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Resource Allocation and Institutional Reforms of China's Banking Sector

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1. INTRODUCTION

It is widely recognized that financial systems play a crucial role in market-based economies. Financial systems mobilize savings into financial assets and allocate them to productive sectors. Given underdeveloped capital markets, the banking sector's ability to produce information and allocate credit efficiently is fundamental for the development of the market-based economy.

In the period since the initiation of reforms, China's economic performance has been remarkable, and its economy has changed from a state-owned, centrally planned one into a mixed ownership and decentralized one. Under the overall process, financial sectors have been reformed through the creation of a variety of specialized and commercial banks, non-bank financial institutions, and new financial instruments.

Until now, China has also managed to maintain macroeconomic stability, at least in comparison with other transitional economies. However, the allocation of resources is still determined within a framework of economic planning, and loans from financial institutions are to a large extent allocated on the basis of decisions made by government authorities at the

central, regional, and local levels (World Bank [1990]). Therefore, the development of China's financial system has lagged behind the development of other sectors of the economy, and further reforms in this area have been an urgent task for the objective of further developing a market-oriented economy.

In this paper, which also gives an overview of the development of Chinese financial sectors since 1979, we analyze the current situation of resource allocation through the banking system and conclude that cross-regional resource allocations are fragmented as well as distorted (Section 3). Then, in Section 4, we look at resource allocations in rural areas and the development of credit cooperatives. In Section 5, we consider the problems of the current banking structure, and draw some lessons from prewar and postwar Japanese experiences as a basis for the next stage of financial reforms in China.

2. DEVELOPMENT OF THE CHINESE FINANCIAL SECTOR: OVERVIEW

In this section, we give an overview of the development of Chinese financial institutions and macroeconomic management since 1979. More detailed descriptions can be found in World Bank [1990, 1995], McKinnon [1993a], Tseng et als. [1994], and Yi [1994].

2.1 The Development of Financial Institutions

Before the initiation of economic reforms, the Chinese financial system operated under a mono-bank system, as it was in other formerly centrally planned economies. The People's Bank of China (PBC) acted both as a central bank and as a commercial bank. Since the State Planning Commission made all the important decisions concerning investment, production and finance, and most investment financing was allocated through the state budget, the only major role of the banking system was to provide working capital to enterprises. In 1984, the PBC was granted the authority of a central bank, and its commercial operations were transferred to the newly established Industrial and Commercial Bank of China (ICBC) and to three other specialized banks: the Agricultural Bank of China (ABC), the People's Construction Bank of China (PCBC), and the Bank of China (BOC). In addition to these four specialized banks, two comprehensive national banks, as well as several local commercial banks, were established around 1987. In very recent years, further reform measures were taken to commercialize the specialized banks and to strengthen the PBC as an autonomous central bank to implement monetary policy. In

1994, three policy banks were created to take over the policy loans of the specialized banks and to finance the import and export trade. In 1995, laws on both central banking and commercial banking were enacted.

Nonbank financial institutions have also developed. The Rural Credit Cooperatives (RCCs) have been growing since the earlier stages of the reform period, and in recent years the Urban Credit Cooperatives (UCCs) and Trust and Investment Companies (TICs) have begun to grow at a remarkably fast pace. Although the four specialized banks, which have a widespread network (they had more than 135,000 branches[1] in 1993) account for 78 percent of total financial institutions assets and continue to dominate China's financial system, the approximately 50,900 independent RCCs, who have more than 289,000 branches[1], hold 8 percent of total assets, and the UCCs and TICs hold 3 percent and 6 percent, respectively. In 1986, the Postal Saving and Remittance was also restarted as a deposit taking institution.[2] The growth of this system has been remarkable. Deposits have grown at an annual rate of 59 percent for the period 1987 to 1993, and the share of postal deposits in overall individual savings deposits reached 4.5 percent in 1993.

Thus, China's financial sector currently consists of a much broader range of intermediaries, and the reforms have shown progress, at least from the viewpoint of institutional setting. Yet as we will see in later sections, without fiscal reforms there will be little chance of realizing market-oriented resource allocation, and we are skeptical on the issue of whether the recent reform measures will bring about marked progress in commercializing the specialized banks.

2.2 Monetary Development

The purpose of financial reforms is to mobilize financial resources, allocate them efficiently, and maintain macroeconomic stability. Since the initiation of market-oriented reforms in 1979, China has recorded remarkable success in resource mobilization, and has managed to control inflation.

The rise of financial accumulation by households occurred first in rural areas. The introduction of the responsibility system and increased procurement prices for agricultural products at the first stage of overall reforms changed the incentive system for the farmers, and led them into the marketplace and to begin to accumulate monetary assets. Savings deposits in rural areas grew at an annual rate of 41 percent for the period 1979-84 (Table 1). This was followed by urban areas, as industry succeeded agriculture as a leading growth sector (McKinnon [1993a]). Thus, as shown in Table 1, individual savings deposits increased to 1,476 billion yuan in 1993 from 28 billion in 1979, and China's financial deep-

Table 1 Depository Institutions in China

(Billion yuan)

	1979	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	Growth rate (%)[1] 79–84	84–89	89–94
Deposits																			
(A) Specialized banks	134	166	204	237	276	339	427	538	657	743	901	1,164	1,486	1,889	2,323	2,933	20.4	21.6	26.6
(A1) Individual savings	20	28	35	45	57	78	106	147	207	266	373	519	679	868	1,119	1,584	30.8	36.9	33.5
(A2) RCCs' deposits with ABC	19	21	25	30	37	33	40	49	55	58	66	77	92	108	138	—	11.3	15.0	20.3[2]
(B) RCCs	22	27	32	39	49	62	72	96	123	140	166	214	271	348	430	568	23.6	21.7	27.8
(B1) Individual savings	8	12	17	23	32	44	56	77	101	114	141	184	232	287	358	482	41.1	26.4	27.8
(C) Specialized banks & RCCs:																			
(A)–(A2)+(B)	136	171	210	246	288	368	460	585	725	825	1,002	1,302	1,666	2,129	2,615	—	22.0	22.2	27.1[2]
(C1) Individual savings:																			
(A1)+(B1)	28	40	52	68	89	121	162	224	307	380	515	703	911	1,155	1,476	—	34.0	33.5	30.1[2]
Loans																			
(D) Specialized banks	204	241	276	305	343	442	591	759	903	1,055	1,241	1,517	1,804	2,162	2,646	3,160	16.7	22.9	20.6
(D1) Urban collectives and individuals	6	8	12	13	16	30	32	43	55	66	71	83	95	117	140	120	38.7	19.1	11.0
(D2) TVEs	3	5	6	7	8	16	19	29	35	41	42	46	50	58	—	—	39.5	21.7	—
(D3) RCCs	1	1	1	1	2	3	3	4	4	4	4	4	5	6	6	—	43.4	3.9	12.5[2]

Table 1 (continued)

(E) RCCs	5	8	10	12	16	35	40	57	77	91	109	141	181	245	314	417	49.4	25.2	30.8
(E1) TVEs	1	3	4	4	6	13	16	27	37	46	57	76	101	147	200	228	57.0	33.4	31.9
(F) Specialized banks & RCCs:																			
(D)–(D3)+(E)	208	248	285	316	358	474	627	812	977	1,142	1,346	1,654	1,980	2,401	2,954	—	17.9	23.2	21.7[2]
(F1) State sector:																			
(D)–(D1)–(D2)–(D3)	195	227	257	283	318	394	536	684	809	945	1,124	1,383	1,654	1,981	—	—	15.1	23.4	—
(F2) Non-state sector:																			
(D1)+(D2)+(E)	13	21	28	33	40	81	91	128	167	197	222	271	326	420	—	—	43.0	22.4	—
(F21) Share of non-state sector:																			
(F2)/(F) (%)	6.5	8.4	9.8	10.4	11.3	17.0	14.5	15.8	17.1	17.3	16.5	16.4	16.4	17.5	—	—			
Specialized banks' transaction with PBC																			
(G) Reserves (% of deposits)	—	—	—	—	—	—	22.5	20.7	17.3	17.4	19.8	22.7	24.2	19.5	22.7	—			
(H) Credit from PBC																			
(% of deposits)	—	—	—	—	—	—	52.6	49.9	41.8	45.3	46.6	43.6	39.7	35.5	41.4	—			
(I) Loan-to-deposit ratios:																			
(D)/(A) (%)	152.3	145.3	135.8	129.0	124.2	130.5	138.2	141.0	137.4	142.1	137.7	130.2	121.4	114.4	113.9	107.8			

Note: 1. Annual average. 2. Growth rate for 1989–93.

Source: *Statistical Yearbook of China, Rural Financial Statistics of China, International Financial Statistics*, and World Bank (1990).

ening proceeded at a dramatic pace. The money to GNP ratio increased from 16.2 percent in 1978 to 63.8 percent in 1993. In addition, the broad money to GNP ratio reached 95.4 percent in 1993, up from 24.8 percent in 1978 (Table 2)[3].

This rapid buildup of monetary assets could not have been achieved voluntarily given the severe financial repression. In 1988, the sharp rise in inflation made the real rate on deposits significantly negative, and led to widespread withdrawals from savings deposits in mid-1988 (World Bank [1990]). Under this situation, authorities introduced interest rate indexation for over three-year maturity deposits[4] as well as measures to curtail monetary expansion, and the incentives to accumulate monetary assets were preserved (McKinnon [1993a]).

This rapid accumulation of monetary assets contributed to the maintenance of price stability. Table 3 provides two estimates of seigniorage in China for the period 1979 to 1993. If we take GDP deflator as an index of price (the first estimate), the level of seigniorage until 1983 can be estimated to have been around one percent of real GDP, then jumped to nearly 4 percent in 1984. Compared to the first half of 1980s, seigniorage has recorded higher levels since the mid-1980s. In 1992 and 1993 as well as in 1988, in particular, it reached almost 5 percent of real GDP. This high level of seigniorage, however, has mostly been absorbed as an increase in real currency holdings, and except for the period 1984 to 1986, there was no sizable inflation tax. However, as McKinnon [1993a] and Horiuchi [1995] have suggested, since the financial deepening in China has already progressed so far, and reached a level comparable to industrial countries when measured as M2 over GNP, there is little room left for seigniorage without inflationary pressure. Also, the practice of indexing deposits, though it stemmed a vicious circle of dis-

Table 2 Financial Deepening in China

(Percentage of GNP)

	1978	79	80	81	82	83	84	85
Currency	5.9	6.7	7.7	8.3	8.5	9.1	11.4	11.5
M1	16.2	29.8	33.4	36.5	37.1	39.2	46.6	46.8
M2	24.8	33.3	37.4	41.4	43.6	46.7	51.7	57.0
	86	87	88	89	90	91	92	93
Currency	12.6	12.9	15.2	14.6	14.9	15.7	18.0	18.6
M1	52.4	53.3	54.2	51.1	54.5	60.1	66.7	63.8
M2	65.5	70.4	68.3	71.2	83.0	91.9	101.2	95.4

Note: End of year figures are used for currency, M1 and M2.
Source: IMF, *International Financial Statistics*.

Table 3 Seigniorage and Expansion of Real Currency Holdings
(Percentage of real GDP)

	1979	80	81	82	83	84	85	86
Seigniorage/A	1.4	1.8	1.0	0.8	1.6	3.8	2.3	2.4
Inflation tax/A	0.2	0.2	0.2	0.0	0.1	0.3	0.8	0.5
Real currency expansion/A	1.2	1.5	0.9	0.8	1.5	3.4	1.5	1.9
Seigniorage/B	1.7	2.1	1.3	1.0	1.8	4.5	2.7	2.7
Inflation tax/B	0.1	0.5	0.2	0.2	0.2	0.2	1.3	0.8
Real currency expansion/B	1.6	1.6	1.0	0.8	1.7	4.3	1.4	1.9
	1987	88	89	90	91	92	93	
Seigniorage/A	2.1	4.8	1.3	1.7	2.6	4.8	4.9	
Inflation tax/A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Real currency expansion/A	2.0	4.7	1.2	1.6	2.6	4.8	4.7	
Seigniorage/B	2.3	4.9	1.2	1.7	2.7	4.7	4.6	
Inflation tax/B	1.0	2.2	2.1	0.2	0.7	1.1	2.2	
Real currency expansion/B	1.3	2.7	–0.8	1.5	2.0	3.6	2.4	

Note: Seigniorage is the increase of currency measured in real terms. Inflation tax is defined as the currency stock at the end of the previous year times rate of inflation in the current year. Real currency expansion is seigniorage minus real currency expansion. The price index is GDP deflator in case A, and CPI in case B.
Source: IMF, *International Financial Statistics*, and World Bank (1990).

intermediation and inflation, has reduced banks' interest margins and weakened their balance sheets.

In China, the revenue from seigniorage was not so much utilized to finance government budget deficits as to sustain the over-loans of the state-owned specialized banks. In 1993, the shares of the central government and deposit money banks in the PBC's claims were 13 percent and 79 percent, respectively. Thus, the control of monetary aggregates is closely related to the state banks' engagement in credit allocation, as will be seen in greater detail in later sections.

2.3 The Financing of Investment

In the prereform era, the state bank was only responsible for providing working capital; investment projects were financed through the state budget. Since 1979, the channel of investment financing has changed fundamentally. The share of budget in financing fixed investment by state-owned units fell from 38.6 percent in 1981 to just 5 percent in 1994. Bank loans have taken over the place of the state budget. The share of domestic bank loans increased from 13.6 percent in 1981 to 25.7 percent in 1994 (Table 4). At the same time, self-fundraising from

Table 4 Financing of Fixed Asset Investment

	1981	82	83	84	85	86	87	88	89	90	91	92	93	94
Total fixed investment (Billion yuan)	96	123	143	183	254	302	364	450	414	445	551	786	1,246	1,637
Budget (%)	28.1	22.7	23.8	23.0	16.0	14.6	13.1	9.1	8.3	8.7	6.8	4.3	3.7	3.2
Domestic bank loans (%)	12.7	14.3	12.3	14.1	20.1	21.1	23.0	20.6	17.3	19.6	23.5	27.4	23.5	22.6
Foreign loans (%)	3.7	5.0	4.7	3.9	3.6	4.4	4.8	5.8	6.6	6.2	5.7	5.8	7.3	10.8
Self-fundraising and other (%)	55.5	58.1	59.3	59.1	60.3	59.9	59.2	64.5	67.8	65.5	64.0	62.5	65.5	63.3
State-owned units (Billion yuan)	67	85	95	119	168	198	230	276	254	292	363	527	766	932
Budget (%)	38.6	31.4	35.4	35.3	26.4	23.7	20.5	14.7	13.4	13.2	10.2	6.3	6.0	5.0
Domestic bank loans (%)	13.6	16.2	14.3	15.4	23.0	22.7	24.5	24.2	20.9	23.6	28.1	30.4	25.4	25.7
Foreign loans (%)	5.4	7.1	6.9	5.9	2.9	5.0	7.3	8.9	10.1	9.1	8.4	8.0	6.1	7.2
Self-fundraising and other (%)	42.4	45.3	43.5	43.5	47.7	48.6	47.6	52.2	55.6	54.1	53.4	55.4	62.5	62.1
Collective-owned units (Billion yuan)	12	17	16	24	33	39	55	71	57	53	70	136	223	267
Budget (%)	—	1.7	1.9	1.3	1.5	0.5	0.7	0.7	0.5	0.4	0.3	0.1	0.1	1.9
Domestic bank loans (%)	—	22.4	25.6	31.8	37.6	38.0	40.4	36.2	26.7	27.6	31.7	36.7	31.0	28.0
Foreign loans (%)	—	0.0	0.6	0.4	0.9	1.0	1.3	1.5	3.0	2.3	2.0	2.6	5.7	8.1
Self-fundraising and other (%)	—	75.9	72.4	66.5	60.2	60.5	57.6	61.5	69.8	69.8	66.0	60.5	63.1	62.0
Individuals (Billion yuan)	18	21	32	41	54	65	80	102	103	100	118	122	148	197
Domestic bank loans (%)	—	—	—	—	0.0	6.2	6.3	0.0	3.4	3.6	4.5	4.2	3.7	3.3
Self-fundraising and other (%)	—	—	—	—	100.0	93.8	93.7	100.0	96.6	96.4	95.5	95.8	96.3	96.7

Note: Investments by other sectors, such as joint ventures, are included in total fixed investment in 1993 and 1994.

Source: *Statistical Yearbook of China*, and *Statistical Data of Investment of Fixed Assets in China 1950–85*.

retained earnings and extrabugdetary funds has also increased. This change of financing sources does not necessarily imply that investment projects have been selected on a commercial base. Rather, it reflects the weakening of the fiscal grip of the central government, as well as the central and local government's continuing control over resource allocation through the banking system. The financial sector now appears to shoulder the responsibility even of financing social infrastructure investment, which is usually considered a fiscal matter in market-based economies.

On the other hand, collective-owned units have become more dependent on bank loans for financing investments as well as for working capital since the early stage of reforms. This dependence, coupled with the stringent influence of deflationary credit policy on nonstate sectors, caused a significant contraction of investments by collective-owned units in the late 1980s.

3. RESOURCE ALLOCATION IN CHINA

The purpose of this section is to survey China's credit plan and to evaluate its effect on the resource flows by statistical analysis.

3.1 The Credit Plan and the Central Bank's Credit

In China, the extension of credit by financial institutions is still highly controlled through the credit plan, and the latitude of the specialized banks in selecting their customers is limited. 'The credit plan is implemented through ceilings on credit of the specialized and universal banks. The PBC sets annual and quarterly ceilings for the head offices of each of these banks, which then set ceilings for their local branches.[5] The credit plan also sets subceilings for specific types of loans such as working capital and fixed investment loans. . . . The credit ceilings for the specialized banks are based on each bank's share in total credit, as well as on the share of policy-based credit in total credit provided by the banks' (Tseng et als. [1994]).

This direct credit control has been supplemented by PBC lending to the specialized banks. When this credit is allocated, consideration is given to the growth of deposits relative to credit ceilings, the priority of the bank loans to be financed, as well as to the overall liquidity situation in the financial sector (World Bank [1990]). Thus, PBC lending has functioned not only as a supplier of liquidity through the granting of short-term credit to banks, but also as a supplier of policy loans. According to World Bank [1995], policy loans[6] account for between 60 and 80 percent of annual PBC lending to financial sectors. We saw in the previous sec-

tion that revenues from seigniorage were mainly allocated to the specialized banks, not to the state budget, but it is now clear that this is not an appropriate appraisal, since policy loans, which make up a major part of PBC lending to the specialized banks, are conceptually no different from government expenditures.

Banks, as well as RCCs, UCCs, and TICs, must hold 13 percent of their domestic currency deposits as required reserves with the PBC, as well as excess reserves at a level which has been set by guidance at 5 to 7 percent of deposits. These required reserves are held and monitored at the branch level, rather than the headquarters level, and they may not be used for settling payments and cash withdrawals (World Bank [1990], Tseng et als. [1994]). Thus, this relatively high level of required reserves is in effect a source of PBC policy lending, and has the function of redistributing financial resources from surplus to deficit banks and provinces.

In addition, the PBC intervenes in the interbank market for the sake of the credit plan. In China, the rate of the interbank market is in principle negotiated. However, 'commercial banks and NBFIs which participate in China's interbank market may encounter PBC intervention if interest rates are considered too high. PBC may also block transactions which "drain" resources from one province to another' (World Bank [1990]).

3.2 Cross-Regional Resource Movements

Next, we will consider cross-regional resource mobility through statistical analysis, and evaluate the influence of the credit plan on allocating funds across regions.

As a first step, we estimated the correlation between regional investment and savings. As is well known, the correlation of investment and savings across countries is used as a measure to evaluate international capital mobility. Dekle [1993] applied this approach to regional data within a country. He used Japanese regional data, and found no positive correlation for the private sector, which is consistent with the Feldstein and Horioka [1980] hypothesis that in a financially integrated economy, the rates of investment and savings are uncorrelated.

In China, however, data for regional savings and for fiscal transfers across regions is unavailable. As a proximate procedure, therefore, we examined the difference between net provincial income and provincial consumption as net provincial savings. The equation estimated the relationship of provincial investment rates to the national savings rate as well as to provincial savings rates. The magnitude of these two correlations can provide a standard to judge the degree of cross-regional resource movements, and if regional savings have major explanatory power, we can conclude that resource movements are restricted across provinces,

and that the economy is not financially integrated. As explanatory variables, we added the share of provincial income in national income, and regional-specific dummies. The data set is a 7 year panel (1986-1992) of the income accounts of China's 29 provinces (The data for Hainan is included in Guangdong).

The result is as follows (figures in parenthesis are t-statistics):

$$\begin{aligned} IN/NI = {} & 0.279 + 0.495\ SA/NI - 0.263\ SA_{rc}/NI_{rc} - 0.419\ NI/NI_{na} \\ & (2.734)\ (9.915) \qquad (-0.956) \qquad (-1.653) \\ & + 0.181\ BJ + 0.078\ SX + 0.121\ IM + 0.270\ TB + 0.160\ SA \\ & (7.789) \quad (3.542) \quad (5.399) \quad (10.456) \quad (7.227) \\ & + 0.096\ GS + 0.328\ QH + 0.241\ NX + 0.235\ XJ \\ & (4.317) \quad (13.788) \quad (10.339) \quad (10.531) \end{aligned}$$

$$\text{Adjusted } R^2 = 0.714,\ SEE = 0.055,$$

where IN, SA, and NI are net provincial investment, savings, and income, respectively. Inventories are included in investment. The subscript rc represents data for the rest of the country, while the subscript na represents the national aggregate. BJ, SX, IM, TB, SA, GS, QH, NX, and XJ are province-specific fixed effects for Beijing, Shanxi, Inner Mongolia, Tibet, Shaanxi, Gansu, Qinghai, Ninghai, and Xinjiang, respectively.

From this result, we find that regional investment is positively correlated with regional savings, and that the rate of savings in the rest of the country does not have explanatory power over the rate of investment in the province. In addition, the nine province-specific dummies are positive and significant, and except for Beijing the provinces are characterized as underdeveloped areas. These results indicate that, with the exception of resource flows related to public concerns, regional investments are more or less bound by regional savings levels, and resource mobility is limited in China.

3.3 Cross-Regional Resource Flows through the Banking System

In the above analysis, we were not able to distinguish financial resource allocations from fiscal transfers. Hence, we will now go on to consider resource flows across provinces through the banking system.[7]

Table 5 shows the loan-to-deposit ratio in each province relative to the national average[8] for the period 1989 to 1993. We are here considering loans and deposits from the national specialized banks (ICBC, ABC, BOC, and PCBC). For instance, in 1993 the loan-to-deposit ratio in Beijing was 54.9 percentage points lower than the national average,

Table 5 Loan-to-Deposit Ratios: National Banks
(Deviation from national average, percentage points)

	1989	90	91	92	93
Beijing	-66.8	-65.0	-62.9	-57.7	-54.9
Tianjin	40.8	35.1	30.6	29.7	28.8
Hebei	-17.1	-16.5	-15.5	-13.0	-12.7
Shanxi	-24.8	-16.6	-9.3	-4.9	-3.1
Inner Mongolia	18.7	30.5	37.5	35.9	45.4
Liaoning	8.7	17.2	23.4	16.0	17.1
Jilin	50.6	70.6	77.3	71.7	74.9
Heilongjiang	13.3	19.1	27.0	23.0	30.6
Shanghai	8.1	10.5	12.0	-0.6	-8.3
Jiangsu	5.4	-3.0	-5.1	-6.5	-13.7
Zhejiang	-18.5	-25.0	-24.8	-21.9	-22.2
Anhui	25.6	30.0	28.2	31.7	28.0
Fujian	-19.4	-22.8	-51.4	-26.4	-18.7
Jiangxi	26.1	25.7	34.2	34.1	23.0
Shandong	6.3	6.0	10.4	9.0	4.6
Henan	4.2	5.7	6.5	10.2	5.8
Hubei	43.7	50.0	47.2	43.3	31.3
Hunan	23.4	12.9	11.6	11.7	11.4
Guangdong	-9.6	-16.7	-25.2	-38.4	-31.9
Guangxi	-1.1	-11.9	-11.2	-16.1	-21.2
Sichuan	3.9	6.1	11.3	14.6	19.0
Guizhou	-5.2	-1.8	3.7	11.8	13.7
Yunnan	-30.6	-35.7	-30.9	-26.3	-23.8
Shaanxi	5.0	7.9	11.1	14.0	11.6
Gansu	-6.7	-3.3	4.0	3.0	7.3
Qinghai	-8.6	-1.5	13.8	30.9	43.4
Ningxia	6.2	13.1	18.8	20.4	22.3
Xingjiang	-34.1	-25.3	-15.7	-1.9	1.2
National average (%)	137.7	130.2	121.4	114.4	113.9

Note: The data for Hainan is included in Guangdong.
Source: *Almanac of China's Finance and Banking.*

which was 113.9 percent.

Although loan-to-deposit ratios throughout the entire economy have fallen from 137.7 percent in 1989 to 113.9 percent in 1993, the level of loans remained well above that of deposits even in 1993. This gap has been compensated for mainly through PBC loans to the state banks. An equally important fact is that provincial differences in the loan-to-deposit ratio do not appear to be consistent with profit-oriented banking activity. In 1993, nine provinces[9] showed a positive deviation from the national average exceeding 20 percentage points. Except for Tianjin, these provinces are all located in inland and underdeveloped areas, or in places where the economies are highly dependent on state-owned enterprises (SOEs). On the contrary, for the more developed regions, such as Zhejian, Fujian, Guangdong, and Beijing, the level of loans was lower than that of deposits in 1993.

To evaluate this provincial variation in loan-to-deposit ratios, we estimated a simple regression that relates provincial loans extended by the specialized banks to provincial deposits accepted by them, as well as to variables that represent provincial industrial structures. The data set is a 5 year panel (1989-1993) of China's 28 provinces (Tibet is excluded due to lack of data, and Hainan is included in Guangdong).

The resulting equation is:

$$\begin{aligned} LN/GDP = {} & 0.307 + 0.447\ DP/GDP + 0.512\ OVIN_{st}/OVIN \\ & (6.397)\ (9.890) \qquad (10.826) \\ & +3.445\ LOSS/OVIN_{st} - 0.500\ EMP_{ag}/EMP \\ & (6.077) \qquad (-11.428) \\ & -0.408\ BJ + 0.221\ TJ + 0.359\ JL + 0.184\ HU \\ & (-7.078)\ (6.821)\ (11.981)\ (6.170) \\ & +0.140\ QH + 0.201\ NX - 0.124\ XJ \\ & (4.432)\ (6.520)\ (-4.010) \end{aligned}$$

$$\text{Adjusted } R^2 = 0.915,\ SEE = 0.063,$$

where LN/GDP and DP/GDP are provincial loans and deposits standardized by provincial GDP. OVIN is the gross output value of industry[10] in each province, and subscript st represents state-owned industrial enterprises. LOSS is the amount of losses recorded by loss-generating state-owned industrial enterprises,[11] and EMP_{ag}/EMP is the share of agricultural employment in total social employment. BJ, TJ, JL, HU, QH, NX, and XJ are province-specific fixed effects for Beijing, Tianjin, Hubei, Qinghai, Ninghai, and Xinjiang, respectively.[12]

We estimated the same equation after including RCCs' loans and

deposits, but the result was basically the same as above.[13] From this regression, we find that the provincial deposits level has significant power to explain the level of provincial credit activity of the specialized banks. In those regions where the banks gather more deposits, they extend more loans. This suggests that banking markets are segmented across provinces. Also, as would be expected, the share of the state sector in industrial production has a positive effect on the extension of loans, and more remarkably, the level of loans has a positive and significant correlation with the losses of state-owned enterprises. By contrast, the share of agricultural employment has a negative coefficient. These results indicate that credit allocations through the specialized banks are distorted for state-owned enterprises, and financial resources flow outward to provinces whose economies are more dependent on the state sector from regions with a higher share of nonstate sectors or from agricultural regions. Thus, cross-regional resource flows through the banking system are distorted as well as fragmented, and these empirical findings seem to be consistent with the practices of the credit plan and PBC lending.

4. RESOURCE ALLOCATIONS IN RURAL AREAS AND THE DEVELOPMENT OF RCCs

We found that cross-regional resource flows were fragmented and distorted in China. Next, we consider the question of intra-regional resource allocation. To what extent have financial intermediaries supported the growth of the township and village enterprises? How are resources allocated through nonbank financial institutions? The availability of data made it more difficult to answer these questions. Fortunately, Rural Financial Statistics of China provides annual provincial data for loans and deposits in rural areas, and the data for loans as well as deposits is subdivided into financial institutions categories, the ABC, RCCs, and their aggregates. We therefore used these statistics to consider intra-provincial resource allocations in rural areas.

4.1 Credit Allocation to TVEs

First, we will look at credit allocation to township and village enterprises (TVEs). The growth rate of TVEs' output has been much higher than that of the state-owned industrial sector's, and the proportion of the TVEs' output relative to total industrial and agricultural output has also increased rapidly. In 1994, the nonstate sector accounted for over 65 percent of industrial output, and TVEs alone made up more than 30 per-

Table 6 Loans to Non-State Sectors in Rural Areas
(Percentage of rural deposits)

	1979	80	81	82	83	84	86	88	90	92
Beijing	12.5	16.9	15.3	15.4	18.9	54.3	61.8	69.0	62.1	62.1
Tianjin	10.6	23.3	27.7	25.9	27.6	86.1	103.7	107.4	100.0	100.9
Hebei	23.9	27.0	27.4	25.3	25.5	55.3	69.1	83.3	80.1	79.7
Shanxi	49.0	47.5	51.4	43.6	46.8	88.7	81.2	84.5	85.5	87.2
Inner Mongolia	37.9	39.2	35.2	34.0	34.7	49.6	46.7	53.4	60.7	73.3
Liaoning	21.4	33.9	31.7	33.2	36.4	63.3	79.4	89.0	88.1	96.1
Jilin	25.5	54.3	38.2	41.8	43.0	78.3	78.7	87.8	87.3	98.5
Heilongjiang	35.0	38.4	40.2	58.0	68.3	78.3	71.3	78.6	71.8	84.4
Shanghai	20.2	29.8	29.6	22.5	30.7	79.1	148.5	148.9	121.6	126.3
Jiangsu	18.4	59.5	74.3	61.1	40.4	84.6	103.3	105.7	90.6	91.7
Zhejiang	33.2	54.8	47.9	40.8	44.2	85.5	93.8	99.4	80.6	81.0
Anhui	27.3	39.9	46.7	51.8	51.7	80.0	83.6	88.1	77.3	86.7
Fujian	46.1	55.3	55.7	58.6	67.1	94.6	93.1	103.2	91.2	82.5
Jiangxi	32.2	36.2	39.6	55.0	62.4	86.1	93.2	99.3	90.7	89.1
Shandong	28.9	26.2	31.1	31.6	29.0	55.7	68.5	78.7	80.1	89.1
Henan	63.1	59.0	67.2	72.0	61.2	89.5	94.0	96.4	96.5	102.6
Hubei	39.6	47.7	46.7	50.7	59.9	73.6	101.5	103.7	100.6	100.5
Hunan	51.8	61.6	61.4	63.7	60.9	74.4	88.0	109.4	91.6	81.7
Guangdong	46.9	83.4	78.2	82.3	82.5	109.7	92.9	93.5	93.0	83.1
Guangxi	90.8	89.7	93.2	114.8	121.0	130.8	107.9	114.5	96.1	85.1
Sichuan	60.9	86.9	81.2	78.3	87.0	133.8	125.9	120.2	98.8	93.9
Guizhou	65.3	85.3	90.9	88.4	116.8	138.5	147.2	141.2	132.5	111.6
Yunnan	52.0	58.2	59.2	59.7	80.9	120.0	128.2	112.6	91.2	72.5
Shaanxi	44.6	52.4	52.1	51.4	61.7	109.8	100.8	92.1	83.7	86.4
Gansu	44.8	45.3	46.8	44.6	39.5	59.1	72.5	75.9	72.3	74.3
Qinghai	16.6	20.3	20.2	21.5	22.7	35.0	59.9	74.8	79.8	77.9
Ningxia	33.8	33.9	23.7	21.1	25.8	40.9	50.7	74.7	75.4	78.2
Xingjiang	17.3	15.0	13.5	12.2	15.4	38.8	51.0	66.5	55.5	65.8
National average	35.9	49.2	49.7	50.0	50.1	82.0	89.0	94.0	87.4	87.3

Note: Loans to non-state sectors are the sum of loans extended by RCCs and the ABC's loans, to TVEs. Rural deposits are those which are placed on RCCs. The data for Hainan is included in Guangdong.
Source: *Rural Financial Statistics of China.*

Table 7 Loans to TVEs
(Percentage share of total loans extended by ABC and RCCs)

	1979	83	86	89	92
Beijing	11.0	27.8	38.8	32.2	29.6
Tianjin	2.2	24.2	33.7	35.4	36.8
Hebei	4.2	7.2	15.9	22.7	24.9
Shanxi	7.1	13.4	23.6	28.2	29.6
Inner Mongolia	4.7	4.9	5.2	6.8	8.5
Liaoning	7.2	15.9	21.3	22.1	23.1
Jilin	4.9	11.1	9.4	9.2	8.9
Heilongjiang	7.8	9.7	8.9	9.6	9.5
Shanghai	28.4	38.3	51.8	36.7	37.1
Jiangsu	11.2	29.0	36.6	38.1	37.4
Zhejiang	20.9	31.3	42.5	42.6	43.7
Anhui	3.4	8.5	11.6	13.2	15.4
Fujian	13.4	20.0	23.5	22.2	21.7
Jiangxi	6.8	15.4	15.7	14.7	12.9
Shandong	10.8	12.3	21.6	27.0	26.9
Henan	10.0	11.6	13.5	16.7	17.7
Hubei	7.0	11.0	14.8	14.9	12.6
Hunan	13.9	14.8	19.1	19.7	18.0
Guangdong	14.2	33.3	33.0	33.5	37.5
Guangxi	11.5	12.6	11.4	12.7	14.3
Sichuan	16.0	22.2	26.1	24.2	19.9
Guizhou	6.5	6.4	8.8	8.9	8.8
Yunnan	8.7	10.9	13.1	12.5	12.4
Shaanxi	8.1	10.7	20.1	18.2	17.8
Gansu	7.5	6.2	10.7	12.3	11.7
Qinghai	6.9	7.4	9.1	9.2	9.4
Ningxia	5.5	5.4	9.6	12.9	16.9
Xingjiang	3.9	3.1	4.2	6.2	4.4
National average	9.7	16.2	22.0	23.4	23.8

Note: The data for Hainan is included in Guangdong.
Source: *Rural Financial Statistics of China*.

cent. Thus, TVEs have now become one of the principal institutions in China's economic activities.[14]

This rapid development of the TVEs has been reflected to a certain degree in the loan composition of depository institutions at the national level. As shown in Table 1, credits extended to TVEs by the ABC and RCCs grew at an annual rate of 33.5 percent on average during the period 1979-1992, a much higher rate than that of the total loans the specialized banks extended to the state sector, which was just 19.5 percent annually on average for the same period. Tables 6 and 7 depict credit allocations to the nonstate sector and to TVEs in rural areas at the provincial level. Loans to rural nonstate sectors[15] relative to rural deposits (those accruing in RCCs) increased significantly in the mid-1980s (Table 6). Until 1983, in most provinces, only half or so of rural financial resources were directed to rural nonstate sectors. As decentralization advanced, however, these sectors have increasingly become able to take advantage of most of the financial resources within their regions. Table 7 shows the share of TVEs loans in total loans extended by the ABC and RCCs. The state of TVEs loans is markedly dispersed across provinces, and in the coastal provinces such as Jianggsu, Zhejiang, and Guangdong, the share of TVEs in total loans was much higher than the national average. In 1992, loans to TVEs accounted for 43.7 percent of the total loans in Zhejiang, and 37.5 percent in Guangdong. An equally important fact is that the share of TVEs in these coastal provinces had already begun to increase in the early stages of the reform period. In Zhejiang and Guangdong, for example, it exceeded 30 percent in 1983, and in Jiangsu the share rose dramatically from 11.2 percent in 1979 to 29 percent in 1983.[16]

As was discussed in Section 2, it is certain that credit to nonstate sectors has been rationed, especially during the phase of contracting credit policy. Yet an increasing volume of financial resources has come to be intermediated to nonstate sectors in provinces that have been able to take advantage of decentralization. The problem is that the resources that nonstate sectors can utilize are to a large extent limited to local savings.

4.2 The Development of Rural Credit Cooperatives

Table 8 provides selected indicators of RCCs' balance sheet items at the provincial level. In 1980, the RCCs in most provinces held reserves with the ABC[17] amounting to over 80 percent of their deposits, and RCCs really functioned as deposit collecting institutions for the ABC rather than as cooperatives. However, in the mid-1980s, some reform measures were enacted which gave RCCs more independence (Yamamoto [1990]), and the reserve ratios declined significantly in many provinces. In 1992,

Table 8 Selected Indicators of RCCs' Balance Sheet

	Loan-to-deposit ratio (%)		Reserve ratio (%)				Individual savings deposits/Total deposits (%)		TVE loans/ Total loans (%)	
	1980	92	80	84	88	92	80	92	80	92
Beijing	11.2	49.8	97.6	63.6	52.0	38.9	16.5	63.4	48.2	64.6
Tianjin	13.3	74.8	96.6	60.9	46.9	31.5	26.6	79.7	48.1	79.4
Hebei	19.2	69.9	88.5	61.5	38.4	28.0	43.0	91.2	30.9	42.7
Shanxi	36.6	73.6	77.6	48.9	41.5	29.0	55.4	89.2	17.8	46.7
Inner Mongolia	23.6	56.1	87.4	70.8	68.9	40.9	42.2	89.0	6.4	32.4
Liaoning	17.8	79.0	89.3	64.9	47.5	26.3	49.3	86.7	28.4	50.9
Jilin	31.5	69.6	75.8	40.5	51.1	27.0	49.5	92.1	9.0	32.4
Heilongjiang	12.3	64.3	94.3	59.0	50.2	39.7	47.9	90.6	5.7	36.1
Shanghai	11.5	73.6	95.6	73.1	35.7	20.7	30.2	61.7	62.6	87.2
Jiangsu	21.3	67.8	93.0	46.9	38.2	23.2	38.2	80.3	76.1	80.4
Zhejiang	34.2	63.7	73.6	50.0	43.7	29.9	42.6	78.2	71.8	71.9
Anhui	26.6	61.0	82.3	56.6	49.1	45.6	40.1	84.0	19.6	35.5
Fujian	27.5	64.8	81.6	57.2	41.6	33.4	49.4	81.3	23.5	39.8
Jiangxi	17.0	63.7	92.1	56.7	51.1	29.0	39.1	88.3	10.8	38.8
Shandong	20.9	77.1	81.3	60.8	36.5	21.6	54.2	88.1	51.0	56.2
Henan	45.0	88.1	68.0	38.1	34.8	19.4	49.8	89.3	39.3	40.7
Hubei	26.9	73.0	83.1	49.1	36.9	29.0	45.9	83.1	18.9	37.7
Hunan	29.6	63.6	82.3	57.1	43.4	33.1	35.5	87.1	32.5	41.5
Guangdong	52.0	74.8	58.9	25.1	32.7	26.6	60.5	75.4	47.9	61.6
Guangxi	45.4	71.2	65.7	42.7	34.4	28.3	42.9	85.6	13.9	27.9
Sichuan	48.5	70.2	87.5	46.0	38.9	35.3	34.6	84.0	24.0	40.7
Guizhou	64.9	76.2	66.8	52.6	48.2	52.4	29.3	79.7	6.1	11.4
Yunnan	32.5	56.2	84.2	48.3	41.7	40.9	26.8	72.0	5.7	28.4
Shaanxi	36.2	68.5	80.9	49.4	35.5	24.0	43.5	89.6	15.6	29.6
Gansu	25.8	52.1	87.1	76.4	56.6	22.2	32.5	84.2	10.6	25.1
Qinghai	13.2	39.6	100.8	76.6	75.8	66.7	14.6	70.4	9.2	14.1
Ningxia	22.0	41.5	90.2	76.9	51.1	36.3	40.8	89.1	5.1	30.1
Xingjiang	8.3	38.4	99.8	80.6	67.9	57.9	33.9	82.9	5.9	21.3
National average	29.2	70.6	80.4	52.3	41.4	31.3	44.1	82.5	35.5	52.7

Note: RCCs' reserves with ABC in each province are estimated as the difference between gross total of deposits accepted by RCCs or ABC and consolidated total deposits placed in them. The data for Hainan is included in Guangdong.

Source: *Rural Financial Statistics of China*.

Table 9 RCCs' Financial Intermediation by Province (1992)
(Percentage share of RCCs in depository institutions)

	Total deposits		Total loans		
		Individual savings		TVE loans	
Beijing	6.7	15.3	5.7	72.4	(48.6)
Tianjin	12.6	20.4	6.7	69.4	(38.8)
Hebei	27.2	36.0	18.9	75.2	(43.1)
Shanxi	21.8	30.1	14.8	71.7	(37.3)
Inner Mongolia	10.7	15.1	4.1	51.5	(8.8)
Liaoning	13.7	19.0	8.5	70.2	(23.8)
Jilin	10.8	14.9	4.2	43.8	(11.0)
Heilongjiang	8.6	12.1	4.1	53.6	(2.6)
Shanghai	6.4	10.9	4.2	54.9	(28.4)
Jiangsu	19.0	26.8	12.3	69.5	(29.8)
Zhejiang	25.5	38.2	17.6	72.5	(54.4)
Anhui	17.6	26.0	7.6	45.6	(28.2)
Fujian	13.6	20.4	10.0	59.4	(18.8)
Jiangxi	14.3	20.5	6.4	49.3	(8.7)
Shandong	23.9	32.2	15.5	78.4	(67.0)
Henan	19.2	25.9	13.9	71.2	(55.9)
Hubei	12.3	18.5	5.9	50.1	(19.7)
Hunan	19.4	26.3	10.1	59.3	(23.1)
Guangdong	20.9	32.3	19.6	84.7	(44.2)
Guangxi	15.0	22.1	10.9	58.8	(12.5)
Sichuan	18.0	27.3	10.0	54.6	(23.2)
Guizhou	8.6	15.1	5.2	19.6	(16.3)
Yunnan	12.0	20.2	7.7	49.5	(6.8)
Shaanxi	16.8	23.1	9.4	53.2	(25.9)
Gansu	10.4	15.4	4.8	37.1	(12.3)
Qinghai	4.9	6.4	1.3	12.7	(14.5)
Ningxia	10.8	15.2	3.5	25.4	(8.6)
Xingjiang	6.0	8.9	2.1	23.0	(6.8)
National average	16.3	24.8	10.2	71.6	(32.1)

Note: Depository institutions are the four national specialized banks and RCCs. Figures in parentheses are those for 1979. The data for Hainan is included in Guangdong.
Source: *Rural Financial Statistics of China.*

the ratios were the lowest in Henan (19.4%), Shanghai (20.7%), and Shandong (21.6%). These declining reserve-deposit ratios have strengthened the RCCs' role as financial intermediaries, and this is reflected in their loan-to-deposit ratios. However, it is also important to note that the development of RCCs in the 1980s was not uniform across regions. In such underdeveloped regions as Inner Mongolia, Anhui, Yunnan, Qinghai, and Xingjiang, the reserve ratios remain high, and the lending activities of RCCs are not as developed. The divergent degree of the development of RCCs can be seen more clearly if we look at the share of RCCs among depository institutions (Table 9). In provinces where rural industries have developed more fully, such as Hebei, Shanxi, Zhejiang, Shandong, and Guangtong, RCCs held over 20 percent of regional total deposits, or more than 30 percent of individual savings deposits, in 1992. On the credit side, RCCs account for over 15 percent of total loans extended by both RCCs and the four specialized banks.

Although RCCs are still tightly controlled by the ABC, they are more flexible than the state banks in their financial activities. As outside-the-plan financial institutions, their development seems to have made very important contributions to the rapid growth of nonstate sectors in their regions. At the same time, RCCs are now one of the principal financial intermediaries in several provinces. Thus, we should take this current structure of financial intermediaries into account when considering future reforms of the banking sector.

5. DECENTRALIZATION AND REFORM OF THE BANKING SECTOR

In this section, we will consider the influence on China's macroeconomic stability of the current distortion of resource allocations through the state banks, and conclude that restructuring the banking sector and fiscal and SOEs reforms are urgently needed. We will then go on to discuss some issues related to institutional reforms in the banking sector.

5.1 Decentralization and Macroeconomic Stability

As financial accumulation and the growth of TVEs in rural areas clearly show, decentralization has been critical to China's transitional process to market-oriented economies. In the early stage of the reform period, decentralization led not only to the growth of a nonstate sector, but also to the accumulation of financial assets, which contributed to macroeconomic stability. However, given the current slow progress in the reforms of SOEs, fiscal and financial systems, the decentralization of decision-

making from central to local governments has come to be a problematic point for macroeconomic management.

World Bank [1995] reports that control rights over the operation of SOEs have been transferred from the central to local governments, and that by 1988, over 80 percent of output from SOEs was under local government control. However, SOEs still supply varying social services, including housing, schooling, health care and retirement benefits. This means that local governments have to depend on SOEs to provide a social safety net. Local governments also have influence on the state banks. The PBC's more than 2,400 branches have been especially vulnerable to pressure from local governments. As we saw in Section 3, resource flows through the state banks are distorted in favor of those regions which are highly dependent on SOEs.

Given this situation, the maintenance of macroeconomic stability and especially controlling inflation, has become a profoundly difficult task for the central government. It is considered that most of the benefits derived from regional credit expansion with PBC credit used to finance SOEs investment and deficits remain in the locality. In contrast, inflationary costs are more or less passed on throughout the country. Thus, local governments are likely to show more tolerance toward SOEs' soft budgets as a means to sustain employment and enhance growth in their own regions, though this leads to greater seigniorage and greater shared inflation at the national level. This is a typical example of a Nash noncooperative game. And, as Conway [1995] examines, a similar problem existed in the ruble-area of the former Soviet Union.

Thus, we can conclude that the slow progress in SOEs, fiscal and financial system reforms now threaten China's macroeconomic stability, and that quicker structural reforms are become more and more of an inevitability in the current stage of transition.

5.2 Reform of the Banking Sector

It is widely recognized that China will need to restructure the banking system to make it compatible with market-oriented economies. In particular, the current situation, under which local governments have strong influence over the decision-making of the specialized banks, is problematic. Therefore, '[i]t has often been suggested that specialized banks' autonomy from local governments and large SOEs can be enhanced by reorganizing them along regional and not provincial jurisdictions, ... A possible longer-term objective could be to split these regional offices into independent banks along the redrawn regional boundaries' (World Bank [1990]).

Yusuf [1994] posits regional small intermediaries, including "infor-

mal" banks, as the main supplier of funds in the rural and urban peripheries. 'Private, cooperative, and collective enterprises will remain small-scale operations, ... Their needs will be more efficiently served by small intermediaries that are well supplied with intelligence on borrowers, their kinfolk, and local politics' (Yusuf [1994]).

Since Qian [1994] discusses in full detail the importance of dividing responsibility between the fiscal and financial sectors, and of separating policy lending from commercial lending,[18] in this subsection we will consider the next stage of Chinese financial reforms from the viewpoint of the geographical structure of the banking sector, and draw some related lessons from the Japanese prewar and postwar experiences.

Asymmetric information in local markets

As Stiglitz [1994] discusses, local information is important in lending but not in deposit activities. If large nationwide banks become dominant in local markets, therefore, they may show a tendency to gather deposits but to concentrate the allocation of funds in areas where they have more information, and this can lead to a loss of efficiency. In a high-risk environment, these banks also retrench credit allocation to small enterprises.

On this point, the Japanese experience seems to hold important lesson for banking sector reforms in China. According to Teranishi [1990], the prewar Japanese financial institution system basically operated on the principle of laissez faire. The compulsory guideline of one bank in one prefecture was introduced in 1933. Up until that time, entry into banking markets was basically free. In late 1918, agreements on maximum deposit rates were introduced in major urban regions. Although room still exists for further research on the effectiveness of these agreements, Okazaki [1993] argues that the agreements gave commercial and savings banks incentives to expand their branch networks. The entry of large city banks into local markets had a significant influence on resource flows across regions. Since the city banks were new entrants into local markets and lacked an accumulation of information on local enterprises, they extended loans only to high-quality borrowers that were capable of providing liquid collateral. In 1914, loan-to-deposit ratios were higher in local areas than in cities, and financial resources tended to flow outward from urban to rural areas through the banking system. This situation changed dramatically during the mid-1920s. In 1925, the loan-to-deposit ratio was nearly 13 percentage points lower in local areas than in the six largest urban areas. This cream skimming behavior of the city banks had a serious influence on the soundness of some local banks, and became one of the factors behind financial destabilization in Japan's interwar period (Okazaki [1993]).

Table 10 Provincial Loan-to-Deposit Ratios and Home Banks Share in Japan

	Loan-to-deposit ratio (%)				Home banks share (%)	
	All banks	All banks	Home banks	Non-home banks	Loans	Deposits
	1930–35	1950–55	1950–55	1950–55	1950–55	1950–55
Hokkaido	53.1	74.7	70.7	82.0	60.7	64.2
Aomori	91.1	73.1	78.3	53.1	85.1	79.5
Iwate	81.3	72.0	75.7	44.6	92.7	88.2
Miyagi	72.2	95.8	69.1	144.9	46.6	64.7
Akita	57.6	72.5	79.8	39.8	90.1	81.9
Yamagata	67.9	75.4	79.5	55.6	87.2	82.6
Fukushima	100.0	73.8	75.0	72.5	54.7	53.8
Ibaragi	62.2	71.4	76.8	41.6	91.1	84.8
Tochigi	53.4	65.3	70.1	57.0	68.6	64.0
Gunma	60.0	80.7	83.6	76.2	63.0	60.8
Saitama	41.8	59.8	62.3	52.8	76.8	73.7
Chiba	44.5	63.7	76.3	35.2	83.0	69.2
Tokyo	73.8	111.2	114.7	102.6	74.0	71.8
Kanagawa	75.9	56.5	76.1	48.2	40.3	30.0
Niigata	71.9	68.4	69.1	64.5	84.0	83.1
Toyama	79.3	103.2	86.7	167.6	66.8	79.5
Ishikawa	60.5	80.9	86.3	72.9	63.9	59.9
Fukui	54.8	80.7	83.5	75.8	65.3	63.1
Yamanashi	89.0	71.8	84.9	40.2	83.5	70.6
Nagano	112.3	72.6	80.4	45.9	85.7	77.4
Gifu	52.5	71.1	76.0	58.4	77.3	72.3
Shizuoka	68.2	82.0	88.7	59.1	83.8	77.5
Aichi	47.5	91.7	79.2	104.9	44.2	51.2
Miye	55.2	64.0	71.6	51.5	69.4	62.0
Shiga	43.1	58.3	60.8	47.3	85.2	81.8
Kyoto	36.8	70.4	80.6	69.0	14.5	12.7
Osaka	68.7	122.6	100.6	150.2	45.8	55.7
Hyogo	51.7	94.2	74.7	109.5	34.8	43.9
Nara	52.6	82.1	96.1	40.8	87.5	74.8
Wakayama	45.6	71.3	83.1	60.1	56.5	48.5
Tottori	60.1	66.2	79.5	63.1	22.8	19.0
Shimane	54.1	82.8	87.7	47.2	93.2	88.0
Okayama	53.5	72.7	83.6	53.1	73.9	64.3
Hiroshima	33.4	75.7	76.7	74.9	46.6	46.1
Yamaguchi	35.2	69.7	72.1	64.2	71.9	69.4
Tokushima	25.0	62.6	76.1	45.0	68.9	56.7
Kagawa	44.0	82.4	78.3	88.3	55.7	58.7
Ehime	68.7	85.2	85.5	84.5	69.0	68.8
Kochi	76.3	81.0	88.7	52.3	86.4	78.9
Fukuoka	54.8	87.0	77.3	92.1	30.9	34.8
Saga	64.2	71.3	77.4	50.4	83.9	77.3
Nagasaki	69.4	77.9	81.7	65.5	80.3	76.6
Kumamoto	62.8	60.6	72.2	40.0	76.3	64.1
Oita	85.4	71.0	74.4	62.2	75.3	71.8
Miyazaki	90.8	82.0	80.9	85.5	73.9	75.0
Kagoshima	61.7	71.0	79.2	51.9	77.9	69.8
National average	62.5	94.2	93.4	95.5	61.1	61.6
Mean[1]	62.3	76.7	79.6	68.3	68.5	65.3
S.D.[2]	18.1	13.2	9.2	29.4	19.3	17.0

Notes: Home banks are those which have their head offices in the respective prefectures.
Loans and deposits are the arithmetic mean for the respective periods.
1. The simple arithmetic mean of 46 prefectures.
2. Standard deviation.

Source: Bank of Japan, *Economic Statistics of Japan*.

In the postwar period, the safety of the system was given top priority, and various regulations were introduced to restrict competition.[19] Branch licensing was strictly controlled by the authorities, and city banks were treated less generously than other institutions, such as local banks, mutual banks, and credit unions (Teranishi [1990]).

Table 10 provides the prewar and postwar loan-to-deposit ratios for 46 prefectures in Japan. In the postwar period, we can distinguish the activities of out-of-prefecture banks from those of home banks with their head offices in the respective prefectures. We can make two remarkable observations. The first is that compared to the prewar period, loan-to-deposit ratios varied less across regions in the postwar period. The standard deviation of prefectural loan-to-deposit ratios was 18.1 for the period 1930-35, and 13.2 for the period 1950-55. Further research needs to be done on the reasons for the difference between these two periods, but the change in regulations is one likely candidate. The second finding is that, in the period 1950-55, the variance of prefectural loan-to-deposit ratios was more significant for out-of-prefecture banks than for home banks,[20] and except for nine prefectures which included major urban areas, the loan-to-deposit ratios of home banks were higher than those of out-of-prefecture banks. Since local banks could invest their funds in interbank markets, the fact that home banks have played the more important role in extending loans in local markets seems to suggest the existence of asymmetric information.

This Japanese experience suggests that the institutional or geographical structure of the banking sector may have a significant influence on allocations of resources, which are closely related to the safety as well as to the efficiency of the financial system. Thus, authorities should take this point fully into account when reforming financial structures or regulating banking or branching licenses.

Asset and liability diversification

As Stiglitz [1994] mentions, in discussing regional restrictions based on informational problems one encounters the problems of monopolistic behavior due to lowered competition as well as inadequate diversification of loan portfolios.

In the early stages of financial development, in particular, disclosures of information tend to be inadequate and over-lending to related-firms leads to unsound banking, which is a major cause of financial instability, as is shown in the prewar Japanese experience (Teranishi [1990]). Faini et al. [1993] argue that operating and allocative inefficiencies developed in the less-developed Southern Italy under a regulatory regime which included, for instance, the protection of local banks

and the promotion of specialized regional institutions. They also indicate 'that informational problems are heavier, leading to more intense rationing, captive relations between banks and firms, and poorer screening' (Faini et als. [1993]). In addition to this captive relationship, diversification is important for banking activity. When a bank's assets are not geographically diversified, the quality of its balance sheet can be severely affected by fluctuations in the regional economy. At the same time, a bank with a large retail network can raise a stable source of funds, so geographical diversification may also be important on the liability side (GAO [1993]).

Functions of the interbank market

The functioning of the interbank market is also related to the banking structure. In China, '[t]he interbank market has in fact provided a useful alternative channel for intrabank funding operations' (World Bank [1995]).

However, as in prewar Japan, the mal-functioning of the interbank market now threatens the stability of the financial system. In prewar Japan, the banking system was characterized as dual-structured, and the call market, which was the most important money market, functioned not as a market for short-term liquidity adjustments among banks, but rather as a market to redistribute funds from healthy large banks to weak medium and small banks as well as to special banks dealing with foreign exchanges. The large banks treated lending in the call market as short-term investments. The small banks, in contrast, treated the funds as an alternative to time deposits. This unstable structure of the call market contributed not only to the initiation of the financial crisis in 1927, but aggravated it as well (Teranishi [1990]). In China, too, short term funds in the interbank market were used to extend long term or risky loans, such as the acquisition of real estate assets and purchases of securities in 1992-93 (Shu-Ki [1995], World Bank [1995]).

Since financial capabilities such as information processing improve only gradually, and the financial as well as overall economic conditions differ markedly across countries in the process of reforms, banking sector reforms must be considered on the basis of the existing financial system and economic conditions. On this point, competitive regional banks seem to be important for China, with its great regional variations and current distorted resource flows. If the specialized banks are commercialized and made profit-oriented without changing the current condition where there are few competitive regional banks, flows of financial resources across provinces may change dramatically. This could potentially have serious

impacts on regional development and lead to socio-political problems. On the other hand, diversification should be given importance when considering reforms of existing nonbank financial institutions. There appear to be too many independent credit cooperatives, and the prudential supervision of authorities toward these institutions may be inadequate. The failure of these institutions could have a profound influence on the nonstate sector enterprises, which are presently responsible for over half of China's industrial output.

6. CONCLUDING REMARKS

In this paper, we found that resource allocations through the current banking system are significantly distorted and fragmented. However, at the same time, nonbank financial intermediaries, such as RCCs, have grown during the reform period, and have made significant contributions to the growth of nonstate sectors.

Therefore, the most important issue at present is to make the specialized banks independent of government authorities. Reforms of SOEs and of the fiscal system are urgent matters for achieving this.

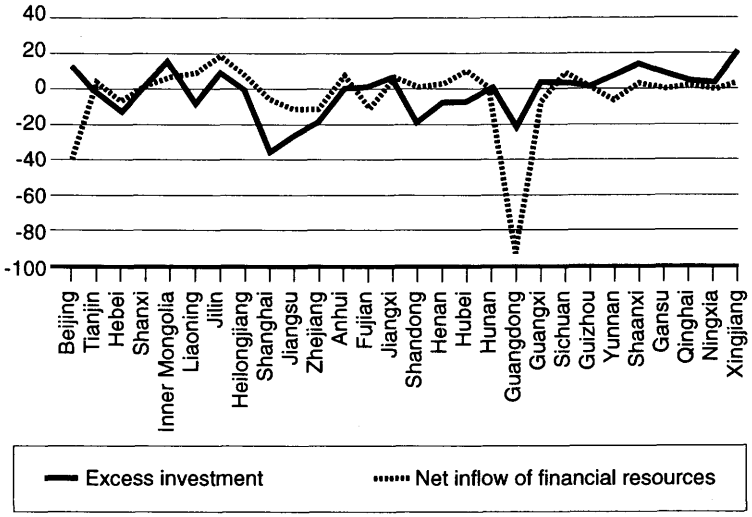
The next issue will be to design a banking structure in the near future. It is too early to draw a clear implication for reforms in the Chinese banking structure, and further research needs to be carried out. However, given the existence of asymmetric information, sound regional banks which can contribute to regional development will be necessary. Given the current situation, under which labor movements are restricted, and income levels are significantly diversified across regions, local financial institutions as well as fiscal transfer mechanisms seem to be very important to regional economies. Yet, at the same time, in the uncertain and high-risk environment of the reform period, it will be desirable to restrict the entry of small-scale banks by establishing minimum capital standards and to limit the number of banks as a means of enhancing the franchise value of banking licenses in order to promote the stability of the financial system. Also, it may be necessary to modernize the existing credit cooperatives to meet the needs of industry. Finally, the most important task facing the authorities will be to strengthen their capabilities of prudential supervision when proceeding toward more market-oriented economies.

Appendix A Data for Regression Analysis (Sample of 1993)

	Share of state-owned in total industrial output	Loss of state-owned/ State-owned industrial output	Share of agricultural employment in total social employment
Beijing	0.616	0.010	0.111
Tianjin	0.589	0.024	0.181
Hebei	0.635	0.017	0.569
Shanxi	0.727	0.032	0.451
Inner Mongolia	0.823	0.028	0.501
Liaoning	0.689	0.022	0.305
Jilin	0.754	0.038	0.452
Heilongjiang	0.827	0.039	0.316
Shanghai	0.545	0.004	0.085
Jiangsu	0.327	0.009	0.434
Zhejiang	0.312	0.008	0.466
Anhui	0.635	0.020	0.638
Fujian	0.396	0.015	0.531
Jiangxi	0.710	0.032	0.557
Shandong	0.497	0.028	0.581
Henan	0.692	0.015	0.648
Hubei	0.693	0.012	0.545
Hunan	0.658	0.042	0.645
Guangdong	0.344	0.012	0.421
Guangxi	0.697	0.016	0.691
Sichuan	0.627	0.025	0.664
Guizhou	0.849	0.026	0.774
Yunnan	0.834	0.007	0.763
Shaanxi	0.771	0.035	0.614
Gansu	0.839	0.023	0.600
Qinghai	0.889	0.055	0.585
Ningxia	0.836	0.025	0.583
Xingjiang	0.860	0.047	0.431

Source: *Statistical Yearbook of China*, Herrmann-Pillath (1995).

Appendix B Investment-Savings Balance and Net Inflow of Financial Resources
(Cumulative sum for the period 1990–1992, billion yuan)



Note: Excess investment is investment minus savings. Net inflow of financial resources is defined as the increase in loans minus the increase in deposits. Loans and deposits are those of the specialized banks.

Source: *Statistical Yearbook of China, and Almanac of China's Finance and Banking.*

Notes

1. Includes savings deposit offices and business offices.
2. The introduction of postal savings also indicates that the authorities are active in savings mobilization. However, deposits accepted by the postal bureau are controlled and utilized by the PBC (Yi [1994]), and there may be problems in the way these funds are utilized.
3. These figures seem to be somewhat overestimated due to the underestimation of GDP and GNP.
4. The indexation was suspended in the late 1991, but reintroduced in July 1993.
5. The process of determining credit ceilings is becoming a "bottom-up" one (World Bank [1995]). Also local PBC branches have some autonomy in allocating a part of the credit under the plan within their jurisdictions (Tseng et als. [1994]).
6. World Bank [1995] defines the following five categories as policy loans:

(1) Loans for financially viable ventures, but generally large scale and with long payback periods (loans for infrastructure investment),
(2) Loans for the technological renovation of selected enterprises,
(3) Loans to fund rural development and food security oriented programs,
(4) Subsidized working capital loans to "priority" enterprises (including structurally loss-making state-owned enterprises of significant national or regional importance),
(5) Subsidized loans for social sector development (loans for health and education).

7. The appendix figure provides a cumulated sum of excess investment and net inflows of financial resources for the period 1990 to 1992. Net inflows of financial resources are defined as the increase in loans less the increase in deposits.
8. Loans and deposits of the headquarters of the specialized banks, the Bank of Communications, and CITIC Industrial bank are counted when calculating the national average.
9. These provinces are Tianjin, Inner Mongolia, Jilin, Heilongjiang, Anhui, Jiangxi, Hubei, Qinghai, and Ningxia.
10. Gross output value is that of industrial enterprises with independent accounting systems.
11. Since provincial data for volumes of losses was not provided for the year 1992, I calculated a proportion of each province's loss to total national loss in 1992 as the average of proportions in the previous and the following year, and assumed the proportion times national total loss as the amount of loss in each province in 1992.
12. I also estimated an equation adding income per capita as an explanatory variable, but it was not significant.
13. The resulting equation is as follows (due to data limitation, the sample period is 1989 to 1992):

$$
\begin{aligned}
LN/GDP = \; & 0.376 + 0.528\ DP/GDP + 0.395\ OVIN_{st}/OVIN \\
& (6.424)(11.160) \qquad (6.999) \\
& + 3.899\ LOSS/OVIN_{st} - 0.486\ EMP_{ag}/EMP \\
& (5.974) \qquad (-10.221) \\
& - 0.475\ BJ + 0.224\ TJ + 0.345\ JL + 0.199\ HU + 0.100\ QH \\
& (-8.068) \quad (6.071) \quad (10.158) \quad (5.890) \quad (2.883) \\
& + 0.169\ NX - 0.141\ XJ \\
& (4.911) \quad (-4.801)
\end{aligned}
$$

Adjusted $R^2 = 0.904$, SEE = 0.064.

14. The rapid growth of TVEs is closely related to their ownership structure.

For more details on this interesting and important issue, see Yusuf [1994] and Chang and Wang [1994].

15. The loan portfolio of RCCs consists of credit to agricultural collective units, farmer households, and TVEs. Thus, loans to rural nonstate sectors are the sum of loans by RCCs and the ABC's loans to TVEs.
16. McKinnon [1991, 1993b] recommends that in the early stages of transition all urban and rural liberalized enterprises be financed through retained earnings and equity, and should be ineligible for credit from banks. However, this view seems to be too strict in the light of the success stories of TVEs in the coastal provinces.
17. Although data for RCCs' reserves with the ABC is not supplied at the provincial level, since RCCs' reserves are treated as deposits on the balance sheet of the ABC, I considered the difference between the simple sum of ABC's and RCCs' deposits and their consolidated total deposits to be RCCs' reserves.
18. Qian [1994] also discusses the case for a bank-oriented financial system in China, and introduces a two-tier banking system: a coexistence of commercialized national banks and second-tier banks such as regional banks.
19. The postwar financial system was established during 1950-55.
20. F-statistic testing for the difference between these two variances is significant at the 1 percent level.

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