when making lending decisions. Controlling for several factors, we find that large SCBs have continued to lose market share to other financial institutions in provinces with more profitable enterprises. The full impact of the most recent reforms will become clear only in several years, however, and these issues should be revisited in future research.

JEL Classification Numbers: G21, G28

Keywords: China, banks, reforms, nonperforming loans

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[1] I would like to thank—without implicating—Brian Aitken, Jahangir Aziz, Steven Barnett, Ray Brooks, Steven Dunaway, Eswar Prasad, Amadou Sy, Leslie Teo, and participants of a Monetary and Financial Systems Department workshop for their useful comments.

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I. Introduction

Banking reforms are at the core of China's strategy to improve the intermediation of its large private sector savings. Reforms in the banking sector have been implemented over the last two decades in China, replacing the monobank system with a multilayered system that separates commercial lending and central banking functions. However, lending by state-owned commercial banks (SCBs) has been inefficient and focused on state-owned enterprises, has brought a large burden of nonperforming loans, and has triggered several attempts to recapitalize and reform the banks. One important restructuring action came in 1999, when the government transferred a substantial amount of nonperforming loans to asset management companies at book value.[2] The most recent major initiative to improve the functioning of the banking sector started in late 2003, when the government decided to recapitalize two of the four major SCBs and introduce changes in legal structure, corporate governance, and risk management, with the goal of bringing in strategic investors and eventually listing the banks. This effort has been partly motivated by the prospects of facing increased competition when, at the end of 2006 under the World Trade Organization agreement, the sector will be opened to foreign banks.

This paper focuses on reforms in the four SCBs, which continue to be the major part of the banking system in China. At end-2004, the four SCBs—the Industrial and Commercial Bank of China (ICBC), the Bank of China (BOC), the China Construction Bank (CCB), and the Agricultural Bank of China (ABC)—accounted for almost 60 percent of banking system assets.[3] We reviewed the progress in reform implementation and examined lending growth, credit pricing, and regional patterns in lending to look for evidence of changing behavior of the SCBs. While the full impact of the most recent reforms will become clear only in several years' time, we believe it is useful to explore any changes in the behavior of SCBs—in response to the long-term reform effort and as an initial reaction to the most recent reforms.

Several previous studies describe the reform effort and the inefficiency of the Chinese state-owned banks.[4] IMF (2004 and 2005) provides an overview of the most recent reforms and Barnett (2004) reviews the structure and recent developments in the banking sector. For a review of previous banking system reforms, since the mid-1990s, see Karacadag (2003).

[2] According to Karacadag (2003), nonperforming loans worth RMB1.4 trillion—equivalent to 14 percent of total loans of the state-owned banks and 17 percent of 1999 GDP—were transferred at book value from the four major state-owned banks to four newly created asset management companies.

[3] Other commercial banks and rural credit cooperatives (RCCs) followed with 16 percent and 10 percent, respectively, and foreign-funded banks' share stood at only 1.7 percent. While we focus on the four SCBs, it should be noted that the government owns—directly or indirectly— almost all important banks in the system. For instance, the government almost fully owned nine out of ten national joint stock commercial banks at end-2003.

[4] Other studies focused on bank intermediation and the relationship between state-owned banks and state-owned enterprises, e.g., Wei and Wang (1997) found that China's bank loans favored state-owned industrial enterprises; Cull and Xu (2000 and 2003) suggest that banks were more efficient in allocating resources than bureaucrats allocating direct transfers from 1980 to 1994, albeit to a lesser degree later in the sample period; and Park and Sehrt (2001) argue that lending by China's financial institutions did not respond to economic fundamentals from 1991 to 1997.

Duenwald and Aziz (2003) explored the growth-financial-development nexus in China and concluded that, contrary to most cross-country studies, financial development (proxied by total bank lending) has not significantly boosted growth among China's provinces. Boyreau-Debray and Wei (2005) found that the correlation between investment and savings at the provincial level is strong and increased in the 1990s when SCBs were given more autonomy in allocating regional credit. This suggests the existence of large barriers to capital mobility, possibly in the form of noncommercially motivated interference in bank lending decisions.

Progress has been made on reforming the SCBs, but more needs to be done to make banks more efficient. The two pilot reform banks, the BOC and the CCB, have likely met the 2005 quantitative targets set in their restructuring plans. They have completed their financial restructuring, introduced new governance structures, and started improving risk management and internal controls. The approval in 2005 of a reform plan for the largest bank in the system, the ICBC, was an important step. Furthermore, all three banks have recently introduced minority strategic investors. However, the last state commercial bank—the ABC—still lacks a restructuring plan. Remaking and modernizing the operations of these banks, increasing their commercial orientation, and establishing a strong credit culture are major undertakings that will inevitably take time to implement and to yield substantial benefits.

Our results, based on data covering only the beginning of the most recent reforms, reinforce the need for thorough reform implementation. In the 1997–2004 data, it is difficult to find solid empirical evidence of a strong shift to commercial orientation by SCBs. The pricing of credit risk remains rather undifferentiated, and bank lending continues to be driven by availability of funds and does not appear to take enterprise profitability into account when making lending decisions—the four large SCBs continue to lose market share in provinces with more profitable enterprises.

The next two sections describe the progress in reforms of two large SCBs that were chosen as a pilot for reforms (the BOC and the CCB) as well as reforms in other banks. Section IV then explores any impact the reforms have had on bank lending decisions, level of credit risk, and credit risk pricing. Section V concludes and outlines key areas for further reforms.

II. Reforms in Two Pilot Banks

The BOC and the CCB were selected as pilot banks for the latest reform effort, which commenced in late 2003. In December 2003, the authorities announced the decision to recapitalize these two banks with $45 billion from foreign exchange reserves and to develop a broader reform plan. These plans involved strengthening their corporate governance and risk management, resolving non-performing loans (NPLs), using reputable external auditors to assess the true financial position of the banks, as well as enhancing external oversight of the banks' operations. The authorities also set the goal of bringing in strategic investors and listing the banks' shares.

Overall, good progress has been made in implementing the reform plans in the two pilot banks. Financial restructuring of the BOC and the CCB has been completed. Both banks have likely met the 2005 quantitative targets, were incorporated as joint stock companies, introduced new corporate governance structures, have worked on changing risk management and internal organization, brought strategic investors, and either were listed (CCB) or appear on track to do so in 2006 (BOC). However, it will likely take time before the ongoing changes become fully effective.

The BOC and the CCB basically met two 2004 quantitative targets and likely met the first full set of quantitative targets for 2005 (Table 1). There were only two quantitative targets set for 2004, the ratio of NPLs to total loans and capital adequacy. The completed financial restructuring, including the $45 billion capital injection and NPL write-offs and sales, helped the two banks meet these targets.[5] Overall, 2004 performance and preliminary information for 2005 suggest that the banks were on track to meeting the first full set of quantitative performance benchmarks at end-2005.[6]

Table 1. Performance Assessment Indicators for the BOC and CCB
(in percent unless indicated otherwise)

	BOC	CCB		Targets	
	2004	2004	2004	2005	2007
Return on assets 1/ 2/	0.6	0.9	--	0.6	approx. 1.0
Return on equity 2/	10.0	17.3	--	11.0	≥13.0
Cost-to-income ratio 3/	40.0	39.2	--	35-45	35-45
NPLs to total loans 4/	5.1	3.9	3-5	3-5	3-5
Capital adequacy 5/	10.0	11.3	≥8.0	≥8.0	≥8.0
Largest client exposure to capital	3.6	10.1	--	≤10.0	≤10.0
NPL provisioning coverage 6/	68.0	70.0	--	60-80	>60-80

Source: BOC (2005), CCB (2005), author's estimates, and CBRC (2004).
1/ The 2007 target is "a level required for an internationally competitive bank."
2/ 2004 return data for the CCB exclude the impact of income tax exemption relating to restructuring.
3/ Cost-to-income ratio is to be controlled in the 35-45 percent range starting from 2005.
4/ Five-category NPL classification.
5/ Measured in compliance with the new (2004) guidelines that require full provisioning for NPLs.
6/ Total provisioning to total NPLs. The 2005 target is 60 percent for the BOC and 80 percent for the CCB. Further increase is required by 2007.

[5] The BOC's NPL ratio (at 5.1 percent) was slightly higher than the 5 percent upper bound of the target for end-2004, but it fell to 4.7 percent already in the first quarter of 2005.

[6] The CCB's performance was also improved by additional support from the government to offset higher-than-expected loan loss provisions in the amount of RMB65.5 billion ($7.9 billion). This support came as a promise of a temporary tax cut and a waiver of dividend payments and about two-thirds of the amount was effectively received in 2004.

First steps have been taken in corporate governance, internal organization, and risk management reforms. Both banks have been transformed into joint-stock companies—the Bank of China Limited and China Construction Bank Corporation—and have put into place a new corporate governance structure with a shareholders' meeting, board of directors, board of supervisors, and top management operating according to newly adopted rules. The BOC board of directors, for instance, now consist of 13 directors, of which 7 are non-executive directors, 3 are executive directors, and the remaining 3 are international senior financial experts serving as independent directors.[7] Both banks prepared, adopted, and started to implement development plans that deal with a number of operational areas, including internal organization and control, strategic development, and risk management.

However, important concerns about governance and internal controls remain. Several scandals, including high-level corruption at the CCB and embezzlement at the BOC, have been uncovered during the implementation of recent reforms. While these were related to events that occurred prior to the reforms, they highlight the need to implement improvements in internal control systems and governance. Furthermore, while the formal corporate governance structure has changed substantially, the way business is done may not have changed much just yet. For instance, recent reports argued that, in the CCB, the board was the nominal final decision maker, but board members were not routinely involved in important decisions.[8] Separately, the implementation of reforms in risk management only started, and it will certainly take some time before they are fully implemented throughout the relatively large organizations.[9]

Both banks have introduced strategic investors with a minority ownership share.[10] By offering an ownership stake, the banks generally expect to diversify the ownership structure, enhance their capital strength, take advantage of the partner's management and technology expertise, and launch joint operations in selected areas:

- CCB. In a deal announced in June 2005 and completed in the second half of 2005, the Bank of America Corporation (BoA) and Temasek invested \$3.0 billion and \$2.5 billion for approximately 9 and 6 percent ownership shares, respectively.[11] The BoA will have one seat on the Board of Directors and will provide a team of professionals

[7] Among other activities, the independent directors chair the risk management and audit committees in the BOC.

[8] Citigroup Macro China (May 4, 2005), citing an article in the Chinese magazine *Cai Jin*.

[9] The BOC and the CCB had 189,000 and 275,000 employees, respectively, at end-2003. This is comparable to the staff of Citigroup or HSBC Holdings, which are among the largest banks in the world (Bankscope data). The number of employees of the ICBC and the ABC was considerably larger, at 389,000 and 511,000, respectively, at end-2003.

[10] Individual foreigner investors can effectively take up to 20 percent of a Chinese bank, and combined foreign ownership cannot exceed 25 percent.

[11] According to the agreement, Bank of America Corporation (BoA) paid \$2.5 billion for a 9 percent ownership stake in the CCB (pre-IPO), invested another \$500 million in shares issued in the IPO, and has a non-exclusive option to increase its stake to 19.9 percent at the IPO share price. Temasek reportedly paid \$1.5bn for a 5.1 percent ownership stake (pre-IPO) and was to invest another \$1 billion in the IPO.

to work with the CCB in several areas, including risk management, governance, and consumer banking. Temasek's role is likely to be as more of a financial investor.

- BOC. In August and September 2005, the BOC announced the entry of several investors—an investor group (Royal Bank of Scotland, RBS, with Merrill Lynch, and Li Ka-shing) announced a combined investment of $3.1 billion for a 10 percent ownership share, Temasek announced an investment of similar size, and United Bank of Switzerland (UBS) was to buy a 1.6 percent share for $0.5 billion. The RBS should nominate one BOC Board member and cooperate with the BOC in wealth management, credit cards, and corporate banking. BOC's partnership with UBS in investment banking and securities was also announced.

The CCB listed its shares in 2005, and the BOC appears to be on track to do so in 2006. The CCB had a successful initial public offering of its shares in Hong Kong in October 2005, raising approximately $9 billion of new capital. The BOC has been preparing its listing as well and appears to be on track to have its shares listed in Hong Kong in 2006.

III. Reforms in Other Banks and Deposit-Taking Institutions

In early 2005, the authorities approved a restructuring plan for the ICBC, the largest commercial bank in China, with total financial support of over US$80 billion. In late April 2005, the government approved the restructuring of the Industrial and Commercial Bank of China (ICBC), which is to follow the same process and performance benchmarks as the BOC and the CCB. While a US$15 billion capital injection from foreign exchange reserves has been announced, details about a carve-out of loss and doubtful loans from the bank's balance sheet have not been publicly disclosed. The estimated total financial support from the government, after taking into account the carve-out of NPLs, is likely to be close to US$80 billion (4.3 percent of GDP). This should be sufficient to increase the core capital adequacy ratio with full provisioning for NPLs to over 6 percent (Box 1).

The ICBC had been working on operational restructuring for some time before the restructuring plan was approved. The business model and asset structure of the ICBC have changed in recent years, with a decrease in the share of commercial loans in total assets and a substantial increase of residential mortgages and consumer loans. The number of employees decreased from almost 600,000 to below 400,000, and the number of branches was cut by more than half to around 20,000. This helped raise operating profit five fold between 2000 and 2004 and decrease the cost-to-income ratio to 42 percent in 2004.

After the financial restructuring was completed, the next steps in the reform process are similar to those followed by the two pilot banks. The ICBC was transformed into a shareholding company and announced an entry of strategic investors in the second half of 2005. In January 2006, a definite agreement was signed with Goldman Sachs, Allianz, and American Express, calling for a combined investment of $3.78 billion in the form of subscription to newly issued ordinary shares. Under the agreement, each of the investors should cooperate with the ICBC in different business and management areas—Goldman Sachs in corporate governance, risk management, internal controls, and investment banking; Allianz in bank assurance products; and American Express in the bank card business. The bank's stock should also be ultimately listed. Overall, the ICBC does not seem to be far behind the two pilot banks in terms of reform progress.

Box 1. Financial Restructuring of the ICBC

The aim of financial restructuring was to clean the bank's balance sheet, lower NPLs, and increase capital adequacy.

Recapitalization. Huijin Company injected $15 billion into the bank from foreign exchange reserves. This capital injection gave the Huijin Company a RMB124 billion stake in the ICBC's equity capital. The Ministry of Finance (MoF) had an equity stake in the bank of approximately RMB170 billon and this stake was written down to RMB124 billion against provisioning for NPLs. Therefore, Huijin Company and the MoF each have 50 percent ownership share after the restructuring. The total capital of RMB248 billion, combined with issuance of subordinated debt, should be sufficient to bring the bank's capitalization to the proximity of 8 percent of risk-weighted assets. An entry of strategic investor(s) and public listing should help further increase capital adequacy.

Nonperforming loans. NPLs were carved out of ICBC's balance sheet. In May and June 2005, two tranches of NPLs, worth RMB246 billion and RMB459 billion, respectively, were transferred to asset management companies. So that the ICBC did not lose additional capital, new assets—claims on the asset management companies, the government, or cash—had to replace virtually the full book value of the transferred NPLs.

Assuming that loss loans have zero value and doubtful loans are worth 30 percent of their face value, the estimated total government financial support for the ICBC in this financial restructuring would exceed US$80 billion.

In contrast, there has been little progress in reforming the fourth SCB, the Agricultural Bank of China (ABC). The ABC has the poorest credit quality among the four state-owned banks, and the bank appears to have done less than others to implement operational restructuring and control costs. For instance, its cost-to-income ratio is more than 20 percentage points higher than that of the other three banks. Delays in reforms may create moral hazard and lead the ABC to aggressively expand lending operations and undermine market discipline, thus creating new problems for itself and other banks. Available data suggest that the ABC's lending growth was only slightly faster than in other SCBs in 2004. However, the ABC is also the least transparent of all four SCBs, and its problems may be deeper than suggested by the publicly available data.

Progress in reforming other institutions providing financial services in agricultural areas may help formulate reform plans for the ABC. Pilot reforms of rural credit cooperatives (RCCs) that were started in 2003 in eight provinces were extended nationwide in June 2004. The restructuring and consolidation of the RCCs (some into rural commercial banks) has been financed by the central bank, the Ministry of Finance, and local governments. The total number of RCCs is targeted to be reduced from 30,000 in 2004 to around 10,000 (including about 200 rural commercial banks) by end-2007, when the major part of RCC reform is expected to be completed. In 2004, the RCCs as a group, reported profits for the first time in 10 years. Capital adequacy of this segment of the banking system is reported to be 0.5 percent, and it reports an NPL ratio of 23 percent, as measured by the old four-category classification criteria. The pilot group of RCCs reported capital adequacy of 8.7 percent.

Foreign ownership participation in smaller Chinese banks has increased substantially as well. In 2004, five Chinese banks, including the Bank of Communications (BoCom), Shenzhen Development Bank, and Xi'an City Commercial Bank, brought in foreign strategic investors, doubling the number of Chinese banks with foreign equity participation. The partnership between HSBC and the Bank of Communications, China's fifth largest bank, has been the most important step.[12] In 2005 and early 2006, a number of further deals were announced, including China Minsheng Banking Corporation, Huaxia Bank, Bohai Bank, Guangdong Development Bank, Bank of Beijing, and Hangzhou City Commercial Bank. In fact, only few joint-stock commercial banks and large city commercial banks do not have a foreign strategic partner.

However, the ownership shares of foreign strategic investors are relatively small and their management involvement minimal. Ownership regulations limit the share of a single foreign owner to 20 percent of capital, and most deals leave foreign investors with about 10 percent ownership share. In fact, there has been only one smaller Chinese bank in which a foreign investor effectively gained management control.[13] This is consistent with the authorities' stated objective to help develop and strengthen management systems in the local banks without allowing foreign control of major Chinese banks. However, low ownership shares of foreign strategic investors in Chinese banks and their limited management involvement could weaken the incentives for foreign investors to take an active interest in the overall bank performance and make them focus on creating value only in narrow areas of cooperation, e.g., issuing credit cards. So far, there has been a strong interest among foreign banks to become minority investors in Chinese banks, but we will see only over time to what extent the strategy of partial opening to foreign strategic investors has been successful.

IV. CREDIT RISK AND BANK LENDING DECISIONS

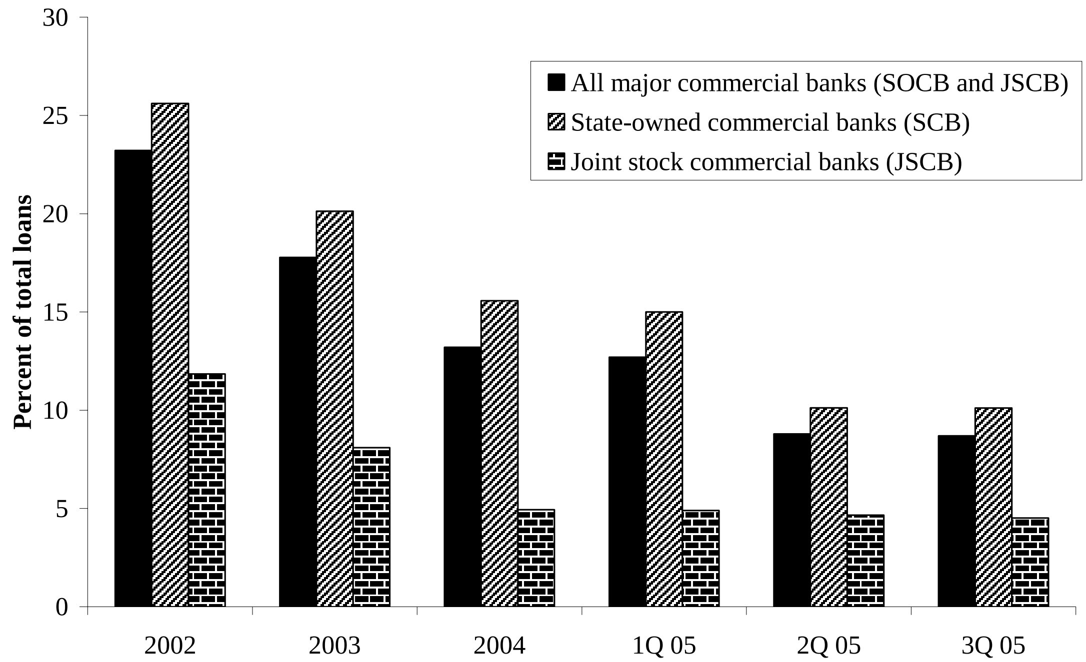
A. Reported Loan Performance

The key objective of the reform efforts has been to improve bank lending decisions, and the reported NPL ratios have indeed declined. In 2004, NPLs in major commercial banks fell in absolute value by RMB395 billion and as a ratio to total loans by 4½ percentage points to 13¼ percent. In Q3 2005, the NPL ratio declined further to 10 percent of total loans (Figure 1). This decline was due to NPL write-offs, transfers to asset management companies, and dilution of old NPLs by better-performing new loans.

[12] The Bank of Communications also successfully completed an IPO on the Hong Kong market in June 2005 and has been viewed as a model for shareholding reform for the four large SCBs.

[13] In 2004, Newbridge Capital LLC took over management control with an 18 percent stake in Shenzhen Development Bank. The other exception may be an effective takeover, announced in early 2006, of the Guangdong Development Bank by Citibank, but details of this transaction are not clear yet.

Figure 1. Nonperforming Loans in Major Commercial Banks



Source: CBRC, and author's calculations and estimates.

Data for individual SCBs confirm the major role that restructuring has played in decreasing NPL ratios (Table 2). The two pilot banks, the BOC and the CCB, had only few NPLs left on their balance sheets, 5.1 percent and 3.9 percent of total loans, respectively, at end-2004. On the other hand, the ICBC and the ABC had 19 and almost 27 percent of NPLs, respectively, and increase the average substantially. In fact, the substantial decrease of the NPL ratio in the first three quarters of 2005 can be almost entirely explained by the recent transfers of NPLs out of the ICBC as part of its restructuring (for details, see Box 1).

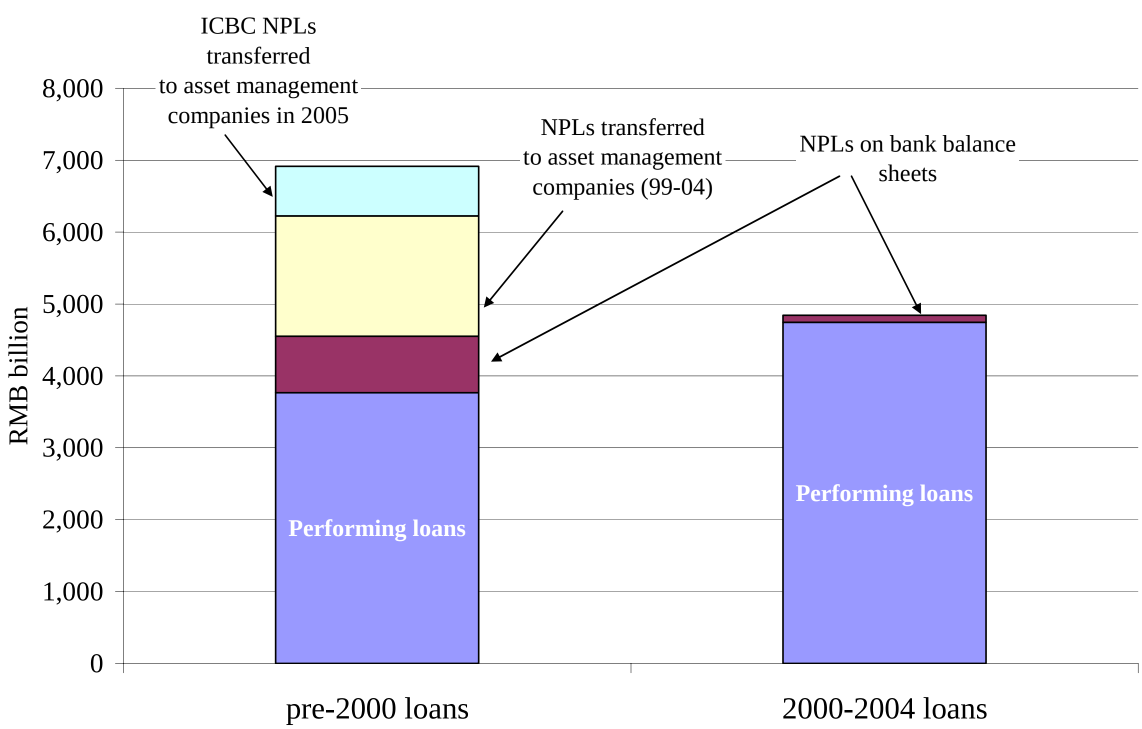
Table 2. Nonperforming Loans in Major Chinese Banks

NPLs to total loans	2002	2003	2004	3Q 2005
State-owned commercial banks (SCBs)	25.6	20.1	15.6	10.1
Bank of China	22.5	16.3	5.1	...
China Construction Bank	15.2	9.1	3.9	...
Industrial and Commercial Bank of China	24.4	21.2	19.0	...
Agricultural Bank of China	36.6	30.8	26.8	...
Joint-stock commercial banks (JSCBs)	11.8	8.1	5.0	4.5
Total (SCBs and JSCBs)	23.2	17.8	13.2	8.7

Source: CBRC, commercial banks, and author's calculations and estimates.

There is a striking difference between the reported credit quality of old and new loans, suggesting either a dramatic improvement of the underlying credit quality since 2000 or measurement problems. The reported NPL ratio for loans extended after 2000 has been approximately 2 percent in aggregate, dramatically lower than the NPL ratio for older loans (over 60 percent for some banks).[14] This can be partly explained by greater seasoning of the older loans. Also, the recent credit growth has been slower than the credit boom in 1991–95 (which caused most of the recent NPL problems), and the growth of loans in SCBs has been slower compared to other commercial banks (Table 3). On the other hand, banks remain exposed to several sectors that are likely overinvested, such as steel, cement, aluminum, and construction and, are therefore vulnerable to an economic slowdown and/or consolidation in these sectors. In addition, new areas of lending growth—consumer and residential mortgage lending—are not risk-free; for instance, it may be difficult to foreclose on residential housing, and banks need to gain experience in evaluating the credit quality of consumers.

Figure 2. An Estimate of SCB Credit Quality Based on Reported Data



Source: CBRC and PBC data, and author's assumptions and estimates.

[14] For instance, ICBC (2004) reports that the NPL ratio for loans extended in 1998 and before was 57 percent. According to OECD (2005), major banks estimate that less than 2 percent of loans made since 1999 have become nonperforming. A very rough estimate based on available information suggest that some 45 percent of all loans extended before 2000 became nonperforming (Figure 2).

Table 3. Loan Growth in Major Banks

Loan growth (in percent) 1/	2002	2003	2004
State-owned commercial banks (SCBs)	12.8	18.2	…
Bank of China	10.8	9.5	11.3
China Construction Bank	16.0	27.8	11.5
Industrial and Commercial Bank of China	11.5	12.8	9.0
Agricultural Bank of China	16.1	18.6	13.8
Other commercial banks	48.8	40.0	20.6

Source: CBRC, PBC, CEIC, and author's calculations and estimates.

1/ Adjusted for NPL write-offs (subject to data availability).

B. Pricing of Credit Risk

The authorities have been gradually deregulating lending and deposit interest rates, providing the banks with room to improved credit risk pricing. Since 1996, when loans to all enterprises had to be in the range of 0.9 times to 1.1 times the official benchmark rate sent by the central bank, the authorities gradually loosened the regulations (Table 4). Since October 2004, there has been no upper limit on lending rates for commercial banks, only a floor of 0.9 times the benchmark rate.[15]

Table 4. Regulation of Interest Rates for Commercial Banks

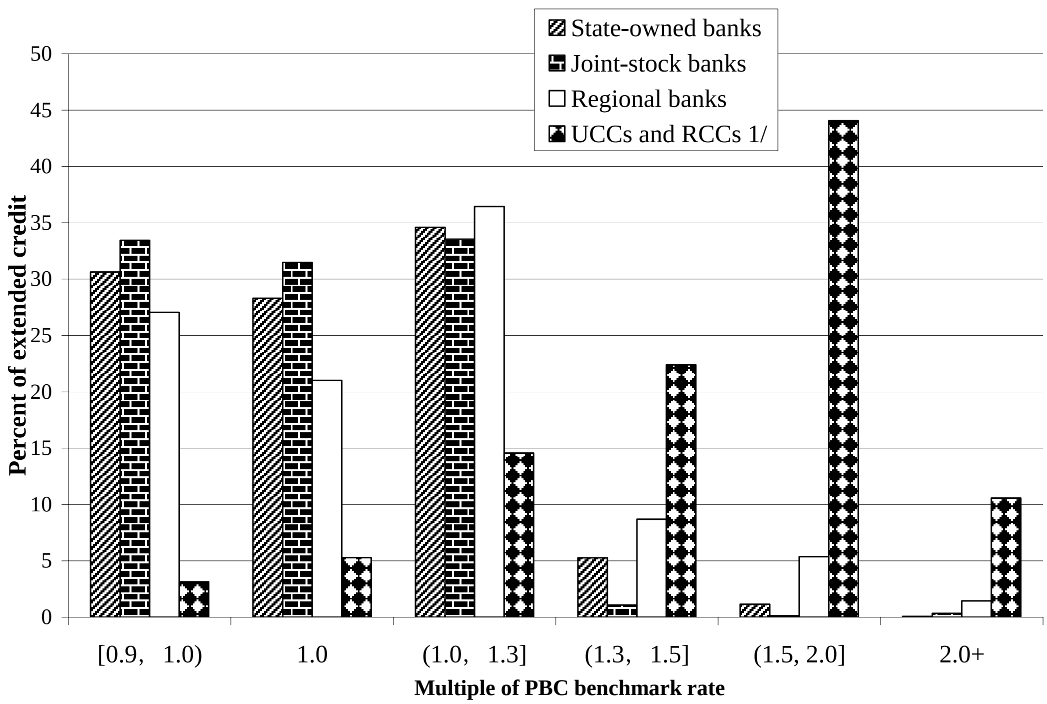
Year	**Loans (RMB)**	**Deposits (RMB)**
1996	All enterprises: 0.9 times to 1.1 times the official benchmark rate	Deposit rate required to equal to the official benchmark rate
1998	Medium and large enterprises: 0.9 times to 1.1 times Small enterprises: 0.9 times to 1.2 times	No change
1999	Large enterprises: 0.9 to 1.1 times Small and medium enterprises: 0.9 to 1.3 times	No change
January 2004	All enterprises: 0.9 to 1.7 times	No change
October 2004	Upper limit removed, lower limit unchanged at 0.9 times	Lower limit removed

Source: PBC and FSF.

[15] For urban and rural credit cooperatives, a ceiling on lending interest rates of 2.3 times the benchmark rate continues to apply. For deposits, there is no floor, but the official deposit benchmark rate forms a ceiling.

Loan pricing by state-owned banks remains undifferentiated, despite the space provided by the liberalization of lending rate caps in 2004 (Figure 3). Most new loans were still contracted at or below the PBC's benchmark rate in the fourth quarter of 2005, and virtually no client paid more than 1.3 times the benchmark rate for a new loan in the fourth quarter of 2005. Since October 2004, the benchmark lending rate has been between 5.2 percent for a six-month loan and 6.1 percent for a loan over five years; thus, basically no corporate clients paid more than 6.8 percent interest on their six-month loan (7.9 percent for a loan over five years).

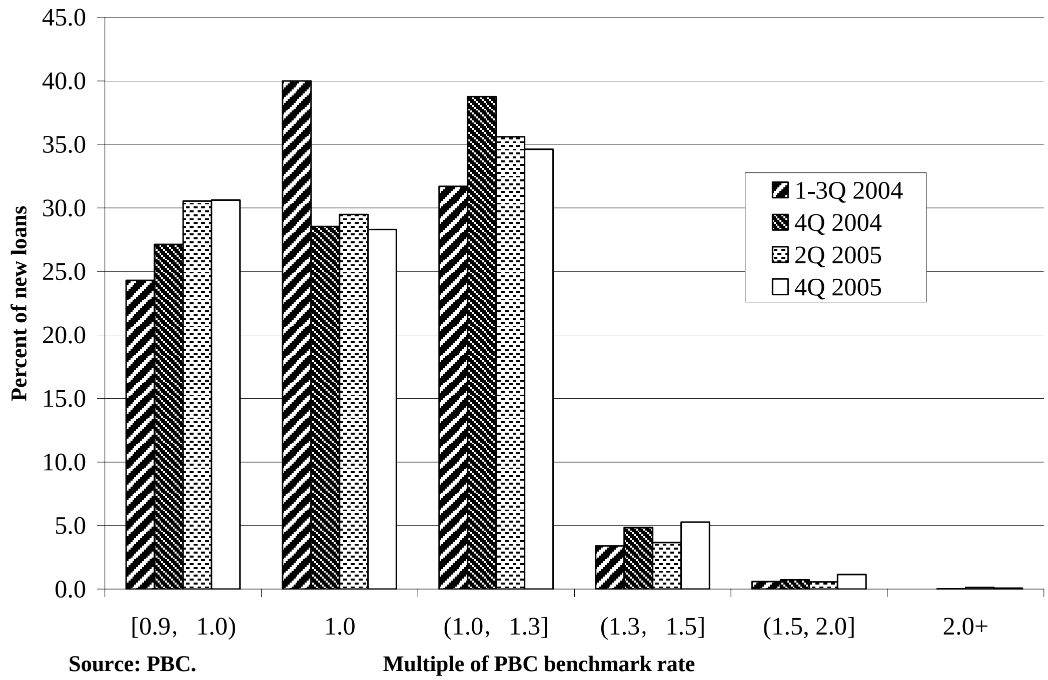
Figure 3. Distribution of Interest Rates Charged by Financial Institutions on New Loans (4Q 2005)



Source: PBC.
1/ Urban credit cooperatives (UCCs) and rural credit cooperatives (RCCs).

Following the 2004 liberalization, the differentiation of interest rates on new loans increased somewhat in the fourth quarter, but interest rates became more uniform again in the first three quarters of 2005. The changes of the SCB interest rates distribution over time (Figure 4) do not exhibit a clear trend. The dispersion of interest rates, taking an estimate of standard deviation as a rough proxy, has increased from 0.124 times the benchmark interest rate for new loans in the first three quarters of 2004 to 0.134 in the last quarter of 2004, but then decreased to 0.130 in the first quarter of 2005 and remained virtually unchanged until the fourth quarter of 2005 when it increased to 0.135.[16] The lack of a substantial increase in interest rate differentiation so far may be caused by several factors—including slow implementation of changes in sizable SCB operations, low priority for interest rate differentiation in an environment of abundant liquidity, and a decision by banks not to charge higher interest rates to worse and therefore more vulnerable clients—but currently available data do not allow us to discriminate among these and other possible reasons.

Figure 4. Distribution of Interest Rates Charged by SCBs



Source: PBC.

C. Bank Lending and Enterprise Performance

We estimate a model explaining the changes in regional lending to address the question of whether SCB lending decisions have become more commercially oriented. The model includes a number of control variables that could have an impact on a bank's decision on credit expansion in a given region (province or municipality). Our main focus, however, is whether banks take into account the performance of enterprises, measured by operating surplus to GDP in each province, when deciding how much to lend.[17] If they do, this could be

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[16] Since data about distribution of interest rates on individual loans are not publicly available, we roughly estimate the standard deviation of interest rates from the distribution (Figure 4) by assuming that loans in each interest rate band have uniform size and are all extended at the midpoint of the band.

[17] The operating surplus data come from Gross Regional Product statistics—Table 3-12 in the 2005 China Statistical Yearbook, for instance.

interpreted as an indication of growing commercial orientation, improving credit risk management, and an absence of a bailout role of SCBs in the economy. While the operating surplus data may reflect the performance of state-owned enterprises more closely than that of other enterprises, we take operating surplus as a proxy for the profitability of all enterprises as there are no reliable and comprehensive data on the performance of all enterprises by regions.[18]

The model is estimated for the aggregate of the four major SCBs and for other financial institutions to examine any differences in lending patterns and then also for the four major SCBs individually. Regional data for the four major SCBs—the BOC, CCB, ICBC, and ABC—are publicly available, along with the total credit for each province or municipality. This allows us also to calculate the total credit from other financial institutions, which include joint-stock commercial banks, urban commercial banks, specific depository institutions, foreign-funded banks, and rural credit cooperatives. Joint-stock commercial banks had the largest share among other depository institutions at end-2004, accounting for 37 percent of total assets.

The growth rate of loans in a given province or municipality is explained by several province- and bank-specific variables. These include lagged GDP growth, change in the funding base (proxied by the growth rate of savings deposits), enterprise profitability (proxied by operating surplus/nominal GDP), share of state-owned enterprises (SOEs) on industrial output, lagged growth rate of loans, and a trend:

$$\textit{growth rate of loans}_{i,t} = \alpha_i + \beta_1\, \Delta\, GDP_{i,\,t-1} + \beta_2\, \textit{growth rate of saving deposits}_{i,t} +$$

$$+ \beta_3\, (\textit{operating surplus/GDP})_{i,t} + \beta_4\, (\textit{SOEs industrial output/industrial output})_{i,t} +$$

$$+ \beta_5\, \textit{growth rate of loans}_{i,t-1} + \beta_6\, \textit{trend}_t + \varepsilon_{i,t} \qquad (1)$$

for panel data i = 1, ... , 31 provinces and municipalities and t = 1, ... , 8 years (1997–2004). Our data is from the CEIC database and various issues of the Banking Almanac and the National Bureau of Statistics Statistical Yearbook. The means of some of the key variables are provided in Table A.1. in the Appendix. The fixed-effects model (1) was estimated using the PANEL routine in TSP 4.5, with heteroscedasticity-consistent standard errors.[19] The operating surplus variable was entered directly as in (1) and also in an interaction with a trend and in an interaction with dummy variables for individual years to explore any changes of its impact over time.

Changes in funding base are an important determinant of lending by SCBs, but corporate profitability has either no or negative effect on lending growth—and we do not find any of these features in case of other financial institutions. The results (Table 5) suggest that the availability of funding (growth rate of savings deposits) is an important determinant of lending growth for the major state-owned banks. As for the role of enterprise performance,

[18] State-owned enterprises accounted for approximately 60 percent of industrial output during our sample period (simple average across the provinces in our sample).

[19] The Hausman test rejected the random effects model in favor of the fixed effects model in most cases.

large state-owned banks either do not take it into account (first column of Table 5) or lend more in provinces with *lower* profitability of enterprises (second and third columns of Table 5). The negative effect of profitability does not appear to diminish over time. We do not observe any of these features in case of lending by other financial institutions in China. Share of SOEs in output does not appear to have a significant impact on SCB lending, suggesting that the SCBs' focus on SOE lending might be weaker in recent years. The results for individual SCBs generally confirm the aggregate results, but there is no clear differentiation by the progress in reforms—the results for the two pilot banks or the ABC do not stand out. All models, with the exception of the BOC, have good explanatory power.

We also directly compare the relative lending growth of the SCBs and other financial institutions. We estimate a similar model as model (1), explaining the *changes* in lending market share of the four SCBs in a given province by changes in their market position in funding, GDP growth, SOE output share, and operating surplus. The results (Table 6) confirm the implication of results in Table 5 that the large SCBs have been losing market share to other financial institutions faster in provinces with more profitable enterprises, even after we control for output growth, SOE share, and changes in the position on the deposit market in a given province. Again, the slide of market share in more profitable provinces does not appear to diminish over time.

Table 5. Explaining Lending Growth Rate by Province (1997–2004) 1/

	Major State-Owned Banks			**Other Financial Institutions 3/**			**Individual State-Owned Banks 2/**											
							BOC			CCB			ICBC			ABC		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
GDP growth (-1)	.002	.002	.002	-.001	-.001	-.01	-.001	-.0005	.001	-.01***	-.01***	-.003	.005**	.005**	.003	.01***	.01***	.003
	(.002)	(.002)	(.002)	(.01)	(.01)	(.01)	(.005)	(.005)	(.005)	(.003)	(.003)	(.004)	(.002)	(.002)	(.003)	(.002)	(.002)	(.002)
Savings deposit growth rate	.64***	.64***	.56***	.09	.10	.03	.00003	.0001	.00002	.53***	.53***	.67***	.69***	.70***	.69***	.84***	.84***	.24*
	(.05)	(.04)	(.03)	(.20)	(.20)	(.21)	(.0001)	(.0001)	(.0001)	(.09)	(.10)	(.11)	(.03)	(.03)	(.03)	(.13)	(.13)	(.13)
Operating Surplus/GDP	-.32	...	...	.70	...	...	-.43	...	...	-.49	...	...	-.41*	...	...	-.25	...	...
	(.21)			(.58)			(.64)	...	...	(.34)	...	...	(.26)	...	...	(.31)	...	...
Oper. Surplus/GDP*Trend	...	-.10***	...	...	.13	...	...	-.10	...	...	-.13**	...	...	-.13***	...	...	-.05	...
		(.03)			(.12)		...	(.09)		...	(.05)		...	(.03)	...	...	(.05)	...
Oper. Surplus/GDP*99dummy 4/	...	...	...	...	...	.55	...	...	.29	...	...	-.40	...	...	.07	...	...	...
						(.67)			(.64)			(.32)			(.23)			
Oper. Surplus/GDP*00dummy	...	...	-.48***	...	...	.86	...	...	-.63	...	...	.21	...	...	-.46*	...	...	-.85***
			(.08)			(.58)			(.59)			(.30)			(.25)			(.13)
Oper. Surplus/GDP*01dummy	...	...	-.19**	...	...	1.30*	...	...	.28	...	...	-.35	...	...	-.10	...	...	-.16
			(.09)			(.66)			(.62)			(.29)			(.21)			(.13)
Oper. Surplus/GDP*02dummy	...	...	-.33***	...	...	1.03	...	...	.52	...	...	-.41	...	...	-.45**	...	...	-.09
			(.11)			(.71)			(.58)			(.31)			(.21)			(.16)
Oper. Surplus/GDP*03dummy	...	...	-.36**	...	...	.99	...	...	.51	...	...	-.49	...	...	-.46**	...	...	-.10
			(.14)			(.82)			(.56)			(.35)			(.22)			(.19)
Oper. Surplus/GDP*04dummy 4/	...	...	-.88**	...	...	...	...	...	-.75	...	...	-.98***	...	...	-.98***	...	...	-.40
			(.14)						(.56)			(.37)			(.22)			(.25)
Share of SOEs in output	-.0004	-.0005	-.0002	.01	.01	.01	-.005	-.005	-.003	.001	.001	.0005	-.002	-.002	-.002	-.001	-.001	-.0004
	(.002)	(.002)	(.001)	(.01)	(.01)	(.01)	(.005)	(.005)	(.004)	(.004)	(.004)	(.003)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Lending growth rate (-1)	-.12***	-.11**	-.002	-.39***	-.39***	-.40***	-.22**	-.22**	-.15	.05	.04	.09	-.10***	-.10***	.001	.10***	.11***	.09***
	(.04)	(.04)	(.05)	(.09)	(.10)	(.10)	(.11)	(.11)	(.12)	(.05)	(.05)	(.06)	(.03)	(.03)	(.03)	(.03)	(.03)	(.04)
Trend	.02**	.03***	.04***	.07***	.04	.05	.03	.04*	.03	.05***	.07***	.06***	.0003	-.02***	.03***	-.003	.01	.01
	(.01)	(.01)	(.01)	(.02)	(.04)	(.05)	(.02)	(.02)	(.02)	(.01)	(.02)	(.02)	(.007)	(.009)	(.01)	(.01)	(.01)	(.01)
N	168	168	168	144	144	144	168	168	168	168	168	168	168	168	168	168	168	168
R^2	.71	.73	.78	.46	.46	.48	.22	.23	.56	.57	.58	.66	.83	.84	.89	.55	.55	.74

Source: Author's estimates based on CEIC and 2005 Banking Almanac data.

1/ Fixed effects model with heteroscedasticity-consistent standard errors, annual lending growth rate by province as dependent variable, i.e., (credit[t]-credit[t-1])/credit[t-1]. Hausman test rejected the random effects model in favor of the fixed effects model in most cases. Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors in parentheses.

2/ Bank of China (BOC), China Construction Bank (CCB), Industrial and Commercial Bank of China (ICBC), and Agriculture Bank of China (ABC).

3/ 1997–2003 data only

4/ Missing 1999 dummy variables were not identified; missing 2004 dummy for other financial institutions due to shorter sample period (through 2003).

Table 6. Explaining *Changes* of SOB Lending Market Share (1997–2003) 1/

Dep. Variable: *Change* in Market Share of Four Major State-Owned Banks	(1)	(2)	(3)
GDP growth 2/	-1.70	-1.63	-.76
	(1.40)	(1.40)	(1.45)
Change in savings deposit market share	.60***	.61***	.55***
	(.06)	(.06)	(.07)
Operating Surplus/GDP	-.18	...	...
	(.12)		
Oper. Surplus/GDP*Trend	...	-.04**	...
		(.02)	
Oper. Surplus/GDP*99dummy	...	...	-.07
			(.13)
Oper. Surplus/GDP*00dummy	...	...	-.25**
			(.12)
Oper. Surplus/GDP*01dummy	...	...	-.26**
			(.13)
Oper. Surplus/GDP*02dummy	...	...	-.29**
			(.13)
Oper. Surplus/GDP*03dummy	...	...	-.31**
			(.14)
Share of SOEs in output 2/	-1.46	-1.48	-.84
	(1.20)	(1.19)	(1.10)
Change in lending market share (-1)	-.26***	-.25***	-.28***
	(.09)	(.09)	(.10)
Trend	.002	.01	.01
	(.005)	(.01)	(.01)
N	145	145	145
R^2	.55	.55	.58

Source: Author's estimates based on CEIC and 2005 Banking Almanac data.
1/ Fixed effects model with heteroscedasticity-consistent standard errors, annual change in market share of four major state-owned banks as dependent variable. The four banks include the Bank of China, China Construction Bank, Industrial and Commercial Bank of China, and Agriculture Bank of China.
Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors in parentheses.
2/ Coefficients and standard errors multiplied by 10^3.

V. Conclusions and Issues Going Forward: Creating the Incentives and Infrastructure for Banks to Operate Efficiently

Our results, based on data covering only the beginning of the most recent reforms, reinforce the need for thorough reform implementation. In the 1997–2004 data, it is difficult to find clear evidence that the SCBs have substantially changed their behavior and became commercially oriented. The banks have slowed down credit expansion, but the pricing of credit risk remains undifferentiated. Furthermore, SCBs' lending appears to be driven mainly by the availability of funds (savings deposits) and either does not take enterprise performance into account or is actually *lower* in more profitable provinces. Large SCBs have continued losing lending market share to other financial institutions in provinces with more profitable enterprises in recent years. On the positive side, share of SOEs in output does not appear to have a significant impact on SCB lending, suggesting that the SCBs' focus on SOE lending might be weaker in recent years.

Fundamental changes of behavior of state-owned banks will inevitably take time even after major high-level reforms are successfully implemented.[20] The authorities will need to create the incentives and infrastructure for banks to operate efficiently if the recent reform effort is to bring sustainable improvements in bank performance. We briefly review some of the key steps below.

It will be critical to the ultimate success of banking reforms for the authorities to create strong incentives for banks to base their decisions on commercial principles and improve infrastructure for banking operations. The recent substantial government pressure on banks to reform needs to be replaced with a standard set of incentives for bank managers to perform well if a sustainable improvement of bank performance is to be achieved. Besides strictly avoiding interference for policy purposes and holding managers in the state-owned banks accountable for achieving reform goals, the authorities should focus on (i) further developing banking regulations and, in particular, strengthening their enforcement; (ii) further diversifying bank ownership structure and increasing transparency of bank operations; and (iii) improving the legal environment for enforcement of creditor rights and resolving existing nonperforming loans.

The China Banking Regulatory Commission has made progress in improving bank supervision, but more effort is required. Substantial improvements in banking regulation have been made in recent years, including in the critical areas of asset classification and provisioning and capital adequacy.[21] The new capital adequacy requirements, which require banks to fully provision for their nonperforming loans and maintain at least 8 percent of aggregate capital adequacy, were adopted in 2004 and will become fully binding as of 2007. Strengthening capital adequacy requirements was a major step in creating a standard regulatory environment, but it will be a major test for the CBRC to ensure that all banks achieve compliance and that no precedent of forbearance is created. At end-2004, 30 banks accounting for 48 percent of commercial bank assets were in compliance and the total shortfall in provisioning stood at RMB960 billion ($116 billion). In 2004, the CBRC also issued and revised a number of other regulations and took steps to strengthen on-site examinations and monitoring of large exposures and connected lending, introduced a risk-based supervisory system for city commercial banks.

The more diversified ownership structure and higher transparency that come with public listing should increase the pressure on banks to improve governance and operations and provide both additional capital and management expertise. As described above, foreign ownership of banks has increased recently, promising to accelerate the transfer of technology

[20] It will also take time for the full impact of the most recent reforms to become observable in the data and these issues should be revisited in future research.

[21] The current asset classification and provisioning requirements are close to international practice, but leave substantial discretion for individual banks in deciding the classification of individual loans. While some discretion is inevitable and even useful, it also requires close on-site monitoring by the supervisor, particularly when a new system is being introduced.

and management practices. However, the role of strategic investors in domestic banks has been limited so far, as ownership regulations limit the share of a single foreign owner to 20 percent of capital. In fact, there has been only one smaller Chinese bank in which a foreign investor effectively gained management control thanks to an unusually fragmented ownership.[22] An initial public offering should, in addition to providing additional capital, increase the transparency of bank operations, enhance the standards of reporting, and increase the attention paid to bank operations.

Broader legal and SOE reforms would help limit the rate of new creation of nonperforming loans. Asset management companies resolved 67 percent of assumed assets by end-2005—almost six years after the start of the process—with a 21 percent cash recovery ratio. This progress does not compare favorably with the pace of resolution and recovery rates of most asset management companies after the Asian crisis. Several changes in the legal environment would be helpful to limit the creation of new NPLs and facilitate their timely resolution. These include an adoption of a new bankruptcy law that would provide sufficient protection to creditors and improvements in foreclosure and framework for creditor rights more generally. Tax deductibility of specific loan loss provisions would improve the incentives to resolve nonperforming loans. Further reforms of state-owned enterprises strengthening their governance and financial discipline would also lower the credit risk banks face.

[22] Newbridge Capital LLC, with an 18 percent stake in Shenzhen Development Bank.

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Table A. 1. Means of Key Variables by Province/Major City (1997–2003/2004)
(in percent, unless indicated otherwise)

	Nominal GDP growth	Operating surplus/GDP	Share of SOEs on industrial output 1/	Lending growth	Four major SOB lending market share
Anhui	9.6	20.1	57.1	12.7	56.1
Beijing	13.0	23.3	64.5	28.6	55.7
Chongqing	10.8	18.6	69.2	25.3	n.a.
Fujian	11.3	27.6	30.7	16.4	57.5
Gansu	10.3	14.2	76.1	11.4	62.4
Guangdong	12.0	18.7	32.7	18.2	48.8
Guangxi	8.9	11.8	62.1	10.5	68.8
Guizhou	10.6	9.3	76.5	14.6	68.2
Hainan	9.3	14.7	64.9	5.9	59.4
Hebei	12.6	24.4	49.7	12.4	57.7
Heilongjiang	10.5	22.9	80.5	10.1	54.7
Henan	11.8	12.6	53.0	14.0	50.8
Hubei	10.0	10.7	58.4	12.1	51.6
Hunan	10.0	10.8	61.6	12.2	59.2
Inner Mongolia	13.7	14.8	75.0	10.6	60.8
Jiangsu	12.7	22.8	27.5	19.4	55.5
Jiangxi	11.2	11.8	73.5	11.4	66.5
Jilin	10.5	11.3	78.6	9.6	51.5
Liaoning	10.2	24.4	63.5	12.6	44.6
Ningxia	11.5	8.6	71.4	16.9	74.4
Qinghai	12.4	10.3	85.3	13.2	70.8
Shandong	12.8	19.8	39.4	16.2	46.5
Shanghai	12.6	27.5	47.3	21.5	57.8
Shaanxi	12.0	11.9	75.8	14.7	60.7
Shanxi	11.4	23.7	64.6	15.3	58.4
Shenzhen	n.a.	n.a.	n.a.	24.7	56.6
Sichuan	10.4	15.2	57.3	13.4	53.7
Tianjin	13.1	19.7	34.8	16.7	65.2
Tibet	16.2	6.1	76.1	14.2	n.a.
Xinjiang	11.7	16.7	85.8	11.4	58.8
Yunnan	9.0	15.6	79.0	14.4	68.7
Zhejiang	13.4	27.6	19.5	25.5	51.9

Source: CEIC, Banking Almanac, and author's calculations.