Economic Reform in China
A New Phase

Wanda Tseng, Hoe Ee Khor, Kalpana Kochhar, Dubravko Mihaljek, and David Burton

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The following symbols have been used throughout this paper:

- ... to indicate that data are not available;
- — to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist;
- between years or months (e.g., 1991-92 or January-June) to indicate the years or months covered, including the beginning and ending years or months;
- / between years (e.g., 1991/92) to indicate a crop or fiscal (financial) year.

“Billion” means a thousand million.

Minor discrepancies between constituent figures and totals are due to rounding.

The term “country,” as used in this paper, does not in all cases refer to a territorial entity that is a state as understood by international law and practice; the term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate and independent basis.
Preface

This Occasional Paper discusses China’s current reform program to transform its economy to a fully market-based system; the strategy for this new phase of reform was adopted during the Third Plenum of the Fourteenth Central Committee in November 1993. The paper is based largely on research papers prepared in connection with the 1993 Article IV consultation with China, updated to reflect developments through mid-1994.

The authors would like to express their appreciation for the assistance provided by the Chinese authorities during the consultation and subsequent discussions. They also wish to thank Yusuke Horiguchi for valuable comments and support and Douglas Scott for insightful views, especially on the foreign exchange balancing requirement of foreign-funded enterprises. The technical assistance work of colleagues in the Fiscal Affairs Department, Monetary and Exchange Affairs Department, and the Statistical Department of the IMF is also gratefully acknowledged. Anjali Kumar of the World Bank and Mingwei Yuan, a summer intern in 1993, contributed to the sections on the investment system and SOEs, and the empirical work on China’s import demand, respectively. Thanks are also due to Viola Chou for research assistance and Rosanne Heller for editorial assistance, and Prabha Job and Graciela Martin for secretarial assistance. Tom Walter of the External Relations Department edited the paper for publication and coordinated production.

The opinions expressed in the paper are those of the authors and should not be construed as representing the views of the IMF, its Executive Directors or other IMF staff members, or the Chinese authorities.
**Glossary of Abbreviations**

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<th>Description</th>
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<tr>
<td>ABC</td>
<td>Agricultural Bank of China</td>
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<tr>
<td>ADF</td>
<td>augmented Dickey-Fuller test</td>
</tr>
<tr>
<td>BOC</td>
<td>Bank of China</td>
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<tr>
<td>CCP</td>
<td>Chinese Communist Party</td>
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<tr>
<td>CFETS</td>
<td>China Foreign Exchange Trading System</td>
</tr>
<tr>
<td>CRS</td>
<td>contract responsibility system</td>
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<tr>
<td>CSRC</td>
<td>China Securities Regulatory Commission</td>
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<td>FECs</td>
<td>foreign exchange certificates</td>
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<td>FFEs</td>
<td>foreign-funded enterprises</td>
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<td>FTCs</td>
<td>foreign trade corporations</td>
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<td>GATT</td>
<td>General Agreement on Tariffs and Trade</td>
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<td>ICBC</td>
<td>Industrial and Commercial Bank of China</td>
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<td>ITICs</td>
<td>international trust and investment companies</td>
</tr>
<tr>
<td>MOFTEC</td>
<td>Ministry of Foreign Trade and Economic Cooper</td>
</tr>
<tr>
<td>NBFIs</td>
<td>nonbank financial intermediaries</td>
</tr>
<tr>
<td>NTS</td>
<td>National Tax Service</td>
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<tr>
<td>OLS</td>
<td>ordinary least squares</td>
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<tr>
<td>PBC</td>
<td>People’s Bank of China</td>
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<td>PCBC</td>
<td>People’s Construction Bank of China</td>
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<tr>
<td>RCCs</td>
<td>rural credit cooperatives</td>
</tr>
<tr>
<td>SAEC</td>
<td>State Administration of Exchange Control</td>
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<tr>
<td>SDB</td>
<td>State Development Bank</td>
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<td>SICs</td>
<td>state industrial corporations</td>
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<td>SOEs</td>
<td>state-owned enterprises</td>
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<tr>
<td>SPC</td>
<td>State Planning Commission</td>
</tr>
<tr>
<td>STB</td>
<td>State Tax Bureau</td>
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<td>TICs</td>
<td>trust and investment companies</td>
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<tr>
<td>UCCs</td>
<td>urban credit cooperatives</td>
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<tr>
<td>VAR</td>
<td>vector autoregression</td>
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<td>VAT</td>
<td>value-added tax</td>
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China's economic performance has been remarkable since the initiation of the reform process 15 years ago. Rapid growth has accompanied structural transformation. With real output increasing by 9 percent annually, the size of the Chinese economy has nearly quadrupled (Table 1). Productivity gains have permitted substantial improvements in real incomes and living standards and notable progress in reducing poverty. At the same time, many of the distortions and rigidities of the former central planning system have been eliminated or reduced, and economic agents have increasingly been allowed to make their own decisions, based on market signals. A vibrant nonstate sector has emerged as the leading sector, accounting for more than half of industrial output and two thirds of GDP. The economy has also become more open and integrated with the rest of the world through trade and investment.

Notwithstanding these achievements, important problems remain, reflecting the partial nature of the reform process through 1993. Among the most serious is the lack of an effective infrastructure (institutions and instruments) for macroeconomic management. As a result, the economy has been prone to “stop-go” cycles of macroeconomic instability (Chart 1), as economic stabilization has invariably had to rely on administrative measures that have imposed abrupt and at times excessive restraint on the economy, creating, in turn, countervailing pressures for relaxation. Additionally, efforts to restore economic stability usually have been accompanied by a slowdown of reforms. The continued poor performance of state-owned enterprises (SOEs) is another legacy of partial reforms; this has constrained the implementation of financial policies and hindered the development of the financial system. Moreover, the weak legal and regulatory framework has impeded the development of competitive markets and a clear delineation of the rights and obligations of market participants. The obstacles posed by these problems for maintaining sustainable growth

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1 See Bell, Khor, and Kochhar (1993) for a detailed analysis of the reform process during 1978-93. The process is best captured by the metaphor (attributed to Deng Xiaoping) of “crossing the river by feeling the stones under the feet.”
I INTRODUCTION

Table 1. Selected Macroeconomic Indicators
(Annual percent change, unless otherwise specified)

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<td>16.3</td>
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<td>Merchandise exports (percent change in U.S. dollar terms)</td>
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<td>20.5</td>
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<td>-2.0</td>
<td>15.4</td>
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<td>27.9</td>
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<td>18.9</td>
<td>17.5</td>
</tr>
</tbody>
</table>

Sources: China Statistical Yearbook, 1992; and Chinese authorities.

have become increasingly evident with each macroeconomic cycle, as have the risks of not dealing with them thoroughly.

The most recent cycle began in early 1992 when Deng Xiaoping toured the prosperous coastal areas and called on the whole country to accelerate growth and more vigorously pursue the policy of reforming and opening up the economy. The call was taken by local officials as a carte blanche for faster growth; in response, there was a boom in aggregate demand, with them thoroughly.

Third Plenum of the Fourteenth Central Committee in November 1993.2

Thus, a new phase of economic reforms has begun in China in 1994, aimed at tackling the problems left by partial reforms and establishing by the year 2000 a “socialist market economy,” in which market forces will play the primary role in resource allocation while public ownership (including in the form of corporatized enterprises and collectives) remains the mainstay of the economy.3 The strategy


3Appendix I provides a summary of the structural reforms.
calls for fundamental changes in a broad range of important areas. A major theme of the strategy is to build the infrastructure necessary for indirect macroeconomic management, which will require reforms in such areas as the exchange and trade system, central banking and the financial system, the tax system and intergovernmental fiscal relations, and the investment system. The building of a macroeconomic policy infrastructure is intertwined with SOE reforms, which is another important focus of the new strategy. The objective is to transform the SOEs into "modern" enterprises that are autonomous, competitive, and legal entities with full accountability for profits and losses. The new strategy also includes an ambitious agenda to develop fully the legal and regulatory framework. The new reform program is comprehensive, bold, and ambitious, aiming to create an even, competitive environment in all sectors and throughout the country, so as to lay a solid foundation for the continued rapid development of the economy. The successful implementation of the reform program would bring about continued progress toward a full realization of the vast potential of the Chinese economy.

This paper discusses the current reform program, with particular focus on aspects relating to macroeconomic management. The following sections describe the working of the existing system in the various macroeconomic policy areas, analyze its main weaknesses, and assess the authorities' reform plans. Section II discusses exchange and trade system reforms that encompass the establishment of a unified exchange rate, a national foreign exchange interbank market, more liberal access to foreign exchange for trade and trade-related transactions, and a reduction in trade restrictions. Section III discusses monetary policy and financial sector reforms that aim to strengthen the People's Bank of China (PBC) as a central bank with greater autonomy, develop indirect instruments of monetary control, and commercialize the banking system. Section IV focuses on fiscal reforms that involve a fundamental overhaul of the tax system and a new revenue-sharing system between the central and local governments. Section V deals with the behavior of investment, its role in the macroeconomic cycles, and investment system reforms involving the introduction of risk mechanisms in investment decisions. Section VI covers SOE reforms, emphasizing the adoption of the shareholding system, or "corporatization," which provides a clear separation between the ownership and management of enterprises.
II Exchange and Trade System Reforms

At the outset of the reform process in 1978, almost all foreign trade was subject to planning and was carried out through a handful of foreign trade corporations (FTCs). Since then, as part of the reform process, the trade and exchange system has been progressively liberalized. China's growing openness and integration into the global economy is reflected in a more than threefold increase in the share of trade in GNP (from 10 percent to 35 percent) and a more than doubling of its share in world trade (from 1 percent to over 2 percent) during 1978–93. The main thrust of external reform has been to scale back the scope of trade planning and to shift to a reliance on market mechanisms for determining the pattern of imports and exports. While external reform, like the reform process more generally, has proceeded in spurts, considerable progress has been made over the past 15 years in opening up the economy, and a major new round of reform is under way. This section summarizes the main elements of the trade and exchange system as it stood in 1992–93 and indicates the major changes made during that period; it also describes the authorities' reform program for 1994 and beyond.\(^4\)

The trade and exchange system in 1992–93 comprised several forms of trade controls—some of which were linked to the planning process—a relatively complex tariff structure, and a dual exchange rate system with controls on some current and capital transactions.\(^5\)

Trade System in 1992–93

Scope of Planning and Canalization

The role of planning in external trade had become quite limited by 1993. Mandatory planning for exports was abolished in 1991, at which time budgetary subsidies to FTCs for exports were also eliminated. By 1992, planning for imports covered only 11 broad product groups, accounting for about 18 percent of total imports; the scope of mandatory import planning was further scaled back in 1993 to cover only about 5 broad product groups.

The importation of products falling under the mandatory plan was canalized—that is, restricted to a small number of designated FTCs—to facilitate plan implementation and the application of subsidies as required by the plan. Imports of some other products outside the mandatory plan but considered to be of national importance were also canalized, although the number of FTCs that could import these items was much larger than for products subject to mandatory planning. Altogether, at the end of 1993, 14 products accounting for less than 20 percent of total imports were subject to canalization.\(^6\)

On the export side, although mandatory planning had been eliminated, about 15 percent of total exports were estimated to have been canalized in 1992.

Imports and exports not subject to canalization could be undertaken by any enterprise authorized to engage in foreign trade. By 1993, about 5,000 domestic enterprises and 8,800 FTCs were engaged directly in foreign trade. In addition, about 80,000 foreign-funded enterprises (FFEs)\(^7\) could engage directly in exports or imports of specified products.

Import Licensing and Controls

Although the role of the plan and the scope of canalization have been reduced, a substantial proportion of imports remains regulated by licensing and other forms of control. Import licensing is administered by the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) and has been used for a variety of purposes, including to imple-

\(^4\)The evolution of the exchange and trade system during 1978–92 is not discussed in this section, as this is covered extensively elsewhere. See Bell, Khor, and Kochhar (1993) and Blejer and others (1991). Appendix III provides an empirical study of import behavior in China during the reform period.


\(^6\)The 14 products subject to canalization were grain, sugar, steel, chemical fertilizers, crude oil, oil products, rubber, timber, polyester synthetic fibers, tobacco products, pesticides, agroplastic foil, cotton, and wool.

\(^7\)FFEs include Sino-foreign equity joint ventures, Sino-foreign cooperative ventures, and wholly owned foreign enterprises.
ment the plan, protect certain sectors, and contain overall imports for balance of payments reasons. During 1993, 53 product categories—including a range of intermediate products and some consumer goods—representing 30 percent of total imports were subject to licensing.

Control over the importation of a range of goods in the machinery and electronics sectors was exercised by the State Council Machinery and Electronics Import Control Office. Applications for the importation of machinery and electronic equipment were assessed in light of whether substitutes were available domestically. These controls, which did not overlap with import licensing, were estimated to have covered about 8 percent of total imports in 1992.

**Import Tariff System**

China's tariff regime is characterized by a relatively high average tariff and a large number of tariff bands with wide dispersions. At the beginning of 1993, the average unweighted tariff stood at approximately 40 percent; the standard deviation of tariffs in 1992 was 30 percent. The rates tend to be lowest for raw materials and highest for finished consumer goods. More specifically, raw materials may be divided into those materials whose domestic prices are kept low, reflecting plan priorities, and those that are subject to low tariffs of under 15 percent; and lower-priority items that are subject to tariffs of 20-40 percent. Intermediate and capital goods are generally subject to rates in the 20-40 percent range. Rates on finished consumer goods are substantially higher than rates on intermediate goods; most are in excess of 60 percent, with some categories subject to average rates of over 80 percent. This structure of tariffs gives rise to very high rates of effective protection for some finished goods.

The potentially adverse effects of the tariff structure on the export sector have been mitigated by a system of duty exemptions for exporters. Exemptions are also provided for equipment imported by FTCSs, and duty concessions of 50 percent are given for border trade and materials imported by FTCSs for production in the domestic market. Reflecting the extensiveness of duty exemptions and reductions, revenues from tariffs amounted to about 6 percent of the c.i.f. value of imports in 1992.

**Export Controls and Tariffs**

On the export side, licensing also continues to be pervasive, playing a variety of roles. Since January 1, 1993, export licensing has been administered under the Temporary Provisions for the Administration of Export Commodities. Its objectives under these provisions are to improve the domestic availability of products in short supply; to limit exports to particular markets for which China is a major supplier; to implement international agreements on export restraints, such as those for textiles; to implement commitments made under international commodity agreements, such as those for tungsten and tin; and to avoid antidumping actions by partner countries. With the introduction of the temporary provisions, the number of products subject to licensing was reduced at the beginning of 1993 from 250 to 138, accounting for about 48 percent of total exports. In addition, 40 product categories—2 of which were also subject to licensing—were subject to export tariffs in 1993.

**Exchange System in 1992-93**

During 1986-93, China maintained a dual exchange system, with an official rate that was adjusted periodically and a more depreciated market-determined rate set in the Foreign Exchange Adjustment Centers (swap centers or the swap market). Under this dual system, domestic enterprises and FTCSs were required to surrender their export receipts at the official exchange rate but received retention quotas equivalent to a proportion of their export earnings. These retention quotas, which entitled the owner to purchase foreign exchange at the official exchange rate, could be traded in the swap market. FFESs were allowed to retain all of their foreign exchange and to transact directly in foreign exchange in the swap market.

From February 1991, a uniform retention scheme was adopted, under which domestic exporters, through the retention quota system, were effectively reimbursed—for most exports—at the swap market rate for 60-80 percent of their export earnings. However, the state had the option to purchase 30 percent of export earnings at the official rate.

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8Tariffs were reduced at the end of 1992 on 3,371 tariff items (which accounted for approximately 54 percent of the total), resulting in a lowering of the average tariff by about 3 percentage points. The reductions were concentrated on raw materials, technically advanced goods not produced domestically, products produced in developing countries, and manufactured goods for which China is competitive in international markets.

9The swap market rate was initially set by the authorities, becoming market determined in 1988. By 1993, there were 100 swap centers. Prices in 18 of the centers were determined by an electronic open bidding process and by the manual matching of written offers to buy and sell in the other cities. The operation of the swap market and access to the market are described in Khor (1993) and Bell, Khor, and Kochhar (1993).

10The price of retention quotas was equal to the premium of the swap market exchange rate over the official rate.

11For a description of the retention system, see Bell, Khor, and Kochhar (1993).
II EXCHANGE AND TRADE SYSTEM REFORMS

percentage points of the retention quota at the swap market rate—an option fully exercised during 1991–93. Prior to July 1993, this portion was sold for priority uses at the official exchange rate, with the central government absorbing the loss. After July 1, 1993, however, this foreign exchange was sold at the swap market rate, substantially reducing the amount of foreign exchange allocated at the official rate and eliminating budget subsidies for imports.

As regards access to the swap market, while there were virtually no restrictions on sales of foreign exchange after December 1991, when domestic residents were allowed to sell foreign exchange at designated branches of banks, the purchase of foreign exchange or retention quotas remained subject to approval by the State Administration of Exchange Control (SAEC). Decisions on approval were guided by a “priority list” issued by the SAEC, which comprised in 1993 seven broad categories of foreign exchange usage. While access to swap centers was allowed for products not covered by the priority list, such as consumer goods, the strictness with which the list was applied—and, hence, the ease of access for the importation of products not on the list—varied according to overall macroeconomic conditions and pressures on the exchange market. The way in which the priority list was applied also varied across swap centers, with its application tending to be stricter in localities where foreign exchange was in relatively short supply. In addition, local restrictions on access by enterprises outside the locality had resulted in market fragmentation and at times wide differentials in rates across centers.

As regards earnings from invisibles, domestic enterprises were also required to sell the foreign exchange to the domestic banking system. Individuals had to repatriate foreign exchange earned from working abroad but could retain those earnings in foreign currency accounts with the domestic banking system. Foreign exchange remitted from abroad to Chinese residents could also be held in foreign currency accounts with domestic banks. Foreign exchange remitted or brought into the country by foreigners could be converted at the official exchange rate into foreign exchange certificates (FECs) denominated in yuan. FECs could be used by foreigners for domestic transactions; prices for goods and services quoted in FECs were generally lower than those in local currency. Upon leaving the country, nonresident and resident foreigners were permitted to reconvert at the official exchange rate up to 50 percent of their original FECs upon presentation of documentation of the original purchase.

Under the exchange system, the after-tax profits of joint ventures could be remitted through their foreign exchange accounts. Foreign employees of joint ventures could remit their salaries and other income earned in China after payment of taxes and deduction of living expenses. Chinese residents requiring foreign exchange for remittance or travel abroad were required to apply to the local SAEC bureau for approval. Where permission was granted for travel abroad, residents were allowed to purchase a “reasonable” amount of foreign exchange to cover expenses for travel and subsistence. All such purchases of foreign exchange, except those of an official nature, had to be carried out in the swap market. Since March 1, 1993, domestic residents have been allowed to take with them up to Y 6,000 of renminbi—the currency of China—on trips abroad.

With respect to capital transactions, the SAEC had the main responsibility for monitoring China’s external borrowing. All foreign borrowing had to be registered with the SAEC; foreign exchange would not be provided to service loans that were not registered. Loans from international financial organizations and foreign governments required the clearance of the State Planning Commission (SPC) and the approval of the State Council. All medium- and long-term commercial borrowing (including bond issues) required prior approval by the SAEC. Foreign direct investment projects were in principle subject to approval by MOFTEC, but a number of provincial and local governments had been granted approval authority up to specified amounts. Outward transfers of capital, including by joint ventures, generally required SAEC approval.

Bilateral payments arrangements with all countries except Cuba were terminated. The arrangement with Cuba will be terminated on January 1, 1996.

Summary and Assessment of Reforms Through 1993

Considerable progress in liberalizing the exchange and trade system was made by 1993. In particular, the mandatory planning of trade transactions was greatly reduced, and the bulk of foreign exchange transactions (about 80 percent) took place at an exchange rate determined in a relatively open exchange market. These changes have played a crucial role in the dynamism of the export sector and, more generally, the rapid development of the econ-
Table 2. Comparison of Tariff Systems of Selected Countries (in percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>Trade/GNP</th>
<th>Maximum</th>
<th>Average</th>
<th>Bands</th>
<th>Tariffs/Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>China (1993)</td>
<td>37</td>
<td>85</td>
<td>36.4</td>
<td>69</td>
<td>6</td>
</tr>
<tr>
<td>India (1994)</td>
<td>23</td>
<td>65</td>
<td>50.0</td>
<td>13</td>
<td>38</td>
</tr>
<tr>
<td>Indonesia (1991)</td>
<td>50</td>
<td>60</td>
<td>20.0</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Korea (1992)</td>
<td>54</td>
<td>30</td>
<td>10.0</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Malaysia (1991)</td>
<td>156</td>
<td>50</td>
<td>14.0</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Pakistan (1991)</td>
<td>34</td>
<td>80</td>
<td>45.0</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Philippines (1992)</td>
<td>46</td>
<td>50</td>
<td>24.0</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Sri Lanka (1991)</td>
<td>57</td>
<td>50</td>
<td>29.0</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Bolivia (1991)</td>
<td>102</td>
<td>50</td>
<td>10.0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Brazil (1992)</td>
<td>15</td>
<td>50</td>
<td>17.0</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Colombia (1992)</td>
<td>31</td>
<td>45</td>
<td>26.4</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Mexico (1990)</td>
<td>25</td>
<td>20</td>
<td>13.0</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Venezuela (1992)</td>
<td>45</td>
<td>20</td>
<td>10.0</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Czech Republic (1992)</td>
<td>652</td>
<td>...</td>
<td>6.0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hungary (1993)</td>
<td>622</td>
<td>...</td>
<td>11.0</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Poland (1993)</td>
<td>352</td>
<td>...</td>
<td>11.0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Romania (1992)</td>
<td>532</td>
<td>60</td>
<td>13.0</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Sources: World Bank (1994); IMF staff estimates; and International Monetary Fund, International Financial Statistics and Government Finance Statistics (various issues).

Footnotes:
1 Numbers of bands.
2 In percent of GDP.

The economy. Nevertheless, at the end of 1993, the exchange and trade system still contained major distortions and restrictions and was lacking in transparency and uniformity. As regards the exchange system, the dual-rate structure represented a distortionary tax placed on the exports of domestic enterprises in order to subsidize priority imports. Also, access to the exchange market, even for trade and related transactions, was still discretionary, and the foreign exchange market remained fragmented.

In the trade system, almost one half of both exports and imports were subject to licensing or some other form of control, with the procedures involved implemented in a discretionary manner. The tariff system, with its high average rate and wide dispersion, has represented a further impediment to allocative efficiency. While its adverse effects have been mitigated by extensive exemptions—particularly for the export sector—the tariff system has influenced the structure of output in the domestic economy, in particular, by biasing production away from raw materials and intermediate goods toward final goods. In addition, the inadequate development of good-quality intermediate products has been a factor in the low domestic content of exports. These biases have generally been reinforced by the import and export licensing regime and by the system of export taxes. Thus, notwithstanding the trade liberalization in recent years, China's trade regime, while comparable to some large developing countries, remains more restrictive than those of the dynamic Asian economies and some of the transition economies in Eastern Europe (Table 2).13

Further progress in trade and exchange system reform can, through the elimination of the distortions and restrictions described above, play a major role in ensuring the dynamism of the economy and helping to spread the benefits of reform more uniformly throughout the country.

Current Reform Program

Recognizing the crucial role for external sector reform in achieving the broader objectives for reform and economic development, the authorities have embarked in 1994 on a new and far-reaching round of external liberalization. Their objective is to move toward a uniform and transparent system that

13 For a detailed assessment of the effects of China's trade regime, see World Bank (1994).
is based on rules, relies on macroeconomic policies for managing the balance of payments, and is conducive to the efficient economic development of the country as a whole. Key elements in this strategy are the unification of the exchange rates and achievement of significant—and, eventually, full—current account convertibility; a major reduction in the scope of import licensing and other controls; and a substantial reduction in tariffs. The remainder of this section describes the authorities' policy program in more detail, especially the exchange system reforms implemented at the start of 1994.

**Exchange System**

On January 1, 1994, a new exchange system was introduced; the implementing regulations, particularly those pertaining to the sale and purchase of foreign exchange, apply to domestic enterprises only. Under the new system, the exchange rates were unified at the prevailing swap market rate on January 1, 1994. At the same time, the retention system was abolished, although enterprises may continue to use their outstanding retention quotas to purchase foreign exchange at the official exchange rate prevailing at the end of December 1993.  

Domestic enterprises are required to sell their foreign exchange receipts from abroad to designated financial institutions. However, foreign exchange receipts may be held in foreign currency accounts in cases involving FFEs; Chinese residents and foreign nationals; foreign direct investment; foreign borrowing and the issuance of stocks and bonds abroad; foreign exchange approved for servicing foreign currency debt; donations for use abroad, as provided in donation agreements; and foreign exchange of embassies, consulates, international organizations, and offices of other nonresident legal entities. FECs will no longer be issued; while the existing FECs can continue to be used, they will be gradually withdrawn from circulation at the official rate prevailing on December 31, 1993. The renminbi was declared the only legal tender in China, with effect from January 1, 1994, and foreign exchange must be converted into renminbi to meet all local expenditure needs.

Under the new exchange system, the requirement to obtain approval from the SAEC for the purchase of foreign exchange for trade and trade-related transactions—and, with it, the priority list—has been abolished. Foreign exchange for trade transactions may be purchased from designated financial institutions by the importer upon presentation of valid invoices or other commercial bills; for imports subject to licensing, quotas, or automatic registration (see below), presentation of the relevant documentation (for example, import licenses, certificates, and registration) is also required. Foreign exchange may be purchased to pay for trade-related services upon presentation of contracts or payment notices. Regulations and approval procedures for nontrade-related services and capital transactions, as described above, continue to apply.

The unified exchange rate is determined in an interbank market. On April 1, 1994, the China Foreign Exchange Trading System (CFETS) in Shanghai, a nationally integrated electronic system for foreign exchange trading, became operational. The CFETS electronically links the interbank market and the major swap centers, and accounts for the bulk of total foreign exchange transactions. As a national market, the CFETS has largely eliminated the fragmentation of the foreign exchange market that resulted from the tendency of local authorities to protect local holdings of foreign exchange. To trade in the new system, a financial institution has to become a member of the CFETS; by May 1994, more than 200 financial institutions had become members. However, only designated local banks and their branches are allowed to buy and sell foreign exchange among themselves on their own account. Other financial institutions, including foreign banks, may sell foreign exchange or trade among themselves on behalf of their customers.

Unlike domestic enterprises, FFEs operate under different regulations that form the broad framework of the foreign exchange balancing requirement (Box 1)—some important features of which are the right to retain all their foreign exchange in designated banks and the requirement to use the swap centers to balance their foreign exchange needs. Also, FFEs continue to need approval from the SAEC for each transaction in the swap centers.

In practice, foreign exchange trading for FFEs in those swap centers that are electronically linked to the CFETS has been fully integrated with trading in the interbank market. The interbank market exchange rate is established in this integrated trading, and all transactions in the swap centers (that are not linked to

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14For undistributed quotas for which foreign exchange was sold before December 31, 1993, the distribution and deposit of quotas into relevant accounts had to be completed before the end of January 1994.

15In practice, the use of Hong Kong dollars is still pervasive in the southern Guangdong Province.

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Box I. Foreign Exchange Balancing Requirement for Foreign-Funded Enterprises

With the advent of economic reforms and the opening up of the economy to direct foreign investment since 1978, numerous FFEs have been established in China. The foreign exchange regulations governing FFEs require that they operate within a system of self-sufficiency in foreign exchange—that is, FFEs are required to “balance” their foreign exchange income and expenditure. The legal framework for the balancing requirement is complex. It is embodied in the Foreign Investment Law of 1979 and its implementing regulations; the provisional exchange control regulations of 1980, as well as the implementing rules and subsequent amendments to the regulations; and the individual investment contracts establishing the FFEs.

Arrangements for the foreign exchange income and expenditure are specified in the investment contracts. In general, each FFE is expected to generate sufficient foreign exchange income, mainly through exports, to cover its own foreign exchange expenditure, such as imports, expatriate salaries and expenses, and profit remittances. However, where an imbalance is envisaged to arise, balance can be achieved through adjustment, and, as discussed below, the channels for adjustment have been widened over time. An FFE is required to submit a foreign exchange budget each December for the following year, as well as periodic reports of its foreign exchange income and expenditure during the year. Approval of the foreign exchange budget provides the basis for approving applications to purchase foreign exchange the following year. Another feature of the foreign exchange regulations for FFEs is that, in contrast to domestic enterprises, which must surrender most of their foreign exchange, FFEs are allowed to retain all their foreign exchange in designated local banks.

The operation of the balancing requirement has been modified over time. Initially, an FFE facing a foreign exchange imbalance was to seek adjustment from the retained foreign exchange of local governments and, if that were not possible, to refer to the central authorities for resolution. In 1986, the balancing requirement was broadened to apply to the FFE sector as a whole (rather than to an individual FFE) by allowing FFEs with a shortage of foreign exchange to purchase foreign exchange from other FFEs with a surplus through the swap centers, subject to approval by the local SAECs. With the rapid growth of the swap centers and the participation of domestic enterprises, trading in the swap centers became the principal means for FFEs to meet their foreign exchange needs. However, as the swap centers were locally based and trading among the swap centers was not integrated, access to swap centers varied, depending on local conditions.

Other ways for FFEs to obtain foreign exchange included the sale of foreign exchange in the domestic market of certain approved products produced by FFEs; the use of renminbi earnings to purchase domestic products for export, following approval by MOFTEC; and the reinvestment of renminbi earnings in new joint ventures with the capacity to earn foreign exchange.

With the introduction of the exchange system reform in January 1994, FFEs continue to be allowed to retain all their foreign exchange in local banks and to sell or purchase foreign exchange in the swap centers. Since the issuance of the new rules in April 1994, in order to open a foreign exchange account, an FFE must apply to the SAEC to obtain a “foreign exchange registration certificate.” Each transaction in the swap centers also requires the approval of the local SAEC. Domestic enterprises, in contrast, are required to sell their foreign exchange to designated banks; in turn, they can purchase foreign exchange from designated banks for trade-related transactions upon presentation of relevant documentation. Thus, the foreign exchange system has two segments: an interbank market for domestic enterprises, and the swap centers for FFEs. Since the China Foreign Exchange Trading System became operational in April 1994, the major swap centers, accounting for the bulk of all foreign exchange transactions, are electronically linked, and trading among these centers is integrated.

Prior to 1994, domestic enterprises were given retention quotas amounting to a certain portion of their foreign exchange earnings, which they could either sell or use to re-purchase foreign exchange at the official exchange rate (see Khor (1995)).

In 1979, local governments were allowed to retain a certain portion of the foreign exchange earnings originating from their localities.

Prior to 1994, in practice, even before 1986, there had been some trading of foreign exchange among FFEs on an informal basis. A survey by the U.S.-China Business Council reported in October 1993 that about three fourths of all FFEs used the swap centers to meet about half of their foreign exchange needs.

This method was terminated in 1994.

The Provisional Regulations on the Administration of Foreign Exchange Settlement, Sales, and Payments, and the Provisional Measures for the Administration of Foreign Exchange Accounts.

In 1995, local governments were allowed to retain a certain portion of the foreign exchange earnings originating from their localities.

Nevertheless, with different rules for access to foreign exchange, the new foreign exchange system is segmented between domestic enterprises and FFEs.

The new unified exchange arrangement is a managed float. At the start of trading each day, the PBC
announces a reference rate based on the average of the buying and selling rates against the U.S. dollar at the close of the previous day’s trading. Movement of the renminbi against the U.S. dollar is limited to 0.3 percent on either side of the reference rate, with the PBC intervening in the interbank market through purchases and sales of foreign exchange to keep the exchange rate within this limit. During the first six months of 1994, the exchange rate remained stable at about Y 8.7 per U.S. dollar (Chart 2), and the foreign exchange holdings of the PBC rose.

Trade Planning and Canalization

Effective 1994, all remaining mandatory trade planning has been eliminated. Canalization will be limited to those few products subject to guidance planning, under which import ranges (rather than specific targets) are established and administered flexibly. Also, the procedures for the approval of enterprises’ engagement in foreign trade are being liberalized, with the ultimate objective of moving to a registration system under which approval will not be required. Although, during the transition period, approval will continue to be required, it will be based on clear criteria.

Import Licensing and Controls

Under an agreement on trade liberalization reached with the United States in October 1992, China is to remove the bulk of its import licensing and quota controls over a five-year period. As part of this process, import licenses and quota controls for 283 commodities in 9 categories were removed on December 31, 1993. The authorities plan to remove licensing requirements and quota controls from a further 20 categories—including tobacco products and petroleum—by the end of December 1994, and from another 3 categories by the end of December 1995. On May 25, 1994, the authorities eliminated import licenses and quotas on another 195 commodities, including 30 items scheduled for removal by the end of 1994 and 120 items scheduled for removal by the end of 1995 under the agreement with the United States.

As regards import controls on machinery and electronic equipment and other general commodities, new regulations for their administration were implemented that narrowed the scope of controls and simplified import procedures. The list of machinery and electronic products subject to import suspension (covering 165 commodities) and the list of imports subject to unified control by approved agencies (covering 388 commodities) were eliminated. Control procedures on products in 18 categories were replaced by the administration of open quotas, and the procurement policy for another 171 categories was changed to one based on international competitive tenders. For other machinery and equipment, registration for surveillance purposes would be required before importation. With regard to other commodities, a new standardized quota system was introduced that applies to 26 types of commodities, including grains, rubber, and petroleum.

Import Tariff System

Tariffs were lowered by 8.8 percent at the end of December 1993 on 2,898 commodities, covering mainly raw materials and machinery and equipment in short supply domestically. These reductions lowered China’s average tariff rate from 39.9 percent to

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18 The PBC also publishes exchange rates of the renminbi against other major currencies on the basis of exchange rates on world currency markets.
19 The categories are steel products, steel billets, scrap steel, Chinese medicine, polycarbonate, coffee and coffee products, civilian airplanes, assembly processing equipment, and black-and-white television picture tubes.
21 Including automobiles, motorcycles, videocassette recorders, computers, and air conditioners.

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36.4 percent. In addition, tariff rates on two categories of imported automobiles were lowered from 220 percent and 180 percent to 150 percent and 110 percent, respectively, reducing the overall tariff level by another 1.4 percent.

In the context of negotiation for reaccession to the General Agreement on Tariffs and Trade (GATT), the authorities have made offers on further trade liberalization, which continue to be subject to negotiations with major trade partners. The offers include the binding of the tariff on most nonagricultural products to a maximum of 40 percent. By 1998, the 40 percent ceiling will be further reduced to 35 percent. In order to protect certain industries, the authorities intend to exempt from the binding tariff ceiling about 10 percent of all nonagricultural products. The authorities also intend to bind the tariff on all agricultural products. Tariff rates on more than 500 items (that are subject to rates exceeding 40 percent under the 1992 tariff schedule) will be lowered to 40 percent over a ten-year period; for the remaining tariff lines, tariffs will be reduced by at least 10 percent. With respect to those agricultural products that are subject to quantitative restrictions or other nontariff barriers, including cereals, edible sugar, certain vegetable oils, and soybean, the authorities have indicated their commitment to a minimum degree of market access equivalent to 3–5 percent of domestic consumption.

Legal Framework

Another objective of trade reforms is for foreign trade to be conducted within a clear legal framework and under transparent implementing regulations that apply uniformly across the country. Since October 1993, MOFTEC has published 93 documents governing trade that remain in effect and has rescinded 744 internal documents. The Foreign Trade Law was enacted by the Standing Committee of the National People's Congress on May 12, 1994 and became effective on July 1, 1994; implementing regulations are being worked out. The Foreign Trade Law establishes a unified legal framework for the conduct of foreign trade and should help to improve transparency.
III Monetary Policy and Financial Sector Reforms

Since the inception of market-oriented reforms in China more than 15 years ago, the role, instruments, and conduct of monetary policy have undergone significant changes, as has the structure of the banking and financial systems. One of the most important changes was the creation of a two-tier banking system in 1984 when the PBC was established as a central bank, responsible for the conduct of monetary policy and supervision of the financial system, while policy and commercial lending operations were assigned to four specialized banks.23

The reforms also entailed changes in the framework of monetary policy, as well as in its instruments, and have greatly enhanced the role of monetary and credit policy in influencing aggregate demand. Nevertheless, important problems remain in the implementation of monetary policy and in the structure of the banking system and financial markets. This section outlines the main features of China’s existing monetary policy infrastructure (namely, instruments and institutions), evaluates its adequacy, and describes the reforms that the authorities are now undertaking to move to a more market-based system of monetary control that relies primarily on indirect instruments.

Structure of the Banking System

The PBC and the four large, state-owned specialized banks have a highly decentralized branch network totaling more than 120,000 branches throughout the country (Table 3). The organization of the branches is not based on economic criteria, but on the administrative structure of the country. Thus, each bank typically has a head office, about 30 provincial branches, 400 municipal- and prefecture-level branches, and 2,000 county-level branches. Some of the specialized banks even have sub-branches below the county level. Although still largely segmented in their respective activities, the specialized banks have been allowed to diversify their activities since 1985. However, a major activity of the specialized banks remains the provision of policy loans for investment projects, agricultural procurement, and external trade.

In addition to the four specialized banks, the commercial banking system consists of several national and regional universal or comprehensive banks and three development banks. Besides these, there exists a network of about 53,000 rural credit cooperatives (RCCs) and 4,000 urban credit cooperatives (UCCs). The RCCs collect deposits from, and extend credit to, rural households and enterprises, both on their own accounts and on behalf of the ABC. The UCCs perform similar functions in urban areas and are overseen by the other three specialized banks. In addition, foreign and joint-venture banks have established more than 300 representative offices and branches in China, which are engaged primarily in foreign currency banking activities.

There is also a large and growing network of nonbank financial intermediaries (NBFIs). These include trust and investment companies (TICs), affiliated in most cases with one of the specialized banks, which receive trust deposits from the Government, enterprises, and labor and insurance funds, trade securities, and issue guarantees; securities companies, affiliated and owned by the Ministry of Finance, specialized banks, and TICs, which are engaged mainly in trading all types of securities; financial leasing companies, owned by the commercial banks, which specialize in leasing operations; and the People’s Insurance Company of China.

Framework and Instruments of Monetary Policy

The framework for monetary policy and the key instruments have evolved considerably since the pre-reform period, during which credit was simply programmed to support output goals of the physical plan. Much has already been done to adapt the formulation and implementation of monetary policy to

23These are the Bank of China (BOC), the Industrial and Commercial Bank of China (ICBC), the People’s Construction Bank of China (PCBC), and the Agricultural Bank of China (ABC).
the changes in the economic system, in which planning controls have increasingly been supplemented with market mechanisms. While the credit plan remains the key to the monetary policy framework, its formulation has undergone considerable change, so that it is now no longer a "bottom-up" exercise focused on plan fulfillment. Indeed, the plan is formulated taking into account the annual macroeconomic targets of inflation and real GDP growth. Likewise, while direct credit controls remain the most important monetary policy instrument, others, such as central bank lending, reserve requirements, and interest rates, have gained in importance, so that monetary policy is now implemented through a blend of direct and indirect controls.

Credit Plan

Prior to 1988, the state credit plan covered the domestic currency operations of only the specialized

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and universal banks. Since then, credit planning has been broadened to include credit extended by NBFIs and the direct financing of enterprises. However, it excludes credit to the Government. While the more comprehensive credit plan is submitted for information to the State Council, only the narrower credit plan, covering the specialized and universal banks, is subject to its approval. It is this narrower credit plan that is monitored most closely in practice. The more comprehensive credit plan includes a ceiling for aggregate credit in the economy, and, in the process of aggregating its consistency with the major macroeconomic targets and objectives, the PBC also monitors broader monetary aggregates. In this way, the PBC has moved toward a system of greater focus on total monetary expansion. A cash plan—a legacy from central planning, when it was necessary to cover the cash needs of the economy, such as wage payments and agricultural procurement—is also part of monetary policy formulation, but the target for the increase in currency is mainly indicative.

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. The credit plan also sets subceilings for specific types of loans such as working capital and fixed investment loans. While fixed investment credit is allocated by specific projects, banks have been given greater discretion with respect to working capital loans allocated by broad industrial sectors. 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 bank. Monitoring and enforcement of the credit ceilings of individual bank branches are conducted by both the local branches of the PBC and the headquarters of the specialized and universal banks.

Instruments of Monetary Policy

Aside from direct credit controls, monetary and credit aggregates in China are also influenced by PBC lending to the specialized banks, reserve requirements, and changes in administered interest rates.

PBC Lending to Specialized Banks

The purpose of PBC lending is twofold: first, it supports structural and socioeconomic development by filling the gap between bank deposits and credit plan targets; and, second, it manages overall bank liquidity through the granting of short-term credit. PBC lending consists of annual lending—primarily the credit required to meet credit plan targets—with maturities of one-two years; shorter-term lending to cover seasonal withdrawals of deposits, with maturities of two-four months; daily lending, with maturities of 10-20 days; and the rediscounting of commercial paper, with maturities of up to six months.

In addition to the specialized banks that are authorized to borrow directly from the PBC, some NBFIs are permitted limited access to the PBC’s credit facilities. Access to PBC lending is determined by an annual quota for each bank, which, in turn, is based on projections of its deposit growth and credit requirements. Quarterly quotas are also specified, but, until mid-1992, they remained essentially nonbinding, as banks were required only to meet their annual credit quotas. Furthermore, the PBC can adjust its lending quotas during the course of the year, taking account of the growth of deposits relative to credit plan targets for the banks, as well as of the overall liquidity situation of the economy. The maximum interest rate on PBC lending to financial institutions was set at 10.62 percent in 1994.

Reserve Requirements

Bank deposits are subject to a reserve requirement, currently set at 13 percent of domestic currency deposits. They apply to demand and time deposits of specialized and universal banks, as well
as to RCCs, UCCs, and TICs. Fiscal and interbank deposits are excluded. Required reserves currently earn an interest rate of 9.18 percent. The monitoring of compliance with the reserve requirement for the specialized and universal banks is done at the branch level, rather than the headquarters level, and is based on end-of-month deposits. Reserve shortfalls are subject to penalty interest rates.

In general, financial institutions in China need to hold a relatively large proportion of their deposit base as “excess” reserves, primarily because of the shallowness of the interbank market and the inefficiency of funds management and the payments system. The high level of excess reserves also reflects the effects of the credit plan, combined with the existing structure of interest rates on PBC lending and reserve deposits. Excess reserves are used for settlement of payments, cash withdrawals, and on-lending in the interbank market. In 1989, the PBC issued a “guideline” on the level of excess reserves—5–7 percent of deposits—that it judged to be appropriate to satisfy banks’ operational needs. These deposits are, however, at the free disposal of banks. The excess reserve guideline is also based on end-of-month deposits, and excess reserves earn the same interest rate as required reserves.

Interest Rates

Although the effectiveness of interest rates as an instrument of monetary policy is limited because of the soft budget constraints of SOEs, their role has been increasing in importance. First, administered interest rates have been adjusted more frequently in the 1990s to take account of changing macroeconomic circumstances. Also, banks have been allowed some flexibility in adjusting their lending rates (by up to 10 percent of the administered rate). This being said, the effectiveness of interest rate changes is still largely felt through their impact on household savings, rather than on the demand for credit and the level or structure of investment, because of the continued availability of loans and subsidies to cover enterprise losses.

Money and Capital Markets

The short-term money market in China consists of an active, albeit localized and fragmented, interbank market. These local markets are organized mainly through financial intermediaries sponsored by local branches of the PBC. Besides banks, most NBFIs, notably TICs, and finance and securities companies are allowed to participate in the interbank market. The interbank market has been used by banks and NBFIs as a source of funding to meet their loan operation needs and for liquidity management. The maturity of interbank loans ranges from a few days to several months. Interest rates in this market are allowed to vary by up to 20–30 percent of the PBC’s maximum lending rate.

Since the early 1980s, the range of financial instruments has been progressively broadened to include not only cash and bank deposits but also treasury and other financial bonds, and equities. In particular, government securities began to be issued in 1981 through mandatory placement with households, enterprises, and local governments. Initially, the bonds had a maturity of ten years, but in 1985, and again in 1988, the maturity of the new bond issues was shortened to five years and three years, respectively. In 1987, the Government began to diversify its debt instruments with the issuance of “key construction bonds” to households and enterprises. The proceeds of these bonds were earmarked for capital expenditure in priority sectors.

Until 1991, the primary placement of bonds was entirely on a compulsory basis. In 1991, the authorities experimented with the voluntary placement of treasury bonds through underwriting syndicates. The experiment was highly successful. and, in 1992, all treasury bonds were issued through underwriters. During 1993, in an environment of strong demand pressures and disorderly financial conditions, including the proliferation of fund-raising schemes outside the formal financial system, the Government faced difficulties in placing bonds on a voluntary basis and reverted temporarily to compulsory bond placement. However, with the restoration of financial order since the second half of 1993, there have been no reports of forced sales of government securities. Indeed, the authorities have successfully sold more than Y 100 billion of both short- and long-term bonds in the first half of 1994. The range of financial instruments issued by entities other than the Government has also increased since the mid-1980s. Such instruments include enterprise bonds, financial bonds, commercial paper, and certificates of deposit.

Footnotes:

31That is, if the administered rate is 10 percent, banks are allowed to charge up to 11 percent on their loans.

32The length of maturity of the bonds issued in the 1980s implied a significant bunching of maturities in the 1990-93 period. Unable to fully redeem the maturing debt, part of the bonds held by enterprises was rolled over into five-year conversion bonds in 1990 and 1991.

33In general, interest rates on government bonds are linked to those on bank deposits of similar maturities. In 1994, longer-term government bonds began to be indexed for inflation, although the precise nature of this indexation is not known.

34See the discussion below on reform plans for more details on treasury security issues during 1994.
Secondary bond trading was introduced on a nationwide basis in 1988. At first limited to the trading of treasury bonds, it was later extended to include key construction bonds, enterprise bonds, and other nongovernment securities. The volume of secondary market trading has increased rapidly, and the establishment of a national electronic trading system in 1991 linking several cities has served to reduce some of the earlier problems associated with the segmentation of the market.

Since the opening in 1990 of the two stock exchanges in Shanghai and Shenzhen, the market for these securities has burgeoned. Initially, only Chinese residents were allowed to hold and trade in enterprise shares (the so-called A shares). In early 1992, special issues of shares (known as B shares) were available for investment by foreigners. In 1993, shares of seven Chinese companies (referred to as H shares) were listed on the Hong Kong Stock Exchange, and shares of another two companies were listed on the New York Stock Exchange. Several other companies have been approved for listing on these exchanges in the near future. While enterprises can issue A and B shares or A and H shares, all three types cannot be issued by the same company. The market for these shares is segmented: domestic investors cannot buy B or H shares, whereas foreign investors cannot purchase A shares.

While the rapid development of new financial instruments, both long- and short-term, has served to increase the efficiency of financial intermediation, it has also complicated the task of monetary management by rendering the demand for key monetary aggregates much less predictable. Also, as will be discussed below, the weaknesses in the supervisory and regulatory framework are now even more apparent than before.

**Principal Weaknesses of the Existing System**

The key to understanding the weaknesses in China’s system of monetary and credit control lies in the fact that it has become increasingly inconsistent with the reforms in the rest of the economy. In particular, the reform process has emphasized the decentralization and devolution of economic decision making away from the center and diminished the role of the plan, thus rendering administrative methods of control progressively more difficult to apply and less effective. The ineffectiveness of the primary instrument—the credit plan—is evidenced by the frequent breaches of the planned limits on credit expansion, sometimes by substantial margins. Moreover, the recurring bouts of macroeconomic instability in China since 1978 are attributable, in part, to the underdeveloped state of indirect, market-based instruments of macroeconomic management. Where such instruments do exist, their efficacy has been blunted by the fact that the mechanisms by which changes in these instruments are transmitted to real economic activity—for example, interest rates and the exchange rate—do not reflect fully underlying demand and supply. Furthermore, many economic agents have not been strictly subject to the discipline of the market and have therefore not been responsive to price signals. The lack of a legal and regulatory institutional infrastructure has exacerbated these problems.

The weaknesses of the existing system of monetary control can be divided into those that arise from the formulation of credit policy and those that arise from its implementation. Notwithstanding the changes that have been made in the way that the credit plan is formulated, the process retains several elements of a bottom-up exercise. These elements impart an expansionary bias into the plan and complicate the task of grounding the credit plan in a consistent overall macroeconomic framework. The exclusion of credit to the Government from the credit plan is another potential source of expansionary bias. Also, to be credible, the credit plan needs to be rigid, which makes it difficult for the authorities to adapt the plan to take account of changing macroeconomic circumstances.

In addition, several factors have also served to weaken the implementation of monetary policy. The influence of the PBC, as a central bank, is circumscribed at the national level by its lack of administrative independence from the State Council, and at the local levels by a system of “dual leadership,” under which local PBC branches are dependent on local governments for housing, education, and other benefits. Moreover, the large number of PBC branches, which parallels the administrative structure of the Government, tends to leave them especially vulnerable to local political intervention and to weaken headquarters’ control. The large number

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33The number of shares listed on these two exchanges had risen to about 240 in early 1994, and the market capitalization is estimated at over Y 400 billion.

34Both A and B shares are denominated in renminbi; however, B shares are quoted and must be purchased with foreign exchange.

35The authorities have decided to postpone the listings of A shares during 1994 to bolster the stock markets, which have been flagging since mid-1993, owing in part to a glut of stocks in the market. In addition, the authorities are considering introducing a requirement that SOEs that are to be listed go through a six-month adjustment and consolidation program to improve their management and organization before issuing equity.

36The issue is addressed in Appendix IV.

37With effect from January 1, 1994, direct government borrowing from the central bank to finance the deficit was terminated.
of branches also reflects the backwardness of the payments system, which has caused the PBC to stand ready to meet the liquidity needs of the numerous local banks.

In the past, both PBC headquarters and its local branches were able to extend credit to eligible financial institutions; however, the extent of control of this lending by headquarters was progressively eroded as the process of decentralization advanced. Each quarter, PBC branches were allocated credit quotas by headquarters, which they were able to use to provide advances to banks. PBC branches were vulnerable to pressures from local governments to permit local banks to extend credit beyond the planned ceilings; these overruns subsequently had to be accommodated by base money creation. During the “rectification” period of 1989–90, the PBC strengthened its control over credit creation by local branches by requiring the latter to transfer to headquarters most deposits received from financial institutions. In addition, the lending capacity of PBC branches was restricted to the resources that it received from headquarters. However, controls were relaxed in the subsequent period. From 1992 to early 1993, branches of specialized banks came under considerable pressure to extend loans in excess of the credit plan; this, combined with the rapid slowdown in the growth of household deposits, left the PBC with no choice but to provide funds to the banks to cover credit for their planned activities. (Table 4 presents major monetary aggregates, and Chart 3 shows the major factors contributing to the growth of reserve money over the past five years.)

In July 1993, under the 16-Point Program, the ability of local PBC branches to extend credit, except for very short-term funds management purposes, was terminated.

The implementation of credit policy is also weakened because of credit expansion by NBFIs. While such credit expansion is included in the more comprehensive credit plan, compliance with the plan has proved much more difficult to monitor; accordingly, NBFIs have, as during 1992–93, been important sources of faster than planned credit and monetary expansion.

Another important factor that has weakened the conduct of monetary policy has been the behavior of banks with respect to their holdings of excess re-

### Principal Weaknesses of the Existing System

<table>
<thead>
<tr>
<th>Table 4. Money and Credit: Summary Indicators</th>
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<tr>
<td>(In billions of yuan; end of period, unless otherwise specified)</td>
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<tbody>
<tr>
<td>Broad money</td>
<td>520.0</td>
<td>672.2</td>
<td>835.0</td>
<td>1,009.9</td>
<td>1,195.9</td>
<td>1,330.4</td>
<td>1,394.2</td>
<td>2,539.6</td>
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<td>(Annual percent change)</td>
<td>17.1</td>
<td>29.3</td>
<td>24.2</td>
<td>21.0</td>
<td>18.4</td>
<td>28.0</td>
<td>26.4</td>
<td>31.3</td>
<td>24.0</td>
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<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
<td>24.4</td>
<td>40.9</td>
<td>16.5</td>
<td>5.7</td>
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<td>27.7</td>
<td>21.9</td>
<td>30.8</td>
<td>39.0</td>
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<td>Narrow money</td>
<td>374.0</td>
<td>474.2</td>
<td>568.5</td>
<td>695.0</td>
<td>744.2</td>
<td>879.3</td>
<td>1,122.0</td>
<td>1,500.9</td>
<td>1,868.6</td>
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<tr>
<td>(Annual percent change)</td>
<td>10.0</td>
<td>26.8</td>
<td>19.9</td>
<td>22.3</td>
<td>7.1</td>
<td>18.2</td>
<td>27.6</td>
<td>33.8</td>
<td>24.5</td>
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<tr>
<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
<td>13.1</td>
<td>44.1</td>
<td>10.8</td>
<td>-4.5</td>
<td>24.9</td>
<td>24.4</td>
<td>32.6</td>
<td>32.6</td>
<td>33.9</td>
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<td>Reserve money</td>
<td>228.6</td>
<td>282.7</td>
<td>322.3</td>
<td>405.5</td>
<td>501.7</td>
<td>657.3</td>
<td>825.2</td>
<td>971.2</td>
<td>1,316.5</td>
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<td>(Annual percent change)</td>
<td>...</td>
<td>23.7</td>
<td>14.0</td>
<td>25.8</td>
<td>23.7</td>
<td>31.0</td>
<td>25.6</td>
<td>17.7</td>
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<tr>
<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
<td>...</td>
<td>23.9</td>
<td>28.5</td>
<td>20.0</td>
<td>34.6</td>
<td>19.5</td>
<td>25.2</td>
<td>16.3</td>
<td>39.7</td>
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<td>Currency in circulation</td>
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<td>234.2</td>
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<td>19.4</td>
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<tr>
<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
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<td>54.0</td>
<td>13.2</td>
<td>19.2</td>
<td>10.6</td>
<td>19.8</td>
<td>24.5</td>
<td>47.4</td>
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<td>Net domestic assets</td>
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<td>668.3</td>
<td>812.0</td>
<td>979.7</td>
<td>1,158.7</td>
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<tr>
<td>(Annual percent change)</td>
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<td>33.9</td>
<td>21.5</td>
<td>20.7</td>
<td>18.3</td>
<td>24.1</td>
<td>25.0</td>
<td>32.7</td>
<td>25.4</td>
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<tr>
<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
<td>41.6</td>
<td>53.9</td>
<td>15.7</td>
<td>7.8</td>
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<td>25.6</td>
<td>23.1</td>
<td>33.8</td>
<td>34.5</td>
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<td>Domestic credit</td>
<td>619.6</td>
<td>820.4</td>
<td>1,001.1</td>
<td>1,172.4</td>
<td>1,371.6</td>
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<td>2,039.3</td>
<td>2,504.9</td>
<td>3,067.2</td>
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<tr>
<td>(Annual percent change)</td>
<td>19.3</td>
<td>32.4</td>
<td>22.0</td>
<td>17.1</td>
<td>17.0</td>
<td>23.7</td>
<td>20.2</td>
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<tr>
<td>(Annualized quarterly growth rate, seasonally adjusted)</td>
<td>25.2</td>
<td>48.1</td>
<td>18.0</td>
<td>0.8</td>
<td>26.0</td>
<td>20.7</td>
<td>17.8</td>
<td>21.9</td>
<td>34.6</td>
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Sources: Chinese authorities; and IMF staff estimates.
serves. As noted above, banks typically hold deposits at the PBC well in excess of the reserve requirement. Several factors account for this. First, reserve requirements are imposed at the level of the individual bank branch; shortfalls in one branch cannot be offset against excesses in another. Second, the interbank market, although growing in depth, remains localized, fragmented, and relatively inefficient. Third, structural problems in the payments and settlement systems require each bank branch to hold a relatively large amount of excess reserves for operational purposes. Finally, the general lack of a strong profit motive among the state-owned banks, combined with the fact that excess reserves are remunerated at the same rate as required reserves and only slightly below the PBC lending rate, can induce banks to hold larger reserves than necessary.

From the point of view of monetary policy implementation, there are two important consequences of this overhang of excess reserves. First, small changes in reserve requirements would be largely ineffective, as banks would be able to comply with them without changing the amount of lending. Second, banks could potentially draw down these deposits to generate a rapid expansion of credit should the demand for it arise, as happened in late 1992 and early 1993. The latter factor complicates monetary management, as it results in the lack of a predictable relationship between reserve money expansion and broad money growth (Chart 4).

Interest rates have played only a limited role in controlling monetary aggregates mainly because, as mentioned above, most of the largest borrowers from the banking system—the SOEs—are unresponsive to changes in lending rates. Furthermore, changes in interest rates are, in general, subject to State Council approval, making the process time-consuming and subject to political considerations.

Finally, the effective implementation of credit policy through both direct and indirect instruments is seriously hampered by the inadequacies of the legal and regulatory framework, the financial accounting framework of the banks, and the inefficient payments and clearance system.

Reform Plans

Recognizing that the development of China’s financial system has thus far lagged behind the development of other sectors of the economy and that the existing monetary policy infrastructure is no longer
compatible with the objective of developing a market-based economy, the authorities have laid out comprehensive plans to accelerate the reform of the financial system. The broad objectives of the reform are to set up a strong central bank, albeit under the leadership of the State Council, vested with the responsibility of formulating and implementing monetary policy without interference from other government agencies; to commercialize the banking system, so that the existing state-owned banks would operate on a purely commercial basis, while policy-based lending would be undertaken by newly created "policy banks"; and to establish a unified and competitive set of financial markets with strengthened prudential regulation and supervision.

Measures to reform the central bank include the enactment of a central banking law. The law is envisaged to delineate clearly the central bank's main objectives and responsibilities and to provide the PBC with greater autonomy of action. The new law is expected to be enacted in 1994. The objective of monetary policy would primarily be to maintain the stability of the currency and the financial system, thereby creating conditions that would foster sustainable economic growth. To these ends, it is envisaged that the PBC will eventually be reorganized along regional lines that cut across several provinces, thus reducing its vulnerability to the influence of local governments. In addition, as noted above, the ability of local PBC branches to extend credit has been terminated, except for very short-term purposes (with maturities of no more than seven days), to allow the smooth functioning of the payments and clearance system and the management of funds. The primary responsibilities of these branches will include supervising banks in their jurisdictions, collecting data, and conducting research.

As for the conduct of monetary policy, a progressive shift to the use of indicative targeting of money, supported by operating procedures based on excess reserves of the banking system, is planned. The PBC would realize its objectives mainly through open market operations supplemented by the use of reserve requirements, discount rates, and changes in administered interest rates, while allowing lending and deposit interest rates to float within a predetermined band. The authorities envisage that, over time, open market operations will become the primary instrument of monetary policy, beginning with the use of available instruments, such as short-term PBC bills. Increasingly, open market operations would mainly be conducted through the trading of short-term treasury securities. As a first step, an open market operation center has been set up in Shanghai, and preparations are under way to begin such operations on an experimental basis. Trading would be conducted with short-term treasury bills, using the facilities of the Shanghai Stock Exchange. In addition, steps are being taken to improve the statistical reporting system to provide more timely and comprehensive information for policy analysis.

To increase the competitiveness of the banking system, the authorities plan to separate policy-based lending from the commercial activities of the specialized banks. In particular, it is planned to relieve the specialized banks of their obligations to provide policy-based loans and to allow them to operate on a purely commercial basis, thus making them fully responsible for their own profits and losses. The banks will remain state owned. In addition, the RCCs and the UCCs will be transformed into cooperatively owned commercial banks. The authorities are also considering permitting greater freedom of entry to joint-venture and foreign banks, and to allow them to engage in domestic currency operations. By the end of 1993, foreign financial institutions (including banks, insurance companies, and securities companies) had set up over 300 representative offices and branches in China. At present, foreign banks are permitted to engage only in foreign currency operations. Furthermore, the specialized banks will be required to sever financial relations with their NBFI subsidiaries. The NBFI subsidiaries would then operate independently on a commercial basis under strict prudential supervision by the PBC, with the help of new regulations to be issued for this purpose.

The policy-based lending activities will be assumed by three newly created financial institutions, two of which were operational by July 1994. The State Development Bank (SDB), which is responsible for providing low-interest financing for key infrastructure projects and certain basic industries, became operational in April 1994. The SDB is to be financed through appropriations from the Ministry of Finance and from existing funds for key construction projects, bonds issued to banking institutions and the public, and a portion of the deposits of the PCBC. It is expected that the state budget will provide for about Y 50 billion over the next four years to capitalize the SDB. In addition,

41In 1994, the authorities announced their intention to allow selected foreign banks to conduct business in domestic currency on an experimental basis.

42The SDB is essentially a merger of several investment corporations previously under the State Planning Commission, which will continue to make decisions on target projects.

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the SDB has announced a plan to float Y 65 billion in longer-term bonds (issued to financial institutions) in 1994. The first issue took place in April 1994, with the sale of bonds worth Y 28.5 billion. The SDB may also sell bonds directly to the public in the future.

The China Import and Export Bank—which became operational in July 1994—will provide buyers and sellers with longer-term credit for imports and exports of capital goods related to the mechanical and electrical sectors, as well as for complete sets of equipment. It will be financed with capital from the Ministry of Finance and through the issuance of bonds. The Agricultural Development Bank of China will focus on financing the state procurement of agricultural products, and on agricultural development; it will be financed with bonds issued to financial institutions.

To foster the development of well-functioning money markets, the authorities aim to (1) create a market for short-term (maturities of less than one year) treasury securities, which would be issued mainly to specialized banks and institutional investors; (2) break down the segmentation of the existing interbank money market to promote the development of a national interbank market; (3) gradually liberalize interbank interest rates; and (4) strengthen the regulation and supervision of the interbank market. These measures would enable open market operations to become over time the main instrument of monetary policy.

The authorities plan to develop longer-term capital markets by establishing pension funds, mortgage companies, and other sources of long-term capital; by strengthening the regulation of securities markets through the enactment of a national securities law; and by closely supervising the issuance of securities in primary capital markets.

Also, there have been important changes in the government bond sales program for 1994. First, with the decision to terminate deficit financing by the PBC, the authorities have announced a plan to sell some Y 100 billion in treasury bonds in 1994. Second, a program has been introduced to diversify the type and maturity of government activities. In January 1994, the authorities sold Y 5 billion of six-month and Y 8 billion of one-year treasury bills in book entry form. From April to June 1994, the authorities sold Y 27 billion of two-year bonds with an interest rate of 13 percent and Y 60 billion of three-year savings bonds with an interest rate of 13.96 percent if held to maturity. However, the savings bonds are redeemable after six months on a graduated scale of interest payments that range slightly higher than the current interest rates on bank deposits of the corresponding maturities. In addition, Y 2 billion of five-year bonds were also issued. In general, the authorities have recognized the need for greater flexibility in interest rates to facilitate the voluntary placement of government debt instruments and to foster the development of an efficient and well-functioning capital market.

The new round of financial sector reforms is essential for the establishment of a market-based economic system. At the same time, it should be recognized that several challenging problems will need to be resolved when implementing these ambitious reforms. To enable the PBC to perform its two primary functions, namely, the formulation and implementation of monetary policy and the supervision of the financial sector, it will be necessary for the PBC to strengthen its policy research capability and conduct studies on the behavior of monetary aggregates in relation to the ultimate targets of monetary policy, and in relation to the chosen operational targets. It will also be necessary to develop rapidly the necessary infrastructure and the capability to conduct effective supervision and regulation.

As for the banking system, the commercialization of the specialized banks will require not only the establishment of the policy banks but also the identification and quantification of nonperforming loans in the specialized banks’ portfolios, so that the necessary capitalization can be determined. Problems regarding reductions in the number of bank branches and redeployment of staff (both of the PBC and the specialized banks) could also pose major challenges. In this regard, however, the authorities are confident that, with appropriate training, the staffs of these institutions can be absorbed in the growing services sector, particularly those involved in providing financial services. Above all, it will be necessary to reorient the behavior of banks and SOEs to make them more competitive and profit oriented by hardening their budget constraints and making them more responsive to market signals.
Fiscal System Reforms

Fiscal policy in China has operated in a difficult environment in recent years. The central government’s influence on public finances weakened, and budget deficits persisted. At the same time, ongoing reforms, as well as recurrent macroeconomic cycles, increased the demands on fiscal policy to both support the reform process and help stabilize the economy. These concerns have been a driving force behind the authorities’ decision to implement a sweeping program of fiscal reform in 1994.

The envisaged fiscal reforms simultaneously cover the tax system and tax administration, intergovernmental fiscal relations, budgetary procedures, and the government administrative and personnel system. When fully implemented, these reforms will contribute to building an infrastructure for fiscal policy that is more suitable to a market economy.

This section reviews the principal trends in public finance over the past decade; describes how the fiscal policy framework has evolved with the economic reform process; analyzes the main weaknesses of this framework; and discusses the current plans to reform the fiscal system.

Recent Trends in Public Finance

Over the period 1983–93, the size of the state budget in relation to GNP fell by more than 10 percentage points to 17½ percent (Chart 5 and Table 5). (Budgetary data are presented in the format based on the IMF’s *Manual on Government Finance Statistics*, 1986, which, as shown in Table 6, differs from the official Chinese definition.) Revenue and expenditure buoyancies were both less than unity, but the former were smaller than the latter (Table 7). As a result, budget deficits persisted, averaging about 2 percent of GNP over the past decade. These trends are also confirmed when the state budget is consolidated with extrabudgetary funds.43

An important feature of China’s fiscal system is extrabudgetary funds controlled by centrally and locally owned SOEs and line ministries overseeing the SOEs, local governments, plus various public institutions. About 80 percent of extrabudgetary revenue and expenditure, which are compiled according to the national definition).
IV  FISCAL SYSTEM REFORMS

Table 5. State Budgetary Operations

<table>
<thead>
<tr>
<th></th>
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<td><strong>Total revenue</strong></td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.3</td>
<td>326.4</td>
<td>355.0</td>
<td>367.2</td>
<td>392.8</td>
<td>427.2</td>
<td>476.2</td>
</tr>
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<td><strong>Tax</strong></td>
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<td>224.8</td>
<td>231.9</td>
<td>257.6</td>
<td>301.7</td>
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<td>345.7</td>
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<td>417.6</td>
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<td>19.8</td>
<td>23.6</td>
<td>22.7</td>
<td>24.7</td>
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<td>47.1</td>
<td>44.8</td>
<td>58.6</td>
</tr>
<tr>
<td><strong>Total expenditure and net lending</strong></td>
<td>232.4</td>
<td>263.2</td>
<td>281.6</td>
<td>313.7</td>
<td>362.8</td>
<td>391.7</td>
<td>415.2</td>
<td>453.9</td>
<td>486.8</td>
<td>549.1</td>
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<td><strong>Current</strong></td>
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<td>188.0</td>
<td>207.0</td>
<td>237.6</td>
<td>288.2</td>
<td>269.3</td>
<td>338.5</td>
<td>364.0</td>
<td>383.6</td>
<td>424.7</td>
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<td><strong>Of which: Subsidies</strong></td>
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<td>76.3</td>
<td>97.3</td>
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<td>88.3</td>
<td>76.7</td>
<td>76.2</td>
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<td>76.1</td>
<td>75.6</td>
<td>84.8</td>
<td>86.7</td>
<td>89.9</td>
<td>103.2</td>
<td>124.4</td>
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<td><strong>Overall balance</strong></td>
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<td>-18.6</td>
<td>-25.1</td>
<td>-33.4</td>
<td>-37.3</td>
<td>-36.7</td>
<td>-48.0</td>
<td>-61.1</td>
<td>-59.6</td>
<td>-72.9</td>
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<td>48.0</td>
<td>61.1</td>
<td>59.6</td>
<td>72.9</td>
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<td>18.3</td>
<td>22.0</td>
<td>26.0</td>
<td>23.6</td>
<td>38.0</td>
<td>46.0</td>
<td>39.7</td>
<td>47.9</td>
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<td>15.2</td>
<td>15.0</td>
<td>9.7</td>
<td>-5.9</td>
<td>17.4</td>
<td>16.1</td>
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<td>20.5</td>
<td>8.4</td>
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<td><strong>State banks’ purchases of government bonds</strong></td>
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<td>3.3</td>
<td>12.3</td>
<td>21.0</td>
<td>-0.1</td>
<td>12.9</td>
<td>-15.4</td>
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<td>26.7</td>
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<td><strong>Other</strong></td>
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<td>15.0</td>
<td>9.7</td>
<td>-5.9</td>
<td>17.4</td>
<td>16.1</td>
<td>42.9</td>
<td>20.5</td>
<td>8.4</td>
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<tr>
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<td>6.8</td>
<td>11.4</td>
<td>11.3</td>
<td>13.1</td>
<td>10.0</td>
<td>15.1</td>
<td>19.9</td>
<td>23.2</td>
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<tr>
<td><strong>Gross foreign borrowing</strong></td>
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<td>7.6</td>
<td>10.6</td>
<td>13.9</td>
<td>14.4</td>
<td>17.8</td>
<td>18.0</td>
<td>20.9</td>
<td>26.9</td>
<td>30.9</td>
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<tr>
<td><strong>Amortization</strong></td>
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<td>-2.3</td>
<td>-3.8</td>
<td>-2.5</td>
<td>-3.1</td>
<td>-4.7</td>
<td>-8.0</td>
<td>-5.8</td>
<td>-7.0</td>
<td>-7.7</td>
</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td>26.7</td>
<td>25.2</td>
<td>22.8</td>
<td>19.9</td>
<td>20.4</td>
<td>20.1</td>
<td>18.1</td>
<td>16.3</td>
<td>15.6</td>
<td>15.2</td>
</tr>
<tr>
<td><strong>Tax</strong></td>
<td>25.6</td>
<td>23.2</td>
<td>20.5</td>
<td>18.3</td>
<td>18.9</td>
<td>17.7</td>
<td>16.4</td>
<td>14.4</td>
<td>13.9</td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Nontax</strong></td>
<td>1.1</td>
<td>2.0</td>
<td>2.3</td>
<td>1.6</td>
<td>1.5</td>
<td>2.3</td>
<td>2.0</td>
<td>2.0</td>
<td>1.6</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total expenditure and net lending</strong></td>
<td>27.2</td>
<td>27.1</td>
<td>25.0</td>
<td>22.3</td>
<td>22.7</td>
<td>22.1</td>
<td>20.5</td>
<td>18.9</td>
<td>17.8</td>
<td>17.5</td>
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<tr>
<td><strong>Current</strong></td>
<td>19.6</td>
<td>19.4</td>
<td>18.3</td>
<td>16.9</td>
<td>18.0</td>
<td>17.3</td>
<td>16.2</td>
<td>15.1</td>
<td>14.0</td>
<td>13.5</td>
</tr>
<tr>
<td><strong>Of which: Subsidies</strong></td>
<td>5.8</td>
<td>6.0</td>
<td>5.9</td>
<td>5.4</td>
<td>6.1</td>
<td>5.4</td>
<td>4.4</td>
<td>3.2</td>
<td>2.8</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Capital</strong></td>
<td>7.5</td>
<td>7.8</td>
<td>6.7</td>
<td>5.4</td>
<td>4.7</td>
<td>4.8</td>
<td>4.3</td>
<td>3.7</td>
<td>3.8</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Overall balance</strong></td>
<td>-0.5</td>
<td>-1.9</td>
<td>-2.2</td>
<td>-2.4</td>
<td>-2.3</td>
<td>-2.1</td>
<td>-2.4</td>
<td>-2.5</td>
<td>-2.2</td>
<td>-2.3</td>
</tr>
</tbody>
</table>

**In billions of yuan**

**In percent of GNP**

Sources: Ministry of Finance; and IMF staff estimates.

1 These budgetary statistics represent a consolidation of the budget of the central government, provinces, municipalities, and counties. Intergovernmental transfers are netted out. Extragovernmental financial operations of the various levels of government are not included.

2 Comprises price subsidies on daily living necessities and agricultural inputs, plus operating losses of state enterprises.

3 Change in gross credit to Government less change in treasury deposits at the PBC.

4 Extragovernmental transfers to households and enterprises.

5 Foreign borrowing by the Ministry of Finance, including all official loans, deferred payments, energy credits, and buyers’ credits.

6 IMF staff estimates for 1993 actual and 1994 budget.

Budget deficits were largely financed by the PBC and domestic sales of bonds, mainly to captive sources. About one fourth of the deficits were financed by foreign sources, which were used primarily for imports of capital equipment for key construction projects. Bond financing rose more than sixfold since 1986, reaching an estimated Y 36 billion (1 percent of GNP) in 1993. Initially, treasury bonds were issued mainly through mandatory placement with enterprises, households, and, in some cases, financial institutions. Since 1988, the authorities have promoted the development of a secondary market for government bonds held by households, thereby increasing their liquidity and attractiveness. The range of government debt instruments has also been widened, the maturities shortened, and interest rates made more attractive. Nevertheless, there have been repeated difficulties in placing government bonds with the general public.

revenue consists of retained earnings and depreciation funds of SOEs and extrabudgetary funds of line ministries overseeing the SOEs. The remaining 20 percent is composed of local fees, surtaxes, and other revenues of local governments, plus the extrabudgetary earnings of the government administrative units and institutions (Sicular (1992)). Extrabudgetary expenditure consists of current expenditure related to production of SOEs (40 percent) and investment expenditure (60 percent). Most extrabudgetary revenue and expenditure do not conceptually belong in the budget domain, fiscal reforms in 1984–85 shifted these types of revenue and expenditure off the state budget.
Table 6. Reconciliation of Chinese and Government Finance Statistics (GFS) Definitions of State Budgetary Operations (In billions of yuan)

<table>
<thead>
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<tbody>
<tr>
<td>Total revenue (Chinese definition)</td>
<td>186.6</td>
<td>226.0</td>
<td>236.9</td>
<td>262.0</td>
<td>294.8</td>
<td>313.3</td>
<td>361.1</td>
<td>415.3</td>
<td>452.2</td>
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<tr>
<td>Less: Foreign loans received</td>
<td>2.9</td>
<td>7.6</td>
<td>10.6</td>
<td>13.9</td>
<td>14.4</td>
<td>14.8</td>
<td>20.9</td>
<td>26.9</td>
<td>30.9</td>
<td>27.8</td>
</tr>
<tr>
<td>Less: Domestic borrowing</td>
<td>6.0</td>
<td>6.3</td>
<td>6.3</td>
<td>13.2</td>
<td>13.9</td>
<td>16.4</td>
<td>26.9</td>
<td>46.1</td>
<td>37.0</td>
<td>45.5</td>
</tr>
<tr>
<td>Plus: Operating losses of SOEs</td>
<td>18.0</td>
<td>32.5</td>
<td>37.5</td>
<td>44.6</td>
<td>59.9</td>
<td>57.9</td>
<td>51.0</td>
<td>44.5</td>
<td>38.9</td>
<td>41.2</td>
</tr>
<tr>
<td>Equals: Total revenue (GFS format)</td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.3</td>
<td>326.4</td>
<td>355.0</td>
<td>367.2</td>
<td>392.8</td>
<td>427.2</td>
<td>476.2</td>
</tr>
<tr>
<td>Change in treasury deposits</td>
<td>232.2</td>
<td>263.2</td>
<td>282.6</td>
<td>313.7</td>
<td>363.8</td>
<td>391.7</td>
<td>415.2</td>
<td>453.9</td>
<td>486.8</td>
<td>549.1</td>
</tr>
<tr>
<td>Overall surplus (+) or deficit (-) (Chinese definition)</td>
<td>2.1</td>
<td>-7.1</td>
<td>-8.0</td>
<td>-7.9</td>
<td>-9.2</td>
<td>-12.9</td>
<td>-20.3</td>
<td>-23.7</td>
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<tr>
<td>Less: Foreign loan repayments</td>
<td>2.9</td>
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<td>10.6</td>
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<td>17.8</td>
<td>18.0</td>
<td>20.9</td>
<td>26.9</td>
<td>30.9</td>
</tr>
<tr>
<td>Less: Domestic borrowing</td>
<td>6.0</td>
<td>6.3</td>
<td>6.3</td>
<td>13.2</td>
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<td>46.1</td>
<td>37.0</td>
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<tr>
<td>Plus: Construction bonds and special state bonds</td>
<td>4.0</td>
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<td>-61.1</td>
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<td>Equals: Total expenditure and net lending (GFS format)</td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.3</td>
<td>326.4</td>
<td>355.0</td>
<td>367.2</td>
<td>392.8</td>
<td>427.2</td>
<td>476.2</td>
</tr>
</tbody>
</table>

Sources: Ministry of Finance; People's Bank of China; and IMF staff estimates.

2. Beginning in 1985, subsidies and enterprise losses are treated in Chinese statistics as deductions from tax revenue.
3. Total for 1985 includes ¥32.7 billion in subsidies for agricultural inputs and daily necessities that were treated in Chinese statistics as deductions from tax revenue.
4. Mostly government bonds issued to enterprises and households.
5. Residual category; may include some extrabudgetary funds.

Evolving Fiscal Policy Framework

The fiscal policy framework has evolved with the economic reform process that began in 1978. Reforms that have had the greatest impact on the fiscal system were the greater autonomy given to SOEs, the larger role of market forces in determining resource allocation, and the devolution of revenue and expenditure responsibilities to local governments (Blejer (1993)). These reforms helped to improve the efficiency of SOEs and contributed to rapid economic growth, especially in the coastal areas. However, the growing market orientation of the economy highlighted important structural weaknesses in the fiscal policy, most notably declining revenue buoyancy and a lack of uniformity and transparency in the tax system and tax administration.
IV  FISCAL SYSTEM REFORMS

Tax System

China's tax system has gone through significant changes since the inception of reforms (Easson and Jinyan (1987)). The tax system comprises four broad categories: taxes on income and profits (of which taxes collected from SOEs represent more than 80 percent); taxes on domestic goods and services (excises, value-added taxes (VAT), turnover taxes, and transactions taxes); customs duties; and other taxes (mainly special levies on enterprise profits) (Table 8). Except for the VAT and the business turnover tax, revenue from major taxes declined relative to GNP since 1985; the drop was largest for the income tax on SOEs. As a result, the structure of tax revenue has shifted toward taxes on goods and services from taxes on income and profits. Nontax revenue, which used to be a major revenue source in the early reform period because it included profit remittances from SOEs and depreciation funds, became less important after 1984, when profit remittances were largely replaced with profit taxes, while depreciation funds of SOEs were separated from the budget and placed under enterprise control. In the second half of the 1980s, the enterprise tax system changed further with the introduction of the contract responsibility system (CRS), the main feature of which was tax payment according to negotiated tax contracts rather than a standardized tax schedule.

By giving the SOEs greater financial autonomy, the need arose to introduce explicit taxes in lieu of the implicit ones that were prevalent under central planning. At the same time, as the Government started to encourage other forms of ownership—collectives, private enterprises, and FFEs—the need to introduce taxation of the nonstate sector also emerged. Since a premise of the economic reforms in China was to preserve public ownership, an important principle for enterprise taxation was that the various forms of enterprise ownership should be taxed differently, based on their economic importance and social desirability.

SOEs paid three different taxes: the enterprise income tax; special levies on profits (“funds”); and the “income adjustment tax.” Regarding the enterprise income tax, large and medium-sized SOEs paid the tax at a uniform rate of 55 percent of their profits, while smaller SOEs paid the tax at rates ranging from 10 percent to 55 percent. Collectives were taxed according to a progressive eight-bracket schedule, with a maximum rate of 55 percent. The maximum rate for private enterprises was 60 percent; they also had to pay a surtax of 10–40 percent. The standard income tax rate for joint ventures and FFEs was 33 percent, but many tax incentives were even after 1984, retained earnings and depreciation funds have remained partly under the Government’s control, as they have been treated as extrabudgetary funds on which the central government levies a number of special taxes.
available. Regarding the base for calculating the enterprise income tax, all business expenses were deductible, including depreciation, welfare expenses, and employees’ bonuses (up to a certain limit). Principal repayments on loans for fixed-asset investments were also deductible. While the concept of taxable income and accounting rules were reasonably uniform, significant differences existed in the deductibility of various costs and the treatment of losses for tax purposes, depending on ownership.

In addition to the enterprise income tax, a number of special levies on profits significantly increased the enterprises’ tax burden. These taxes were imposed because the authorities felt the need to regulate the uses to which enterprises put their after-tax profits; in line with this reasoning, the authorities considered such taxes to be special “funds.” With these special levies, the marginal tax rate on the after-tax income of SOEs exceeded 65 percent.

The income adjustment tax was essentially a charge for the capital invested in SOEs. Rates for this tax were, on average, equivalent to about 10 percent of taxable profits. Enterprises could receive relief from this tax if profits were inadequate. The income adjustment tax was viewed as essential in creating a level playing field among SOEs. Specifically, given that SOEs operated under different conditions, often policy induced, that affected profitability (for example, the size of state-provided investment, technology, location, market share, and degree of price controls), a uniform income tax would have resulted in unequal levels of profit retention among SOEs. By the nature of its design, the income adjustment tax was necessarily discretionary and highly differentiated. Not surprisingly, enterprises bargained energetically with their line ministries to obtain favorable terms on this tax.

The CRS had existed since the early 1980s but was extended to a large number of SOEs in 1986–87 in the context of enterprise reforms (Koo (1990)). Tax contracts were designed to balance the need for government revenue with the objective of giving

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**Table 8. Structure of Tax Revenue**

<table>
<thead>
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<th>Share in Total Revenue</th>
<th>Share in GNP</th>
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<td>10.7</td>
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<td>Customs duties</td>
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<td>Other taxes</td>
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<td>Of which: Special levies on profits</td>
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<tr>
<td>Nontax revenue</td>
<td>15.8</td>
</tr>
<tr>
<td>Of which: Profit remittances</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Source: Chinese authorities.

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45There were four special levies on profits: (1) mandatory contributions to the key energy and transportation projects fund (earmarked for financing of public infrastructure projects); (2) mandatory contributions to the state budget regulating fund (to compensate the Government for revenue shortfalls resulting from the use of fixed-tax contracts, discretionary tax reliefs, and the deduction of the principal repayments on loans); (3) construction tax (designed to influence the aggregate level and allocation of investment by levying different tax rates on different forms of investment; it was replaced by the investment direction tax, applying only to SOEs, in 1991); and (4) wage adjustment and bonus taxes, which were applied to SOE wage and bonus increases in excess of the state-prescribed norm. All enterprises, regardless of ownership or circumstances, were subject to the first three levies.

46The CRS had its origins in the “household responsibility system,” which was implemented in the agricultural sector in the early 1980s. Under this system, household farms were granted land use rights and the right to dispose of above-quota production in return for fulfillment of state procurement quotas.
greater autonomy and financial accountability to SOEs by leaving larger funds at their disposal. They were also to serve as an instrument for adjusting the relative after-tax profit retention by SOEs. The income adjustment tax, while serving the same purpose, was levied on a case-by-case basis. The CRS opened the possibility of bringing more equity to enterprise income taxation and providing SOEs with greater incentives.

The CRS was utilized mainly by medium-sized and large industrial SOEs. Taxes under the contract were paid in lieu of enterprise income and income adjustment taxes (special profit levies continued to apply). The duration of tax contracts varied from one to five years, with three years being typical. Although there were many types of tax contracts, all of them revolved around the idea of guaranteeing the state a minimum amount of enterprise profits through the stipulation of contractual profit remittance quotas; SOEs that entered into such contracts were allowed to retain above-quota profits at preferential terms.

Enterprises that failed to meet the profit or tax targets in their contracts were expected to meet their tax obligations by drawing on retained profits and depreciation funds. In practice, however, the CRS was implemented flexibly. Even after contracts had been signed, both central and local governments had discretion to grant tax reliefs and exemptions on an ad hoc basis.

About 84 percent of all industrial SOEs had adopted the CRS by 1990. While this proportion is large, the nonindustrial SOEs (which generated 30 percent of profits and profit taxes in the SOE sector), as well as collectives and private enterprises, were not covered by the CRS and continued to pay the income taxes discussed above. The high tax rates for these enterprises created incentives for tax avoidance.

The reduction in revenue from SOEs was an expected outcome of the reform process. However, the lack of revenue buoyancy and the erosion of the tax base stemmed from the continued weak financial performance of SOEs, as well as from the failure of the tax system to expand into the booming nonstate sector. With the expansion of the CRS in 1986, the revenue contribution from the SOE sector fell by more than 4 percent of GNP (Table 9). As the budgetary subsidies to loss-making enterprises continued to rise, the net budgetary contribution of the SOE sector, that is, the difference between income and profit taxes plus profit remittances less subsidies, declined from 10 percent of GNP in 1984 to 2 percent of GNP in 1992.47

**Indirect Taxation**

Despite some differences in design, the three main indirect taxes—the product tax, the VAT, and the business turnover tax—were essentially similar. The product tax was an excise tax levied on imports, purchases of agricultural products, and the manufacture of six categories of products.48 The tax rates ranged from 1½ percent to 69 percent plus local surtaxes. No credit was allowed for tax paid on one stage of production against the next stage, resulting in cascading.

The VAT was similar to the product tax and was applied to commodities other than those covered by the product tax. The VAT was generally calculated according to the amount of sales income, and input tax credits were allowed only in respect of raw materials, energy and fuel, and certain other material inputs; no credit was allowed for fixed assets and overhead and distribution inputs. The rate structure was complex, with six rates ranging between 6 percent and 16 percent. Exporters could apply for a rebate of the tax paid after the goods had been cleared by customs.

The business tax was a turnover tax levied on services, as well as on wholesalers and retailers. The tax was imposed on gross business revenue, and the tax rates varied between 3 percent and 5 percent (although up to 20 percent was applied to entertainment businesses).

FFEs were subject to a single indirect tax—the consolidated industrial and commercial tax—which was similar to the product tax. In addition, both domestic and foreign enterprises were subject to a variety of transactions taxes, such as the urban maintenance and development tax, which were levied mostly at the local level.

**Tax Administration**

Unlike most other countries, the central government in China did not have nationwide tax administration. The bulk of tax collection was undertaken by local governments.49 The State Tax Bureau (STB) and the tax bureaus at lower levels of government defined the tax laws for their subordinate administrations, collected the appropriate taxes, granted exemptions and relief within their authority, coordinated tax policy matters with related agencies,

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47 In addition to budgetary subsidies, SOE losses are covered by bank credit, estimated at about 3 percent of GNP in 1992–93.

48 Liquor, cigarettes, and agricultural, chemical, electrical, and rubber products.

49 Important exceptions were customs duties (collected by customs authorities), offshore petroleum taxes, and taxes paid by certain large centrally owned SOEs (including railway companies, state airlines, specialized banks, and the state insurance company), which were collected by the State Tax Bureau.
Table 9. Budgetary Contribution of the State-Owned Enterprise (SOE) Sector

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(In percent of total revenue)

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(In percent of GNP)

Sources: Ministry of Finance; and IMF staff estimates.

1 The share of SOEs in special profit levies was estimated from the share of SOEs in enterprise income taxes.

and supervised tax bureaus at lower-level governments. Over 60 percent of China's 500,000 tax administrators worked in suboffices of city and county tax bureaus; only a small minority were engaged in supervisory activities at the provincial level or the STB.

At local levels, tax bureaus were matched by finance bureaus, whose task was to draw up and administer the provincial and municipal budgets and handle the jurisdiction's financial relations with other levels of government. Finance bureaus formally represented the Government as "owners" of the jurisdiction's SOEs. Being responsible for industrial policy, the finance bureaus had an interest in granting of tax preferences and tax exemptions to enterprises in their jurisdictions. This frequently created tensions with the tax bureaus and thus complicated tax administration.

In addition, tax administration was weakened by several other problems. First, tax administration was not organized on a functional basis. A tax official assigned to a given number of taxpayers was responsible for all the functions—collection, administration, and inspection. This system gave tax officials too much authority and permitted the taxpayer and tax official to develop a closer relationship than appropriate. For example, large SOEs were assigned a resident tax official, who was responsible for both assessing and collecting the taxes and for advising the SOEs on potential tax incentives. Second, enterprises assumed little or no responsibility for computing their own tax liabilities; this work was done by tax bureau officials. Third, the methods of tax payment were cumbersome, and the audit system was inefficient.

**Intergovernmental Fiscal Relations**

China has four subcentral levels of government: (1) 22 provinces, 5 autonomous regions, and 3 municipalities under the central government; (2) 336 prefectures and municipalities at the prefectural level; (3) 2,182 counties, autonomous counties, and cities at the county level; and (4) several tens of
Table 10. Vertical Fiscal Balance of the Central and Local Governments
(In percent of GNP)

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<td>Vertical balance after grants</td>
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Sources: Chinese authorities; and IMF staff estimates.

1 For the central government, this is derived from own revenue plus contracted revenue transfers from provinces minus own expenditure; for the local governments, this is derived from own revenue minus contracted revenue transfers to the central government minus own expenditure.

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</table>

The financial relations among the different levels of government are guided by a complex web of constitutional principles, laws and regulations, and ad hoc intergovernmental contracts.

In the assignment of expenditure responsibilities among different levels of government, legislative and policy functions are centralized, and administrative functions overlap substantially. The main administrative functions assigned exclusively to the central government are defense, foreign affairs, and monetary affairs; most other functions are shared between the central and local governments. The expenditure assignments are complicated by the substantial role of SOEs in the provision of public goods and social services, especially housing and social security.

The principles underlying the assignment of taxing powers are not explicitly stated in China’s Constitution. Although the central government controls all tax legislative powers, tax assignment and revenue-sharing arrangements have to a large extent been negotiated with local governments.

From 1988 onward, China followed a combination of tax-separation and revenue-sharing approaches to tax assignment. The central government designated revenue from certain taxes as “central fixed revenue” and a portion of revenue from other taxes as “local fixed revenue,” with the remainder going into a pool of shared revenue. Shared revenue was of two types: “fixed” shared revenue was split between the central and local governments according to some fixed proportion, while most shared revenue was split according to formulas stipulated in fiscal contracts between the central and local governments.

There were five different contractual arrangements for the transfer of revenue from local governments to the central government; a sixth type of contract regulated the transfer of revenue from the central government to provinces. Although there were a number of variations, fiscal contracts typically involved revenue transfers fixed with respect to a base year (for example, 1987 for the first round of contracts), with annual increments agreed upon ex post.

The central government made three types of grants to the local governments: quota grants under fiscal contracts, special purpose grants, and final accounts or settlement grants. These fiscal arrangements resulted in a vertical fiscal deficit at the central level prior to 1989 (Table 10). The central government ran a vertical surplus...
during 1989–92, but this diminished from 1990 onward as the fiscal position of local governments improved. The amounts transferred to the central government from 1989 onward were entirely redistributed to the provinces, and the central government made additional transfers from its own resources. The fiscal contract system between the center and provinces thus provided a mechanism through which the central government redistributed a part of fiscal resources from surplus to deficit provinces.

**Weaknesses of the Fiscal Policy Framework**

The discussion above has highlighted several important weaknesses of the fiscal system, notably a lack of revenue buoyancy and problems in tax administration. This section discusses several additional weaknesses: the unequal distribution of the tax burden; the widespread bargaining in the fiscal process; the erosion of the central government's control over fiscal policy; the expansionary bias of the fiscal system; the widening of regional disparities; and inefficiencies in budgetary procedures and government administration.

As the revenue contribution from the SOE sector has declined during the reform process, the failure of the tax system to tap into the growing nonstate sector has resulted in not only a lack of revenue buoyancy but also an unequal distribution of the direct tax burden. While the nonstate sector (collectives and private and foreign-funded enterprises) accounted for 60 percent of GNP, it remained an unimportant source of direct tax revenue. In 1991, for example, only 14 percent of total direct taxes were collected from collectives and 6 percent from private and foreign-funded enterprises, while 80 percent were collected from SOEs.

A strong element of ad hoc bargaining has persisted in the fiscal process. Although it had been hoped that reforms would reduce the scope for bargaining, the expansion of fiscal contracting at the enterprise and intergovernmental levels has made bargaining even more complex and pervasive. One reason is that the reforms were not supplemented with an adequate infrastructure of market-based fiscal institutions, indirect policy instruments, and transparent rules.

The gradual erosion of the central government's control over fiscal policy was another weakness of the fiscal system (Box 2). Given the fiscal-contracting arrangements and the local management of tax administration, local authorities had an incentive to concentrate on the local tax bases and, to the extent possible, shift the tax bases from those that had to be shared with the central government to those over which they had greater control. This involved promoting the growth of local tax bases, for example, by setting up locally owned enterprises (Wong (1991)), granting generous tax reductions and exemptions in respect of indirect taxes (which had to be shared with the central government), and granting various tax incentives and types of tax relief in respect of income taxes on locally owned SOEs. The resources thus “saved” could then be retained by enterprises as extrabudgetary funds that local governments could tap for local projects that they favored. Thus, although tax policy was nominally set by the central government, local governments effectively controlled the total revenue take. This practically severed the link between tax policy set at the central level and the collections at the local level and weakened the central government’s ability to conduct a fiscal policy suitable for, and responsive to, changing macroeconomic conditions. (Table 11 details the development of revenue and expenditure of the central local governments over the period 1983–93.)

The fiscal policy framework also exerted a strong expansionary bias, especially at the local level. This is because multiyear tax contracts fixed, to a large extent, revenue levels for the central government for an extended period. Central government revenue thus responded to underlying changes in economic activity only partially and with a lag, while local government revenue responded more quickly. When the local economy expanded, local tax revenue was boosted. As only a relatively small portion of that revenue had to be shared with the central government, more resources would become available for spending relative to levels approved in local budgets in periods of economic expansion. Local governments tended to spend such “excess revenue” for two reasons. First, they did not have macroeconomic management responsibilities. Second, given the design of central-local fiscal contracts, local governments that accumulated budgetary surpluses could weaken their bargaining position with the central government in negotiations for subsequent contracts. Moreover, the expansionary bias did not subside in periods of slow revenue growth at

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contracted revenue transfers from provinces minus the central government’s own expenditure. The vertical balance thus measures the amount of revenue at the central government’s disposal for making grants to provinces.

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Box 2. Revenue Shares of the Central and Local Governments

There has been concern about the decline in the central government’s share of total revenue. One group of studies has linked this decline to a weaker position of the central government in negotiations over central-local fiscal contracts (Blejer and Szapary (1990), Oksenberg and Tong (1991), and Bahl and Wallich (1992)). Another group of studies has argued, however, that local governments also had their budgetary resources reduced by fiscal decentralization, and that it was the imperative to raise revenue (rather than revenue gains made at the expense of the central government) that spurred the growth observed in many provinces (Tong (1989), Wong (1991), and Bell, Khor, and Kochhar (1993)). A closer look at the data reveals that both views have merit. However, the causes of shifts in revenue shares are difficult to ascertain.

The share of the central government’s own revenue was at about the same level in 1991–93 as in 1981–82 (Chart 6). Between 1983 and 1990, however, that share had significantly increased, reaching almost 50 percent in 1985. This was due to the appropriation of some of the most profitable enterprises, the introduction of special levies on enterprise profits, and the recentralization in 1985 of the coal, nonferrous metals, petroleum, and power sectors (Wong (1991)). Taking account of the contracted revenue transfer from local governments, the central government’s share of revenue has declined since 1985. Data on grants and other transfers to provinces (available from 1989 onward) indicate a sharp decline in the “after grants” revenue share of the central government in 1991–92. The central government’s share of total expenditure has been declining steadily. By 1993, 55 percent of total expenditure has been devolved to lower-level governments. Major shifts in central-local shares of total revenue that occurred in 1986 and 1991 did not coincide precisely with major changes in central-local fiscal relations. Thus, the contracting system per se cannot entirely explain the decline in the central government’s revenue share. As fiscal decentralization is necessarily a complex and an uneven process, it is not inconsistent to observe a weakening of both the central and local governments’ fiscal positions at the same time, especially when the relative size of the overall budget is also declining.

The local level because local budget deficits were often financed by central government grants or by drawing on extrabudgetary funds (often in the form of direct or indirect services provided by local SOEs) and issuing various forms of financial instruments.

The widening of regional disparities was another problem of the fiscal system. Wealthy provinces could better meet the devolved expenditure responsibilities than poorer provinces. Moreover, general grants from the central government to poorer provinces were limited in recent years because of the fiscal difficulties experienced by the central government. Data indicate that per capita provincial revenue and expenditure deteriorated by more in the deficit provinces than they improved in the surplus provinces.55 This suggests that the fiscal contract

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55Based on revenue and expenditure reported for the 1983–90 period.

Table 11. Revenue and Expenditure of the Central and Local Governments
(In billions of yuan)

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</thead>
<tbody>
<tr>
<td>Own revenue (excluding transfers received)</td>
<td>159.4</td>
<td>183.5</td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.2</td>
<td>286.4</td>
<td>355.0</td>
<td>367.2</td>
<td>392.8</td>
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<tr>
<td>Central government</td>
<td>71.7</td>
<td>85.8</td>
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<td>122.0</td>
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<td>Local governments</td>
<td>87.7</td>
<td>97.7</td>
<td>115.9</td>
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<td>107.3</td>
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<td>Own expenditure (excluding transfers made)</td>
<td>169.1</td>
<td>193.9</td>
<td>232.4</td>
<td>263.1</td>
<td>282.6</td>
<td>313.7</td>
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<td>Central government</td>
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<td>183.8</td>
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<td>80.8</td>
<td>100.8</td>
<td>136.8</td>
<td>141.7</td>
<td>164.7</td>
<td>193.5</td>
<td>207.9</td>
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<td>Revenue transfers</td>
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<td>From local governments to the PBC</td>
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<td>55.4</td>
</tr>
<tr>
<td>Revenue after transfers from local governments</td>
<td>159.4</td>
<td>183.5</td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.2</td>
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<td>Local governments</td>
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<td>115.9</td>
<td>134.3</td>
<td>146.3</td>
<td>158.2</td>
<td>184.2</td>
<td>211.1</td>
<td>250.4</td>
<td>266.2</td>
<td>107.3</td>
</tr>
<tr>
<td>Revenue after transfers from local governments and grants from the central government</td>
<td>159.4</td>
<td>183.5</td>
<td>228.4</td>
<td>244.6</td>
<td>257.5</td>
<td>280.2</td>
<td>286.4</td>
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<td>250.4</td>
<td>266.2</td>
<td>107.3</td>
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</table>

Sources: Ministry of Finance and IMF staff estimates.

1. Revenue and expenditure data compiled according to GFS definitions.
2. Central government own revenue plus contracted revenue transfers from provinces.
3. Local government own revenue minus contracted revenue transfers from the central government.
4. Central government revenue plus contracted revenue transfers from provinces minus grants to provinces.
5. Local government revenue minus contracted transfers to the central government plus grants from the central government.

Weaknesses of the Fiscal Policy Framework

The organization of the government administrative system in China follows the customary division of powers among the legislative, executive, and judiciary branches. With regard to the division of functions, however, most of the ministries, commissions, and specialized bureaus under the executive branch (the State Council) were concerned with economic matters. This setup remained even after comprehensive central planning was abandoned. Each significant sector of the economy was supervised by one or more agencies under the State Council. Although efforts were made to streamline the government bureaucracy, overstaffing and overlapping of functions remained, reflecting the continued reliance on direct instruments in managing the economy.57

The government personnel system—known as the "cadre system"—was highly centralized in the past.58 The Government adopted a single mode of managing staff, regardless of occupation. The civil examination system, despite its long history in

57In 1980, the number of vice-premiers was reduced from 13 to 2, the number of State Council agencies was cut by almost one half, and the number of ministers and vice-ministers was reduced from 505 to 167 (Ristaino (1988), p. 434).
58The term "cadre" refers to a public official holding a position in the party or Government.
IV FISCAL SYSTEM REFORMS

China, was not widely used to select candidates for government service. The central departments allocated personnel to departments at lower levels of government. There was only one wage and promotion system for all occupations. In addition, there was very little competitive pressure among personnel or mobility across departments. Demotions or dismissals were rare. Not surprisingly, these practices have resulted in a bloated and inefficient bureaucracy. During the 1980s, several attempts were made to reform the government personnel system, with a view to streamlining and professionalizing the staff. Guidelines were issued that set professional qualifications and strengthened recruitment procedures. This resulted in the recruitment of a larger number of well-trained employees and some success in reducing the size of the staff.

Reform Plans

Recognizing that the weaknesses in the fiscal system undermine macroeconomic management and allocative efficiency and hinder the transformation to a market-based economy, the authorities launched a major program of fiscal reforms in early 1994. The present reform program is noteworthy for its simultaneity and comprehensiveness, covering the tax system and tax administration, intergovernmental fiscal relations, budgetary procedures, and the government administrative and personnel system.

Tax Reforms

The present tax reforms are aimed at unifying the tax code, equalizing the tax burden, simplifying the tax system and tax administration, and increasing revenue buoyancy. A theme of the reforms is to integrate domestic markets and create a level playing field for domestic and, eventually, foreign enterprises.

Reform of the enterprise income tax is part of a wider reform of SOEs that is aimed at establishing a "modern enterprise system." The CRS was abolished as of January 1, 1994. The existing enterprise income taxes—on SOEs, collectives, and private enterprises—have been merged into a uniform domestic enterprise income tax. The new tax has a single, standard rate of 33 percent. This change marks an important ideological breakthrough, as the Government now considers all forms of ownership to be equally important and desirable in developing the economy. Another major advance made under the new enterprise income tax is the abolition of all special levies on enterprise profits.

The definition of the tax base for the enterprise income tax was also changed. All pretax deductions have been standardized and unified, and repayments of the principal on investment loans are no longer deductible. Accelerated depreciation of certain assets and the depreciation of research and development outlays are now allowed. All tax exemptions and reductions are specified in the law, in order to enhance tax collection and tax administration.

The reformed enterprise income tax is not expected to have a major impact on revenue, as the gains and losses stemming from the various provisions would roughly offset each other. The main objective of this reform is to improve revenue buoyancy by widening the tax base, simplifying the tax structure and making it more transparent, strengthening tax administration, and equalizing the tax burden on enterprises.

The new personal income tax applies to both Chinese and foreign individuals, thus replacing the personal income adjustment tax on Chinese taxpayers and the individual income tax on foreigners. Deductions for Chinese and foreign residents are different, however. The tax rates on wage and salary income vary between 5 percent and 45 percent, and the tax rates on production and business income vary between 5 percent and 40 percent. A goal of the new tax is to lower the high tax rates on private business owners, with a view to encouraging compliance.

Indirect taxes are greatly simplified under the program, with the introduction of a broad-based VAT—covering production, wholesale and retail trade, and imports—as the centerpiece (Chart 7). A standard 17 percent VAT applies to most goods and services, excess of the liability that they would have incurred under the old system. From 1998 onward, all FFES will be required to comply fully with the new indirect taxes.

A small number of local government enterprises requested and obtained approval for the extension of tax contracts for two more years.

Several forms of capital income (from real estate sales, securities transactions, and inheritances) will be subject to taxes on financial transactions, rather than the personal income tax.
while a lower rate of 13 percent applies to selected items, such as basic foodstuffs, utilities, and agricultural means of production. Exports are zero rated, and small businesses pay a flat rate of 6 percent on their gross sales revenue. The few exemptions are listed in the VAT law.

In addition to the VAT, the excise and the business taxes have been restructured. The excise tax (now called the consumption tax) was simplified, and its coverage reduced to tobacco, liquor, motor fuels, luxury goods, and motor vehicles; it is levied on top of the VAT, and ad valorem rates vary from 3 percent to 45 percent. The business tax is levied on services not covered by the VAT, including transportation and communications, banking and insurance, posts and telecommunications, culture and entertainment, hotels and restaurants, transfers of intangible assets, and sales of buildings. Business tax rates are 3 percent or 5 percent for most services.

Under the reforms of local government taxation, which are closely related to the reforms of intergovernmental fiscal relations and tax administration, local governments for the first time are given legislative authority over certain local taxes, including the urban construction tax, motor vehicle taxes, and the animal slaughter tax. In addition, a number of minor local taxes were abolished.

**Intergovernmental Fiscal Relations**

Effective January 1, 1994, the complex contract-based intergovernmental revenue system was re-
placed by a transparent delineation of revenue sources for the central and local governments. Also, the National Tax Service (NTS) is to be established to collect all central and shared taxes. These reforms are aimed at eliminating the bargaining aspects in the fiscal contracts, reversing the erosion of the central government's share of fiscal revenue, and strengthening fiscal policy as an instrument for macroeconomic management. The new intergovernmental revenue system assigns the bulk of two major taxes—VAT and excises—to the central government. Greater resources at the disposal of the central government will provide wider scope to implement national priorities, including the reduction of regional fiscal disparities through grants. At the same time, a clear delineation of revenue assignments should also bring greater discipline in expenditure decisions of various levels of government.

The new intergovernmental revenue system, based on revenue-sharing experiments conducted in nine regions in the second half of 1992, stipulates tax assignments and revenue sharing. A main objective of the new system is to raise the central government's share of total revenue to 60 percent, compared with the present level of 38 percent. The central government is assigned revenue from the enterprise income tax on centrally owned SOEs; the business turnover tax on railways and the financial sector (including banks, NBIFIs, and insurance companies); the excise tax; customs duties; and VAT on imports. Local governments are assigned revenue from the enterprise income tax on all enterprises that are not centrally owned (that is, locally owned SOEs, collectives, joint ventures, and private enterprises); personal and agricultural income taxes; the business tax (excluding that assigned to the center, as indicated above); the VAT on real estate transactions; city and town land use taxes; stamp taxes; and several minor transactions taxes. Except as noted, the VAT is shared between the central and local governments at a ratio of 75 percent for the former and 25 percent for the latter. Although revenue from the enterprise income tax is assigned according to ownership, the enterprise tax is unified for all domestic enterprises, and the power to legislate with respect to this tax (as well as most other taxes) has remained within the purview of the central government.

In order to avoid disrupting local government finances and facilitate the formation of a consensus on the fiscal reform program, agreement was reached in late 1993 between the central and local governments that, in the future, the tax revenue of local governments would not fall below a "basic amount." This amount will be based on the 1993 revenue collected by the local governments (from the taxes affected by the new revenue system), and on the initial results obtained under the new system. In addition, the agreement provides for additional transfers to local governments based on the national average growth rate of VAT and excise revenue.

Because of the changes in tax assignments (in particular, the assignment of all the excise tax and 75 percent of the VAT to the central government) and the large expansion of the VAT base, the central government's share of total revenue is expected to increase significantly in 1994, notwithstanding the "basic amount principle." Indeed, the central government's share of total revenue rose to 56 percent in the first five months of 1994. During the initial period, therefore, a large portion of central revenue would have to be transferred back to local governments to comply with the basic amount principle. However, the importance of the basic amount would diminish over time with economic growth and revenue expansion, thereby allowing a large share of central revenue to be used for grants to achieve other objectives.

The new revenue-sharing arrangement is supported by a new structure of tax administration. Locally based tax administration has been split into the NTS, which collects all central and shared taxes, and local tax services, which collect only local taxes. Initially, the existing local tax services staff is to be divided between the NTS and local tax services—the same people in most cases working side by side, but collecting different taxes and putting them into different treasuries. In the latter part of 1994, the two agencies are to be physically separated and will begin functioning independently.

As the assignment of expenditure responsibilities will remain essentially unchanged for the time being (with about 40 percent of total expenditure continuing to be spent by the central government), the new revenue-sharing arrangement, as discussed above, is expected to generate a fiscal surplus at the central government level over time. This surplus will be used to finance a new system of grants from the central government to provinces, which will be based on objective criteria. The authorities have established an interministerial group to define a consistent framework for the grants system. The main issues to be resolved in this area are the degree of horizontal fiscal equalization that the grants system will seek to achieve and the establishment of the criteria for equalization. The design of grants in-

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65Horizontal fiscal equalization refers to the equalization of the relative fiscal capacities among provinces. Fiscal capacities are measured by revenue-raising capacities, expenditure needs (relative to some agreed-upon standard), or a combination of the two factors.

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evitably has important macroeconomic implications: if the grants are used simply to fill the budget gaps, local governments will have little incentive to implement prudent fiscal policies; meanwhile, if the grants are not based on objective criteria, the system will be open to political influence, and regional disparities may widen.

Budgetary Procedures and Government Administration

Institutional reforms of the expenditure system are focused on improving budgetary management and expenditure control, separating government administration from enterprise management, and developing a civil service system.

The main goal of the Budget Law enacted in March 1994—the first such law in recent Chinese history—is to transform the role of the budget from an instrument for central planning into an instrument for indirect macroeconomic management. Under the law, which contains strict provisions on budgetary procedures and expenditure management, local government budgets are to be formulated first and then fed into, and consolidated with, the central government budget, thereby allowing the state budget to be formulated in a coherent framework. Local governments are required to run balanced budgets or to use accumulated budgetary surpluses and extrabudgetary funds for deficit financing. The central government will no longer make transfers to cover local fiscal deficits; moreover, local governments are not allowed to finance their deficits with bond issues or bank borrowing. Meanwhile, the central government is no longer allowed to borrow from the central bank and will have to finance its deficits by selling bonds.

The main principles underlying the administrative system reform are the streamlining of government administration and the separation of government administration from enterprise management. Administrative system reform began at the State Council level and is being diffused to lower levels of the government apparatus. A focus of the reform is to eliminate overlapping functions and inefficient administration. Another focus is to shift the work of State Council departments from planning and the direct management of enterprises toward macroeconomic management and the carrying out of support functions. In the future, line ministries will cease to manage enterprises directly; instead, they will provide information, coordination, and regulatory services. At local levels, government involvement in microeconomic management will be reduced, and government activities will be refocused on infrastructure and other services supportive of overall economic development.

The government personnel system reform aims to replace the present cadre system with a civil service system. Competition is to be introduced into recruitment through civil service examinations, and promotion will be based on merit and performance. The wage system will be reformed to reduce the gap between the income of government workers and SOE employees; however, the authorities recognize that the budgetary constraint will greatly affect the speed with which the income gap can be closed.

The reform in government administration and personnel management is expected to affect some 30 million workers at all levels of government, including managers of SOEs. The goal is to reduce staffing at the central government level by 20 percent and at the provincial government level by 25 percent. In this context, the State Council’s staffing was reduced by 20 percent by end-1993. The timetable for the completion of the reforms is mid-1994 for the central government, and within three years for the provincial level. In view of China’s vast geographical size, the authorities recognize that the actual speed of implementation will have to take account of the specific circumstances in the regions and the speed of reforms in related areas, such as the SOE reforms, the development of the tertiary sector, and the establishment of a social safety net.

67Some line ministries will become autonomous economic units; some will be transformed into industrial and business associations; and some will be phased out over a period of several years.
68At present, the gap in average basic salary between government and SOE employees is about 10 percent; the real income gap is much higher, however, because the SOE employees receive more employment benefits.
69Some of the dismissed employees retired, some employees with technical skills were redeployed to industry and services, and some started their own businesses.
V Investment System Reform

The recurring macroeconomic cycles in China during the past 15 years have been largely attributed to the excessive outlays on fixed investment by SOEs and local governments. Thus, controlling the excessive expansion in fixed asset investment has been a major focus of the present and past stabilization efforts. A key aspect of the current reform program to strengthen the infrastructure for macroeconomic management is the restructuring of the investment system. This section examines the investment system to shed light on the process generating the stop-go macroeconomic cycles and discuss current plans for reforms. It covers the trends in fixed asset investment during the past 15 years; the institutional framework for investment decisions and allocation; and the plans for reforming the investment system.

Trends in Fixed Asset Investment

The share of fixed investment in GNP rose from about 20 percent in 1980 to a peak of about 32 percent in 1987–88 but fell to 25 percent in 1991 under the “rectification program,” when investment projects were drastically cut back (Chart 8). With the acceleration of reforms and the associated boom in fixed investment, the share of fixed investment in GNP increased sharply in 1992 and rose to almost 38 percent in 1993.

As the reforms took hold, the central authorities’ direct control over the investment process was gradually eroded. This is reflected in the decline of investment by state-owned units in total fixed investment from more than 80 percent in 1980 to about 60 percent in 1988–91 (Chart 9). Moreover, reflecting the decentralization of investment decisions, the share of investment subject to the center’s approval declined markedly. Available data for the capital construction component of fixed investment show that the share requiring central approval fell from 53 percent in 1990 to 44 percent in 1992. At the same time, the share of total fixed investment financed through budgetary appropriations fell from more than 30 percent in 1980 to less than 5 percent in 1992 (Table 12), mainly because of the budgetary constraint imposed by the steady erosion in the share of fiscal revenue in GNP during the period (see Section IV). The decline was offset by a corre-
Investment System until 1993

Changes in the investment system over time can be examined in terms of the shifting relative roles of the key institutions involved in the investment process: the government agencies, primarily the SPC, the Ministry of Finance, and their counterparts at the local government level; the banking system; and enterprises.

Investment Allocation Process

Prior to 1978, fixed capital investment had to be allocated through the Ministry of Finance after approval by the planning agencies. The allocation of working capital to state enterprises was also channeled through the Ministry of Finance. Starting in 1978, changes were gradually introduced in the investment approval system. Most important, the central government reduced its role in the investment decision process by both decentralizing investment decisions below certain threshold levels to local governments and withdrawing budgetary grants for investment financing. In 1984, the thresholds were formalized at Y 50 million for investment in priority sectors, such as energy, transportation, and raw materials, and at Y 30 million for other sectors. Investments below these thresholds could be approved by provincial authorities. In cases in which enterprises were able to raise their own resources for financing amounts above these thresholds, central government approval was not always considered necessary.

During 1978–93, the investment approval process underwent some changes. The process began with the determination of the size of aggregate investment. This, in turn, depended on budgetary consid-

Table 12. Total Fixed Asset Investment: By Sources of Financing
(In percent of total fixed asset investment)

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</thead>
<tbody>
<tr>
<td>Total fixed investment</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>By sources of financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State budget</td>
<td>33.0</td>
<td>16.0</td>
<td>8.7</td>
<td>6.8</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Domestic loans</td>
<td></td>
<td>20.1</td>
<td>19.8</td>
<td>23.5</td>
<td>27.4</td>
<td></td>
</tr>
<tr>
<td>Foreign investment</td>
<td></td>
<td>3.6</td>
<td>6.2</td>
<td>5.7</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Self-raised funds</td>
<td></td>
<td>60.3</td>
<td>52.4</td>
<td>52.2</td>
<td>51.2</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>13.1</td>
<td>11.8</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Memorandum item</td>
<td>20.4</td>
<td>29.7</td>
<td>25.1</td>
<td>27.2</td>
<td>12.7</td>
<td>37.7</td>
</tr>
</tbody>
</table>

Source: China Statistical Yearbook, various issues.

The value of foreign direct investment in 1992 is equivalent to almost 11 percent of total fixed investment reported for that year.

Two important developments in 1992–93 are further indications of the diminishing influence of the central authorities over investment. First, although it is not apparent from the data, financing by enterprises through bonds or shares issued directly to the public—instead of through bank borrowing—has grown rapidly. Such practices have further undermined the ability of the central authorities to manage investment through the traditional controls on credit availability. Second, foreign direct investment in China has increased phenomenally. Actual inflows of foreign direct investment into China rose from an annual average of $3 billion in 1985–91 to $11 billion in 1992 and $25 billion in 1993.71

71 The value of foreign direct investment in 1992 is equivalent to almost 11 percent of total fixed investment reported for that year.

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crations, as current expenditures and investment on projects approved in earlier years were first deducted from projected revenues and the balance was then made available for investment; macroeconomic conditions; and material balances, that is, the physical availability of key inputs.  

Once total state investment was determined, the process of allocating resources among sectors and projects began. Sectoral allocation was heavily influenced by past patterns, and the completion of old projects was accorded priority over the launching of new projects. In addition, sectoral allocation depended on prevailing priorities of industrial policy and gradually also on market demand. In order to allocate funds among individual projects, technical, financial, and economic details of the specific project were evaluated. Projects approved by the SPC formed part of the state's mandatory investment plan, and projects to be undertaken by local governments formed part of the local mandatory plan. Both were then combined to form the basis for the fixed investment component of the credit plan.

Projects approved by the SPC were guaranteed supplies of scarce raw materials under the material allocation plan of the investment approval process. However, the role of the material allocation plan has declined markedly in recent years: it was applied to as many as 837 goods in 1980, but to only 16 goods declined markedly in recent years: it was applied to allocation plan of the investment approval process. However, the role of the material allocation plan has been largely eliminated for many of these goods, the state continued to guarantee their availability to key inputs.

**Financing of Investment**

Before 1978, a large portion of the state-allocated funds took the form of grants provided directly through the budget, rather than as loans. At that time, there were no specialized banks, and the monobank system that comprised the PBC and its branches played only a limited role—invoking the allocation of some above-quota working capital funds to enterprises—in providing funds for fixed investment. The bank branches performed the bookkeeping task of recording the details of loans and associated financial flows to investing enterprises. No decisions were taken by bank branches, and their lending was not sensitive to profitability considerations. Also, lending carried no commercial risks for the bank branches.

Beginning in 1978, a number of changes took place in the financing of investment. In terms of the banking system, the monobank system was separated into a central bank—the PBC—and four specialized banks; direct budgetary grants for investment were reduced and replaced by bank loans that became part of the annual credit plan; and a limited discretionary role for lending decisions was permitted for the specialized banks. While the specialized banks' operations were heavily circumscribed by the state credit plan and industrial policies, the banks were permitted some autonomy in selecting borrowers and projects. In this sense, banks began to undertake a combination of policy and commercial lending. Finally, the financial system was expanded to include new lending institutions, such as universal banks and NBFIs, which do not undertake policy lending. In recent years, a capital market has developed rapidly, centered around the two stock exchanges in Shenzhen and Shanghai, that allows certain enterprises to obtain equity financing.

Concomitant with the decline in the budgetary financing of investment, changes also occurred in the SOE sector that affected investment financing (see Section IV). SOEs were allowed to retain their depreciation funds as extrabudgetary funds. Profits were separated from taxes, and enterprises were permitted to retain a portion of their profits. Thus, earning retained in the extrabudgetary funds became an increasingly important source of investment finance, particularly for upgrading and expanding existing facilities. With the introduction of the fiscal contracting system between the central and local governments, the latter had incentives to shift revenue derived from enterprises under their jurisdiction into their extrabudgetary funds, which carried no obligations in terms of transfers to the central government.

Despite the shift in the financing of investment from the budget to bank loans, the state continued to
play an important role in the sectoral composition of investment through the allocation of “policy loans” from the banking system.\(^7^5\) Although there is no clear-cut definition of policy loans, according to official estimates in 1992, they varied considerably across banks, with the highest proportion in the PCBC (53 percent), followed by the ABC (48 percent), the BOC (22 percent), and the ICBC (18 percent). These loans encompassed four categories: fixed asset loans for basic industries and infrastructure; working capital loans for purchasing farm products and, until recently, export and import financing for state-owned trading companies; working capital loans for key SOEs; and loans supporting agriculture, poverty reduction, local development, and the development of science and technology.

In mid-1988, six sectoral state industrial corporations (SICs) were established to implement investment projects selected by the SPC. Administrative costs of the SICs were covered by the budget, and the SICs played virtually no role in project selection, other than to offer their comments. SICs were permitted to approve loans on their account without central government approval for projects that, as described above, were below the thresholds of Y 30 million and Y 50 million. Equity investment was also permitted, although such investment was limited in practice, as the SICs had no independent source of funds. SICs were also prohibited from adding a markup to loans, based on funds received by them from other sources.\(^7^6\) Projects administered by the SICs did enjoy the advantage of guaranteed access to scarce raw materials under the allocation plan. The SICs also served as an implementing vehicle for policy loans undertaken by the specialized banks. For example, the PCBC could, on the payment of a service fee, leave the disbursement and repayment of its policy loans to the relevant SIC.

### Weaknesses of the Investment System

The investment system that has evolved since 1978 contains weaknesses that have become obstacles to the efforts to maintain macroeconomic stability. The approval mechanism for projects, through which the level and composition of fixed investment by state-owned units is determined, contains an expansionary bias, as it provides little incentive for the relevant authorities to take into account project risk and the cost of funds as reflected in the interest rates. The only constraint on investment has been the availability of funds. As a consequence, the state’s capacity to intervene in the investment process through the use of indirect instruments has been limited; the primary means of intervention is administrative, for example, through stricter enforcement of the ceiling on investments requiring approval, or through the discouragement of bank lending for investments not in line with industrial policy.\(^7^7\) At the same time, the effectiveness of the central government’s control has been weakened by its declining role in the financing of investment and the increasing recourse to alternative sources of finance (including retained earnings, extrabudgetary funds, bank loans, and bond and share issues).

Another problem in the investment system has been the weakening of the central authorities’ ability to implement monetary policy. As described in Section II, the head office of each specialized bank is assigned an aggregate lending quota under the credit plan, which is then distributed among the branches of the bank. Although, in theory, policy loans should receive priority over commercial loans, in practice, the opposite often prevails. Banks with limited deposit bases exhaust their funds by first lending to “nonpriority” users and then applying to the central bank for loans to meet their policy lending. The central bank normally complies, giving monetary policy an inherently expansionary bias.

The investment system also carries disadvantages for banks and is detrimental to the development of a market-based financial system. An important part of banks’ portfolios consists of policy loans that were made mandatorily, many of which may not be commercially sound. This has adversely affected portfolio quality and has also discouraged the banks from transforming themselves into commercial lending institutions that are responsible for the profit-and-loss implications of their loan decisions. At the microeconomic level, the system has led to distortions, as state enterprises with low profit margins have had priority in obtaining funds—and at lower interest rates—over more efficient enterprises outside the state sector.

\(^7^5\) Apart from policy loans for fixed assets extended by banks, there was an explicit category of loans, introduced after 1980, called “loans for replacing budgetary grants.” From 1985 onward, all loans for state-supported construction projects, as well as loans for various other purposes, were placed in this category. Later, a portion of these expenditures, particularly for health, education, and social services, was transferred back to the budget for financing.

\(^7^6\) The sources of funds for SIC loans included the budget (through the SPC); policy loans; construction bonds issued on behalf of the SICs by the specialized banks; provincial governments; and overseas borrowing.

\(^7^7\) The ceilings of Y 30 billion and Y 50 billion on investment approvals—for nonpriority and priority sectors, respectively—are easily circumvented by splitting up a project into several smaller components or by phasing a project, so that the first phase is only a small part of the total, while the subsequent phases are deemed to be continuations of the ongoing projects.
Reform Plans

The drawbacks of the traditional investment system have been recognized by the authorities, and plans were announced in late 1993 to reform the system. The broad aim of the reform is to move toward a new system in which most investments are determined primarily by market forces, so that the aggregate level of investment can be influenced through indirect instruments. Under the reform plan, investment projects will be separated into three categories: projects with social benefits, such as health and education, or science and culture, which will continue to be financed by the budget; key state infrastructure projects, which will need government approval and will be financed by the newly established policy banks; and commercial projects, which will be financed by borrowings from the (commercialized) specialized banks and other financial institutions, and through the rapidly emerging capital market.

It is expected that most projects will fall into the third category of commercial projects. These projects will no longer require state approval and will only have to be registered; the risks involved are to be borne fully by banks and enterprises. By introducing the element of risk and accountability into most investment decisions, the authorities hope that the bulk of investments will become sensitive to market mechanisms and thus influenced by indirect instruments of monetary policy. Under the proposed system, the authorities can also pursue their objective of ensuring sufficient funding for key infrastructure and other priority projects through the policy banks established explicitly for such purposes and through other preferential policies. On April 13, 1994, the SDB started operations, with plans to issue Y 65 billion of bonds in 1994 to provide financing for key state projects, including 345 medium-sized and large projects.78

It is clear that the reform of the investment system is closely intertwined with reforms in other sectors of the economy. In particular, the progress in achieving the objectives of the investment reform will depend on the speed with which a number of other steps can be taken, including the hardening of the budget constraints of the enterprises and banks; the elimination of price distortions, particularly in energy, transportation, housing, and other basic industries; the development of new financial institutions geared to providing long-term financing and a reliable capital market for equity financing; and, finally, the establishment of an adequate legal and regulatory framework.

78It was reported that the SDB would supersede the six SICs under the SPC and would be capitalized through budgetary transfers of Y 50 billion over a four-year period.
VI State Enterprise Reform

Notwithstanding the experiments with enterprise reforms undertaken since the early 1980s, deep structural problems remain in the SOE sector.\(^79\) It is increasingly recognized that these problems pose an obstacle to the attainment of a fully market-based economy, and that SOE reform is necessary to establish the microeconomic foundation that permits the effective functioning of the indirect instruments for macroeconomic management essential in a decentralized economy. Accordingly, resolving the problems of the SOE sector is one of the priorities of the current reform program. This section discusses the significance of the SOE sector, reviews past reforms, and describes the present approach to enterprise reform.

Significance of SOEs

While the relative size of the SOE sector in the Chinese economy has declined sharply since the onset of reforms in the late 1970s, it remains important in the economy. In 1978, about three fourths of the gross value of industrial output was accounted for by SOEs; by 1992, the share of the SOE sector had fallen to less than one half (Chart 10).\(^80\) Despite this, the SOE sector's contribution to total output remains large and accounts for about one half of total urban employment. In addition, the SOE sector is closely linked to the banking system through the credit plan, pre-empting as much as two thirds of total domestic credit. It also remains important in budgetary operations, contributing directly to about one fourth of total revenue and receiving operating subsidies amounting to two thirds of the overall budget deficit.\(^81\)

79For a more extensive review and analysis of enterprise reforms, see Bell, Khor, and Kochhar (1993). An evaluation of the progress made in enterprise reforms during the past 15 years is contained in Naughton (1993) and Jefferson and Rawski (1994).

80The relative size of the SOEs in other sectors is even smaller, and it is estimated that its overall contribution to GNP is only about one third.

81SOEs also play an important role as the channel through which two thirds of fiscal revenue is collected and in the extra-budgetary operations of the local governments.

82The new accounting system generally follows international standards, for example, bonuses and benefits are included as part of operating costs.
The continuing weakness in enterprise performance is mainly due to structural factors. One reason for the losses of SOEs was the administrative control on prices of coal, oil, grain, and other essential products. With the recent liberalization of prices, losses because of these factors have been greatly reduced. Another important reason is the organizational structure of the SOEs, which is characterized by a lack of managerial autonomy and accountability, rigidities in wages and employment, overstaffing, the heavy burden of social benefits, and obsolescent technology. SOE losses have been covered about equally through budgetary subsidies and bank loans; the latter has adversely affected the portfolio quality and capital structure of the banking system.

Enterprise Reforms Prior to 1993

Thus far, reform of the SOE sector has been a gradual and incremental process focused mainly on a progressive increase in managerial autonomy. An important step taken in this direction was the issuance of the “Provisional Regulations on the Enlargement of Autonomy of State Industrial Enterprises” in 1984. These regulations permitted an increase in autonomy for above-target output in terms of price setting, output sales, and input purchases. Also, in 1984-85, the enterprise income tax on SOEs was introduced, and tax payments replaced profit remittances as the main source of fiscal revenue from enterprises; enterprises were allowed to retain most of their after-tax profits and their depreciation funds.

In 1986, the CRS, which permits enterprises’ obligations to the Government to be determined on the basis of contracts defining their output, profit remittances, and taxes, was introduced for medium-sized and large SOEs. Under the CRS, an enterprise’s income tax liability was determined by the provisions of the enterprise’s contract instead of by law, leading to a strong element of bargaining in the fiscal process. Also, a law permitting bankruptcy was enacted in 1986 and became effective in 1988.

In 1988, the Enterprise Law was enacted, which essentially legalized the measures of autonomy granted to enterprises in the 1984 regulations. At the same time, the CRS was extended to most SOEs on a nationwide basis. In 1992, the implementing regulations of the Enterprise Law of 1988 were issued by the State Council; these regulations explicitly provided for noninterference by the Government in the operations of the enterprises, which were endowed with a set of 14 rights over their operations. Additionally, enterprises were expected to be accountable for their performance; inefficient and loss-making ones were to be restructured or closed down in accordance with the Bankruptcy Law.

Enterprise reform has also aimed at changing the governance structure and ownership and management rights of SOEs. The initial reforms were ex-

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Table 13. Selected Indicators of State-Owned Enterprises’ Financial Performance

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<td><strong>Profits and taxes</strong></td>
<td></td>
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<tr>
<td>Profits</td>
<td>105.2</td>
<td>169.4</td>
<td>221.6</td>
<td>223.4</td>
<td>172.3</td>
<td>213.7</td>
<td>251.1</td>
</tr>
<tr>
<td>Retained profits</td>
<td>66.9</td>
<td>99.9</td>
<td>116.5</td>
<td>100.1</td>
<td>49.2</td>
<td>74.5</td>
<td>95.5</td>
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<tr>
<td>Taxes</td>
<td>14.4</td>
<td>46.2</td>
<td>70.1</td>
<td>69.8</td>
<td>54.0</td>
<td>58.4</td>
<td>61.5</td>
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<tr>
<td>Losses</td>
<td>38.2</td>
<td>69.5</td>
<td>105.1</td>
<td>123.3</td>
<td>123.1</td>
<td>139.2</td>
<td>155.5</td>
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<td><strong>Industrial SOEs</strong></td>
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<td></td>
</tr>
<tr>
<td>Subsidies</td>
<td>14.1</td>
<td>25.9</td>
<td>52.1</td>
<td>75.0</td>
<td>93.3</td>
<td>92.6</td>
<td>75.7</td>
</tr>
<tr>
<td><strong>Subsidies</strong></td>
<td>3.2</td>
<td>2.7</td>
<td>7.1</td>
<td>12.8</td>
<td>27.9</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td><strong>Percent of loss-making SOEs</strong></td>
<td>22.4</td>
<td>9.6</td>
<td>10.7</td>
<td>15.9</td>
<td>30.3</td>
<td>28.0</td>
<td>24.5</td>
</tr>
<tr>
<td><strong>Ratio of profits and taxes to fixed assets</strong></td>
<td>26.0</td>
<td>24.8</td>
<td>22.1</td>
<td>19.7</td>
<td>13.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: China Finance Statistics (1950-91); and State Statistical Bureau.

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Notes:

84The change over time in the financial relationship between SOEs and the central government is described in more detail in Section IV.

85Recourse to the Bankruptcy Law was rare in the initial years but has increased in more recent years, mainly for small SOEs.

86For details, see Bell, Khor, and Kochhar (1993).
experimental and took the form of providing for greater flexibility in enterprise organization through mergers and horizontal integration. More recently, reforms in this area were extended to provide for the formation of enterprise groups integrated through a parent-subsidiary relationship. Some of these groups have been required to take over loss-making enterprises to help rationalize their operations. Another development in the restructuring of SOEs is the "grafting" of SOEs with foreign investment. In such an arrangement, an SOE would typically invite foreign participation in certain lines of production, and a joint venture would be formed, under which the SOE would provide the land, building, and labor, and the foreign partner the equipment, technology, and marketing expertise.

Another experiment in reforming the governance structure of enterprises was the introduction of corporate forms of ownership and management. Companies were being established even though they had no legal status, and, in 1985, such companies were subject to separate registration requirements. Provisions for limited liability private companies were introduced in 1990, and the "shareholding" experiment was formally sanctioned for SOEs. In late 1990, stock exchanges were established in Shanghai and Shenzhen (discussed below), although provisions on the issuance of securities were made public by the Shanghai and Shenzhen municipal governments only in 1992.

In 1992, provisional regulations were issued for two types of share-holding experiments, namely, the limited liability companies and joint-stock companies (the latter are also known as limited liability stock companies). In the former type of company, ownership is closely held, typically among a small group of investors/owners, and the capital of the company is not necessarily divided into equal shares. Transfer of ownership rights in the limited liability company is usually more complicated than in a joint-stock company. In the latter type of company, the ownership structure is similar to that of a joint-stock company in most market economies: the equity of a company is divided into equal shares, which can be held by many owners, and ownership can be transferred.

Reforms of the labor and employment system were also initiated, providing for greater flexibility at the enterprise level in terms of worker selection, task definition, and wages. Reforms have also begun in the social benefits system, including unemployment benefits, pensions, and health care, aimed at establishing pooled benefits schemes that separate the provision of benefits from specific enterprises. Reforms aimed at commercializing the housing market have also been launched. Also, some SOEs have separated service activities from enterprise operations, creating autonomous units that are responsible for their own profits and losses. Other reforms affecting SOEs have included price liberalization, the reduction of the scope of the mandatory plans, the introduction of markets for land use rights, the liberalization of the foreign exchange market, the opening of new sectors and regions to foreign trade and investment, and the deepening of financial markets.

Reforms in 1993 and 1994

Framework for Reforms

The thrust of the new phase of reforms is a change of enterprise governance, with a view to establishing a "modern enterprise sector." This aim is to be achieved through the "corporatization" of SOEs, that is, the conversion of SOEs into shareholding companies through the implementation of a new Company Law. The new companies will be vested with a corporate governance structure that generally follows international practice. Through this, the authorities aim to achieve a separation of the ownership functions of the state from the management of the enterprises within a framework of greater autonomy and accountability. Specifically, the new framework will clarify the rights of enterprises as legal entities entitled to make decisions concerning assets entrusted to them by owners and investors; separate government ministries and departments from enterprise management to eliminate government interference in enterprise management; relieve SOEs of the obligations to provide social services while expanding the Government's role in the provision of these services; establish market-based relations between enterprises, so as to avoid the recurrent accumulation of interenterprise debt; and reduce the Government's control over wage and employment policies while limiting its role in this sphere to a supervisory one. In this new framework, a system for the management of state-owned assets

87 Horizontal integration refers to associations between enterprises that are either under different administrative jurisdictions, making different products, or located in different regions.

88 Grafting has become important in some cities; it has been described figuratively as "making the old tree of low-efficiency SOEs bloom."

89 These regulations were entitled "Opinions on the Standards for Limited Liability Companies" and "Opinions on Standards for Limited Liability Stock Companies." Prior to this, legislation providing for the establishment of limited liability companies applied only to FFEs.

90 The majority of the enterprises are expected to be converted to limited liability companies rather than joint-stock companies, partly because of the less stringent requirements set for the latter.
by state holding companies, state asset management companies, and enterprise groups would be introduced.

To permit enterprises in the new system to function effectively, supporting measures will be introduced, including the implementation of the Company Law, the enactment of a national securities law, the implementation of a new accounting system, and the development of factor markets. In addition, to support enterprise reform, the authorities set up in 1994 a fund of Y 7 billion designated for debt repayment.

Shortly after the Third Plenum of the Fourteenth Central Committee in November 1993, the Government launched a pilot project for the establishment of a “modern enterprise system.” Under this project, the 10,000 medium-sized and large SOEs will be involved in a program that includes asset valuation, the granting of financial autonomy, and the adoption of the new accounting system. Of these, 1,000 enterprises deemed to be critical to the economy will be selected for an experiment that will delegate to state asset management firms the authority to oversee the management of these enterprises’ assets and try to increase their value over time. Another 100 enterprises will be used in the introduction of the shareholding system. Finally, ten major cities will be selected for a comprehensive enterprise reform program. The whole project is expected to take two-three years to complete.

**Extension of the Shareholding System**

Considerable progress was made during 1993 in extending and formalizing the shareholding system, and further plans for this are envisaged for 1994. Although experiments with the issuance of stocks began in the early 1980s, these stocks had no legal standing and, hence, were restricted in terms of ownership rights and transferability. Since 1990, a number of important measures have been taken to legalize the corporate form of enterprises and the issuance of stock, leading to, as mentioned above, the establishment of stock exchanges in Shanghai and Shenzhen. The supervisory framework for shareholding companies was substantially strengthened with the establishment of the China Securities Regulatory Commission (CSRC) in 1992. Another significant step in this process was the introduction in December 1993 of the Company Law, which became effective in July 1994.

The new Company Law provides a legal and unified basis for the establishment and operations of companies in China. Under the law, two forms of companies may be established—a limited liability company and a joint-stock company—thereby formalizing the 1992 provisional shareholding regulations. Specifically, the law covers all forms of ownership—private, public, and FFEs; does not provide for a mandatory minimum state shareholding in a company and eliminates the distinction between state-held, corporate-owned, and individual or “private person” shares; specifies a framework of corporate governance in the form of a board of directors and a board of supervisors, and prohibits government officials from serving as company directors, supervisors, or general managers; stipulates minimum capital requirements for various types of companies, and clearly defines conditions for share transfer or sale. Also, the new Company Law outlines procedures for corporate mergers, bankruptcy, and the liquidation of companies.

By the end of 1993, there were about 11,600 companies in China, of which 8,300 were limited liability companies and 3,300 were joint-stock companies. All of these companies can apply for listing in the stock exchanges. The number of companies listed in the two stock exchanges rose to 240 in early 1994, with total market capitalization estimated at Y 400 billion. Foreign investors are allowed to hold special B shares in Chinese companies, and several Chinese firms have been listed on overseas exchanges. Furthermore, a decision was taken in 1993 to extend the right to list shares of joint-stock companies to cities other than Shanghai and Shenzhen.

The major incentive for enterprises to list in the stock exchanges is the ability to raise equity funds for restructuring and upgrading; nevertheless, in the long run, the greater discipline on enterprise management that is likely to result from the scrutiny that listed companies are subject to from both shareholders and investors is more significant. This is

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91The CSRC approves companies for listing and enforces regulations on listing requirements, financial statements, and asset valuation. In particular, the CSRC has applied a maximum debt-to-equity ratio of 70:30 and has also adopted regulations for asset valuation, under which intangibles (such as trademarks) cannot exceed 70 percent of total asset value.

92However, if the company is wholly state owned, some special provisions of the law would apply. At present, shares are divided into categories based on the type of owner, with preferential treatment accorded to holders of state shares in terms of share prices at offering, and of dividend payments.

93In particular, the minimum registered capital for a limited liability company is Y 0.5 million while, for a limited liability stock company, the minimum is Y 10 million. The minimum capital for a listed company is Y 50 million.

94In the case of a limited liability company, majority approval of existing shareholders is required; for joint-stock companies, the transfer or sale of both registered and bearer shares are permitted, and bearer shares may be traded through a stock exchange.

95This estimate does not include the many thousands more that have been registered as “companies” since the mid-1980s.

96See Section II for details.
particularly the case with those enterprises that are listed abroad, as the public disclosure requirements are more stringent in the stock exchanges abroad and the scrutiny from foreign institutional investors more rigorous. However, even the locally listed companies are likely to feel the pressure to improve their performance as the market matures and domestic investors become more sophisticated and demanding.

Conclusions

Although the new phase of enterprise reform has emphasized the maintenance of public ownership as the cornerstone of the economy, it should be noted that a fundamental change has occurred in the concept of ownership. A distinction has been drawn between the ownership of an enterprise and its management: the rights of ownership are circumscribed by law and enterprises are regarded as legal entities with their own rights and responsibilities. Such a clarification of the concept of ownership is necessary to allow for a fundamental restructuring of the SOEs. Furthermore, the predominance of public ownership is to be confined to certain strategic sectors of the economy.

It is also important to note that, with the encouragement of the authorities, considerable diversification has taken place in the ownership structure of the economy over the years. The diversification has been achieved by several means, including the promotion of a dynamic, collectively owned enterprise sector, joint ventures and other FFEs, and private and individually owned businesses; the shareholding experiments; the divestiture by enterprises of some of their ancillary activities by selling or leasing part of enterprise assets to individuals or groups of individuals; and the divestiture by the state of the enterprises themselves. The promotion of the services sector is another avenue for enterprises to divest themselves of certain activities. In addition, the new Company Law represents a major step in the SOE reform process: for the first time, there is a unified legal framework for the establishment and operation of companies as independent entities.

Nevertheless, it must be recognized that the transformation of enterprises into corporations cannot, on its own, ensure greater operational efficiency or profitability. Concomitant changes in other areas are essential to create a competitive environment for SOEs. This requires the enforcement of a hard budget constraint through the commercialization of the banking sector and a wider application of the Bankruptcy Law to non profitable enterprises. In addition, it is essential to further liberalize prices and develop competitive markets for goods and factors of production. In this sense, the supporting changes that are under way in the areas of taxation, banking, housing markets, and the provision of social security are at least as important for bringing about a lasting improvement in SOE performance as the process of corporatization itself.

In 1993, about 2,900 enterprises were sold or merged through 16 property rights exchange centers in Tianjin, Shanghai, Guangzhou, Wuhan, and Shenzhen; this involves the relocation of 240,000 workers.

By the end of 1993, about 1,000 enterprises had been declared bankrupt, of which about 10 percent were SOEs. In 1994, a pilot program was set up under which 156 enterprises from 18 cities are to be declared bankrupt. The authorities are currently drafting and implementing the guidelines for the Bankruptcy Law.
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## Appendix I  Summary of Structural Reforms

<table>
<thead>
<tr>
<th>Status up to 1993</th>
<th>Planned Reform Measures</th>
<th>Implementation Status</th>
<th>Medium-Term Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Exchange and Trade System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exchange System</strong></td>
<td>Complex and lacking in transparency. Dual exchange rates since 1986, when swap centers were established to trade in retention quotas. Access to swap markets progressively liberalized since 1986. Retention and trading of foreign exchange limited to FFEs and certain domestic enterprises. About 80 percent of transactions were estimated to take place at swap market rates.</td>
<td>Unify exchange rates; abolish retention system and the foreign exchange plan; liberalize access to foreign exchange for trade and trade-related services transactions; and move to full current account convertibility. Exchange rate to be determined in an interbank market for foreign exchange, with intervention by the PBC to limit volatility.</td>
<td>A new exchange system was introduced on January 1, 1994, featuring a unified exchange rate that is determined in an interbank market. New regulations were introduced for domestic enterprises with liberalized access for trade and trade-related transactions. FFEs remain subject to regulations on foreign exchange balancing requirement. Foreign exchange market segmented into interbank market for domestic enterprises and swap market for FFEs. Establish integrated foreign exchange market. Attain current account convertibility and, eventually, full convertibility.</td>
</tr>
<tr>
<td><strong>Trade System</strong></td>
<td>Complex and subject to administrative control. Many trade regulations were not publicly available.</td>
<td>Enact Foreign Trade Law. Publish all rules and regulations on trade.</td>
<td>Foreign Trade Law enacted in May 1994 and became effective on July 1, 1994. Nearly all existing trade regulations have either been rescinded or published as of end-1993. Establish a liberalized trade regime in the context of reaccession to the GATT.</td>
</tr>
<tr>
<td>Imports controlled through tariffs and nontariff barriers, including licenses and other controls.</td>
<td>Streamline tariff structure. Bind maximum tariff on most non-agricultural products at 35 percent over next three to five years. Reduce maximum tariff on most agricultural products to 40 percent over ten years. Reduce goods subject to licensing requirements by two thirds by end-1995 from a total of 53 product categories in 1993.</td>
<td></td>
<td>On December 31, 1993, tariffs on about 3,000 commodities were reduced, lowering the average tariff rate from 40 percent to about 36 percent. Tariffs on 235 import items were reduced temporarily for one year effective January 1, 1994. Import licensing requirements were removed for 9 commodity categories on December 31, 1993, and those for an additional 20 categories are to be removed as of December 31, 1994. In May 1994, licensing and quota controls were lifted on 195 commodities.</td>
</tr>
<tr>
<td>The mandatory export plan was abolished in 1991. Export controls including licensing covered about 50 percent of exports. Mandatory import planning applied to five product groups.</td>
<td>Eliminate mandatory trade planning on imports.</td>
<td></td>
<td>Mandatory trade planning eliminated starting in 1994.</td>
</tr>
</tbody>
</table>
Summary of Structural Reforms (continued)

<table>
<thead>
<tr>
<th>Status up to 1993</th>
<th>Planned Reform Measures</th>
<th>Implementation Status</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Bank and Banking System</strong></td>
<td>Weak legal and regulatory framework.</td>
<td>Enact laws on central banking, general banking, and bills of exchange.</td>
<td>Draft laws under review; they are expected to be enacted in second half of 1994.</td>
</tr>
<tr>
<td>PBC had little independence and a highly decentralized structure.</td>
<td>Strengthen the PBC as a central bank that has autonomy in the implementation of monetary policy. Restructure organization of PBC and reform functions of local PBC branches.</td>
<td>The PBC's authority is expected to be strengthened with the passage of the new central banking law. Local PBC branches prohibited from providing loans to banks, except for settlement purposes.</td>
<td>Eliminate numerous local PBC branches and establish several regional PBC branches encompassing several provinces. Focus functions of local PBC branches on supervision and research.</td>
</tr>
<tr>
<td>Local branches of PBC and specialized banks were highly vulnerable to pressure from local governments to provide loans for local projects.</td>
<td>Commercialize the specialized banks. Establish three policy banks: State Development Bank, Export-Import Bank, and the Agricultural Credit Bank to take over policy lending.</td>
<td>Ongoing. The three new policy banks have been established, and two became operational by mid-1994.</td>
<td>Ensure that all policy lending is undertaken by the policy banks, so that the specialized banks can focus on commercial lending.</td>
</tr>
<tr>
<td>The state-owned specialized banks were not commercially oriented and had high levels of nonperforming loans.</td>
<td>Strengthen prudential supervision.</td>
<td>Ongoing.</td>
<td>Establish a modern supervision system in line with commercial banking.</td>
</tr>
<tr>
<td>Bank supervision was oriented toward ensuring compliance with credit plan and lending criteria.</td>
<td>Modernize payments system.</td>
<td>The design of a new payments system is complete, and bidding has gone out to vendors for a pilot project.</td>
<td>Create an efficient payments system to meet the demands of a growing economy and facilitate the conduct of monetary policy.</td>
</tr>
<tr>
<td>Payments system was outdated and inefficient, with high level of intrabank float.</td>
<td>Adopt new accounting system in line with international practices.</td>
<td>A standard code of accounts for financial institutions is expected to be issued in 1994. Banks' accounts are being consolidated.</td>
<td>Establish a modern accounting system for banks.</td>
</tr>
<tr>
<td>Accounting system was highly decentralized and outdated.</td>
<td>Phase out credit plan and move to indicative targeting of money, using reserve money as operational target. Develop open market operations. Liberalize interest rates.</td>
<td>The credit plan will continue to be used in 1994 but will be supplemented by monetary targeting. Experiments with open market operations will be undertaken in Shanghai in 1995. In coordination with the Ministry of Finance, short-term treasury bills in book entry form will be issued to facilitate trading. Training in techniques of open market operations has begun. Greater flexibility of interest rates on loans is being allowed.</td>
<td>Increase reliance on indirect instruments to conduct monetary policy, with the objective of achieving stability of the renminbi.</td>
</tr>
</tbody>
</table>

**Monetary Policy**

Relied primarily on the annual credit plan. Interest rates were set by the PBC and adjusted infrequently. Other indirect instruments, such as PBC lending to banks and required and excess reserve ratios, were not used actively.
### Summary of Structural Reforms (continued)

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<tr>
<th>Status up to 1993</th>
<th>Planned Reform Measures</th>
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</thead>
<tbody>
<tr>
<td>Interbank markets were locally based and organized by financial intermediaries sponsored by the local PBC branches. Loans tended to be long term and used for financing projects.</td>
<td>Develop securities (including short-term treasury bills) and interbank markets to facilitate open market operations.</td>
<td>Regulation and supervision of interbank markets are being strengthened, and short-term money market instruments are coming into use. Development of overnight money market and integration of interbank markets is being encouraged.</td>
<td>Establish an efficient and nationally integrated interbank market that can facilitate the transmission of monetary policy through open market operations.</td>
</tr>
<tr>
<td>Monetary statistics were oriented toward monitoring implementation of the credit plan. Coverage was incomplete.</td>
<td>Introduce more comprehensive and timely statistical reporting system.</td>
<td>Statistical reporting forms are undergoing revision.</td>
<td>Improve monetary statistics to facilitate policy analysis, formulation, and implementation.</td>
</tr>
<tr>
<td><strong>Nonbank Financial System</strong> Weak supervisory and regulatory framework.</td>
<td>Enact law to regulate nonbank operations of financial institutions.</td>
<td>Drafting has not started.</td>
<td>Establish a diversified financial system to meet the needs of a market-based economy.</td>
</tr>
<tr>
<td>Two stock exchanges were established in Shanghai and Shenzhen in 1991. The Securities Regulatory Commission was established in 1992 to supervise the development of the securities industry. By end-1993, 183 companies had been listed on the two stock exchanges, and market capitalization was estimated at about $40 billion.</td>
<td>Enact securities law and establish legal and regulatory framework to guide the development of the industry. Encourage formation of limited liability and joint-stock companies.</td>
<td>The securities law is expected to be enacted in 1994. More listings of companies have been approved in 1994.</td>
<td>Develop the stock market into a major source of funding and vehicle for restructuring SOEs.</td>
</tr>
<tr>
<td>Secondary markets in government bonds were formally established in 1988 and developed rapidly.</td>
<td>Develop primary and secondary markets in government securities. Diversify maturities and types of government securities issued.</td>
<td>Short-term treasury bills were issued through a system of primary dealers to banks and institutional investors in 1994.</td>
<td>Establish an active primary and secondary market in government securities to facilitate the issuance of government debt instruments and open market operations.</td>
</tr>
<tr>
<td>Savings institutions were not well developed.</td>
<td>Develop more long-term savings institutions, such as pension funds and mortgage institutions.</td>
<td>Ongoing.</td>
<td>Develop savings institutions to mobilize long-term savings.</td>
</tr>
<tr>
<td><strong>Tax System</strong> Complex, inefficient, and highly inelastic; tax burden distributed unequally.</td>
<td>Introduce new, simplified tax system, with the aims of improving buoyancy and efficiency of system and distributing tax burden more equally.</td>
<td>New tax system implemented on January 1, 1994. <strong>99</strong></td>
<td>Establish modern tax system more suitable to the needs of a market-based economy.</td>
</tr>
<tr>
<td>Enterprise income tax Tax laws differed by type of ownership. Nominal rate of 55 percent applied to SOEs. However, in practice, taxes paid were governed by the CRS. Loan repayments were tax deductible; no accelerated depreciation; and special taxes on retained earnings were applied.</td>
<td>Abolish CRS and apply uniform tax law to all domestic enterprises with maximum rate of 33 percent; standardize tax deductions; end deductions for loan repayments; abolish two special levies (key energy and transportation projects fund and budgetary regulatory fund), wage adjustment tax, and tax on bonuses; base tax exemptions on law.</td>
<td>Implemented on January 1, 1994.</td>
<td>Unify tax laws for domestic and foreign enterprises.</td>
</tr>
</tbody>
</table>
Summary of Structural Reforms (continued)

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<tr>
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<tbody>
<tr>
<td>Preferential tax rates and tax exemptions were provided to enterprises in open economic zones.</td>
<td>Simplify and unify the personal tax on domestic and foreign residents.</td>
<td>Implemented on January 1, 1994.</td>
<td>Move toward global income tax; integrate corporate and personal income taxation.</td>
</tr>
<tr>
<td><strong>Personal income tax</strong>&lt;br&gt;Different tax laws for domestic and foreign residents; high threshold; exemption for living expenses.</td>
<td>Broaden coverage to include production, wholesale and retail trade, and imports; set basic rate of 17 percent, with lower rate (13 percent) to be applied mainly on food and agricultural tools; use invoice credit method as standard base; and base exemptions on law.</td>
<td>Introduced on January 1, 1994.</td>
<td>Develop VAT into a major revenue source and modernize VAT administration; achieve high revenue buoyancy.</td>
</tr>
<tr>
<td>VAT&lt;br&gt;Narrow coverage; 12 different rates; limited use of invoice credit method; numerous exemptions.</td>
<td>Broaden coverage to include production, wholesale and retail trade, and imports; set basic rate of 17 percent, with lower rate (13 percent) to be applied mainly on food and agricultural tools; use invoice credit method as standard base; and base exemptions on law.</td>
<td>Introduced on January 1, 1994.</td>
<td></td>
</tr>
<tr>
<td>Excises (product tax)&lt;br&gt;Broad coverage (imports, agricultural products, liquor, tobacco, chemical, electrical, and rubber products); many rates; local surcharges.</td>
<td>Narrow coverage to liquor, tobacco, and luxury consumer goods.</td>
<td>Implemented on January 1, 1994.</td>
<td></td>
</tr>
<tr>
<td>Turnover tax (business tax)&lt;br&gt;Levied on services (including transportation and construction), and wholesale and retail trade; many rates; tax base included taxes on inputs.</td>
<td>Narrow coverage and reduce number of tax rates.</td>
<td>Implemented on January 1, 1994.</td>
<td>Replace turnover tax with VAT on most services.</td>
</tr>
<tr>
<td>Other taxes&lt;br&gt;About 24 minor low-yield taxes were in use that were costly to administer; lack of transparency; local authorities levied special fees and charges.</td>
<td>Eliminate about a dozen minor taxes; end levying of local special fees and charges.</td>
<td>Implemented on January 1, 1994.</td>
<td>Further reduce number of taxes; introduce property taxation.</td>
</tr>
<tr>
<td><strong>Intergovernmental Fiscal Relations</strong>&lt;br&gt;Revenue contracts governed the fiscal relations between central and provincial governments. Local fiscal autonomy had contributed to rapid development in some regions but had also led to an erosion in the central control over revenue and fiscal policy as well as a widening of regional disparities.</td>
<td>Transform revenue contract system to one based on uniform rules of tax assignment and tax sharing. Certain taxes will be assigned to local governments, others to central government, and the rest will be shared according to a predetermined formula.</td>
<td>New system introduced on January 1, 1994, but revenue impact to be phased in over several years.</td>
<td>Allow central government to collect 60 percent of total revenue and improve its control over fiscal policy.</td>
</tr>
<tr>
<td>Establish grants commission to distribute surplus revenue collected by central government to the provinces, based on objective criteria.</td>
<td>Preparatory work under way.</td>
<td></td>
<td>Reduce regional fiscal disparities.</td>
</tr>
<tr>
<td>Reform expenditure assignment system.</td>
<td>Preparatory work beginning.</td>
<td></td>
<td>Strengthen expenditure control.</td>
</tr>
</tbody>
</table>
## Summary of Structural Reforms (continued)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Tax Administration</strong>&lt;br&gt;Most taxes collected by local tax bureaus, which then remit the contracted amount of revenue to the central government.</td>
<td>Establish National Tax Service (NTS) to collect taxes assigned to the central government and shared taxes. Local taxes will continue to be collected by local tax bureaus. Modernize tax administration.</td>
<td>NTS formally established on January 1, 1994. Design of new tax administration system, including computerization, is under preparation. Implementation is expected to begin later in 1994 or early in 1995.</td>
<td>Establish an efficient tax administration system.</td>
</tr>
<tr>
<td><strong>Budgetary System</strong>&lt;br&gt;No Budget Law.</td>
<td>Enact Budget Law.</td>
<td>Budget Law enacted by the National People's Congress in March 1994. New budgetary procedures will be implemented in 1994.</td>
<td>Establish transparent budgetary procedures and effective expenditure control.</td>
</tr>
<tr>
<td>Unified budget of both central and provincial governments. Overall budget approved by the National People's Congress in March of each year. In 1992, a dual budget system was adopted that distinguishes between the current and development budget.</td>
<td>Establish separate budgets for central and provincial governments, with the provincial budgets subject to the approval of the provincial People's Congresses. Adopt more analytical budgetary presentation, in line with international conventions.</td>
<td>Introduced three-tier budget that distinguishes between current, development, and financing items.</td>
<td></td>
</tr>
<tr>
<td>Treasury functions performed by PBC. Weak expenditure control system.</td>
<td>Strengthen treasury function and expenditure control.</td>
<td>To be implemented.</td>
<td></td>
</tr>
<tr>
<td><strong>Public Administration</strong>&lt;br&gt;Civil service system&lt;br&gt;Highly centralized &quot;cadre&quot; system: same wage and promotion system for all government workers; recruitment through government assignment; no dismissals, demotions, or resignations; little mobility; wages for workers with equivalent skills lower than in SOEs.</td>
<td>Replace &quot;cadre&quot; system with civil service system, characterized by recruitment through civil service examinations, performance-based promotions, dismissals and demotions, and mobility schemes. Institute wage system reform.</td>
<td>Civil service reform will be completed by 1996. The number of government employees was reduced by 2,000-3,000 in 1993, with another 8,000 to be terminated by 1994, resulting in a total retrenchment of 20 percent at central level. The wage gap with SOEs will be reduced within three to four years. In mid-1994, retrenchment at provincial and lower levels began, which will lead to reduction of provincial government staff by 25 percent within three years. Civil service examination initiated for lower-level staff. New wage scale adopted.</td>
<td>Establish an efficient civil service.</td>
</tr>
<tr>
<td><strong>Government administrative system</strong>&lt;br&gt;Government structure was reformed in 1986-87 to eliminate many line ministries. Nevertheless, the structure of Government has remained monolithic, with overlapping functions of different departments, large numbers of redundant workers, inefficient and inflexible administration, and non-transparent procedures.</td>
<td>Reorganize the State Council and macro control ministries; streamline linkages between different ministries through separation, mergers, and closures.</td>
<td>Line ministries will be abolished in 1994; the number of State Council institutions was reduced from 86 to 59 and the number of committees from 85 to 26.</td>
<td>Complete reorganization of government administration to complement and support other market-oriented reforms; focus Government's role on macro-economic management and development of legal and regulatory framework and other supporting infrastructure for efficient functioning of markets.</td>
</tr>
</tbody>
</table>
Summary of Structural Reforms (continued)

IV. Investment System

Central control over investment declined gradually as decentralization took place. However, an elaborate project approval system for medium- and large-scale projects still existed, under which approval was necessary from the State Planning Commission (SPC). For smaller-scale projects, local authorities were granted powers to approve projects within certain cost limits.

All foreign investment subject to approval by the Ministry of Foreign Trade and Economic Relations and the SPC and restricted to certain sectors and localities.

SOEs
SOE sector contains more than 100,000 industrial enterprises, including about 11,000 medium-sized and large ones.

Despite experiments with enterprise reforms since the early 1980s, performance of the SOE sector remained weak. About one third of SOEs were estimated to be making losses, and another one third were breaking even.

Autonomy and financial accountability remained weak. SOEs operated under the direct supervision of the central or local governments. However, beginning in 1991, several large SOEs were transformed into joint-stock companies and listed their shares on domestic and international stock exchanges.

The Bankruptcy Law was enacted in 1986 but applied infrequently, mainly to small SOEs.

Establish an investment risk mechanism. All investment projects will be divided into three categories: (1) social projects, to be financed through the budget; (2) large-scale infrastructure projects, to be financed mainly by the policy banks and subject to approval by the SPC and other government agencies; and (3) all other investment decisions and projects, which will be made and financed, respectively, on a market basis.

Open up more sectors and regions to foreign investment.

Ongoing. Progress will depend on speed of enterprise and financial reforms.

Develop a system in which most investments will be determined mainly by the market, and in which the level of aggregate investment can be regulated through monetary and fiscal policies.

Utilize foreign investment to modernize and develop the economy, including restructuring of SOEs.

V. State-Owned Enterprises and Related Reform

Expand use of the shareholding system (or corporatization), with the aim of separating the role of the state as an owner from the management of the enterprises.

Ten thousand SOEs are involved in a program of asset valuation and accounting reform, of which 1,000 have been selected for management reform. The shareholding system will be adopted in 100 medium- and large-scale enterprises.

Enact Company Law that will establish the legal framework for the corporatization of the SOEs. The law will define enforceable rights for shareholding companies.

Company Law was enacted in December 1993 and became effective in July 1994.

Transform most SOEs into autonomous, competitive, legal entities fully accountable for their profits and losses, thus establishing a level playing field for all enterprises.

Subject enterprises to market discipline. An increasing number of the loss-making enterprises will be merged, sold, or closed in accordance with the Bankruptcy Law.

Ongoing. Experiments with bankruptcy of large and medium-sized SOEs in 18 major cities are under way.
<table>
<thead>
<tr>
<th>Summary of Structural Reforms (concluded)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOEs</strong> bore a heavy social burden, including the provision of employment, social security, and services such as housing and education.</td>
</tr>
<tr>
<td><strong>Social Security</strong></td>
</tr>
<tr>
<td><strong>Pension</strong></td>
</tr>
<tr>
<td>Retirement benefits were provided mainly by enterprises for their employees and were not transferable. Experiments were undertaken with pooling of pension funds.</td>
</tr>
<tr>
<td><strong>Health insurance</strong></td>
</tr>
<tr>
<td>Wide coverage of SOE employees and retirees; rising medical costs were financed jointly by SOEs and Government.</td>
</tr>
<tr>
<td><strong>Unemployment insurance</strong></td>
</tr>
<tr>
<td>Unemployment insurance was established in 1986, with relatively broad coverage for SOEs but low contribution rates and benefits.</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
</tr>
<tr>
<td>Mainly provided by work units, with housing subsidy equivalent to 20–25 percent of average money wage. Rent increases have been undertaken in most cities since 1991. Limited sale of housing.</td>
</tr>
<tr>
<td><strong>Price System</strong></td>
</tr>
<tr>
<td>The price system was greatly liberalized. By 1993, it was estimated that the proportion of goods subject to price control was 5 percent for retail goods, 15 percent for means of production, and 10 percent for agricultural products. Only 5 percent of total industrial output was subject to mandatory planning.</td>
</tr>
<tr>
<td><strong>Establish a social security system independent of work units and commercialize housing.</strong></td>
</tr>
<tr>
<td><strong>Establish provident funds.</strong></td>
</tr>
<tr>
<td><strong>Extend pooling of enterprise pension funds; standardize contribution rates, eligibility criteria, and benefits; extend coverage; and introduce individual retirement insurance and pension funds.</strong></td>
</tr>
<tr>
<td><strong>Introduce major illness insurance for retirees; individual participation in health care costs; and contractual management of health care (SOEs and hospitals). Establish work injury insurance pools and maternity insurance pools for working women.</strong></td>
</tr>
<tr>
<td><strong>Extend unemployment insurance coverage to all SOE employees and to workers outside the SOE sector.</strong></td>
</tr>
<tr>
<td><strong>Promote development of services sector and nonstate sectors to absorb surplus labor.</strong></td>
</tr>
<tr>
<td><strong>Continue rent reforms, with the objective of raising housing rents to about 6 percent of household wage income by end-1995 and converting housing subsidies into money wages; increase sales of housing units; and formulate a nationwide model for housing reform.</strong></td>
</tr>
<tr>
<td><strong>Further liberalize prices, especially in energy and transportation.</strong></td>
</tr>
<tr>
<td><strong>Coal prices were liberalized in 1994. Transportation prices are expected to be adjusted.</strong></td>
</tr>
<tr>
<td><strong>Petroleum prices were adjusted in May 1994 and grain and other food prices in June 1994. However, price inspection, especially for food products, has intensified during 1994.</strong></td>
</tr>
</tbody>
</table>

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**Status up to 1993**

<table>
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<tr>
<th>Planned Reform Measures</th>
<th>Implementation Status</th>
<th>Medium-Term Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish a social security system independent of work units and commercialize housing.</td>
<td>Ongoing.</td>
<td>Separate all social functions from the SOEs within three years.</td>
</tr>
<tr>
<td>Establish provident funds.</td>
<td>Ongoing.</td>
<td>Move toward a nationwide comprehensive provident fund.</td>
</tr>
<tr>
<td>Extend pooling of enterprise pension funds; standardize contribution rates, eligibility criteria, and benefits; extend coverage; and introduce individual retirement insurance and pension funds.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduce major illness insurance for retirees; individual participation in health care costs; and contractual management of health care (SOEs and hospitals). Establish work injury insurance pools and maternity insurance pools for working women.</td>
<td>Major illness insurance for retirees was introduced in 1993, and a similar program for current employees is under study.</td>
<td></td>
</tr>
<tr>
<td>Extend unemployment insurance coverage to all SOE employees and to workers outside the SOE sector.</td>
<td>Unemployment coverage will be extended to all SOE employees by 1995 and to workers outside the SOE sector by 1998.</td>
<td>Establish a comprehensive unemployment insurance system to facilitate enterprise reform.</td>
</tr>
<tr>
<td>Promote development of services sector and nonstate sectors to absorb surplus labor.</td>
<td>Ongoing.</td>
<td>Raise rents to commercial levels. Develop a housing market independent of the work units.</td>
</tr>
<tr>
<td>Continue rent reforms, with the objective of raising housing rents to about 6 percent of household wage income by end-1995 and converting housing subsidies into money wages; increase sales of housing units; and formulate a nationwide model for housing reform.</td>
<td>Rents have been increasing in most cities to cover key components of housing costs. Focus is being shifted to sale of housing units, the prices of which will incorporate a small profit margin in addition to cost (including construction and land costs). Adoption of State Council resolution on urban housing reform is expected in near future.</td>
<td></td>
</tr>
<tr>
<td>Further liberalize prices, especially in energy and transportation.</td>
<td>Coal prices were liberalized in 1994. Transportation prices are expected to be adjusted.</td>
<td>Allow prices to be freely determined by market forces.</td>
</tr>
<tr>
<td>Petroleums prices were adjusted in May 1994 and grain and other food prices in June 1994. However, price inspection, especially for food products, has intensified during 1994.</td>
<td></td>
<td></td>
</tr>
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</table>

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**Notes:**

1. See Appendix V for details of the new tax system.
Appendix II  Money, Activity, and Prices in China: An Analysis of Causality

The principal purpose of this analysis is to study the joint movements of prices, activity, and monetary and credit variables in China over the past decade. The aim is twofold. First, the analysis attempts to shed light on the causal relationships underly the recurrent macroeconomic cycles in China. In particular, the hypothesis that stop-go cycles were due in large part to autonomous increases in aggregate demand, especially for investment, is examined. Second, in light of the current efforts to reform the monetary policy framework and move away from direct credit controls, the study examines the transmission mechanism of monetary policy, that is, the channels through which monetary policy changes influence the economy. The first part of this appendix contains a brief discussion of the vector autoregression (VAR) methodology used and the ways in which the results can be interpreted. The second part presents the main results of the estimation of VARs for China.

Methodology

One way to conduct an analysis of the joint movements of major macroeconomic variables is to construct a full-fledged structural model spelling out the theoretical relationships between them. This approach also requires assumptions to be made about the exogeneity of certain variables vis-à-vis others in the model and the exclusion of some variables from some of the equations of the system. An alternative, more flexible way is to specify and estimate a VAR in which no a priori assumptions need to be made about the structural relationships underlying the variables in the model or the exogeneity of particular variables. This methodology allows the researcher to manipulate reduced-form systems so as to characterize joint movements among a wide range of potentially endogenous variables. In general, the VAR is set up as follows:

\[ A + B(L) \begin{bmatrix} X_t \\ Y_t \\ Z_t \end{bmatrix} = \begin{bmatrix} \epsilon_{1t} \\ \epsilon_{2t} \\ \epsilon_{3t} \end{bmatrix} \]

where \( X, Y, \) and \( Z \) are the main variables of interest in the model and \( B(L) \) is a 3 x 3 matrix of polynomials in the lag operator, with

\[ B_0L^0X_t = B_0X_t, B_1L^1X_t = B_1X_{t-1}, \text{and so on.} \]

This study will exploit the “agnostic” approach of the VAR technique to examine empirically some prior notions about the causality pattern of certain macroeconomic variables that have played a crucial role in the cycles in China. Specification of a VAR generally involves selecting the variables represented by \( X, Y, \) and \( Z, \) as well as their lag lengths. Clearly, the availability of data constrains both these choices. For this analysis, the set of variables includes broad money, narrow money, currency in circulation, domestic credit, net domestic assets, fixed investment, retail sales, imports (all in nominal terms), industrial production (real), and inflation. The models have been estimated using quarterly, seasonally adjusted data over the nine years from 1985 to 1993.\(^{100}\) The variables were all tested for unit roots and found to be nonstationary in levels and stationary in first differences. All variables are therefore expressed in log differences. Based on the Schwarz-Bayesian Information Criterion, a constant and two lags of each variable have been used in the VAR.\(^ {101}\)

One interesting way of summarizing the results of a VAR estimation is to examine the Granger causality between the variables in the model (Engle and Granger (1987)). A variable \( x \) is said to “Granger cause” another variable \( y \) if lagged values of \( x \) are significant in the equation for \( y. \) The estimation procedure produces a set of F-test statistics that test the null hypothesis that the coefficients of all lags of a particular variable in each equation are zero. The figures shown in the tables below are the proba-

\(^{100}\)Although longer time series are available for some of the variables, the length of the sample used here is constrained by that of the fixed investment series.

\(^{101}\)The Akaike Information Criterion suggests the inclusion of a third lag of each variable. However, in the interest of conserving degrees of freedom, given the limited availability of data, the lag length chosen by minimizing the Schwarz-Bayesian criterion has been used.
bilities of accepting the null hypothesis. For example, a p-value of less than 0.1 on variable $x$ in the equation for $y$ would imply that lagged values of $x$ have significant incremental predictive power in the evolution of $y$.

Another way of summarizing the results of a VAR is to decompose the variance of the forecast error of a variable of interest into the shares attributable to innovations in each of the other variables in the system. To do this, it is necessary to first transform the autoregressive representation of the system into a moving average representation, as follows:

$$
\begin{bmatrix}
X,
Y,
Z,
\end{bmatrix}
= -AB(L)^{-1} + B(L)^{-1}
\begin{bmatrix}
\epsilon_{1t},
\epsilon_{2t},
\epsilon_{3t},
\end{bmatrix}
$$

In general, the covariance matrix $\Sigma$ of the residuals, $\epsilon$, is not diagonal, that is, off-diagonal elements of the matrix representing covariances between any two variables in the system are non-zero. The residuals of this moving average representation thus need to be orthogonalized, as orthogonalization eliminates the covariances among the shocks to each explanatory variable, so that the covariance matrix of the residuals is diagonal. This process allows the relative impact of each variable to be identified separately. In this study, the Choleski factorization procedure is used, in which the covariance matrix $\Sigma$ is factorized into two matrices $S$ and $S'$. The matrix $S$ is “lower triangular,” that is, its diagonal elements are positive, the elements below the diagonal are nonzero, and the elements above the diagonal are zero; it can be shown that such a factorization is unique, that is, there exists only one matrix $S$ that is lower triangular so that $\Sigma = SS'$.

One important issue in the orthogonalization procedure is the choice of ordering of the variables, as the ordering can affect their measured impact. This is particularly true when the covariances among the residuals are significant. In general, variables that are expected to have little or no predictive power for other variables should be put last. The issue of ordering the variables is discussed further below.

Results

Granger Causality Tests

The first VAR system (VAR1) consists of broad money, domestic credit, fixed investment, industrial production, and inflation.\(^{102}\) Table 14 contains a summary of the results. Each column represents an equation of the model.

Based on the results of these F-tests, a “causal mapping” of VAR1 can be derived (Chart 11).

At the outset, it should be noted that these dynamics are very complex and, in some cases, difficult to interpret. This being said, the mapping shown in Chart 11 seems to suggest the following dynamics for the Chinese economy.

First, as no other variable in the system appears to have any predictive power in the equation for fixed investment, it could be said that fixed investment is “causally prior,” in the Granger sense, to the other variables in the system. This is, prima facie, in line with the casual empirical observation that fixed investment tends to lead the economic cycles. As noted in Section IV, the investment system has been based predominantly on the central planning system of project approvals rather than on a market mechanism. Moreover, with the decentralization of decision making, overall control over the volume and composition of investment has weakened, as local governments increasingly ignore central directives in the quest for rapid development of their local economies.

Second, the effects of fixed investment on the economy appear to work through its impact on industrial production. As was observed in the most recent cycle, the strong growth in fixed investment during 1991–92 led to rapid growth in industrial output and, in turn, to the overheating of the economy and rising inflation.

Third, with the exception of the inflation equation, changes in domestic credit have little explanatory power in the other equations. The limited role of domestic credit in the dynamics is somewhat unexpected, given the continued significant role of the credit plan in the economy.\(^{103}\) However, there are several reasons to attribute this limited role to the major structural changes that have taken place in the economy during the past decade. First, the domestic credit variable is based largely on the coverage of the credit plan, which is primarily relevant to the SOEs. However, the most dynamic part of the industrial sector in the past few years has been the nonstate sector, which now accounts for more than one half of industrial output and which has had to

\(^{102}\)Changes in merchandise import value were also included in the system but did not alter the implied relationships and so were dropped from the model.

\(^{103}\)One reason for the finding that domestic credit has little predictive power in the system could be the high degree of correlation between broad money and domestic credit. In this case, the inclusion of both variables could result in their joint effect being picked up by one, with little incremental predictive power being assigned to the other. For this reason, the VAR was re-estimated using either broad money or domestic credit but not both at the same time. However, the results were not noticeably different—domestic credit still had little explanatory power in the equations for the other variables in the system.
meet most of its credit needs outside the credit plan. Second, the past five years have witnessed very rapid increases in foreign direct investment, equity issues, and external borrowing, including through the issuance of bonds, all of which have become increasingly important avenues of financing. Another avenue is the diversification of domestic capital markets through the expansion of various forms of government and enterprise stock and bond issues. Third, it is possible that much of this investment was financed by funds channeled through NBFIs. In China, many of these NBFIs are subsidiaries of the specialized banks, and, in many instances, investment funds were channeled from the specialized banks through their subsidiary NBFIs. In terms of the monetary accounts, such financing would be captured in the net domestic assets of the banking system.

For this reason, the VAR has been re-estimated using net domestic assets instead of domestic credit (VAR2). The results are summarized in Table 15 and imply the causal mapping depicted in Chart 12.

Note that the dynamics of the system are largely the same as in VAR1. Fixed investment remains causally prior to the other variables in the system.

Its impact on the rest of the economy appears to work through industrial production. Broad money and net domestic assets are “caused” by changes in inflation and industrial production. However, changes in the broader credit variable—net domestic assets—are also not significant in explaining any of the equations in the system.

In view of the possibility that the high degree of correlation between net domestic assets and broad money may have resulted in their joint effects being picked up by only one of the variables, the VAR was re-estimated by dropping broad money from the system and including only net domestic assets (VAR3). The results are different from the previous two cases (Table 16); the causal mapping is shown in Chart 13.

---

Table 14. Summary Results of VAR1

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Broad money</th>
<th>Domestic credit</th>
<th>Fixed investment</th>
<th>Industrial production</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>R^2</td>
<td>0.59</td>
<td>0.45</td>
<td>0.36</td>
<td>0.61</td>
<td>0.58</td>
</tr>
<tr>
<td>P-value of Q(15)</td>
<td>0.81</td>
<td>0.27</td>
<td>0.96</td>
<td>0.13</td>
<td>0.88</td>
</tr>
<tr>
<td>P-value of F-tests of exclusion restrictions</td>
<td>0.06*</td>
<td>0.18</td>
<td>0.20</td>
<td>0.04*</td>
<td>0.07*</td>
</tr>
<tr>
<td>Explanatory variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broad money</td>
<td>0.28</td>
<td>0.32</td>
<td>0.57</td>
<td>0.61</td>
<td>0.07*</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>0.96</td>
<td>0.52</td>
<td>0.45</td>
<td>0.09*</td>
<td>0.86</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>0.26</td>
<td>0.89</td>
<td>0.25</td>
<td>0.11</td>
<td>0.05*</td>
</tr>
<tr>
<td>Industrial production</td>
<td>0.00*</td>
<td>0.02*</td>
<td>0.95</td>
<td>0.60</td>
<td>0.00*</td>
</tr>
</tbody>
</table>

1 The reported p-values are the probabilities of accepting the null hypothesis that there is no serial correlation in the error term.
2 The reported p-values are the probabilities of accepting the null hypothesis that all lags of the explanatory variables are zero. An asterisk denotes rejection of the null hypothesis with 90 percent confidence.
Table 15. Summary Results of VAR2

<table>
<thead>
<tr>
<th></th>
<th>Broad money</th>
<th>Net domestic assets</th>
<th>Fixed investment</th>
<th>Industrial production</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R^2 )</td>
<td>0.59</td>
<td>0.52</td>
<td>0.40</td>
<td>0.63</td>
<td>0.54</td>
</tr>
<tr>
<td>P-value of Q(15)</td>
<td>0.63</td>
<td>0.67</td>
<td>0.99</td>
<td>0.21</td>
<td>0.64</td>
</tr>
<tr>
<td>P-value of F-tests of exclusion restrictions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broad money</td>
<td>0.64</td>
<td>0.48</td>
<td>0.48</td>
<td>0.10*</td>
<td>0.39</td>
</tr>
<tr>
<td>Net domestic assets</td>
<td>0.27</td>
<td>0.94</td>
<td>0.26</td>
<td>0.29</td>
<td>0.23</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>0.83</td>
<td>0.99</td>
<td>0.64</td>
<td>0.10*</td>
<td>0.83</td>
</tr>
<tr>
<td>Industrial production</td>
<td>0.10*</td>
<td>0.07*</td>
<td>0.30</td>
<td>0.05*</td>
<td>0.18</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.00*</td>
<td>0.00*</td>
<td>0.99</td>
<td>0.82</td>
<td>0.01*</td>
</tr>
</tbody>
</table>

1 The reported p-values are the probabilities of accepting the null hypothesis that there is no serial correlation in the error term.
2 The reported p-values are the probabilities of accepting the null hypothesis that all lags of the explanatory variables are zero. An asterisk denotes rejection of the null hypothesis with 90 percent confidence.

Fixed investment is no longer "causally prior" to the rest of the variables in the system; lagged values of net domestic assets are significant in explaining the evolution of fixed investment. Changes in net domestic assets are also significant in the equations for industrial production and inflation, although there is evidence of a feedback relationship between industrial production and inflation, on the one hand, and net domestic assets, on the other. This suggests that the broader concept of net domestic assets is a more meaningful credit variable than the narrower concept of domestic credit.

As for the issue of how monetary and credit impulses are transmitted to the rest of the economy, the results from the three VARs suggest that, as broad money and net domestic assets are significant in explaining the evolution of both industrial production and inflation, they could be seen as leading indicators for activity and prices. The finding that changes in net domestic assets help to predict industrial production suggests that the credit constraint hypothesis extended by Calvo and Coricelli (1993) may be relevant in the case of China. However, to subject the Calvo-Coricelli hypothesis to a more rigorous test, it would be more appropriate to limit the coverage of industrial output to the SOEs and specify the domestic credit variable in real terms.

Domestic credit, in contrast, appears to have little explanatory power in most of the other equations in the system, with the exception of the inflation equation.
### Table 16. Summary Results of VAR3

<table>
<thead>
<tr>
<th></th>
<th>Dependent Variables</th>
<th>Net Domestic assets</th>
<th>Fixed Investment</th>
<th>Industrial Production</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R^2$</td>
<td></td>
<td>0.49</td>
<td>0.36</td>
<td>0.56</td>
<td>0.50</td>
</tr>
<tr>
<td>P-value of Q(15)</td>
<td></td>
<td>0.90</td>
<td>0.96</td>
<td>0.64</td>
<td>0.51</td>
</tr>
<tr>
<td>P-value of T-tests of exclusion restrictions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explanatory variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net domestic assets</td>
<td></td>
<td>0.07*</td>
<td>0.10*</td>
<td>0.06*</td>
<td>0.10*</td>
</tr>
<tr>
<td>Fixed investment</td>
<td></td>
<td>0.95</td>
<td>0.42</td>
<td>0.34</td>
<td>0.92</td>
</tr>
<tr>
<td>Industrial production</td>
<td></td>
<td>0.09*</td>
<td>0.38</td>
<td>0.08*</td>
<td>0.10*</td>
</tr>
<tr>
<td>Inflation</td>
<td></td>
<td>0.00*</td>
<td>0.88</td>
<td>0.43</td>
<td>0.00*</td>
</tr>
</tbody>
</table>

1. The reported p-values are the probabilities of accepting the null hypothesis that there is no serial correlation in the error term.
2. The reported p-values are the probabilities of accepting the null hypothesis that all lags of the explanatory variables are zero. An asterisk denotes rejection of the null hypothesis with 90 percent confidence.

### Table 17. Inflation: Forecast Error Variance Decomposition

<table>
<thead>
<tr>
<th>Variables</th>
<th>Percentage of Inflation Forecast Error Variance Explained by 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordering 1</td>
<td></td>
</tr>
<tr>
<td>Broad money</td>
<td>5.0</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>2.0</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>13.0</td>
</tr>
<tr>
<td>Industrial production</td>
<td>21.0</td>
</tr>
<tr>
<td>Inflation</td>
<td>59.0</td>
</tr>
<tr>
<td>Ordering 2</td>
<td></td>
</tr>
<tr>
<td>Fixed investment</td>
<td>12.0</td>
</tr>
<tr>
<td>Industrial production</td>
<td>22.0</td>
</tr>
<tr>
<td>Inflation</td>
<td>61.0</td>
</tr>
<tr>
<td>Broad money</td>
<td>3.0</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>1.0</td>
</tr>
<tr>
<td>Ordering 3</td>
<td></td>
</tr>
<tr>
<td>Broad money</td>
<td>8.0</td>
</tr>
<tr>
<td>Net domestic assets</td>
<td>11.0</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>11.0</td>
</tr>
<tr>
<td>Industrial production</td>
<td>13.0</td>
</tr>
<tr>
<td>Inflation</td>
<td>57.0</td>
</tr>
<tr>
<td>Ordering 4</td>
<td></td>
</tr>
<tr>
<td>Fixed investment</td>
<td>8.0</td>
</tr>
<tr>
<td>Industrial production</td>
<td>16.0</td>
</tr>
<tr>
<td>Inflation</td>
<td>62.0</td>
</tr>
<tr>
<td>Broad money</td>
<td>5.0</td>
</tr>
<tr>
<td>Net domestic assets</td>
<td>10.0</td>
</tr>
</tbody>
</table>

1. Percentages refer to the decomposition of the forecast error two years ahead.
Variance Decompositions

Table 17 shows the variance decompositions of the forecast error for inflation two years ahead. As the causality mappings charted above suggest relatively complex patterns of predictive power, several different orderings were examined. The sequence followed in the first ordering is broad money, domestic credit, fixed investment, industrial production, and inflation, while the sequence followed in the second is fixed investment, industrial production, inflation, broad money, and domestic credit. The variance decompositions suggest that, although inflation is explained at the end of a two-year horizon largely by its own innovations, it is also explained to a significant extent by innovations in industrial production and fixed investment. Innovations in money and domestic credit appear to have a smaller impact on inflation. In the third and fourth orderings, net domestic assets is substituted for the narrower domestic credit variable. In these variance decompositions, the broader credit variable is assigned a higher proportion of the variance of the forecast error for inflation. These findings would suggest that, first, the inflation process in China has been partly a result of structural changes (such as price adjustments and price controls), and, second, that activity variables, as well as the broader monetary and credit aggregates, are also important in the inflation process.

References


Appendix III  Import Demand in China

Since the inception of the process of opening up to the outside world in the late 1970s, the role of external trade in China's economy has grown dramatically.\textsuperscript{106} China's foreign trade over the past 15 years has been characterized by an emphasis on the promotion of exports to generate foreign exchange, coupled with a relatively restrictive and managed import regime—although, as discussed in Section II, the trade system has been progressively liberalized. Despite this emphasis, however, the average growth rates of exports and imports between 1980 and 1992 were broadly similar—export growth averaged 28 percent, while imports grew at an average rate of 23 percent. The share of total trade in China's GNP, as well as China's share in total world trade, has risen sharply.

Three features are discernible from an examination of the development of China's imports during 1978–92. First, the share of food items declined markedly, as did the share of other primary products. Correspondingly, the share of capital (machinery and transportation equipment) and intermediate goods rose steadily, from 25 percent of total imports in 1980 to nearly 40 percent in 1992 (Chart 14). The share of consumer goods fluctuated, probably associated with the tightening and loosening of import controls, but remained under 5 percent throughout the 1980–92 period.

Second, the role of the import plan has declined steadily throughout the reform period. In the early years, the bulk of China's imports were undertaken in accordance with the trade plan, which was used to ensure adequate supplies of food, raw materials, and intermediate and capital goods. Quantities imported were determined largely through a "gap-filling" exercise, rather than on the basis of relative prices or quality. In the early 1980s, over 80 percent of food and intermediate goods were imported under this plan. By 1991, only one half of food imports and two thirds of intermediate and capital goods imports were covered by the import plan.\textsuperscript{107} However, notwithstanding the reduction in the role of the plan, China's import structure exhibited significant management and control on the part of the authorities. Moreover, the exchange system was used until very recently to control importers' access to foreign exchange and influence the composition of imports.

Third, China's trade flows—especially its imports—have exhibited considerable volatility in connection with the macroeconomic cycles and the concomitant intensification and relaxation of import controls (Chart 15). During upswings in the cycles, imports would rise rapidly, leading to a widening trade deficit and a deterioration in the balance of payments. The subsequent clampdowns on credit, investment, and imports would lead to sharp declines in imports.

The aim of this study is to estimate the long- and short-run determinants of China's imports by applying the cointegration and error-correction approach.

\textsuperscript{106}For a more detailed discussion of China's reforms and the process of integration into the global economy, see Bell, Khor, and Kochhar (1993). For details of China's foreign trade regime and issues in foreign trade reform, see World Bank (1994) and Section II above.

\textsuperscript{107}The mandatory import plan was abolished in 1994 and replaced by a guidance plan.
to time series analysis. In the next part of this appendix, the issues involved in specifying and estimating an import function for China are outlined, and results of diagnostic tests of the data are provided. In succeeding parts, the results of the estimation procedure are discussed, and a summary and conclusions are presented.

Issues in the Specification and Estimation of an Import Function

Model Specification

Traditionally, import demand models have specified imports as functions of relative price and activity variables, such as GNP or industrial production. However, for many developing countries, foreign exchange constraints can be an important factor in the determination of imports. Government policy in the face of foreign exchange shortages can include changes in the exchange rate and the imposition of tariffs or quantitative import restrictions, which affect both the relative price of imports—and more directly—the volume of imports. Thus, it has been argued that a variable such as foreign exchange reserves or foreign exchange earnings should be used as an additional explanatory variable in the import function (Hemphill (1974), Saracoglu and Zaidi (1986), and Moran (1989)).

Hemphill (1974) explicitly specifies a quadratic cost function defining the cost of adjusting actual imports to the long-run desired level of imports, in order to justify the use of a partial adjustment model. His theoretical rationale for including foreign exchange reserves in the import function is that, in general, most developing countries experience an almost persistent excess demand for foreign exchange. Thus, changes in relative prices and activity affect imports only indirectly through changes in foreign exchange earnings. In the presence of quantitative restrictions, import demand can change with no change in relative prices or activity, reflecting instead changes in the restrictiveness of import controls.

Moran (1989) specifies an import model that includes both traditional activity and relative price variables, as well as indicators of import “capacity,” such as foreign exchange reserves. The present study follows Moran’s generalization of Hemphill’s model by including relative prices, activity, and foreign exchange reserves as explanatory variables in the determination of import volumes. The function estimated below can be seen as the import decision rule of the authorities, rather than as a “pure” import demand function. The estimated function takes the following form:

$$\ln(M/P_m) = \alpha_0 + \alpha_1 \ln(Y) + \alpha_2 \ln(P_m/P) + \alpha_3 \ln(FX/P_m) + \epsilon,$$

where $M$ is the value of imports, $P_m$ is the price of imports in domestic currency, $Y$ is an index of real economic activity, $P$ is the domestic price level, and $FX$ is the level of foreign exchange reserves.

Estimation Procedure

The model has been estimated using an approach to cointegration and error correction developed by Engle and Granger (1987) and Johansen (1988). The idea behind the concept of cointegration is that, even though level variables are individually nonstationary, special linear combinations of these variables can be stationary. In these cases, the long-run components of the series cancel each other out to produce a stationary series; these variables are then said to be cointegrated. The cointegration of vari-
variables implies that there is an adjustment process that prevents the deviations from the long-run relationship from becoming larger and larger. This process is referred to as the error-correction mechanism. Johansen (1988) and Johansen and Juselius (1990) have argued that, in a multivariate model, more than one cointegrating relationship may exist. They have developed a maximum likelihood estimation procedure that fully captures the long-run relationships among the variables and provides estimates of all possible cointegrating vectors.\(^{108}\)

Quarterly data from 1981 to 1991 have been used in this study. Data for the value of imports, foreign exchange reserves, and the exchange rate have been obtained from the IMF's International Financial Statistics; the unit value index for imports in U.S. dollars has been calculated by Brender (1992); and data on industrial production and retail prices have been provided by the Chinese authorities.

Before estimation, the data were tested for unit roots, and the pattern of Granger causality between the variables was examined. Unit root tests (Table 18) indicate that import volumes \(m\), foreign exchange reserves \(r\), industrial output \(y\), and relative prices \(p\) are integrated of order 1 \(I(1)\). Chart 16 plots these variables.

The results of the Granger causality tests of the variables in the model are shown in Table 19.

With respect to the implied relationship between imports and foreign exchange reserves, use of the Granger test indicates that the current period change in imports is caused by lagged values of the change in foreign exchange reserves. This would suggest

that changes in foreign exchange reserves triggered the tightening or relaxation of import controls.

The data also suggest that there is a feedback relationship between imports and industrial output. Given the large share of intermediate and capital goods in China's imports and the use of quantitative controls to restrict imports and influence their composition, it is not surprising to find causality flowing from imports to industrial production.

Finally, the data indicate only a weak causal relationship in either direction between relative prices and imports. It is not surprising to find that the Granger test does not show that China's imports "cause" relative prices; the failure of relative prices to cause imports on the basis of that test may be explained by the relatively significant, albeit declining, role of the import plan. It is possible, of course, that there is a statistically significant contemporaneous relationship between relative prices and imports.

### Cointegration Analysis Using Johansen's Approach

#### Estimating the Long-Run Relationship

Johansen (1988) and Johansen and Juselius (1990) have shown how to calculate maximum likelihood estimators for the coefficients of all possible cointegrating vectors.\(^{109}\) They have also presented two likelihood ratio tests of the number of possible cointegrating vectors among the variables of interest. This study uses these to test for the number of cointegrating vectors for imports, industrial output, foreign exchange reserves, and relative prices; it concludes that there exist two cointegrating vectors among these variables. The coefficients of one of these vectors have the expected signs; based on this vector, the long-run elasticity of imports with respect to industrial output is 0.5, while that with respect to relative prices is about \(-0.3\).\(^{110}\) The for-

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\(^{108}\) A brief discussion of the methodology underlying cointegration and error-correction analysis, as well as technical details regarding the diagnostic tests, is contained in Appendix IV in Yuan and Kochhar (1994).

\(^{109}\) A fuller description of the methodology underlying cointegration and error-correction analysis, as well as technical details regarding the diagnostic tests, is contained in Appendix IV in Yuan and Kochhar (1994).

\(^{110}\) A fuller description of the Johansen methodology can be found in Annex II to Yuan and Kochhar (1994). Other examples of studies using Johansen's approach are Coe and Moghadam (1993), and Hall (1989).

\(^{110}\) Brender (1992) estimated import functions using sectorally disaggregated quarterly data from 1981 to 1990 and found higher income elasticities (ranging from 1.22 to 1.47) than in this paper and somewhat higher price elasticities (ranging between \(-0.36\) and \(-0.6\)). He found that, in a sample of commodities that excludes advanced technology machinery and electronic goods, imports depend positively on foreign reserves. Sekiguchi (1990) used annual data from 1960 to 1986 and found an income elasticity of imports of 0.87, with the price elasticity not statistically significant from zero. However, as his sample spans the period before and after the inception in 1978 of market-oriented reforms and opening up to the outside world, a comparison between his results and this study's is not appropriate.
Table 19. Granger Causality Tests

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>LM(3,27)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta r ) does not ( \rightarrow ) ( \Delta m )</td>
<td>3.291</td>
<td>0.04</td>
</tr>
<tr>
<td>( \Delta m ) does not ( \rightarrow ) ( \Delta r )</td>
<td>1.144</td>
<td>0.35</td>
</tr>
<tr>
<td>( \Delta y ) does not ( \rightarrow ) ( \Delta m )</td>
<td>2.809</td>
<td>0.06</td>
</tr>
<tr>
<td>( \Delta m ) does not ( \rightarrow ) ( \Delta y )</td>
<td>4.181</td>
<td>0.01</td>
</tr>
<tr>
<td>( \Delta p ) does not ( \rightarrow ) ( \Delta m )</td>
<td>1.972</td>
<td>0.14</td>
</tr>
<tr>
<td>( \Delta m ) does not ( \rightarrow ) ( \Delta p )</td>
<td>1.234</td>
<td>0.32</td>
</tr>
</tbody>
</table>

1. \( x \rightarrow y \) denotes that, using Granger's methodology, \( x \) causes \( y \).
2. The p-values represent the probabilities of accepting the null hypothesis.
3. Lagrange multiplier test.

The foreign reserve elasticity of imports is estimated to be about 0.3, suggesting that, in the long run, imports depend positively on the level of foreign exchange reserves.

Short-Run Behavior of Imports

This study utilized a general-to-specific model selection technique to get the error-correction model. The unrestricted model was specified as

\[
\Delta m_t = \alpha_0 + \sum_{i=0}^{n} \beta_i \Delta r_{t-i} + \sum_{i=0}^{n} \gamma_i \Delta y_{t-i} \\
+ \sum_{i=0}^{n} \delta_i \Delta p_{t-i} + \phi EC_{t-1} + \epsilon_t,
\]

where \( m_t \) is imports, \( r_t \) is foreign exchange reserves, \( y_t \) is industrial output, and \( p_t \) is relative prices.
where $EC$ denotes the error-correction term based on the cointegration regression using Johansen’s approach. A testing-down procedure is used in which insignificant lags are dropped, and the following parsimonious representation is obtained:

$$
\Delta m_t = \alpha_0 + \alpha_1 \Delta r_t + \alpha_2 \Delta y_t + \alpha_3 \Delta p_t + \alpha_4 EC_{t-1} + \epsilon_t.
$$

The estimation results are reported in Table 20.

The estimated parameters suggest that the short-run behavior of imports is dominated by developments in industrial production. In particular, the short-run elasticity of imports with respect to industrial production is considerably higher than its long-run value. One possible interpretation of this result is that, in the short run, and in the absence of domestically available substitutes, an increase in economic activity tends to lead to a surge in imports, particularly of intermediate and capital goods. The lower long-run elasticity suggests that import substitution may be significant over longer periods of time.

The results also suggest that, contrary to the long-run results, a decline in foreign exchange reserves leads to a rise in imports in the short term. These dynamics can be explained by the fact that the upswing of a cycle usually corresponds to a conscious decision by the authorities to ease access to foreign exchange for imports, reflecting the continued reliance on administrative means to control imports. The significant negative relationship between changes in relative prices and import demand in the short run suggests that, in line with the increasing market orientation of the economy, import demand is quite sensitive to price changes.

**Summary and Conclusions**

This appendix has examined China’s imports as a function of real activity, relative prices, and foreign exchange reserves—the latter as a proxy for the use of quantitative import controls. The diagnostic causality tests suggest that foreign exchange reserves do “Granger cause” imports. Using a cointegration and error-correction methodology, this model separates the underlying long-run from the short-run relationships among the variables. Based on Johansen’s approach and the likelihood ratio tests, one cointegrating vector with the expected signs is found. The results suggest that the output elasticity of imports is considerably smaller in the long run than in the short run, implying that some import substitution has taken place over time in China. They also show that imports depend positively on the level of foreign exchange reserves and negatively on relative prices in both the short and long run. The short-run relationship between imports and foreign exchange reserves is consistent with the import and exchange regimes that prevailed during the period under study, which relied in part on administrative means to limit imports. The results also suggest that relative prices have played an important role in influencing import demand, even in the short run.

**References**


Appendix IV  The Demand for Money in China

The Chinese authorities' decision to accelerate reforms of the banking system and the financial sector, with a view to moving to a system of monetary control through indirect, market-based instruments, will require, inter alia, a thorough re-examination of the demand for various monetary aggregates. This is particularly true as the authorities envisage using monetary aggregates as indicative targets in guiding the conduct of monetary policy. Clearly, for a given monetary aggregate to be of use as an intermediate target in formulating and implementing policy, it is necessary that it be a reasonably stable and predictable function of a small number of key macroeconomic variables. As discussed in Section III, the role of monetary policy and the structure of the financial system in China and, more fundamentally, that of the entire economy, have undergone significant changes since the inception of market-oriented reforms in 1978. These changes suggest a priori that it would be difficult to estimate a stable demand function for money, particularly the broader aggregates, covering the entire period since reforms began.

In this appendix, the demand for three major monetary aggregates in China—currency, narrow money (M1), and broad money (M2)—is estimated. Narrow money comprises currency and demand deposits held by households and enterprises, while broad money consists of narrow money plus households' time and savings deposits. The demand functions have been estimated using quarterly data, first for the entire sample period from 1983 to 1993, and tests have been conducted for structural breaks and predictive failure. These tests indicate that the demand for all the aggregates underwent a structural change in 1988. The introduction of a secondary market in government securities in 1988, as well as other financial innovations in the period after 1988, may account for this finding, as, for the first time, agents had access to financial assets at more market-determined interest rates. Separate demand functions have therefore been estimated for each of the aggregates for the two subperiods, 1983–88 and 1989–93.

The first part of this appendix discusses the behavior of the major monetary aggregates over the sample period in relation to the determinants of money demand. The next two sections briefly outline the estimation procedure and discuss the main results, respectively. The following part presents some possible policy implications. The final sections describe the variables used, the data sources, and the different diagnostic tests that were conducted as part of the estimation procedure.

Behavior of Major Monetary Aggregates

Chart 17 presents the growth rates of currency in circulation, M1, and M2. Note that prior to 1988, the evolution of the aggregates was broadly similar. In 1988 and again in late 1992 and 1993, when inflation accelerated sharply, the growth rate of currency in circulation was significantly higher than that of M1 or M2. This behavior can be explained by the fact that, in periods of high inflation and inflationary expectations, the demand for cash tends to rise rapidly as economic agents first substitute cash holdings for less liquid deposits to position themselves for the purchase of goods and then switch from cash into commodities or other physical assets. More generally, beginning in 1988, the growth rates of the three monetary aggregates are more divergent than in the pre-1988 period.

Chart 18 plots the growth rates of each of the aggregates in real terms against those of different measures of economic activity; it shows that the movements of currency in circulation and retail sales, and those of M1 and industrial production, are closely correlated. Also, real M1 and M2 clearly lead industrial production and real national income,

111 Despite considerable financial innovation in recent years, currency remains the principal medium of exchange in China and a variable to which policymakers still pay attention.

112 In the empirical analysis presented later in this appendix, real retail sales and industrial production are also used as scale variables in the demand functions for currency and M1. As the results are similar to the ones obtained using national income, only the latter are reported here.
respectively. However, the chart does not provide clear evidence of a discernible change in the behavior of real money holdings vis-à-vis the different activity variables before and after 1988.

Chart 19 presents developments in the income velocity of circulation of the aggregates since 1983. There has been a near secular decline (except during the rectification period in 1989–90) in the velocity of circulation of all the aggregates. These trends are consistent with the increasing monetization of the economy that has resulted from the implementation of structural reforms in China.

Chart 20, which plots the growth rates of the monetary aggregates and retail price inflation, shows that in all cases the growth of nominal balances leads inflation; in the case of currency, the lead is short (one quarter) while, for M1 and M2, the lead appears to be between two and four quarters. This finding has important policy implications, in that a useful intermediate target for monetary policy should be able to give advance indication of the behavior of the ultimate targets of policy, which can be observed only with a lag. The chart also suggests that this lead-lag pattern may have changed since 1988.

**Estimation Procedure**

Conventional money demand functions are specified in a partial adjustment framework, in which current real money balances are regressed on lagged real balances, real income, and opportunity cost/rate of return variables as follows:

\[
\left(\frac{M}{P}\right)_{t} = \alpha_{0} + \alpha_{1} \left(\frac{M}{P}\right)_{t-1} + \alpha_{2} \frac{P_{t}}{P_{t-1}} + \alpha_{3} y_{t} + \alpha_{4} r_{1,t} + \alpha_{5} r_{2,t} + \epsilon_{t},
\]

where \( M = \) nominal money balances, 
\( P = \) the general price level, 
\( y = \) real income (or wealth), 
\( r_{1} = \) the “own” rate of return on money, and 
\( r_{2} = \) the rate of return on alternative assets.

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113 This finding is also consistent with that reported in Appendix II.

114 Such a model can be derived from transactions demand, portfolio balance, and “overlapping generations” approaches to money demand (See Laidler (1985), Goldfield and Sichel (1990), Goodfriend (1985), Blanchard and Fischer (1989), and Cuthbertson and Taylor (1987)). Note that this formulation imposes the restriction that money balances are homogenous of degree 1 with respect to prices. Alternatively, nominal balances can be written as functions of prices, real income, and opportunity cost/rate of return variables.
For the narrower aggregates, the "own" rate of return can be expected to be close to zero. However, this may not be the case for broad money; a priori, the coefficient $\alpha_1$ can be expected to be positive. The coefficient $\alpha_4$, if significant, can be expected to be negative.

The model can then be estimated using ordinary least squares (OLS). However, as shown by several authors, OLS estimators are not consistent in the presence of nonstationary time series. Thus, although OLS estimation results may have high values for $R^2$ and significant t-statistics, inferences based on these test statistics may not be correct.

These findings suggest that nonstationarity of the time series should be tested for, and stationarity induced, before performing regression analysis. One way to make the relevant time series stationary is by differencing, usually once or twice, and performing regressions using these differenced variables. A shortcoming of this method, however, is that information about the long-run relationships between these variables is lost, as the expected value of a stationary time series is equal to zero.

As explained in Appendix III, the development of the concept of cointegration (Engle and Granger (1987)) suggested a way to improve on this method. Most economic time series are integrated of order 1 (the shorthand notation is I(1)), that is, their first differences are stationary, or integrated of order 0 (or I(0)). It has also been shown that there is a way to link integrated processes and a long-run steady-state equilibrium. The idea behind the concept of cointegration is that, even though level variables are individually I(1), that is, dominated by their long-run components, certain linear combinations of these I(1) variables can be I(0); in these circumstances, the long-run components of the series cancel each other out to produce a stationary time series. Such variables are then said to be cointegrated, and the vectors of coefficients of the linear combinations are called the cointegrating vectors. Under these conditions, an adjustment process is at work—the error-correction mechanism—that pre-
vents the deviations from the long-run relationship from increasing in magnitude.

The Granger Representation Theorem demonstrates that any set of cointegrated time series has an error-correction representation, which reflects the short-run adjustment mechanism. The Engle-Granger two-step error-correction model used in this study provides a way to separate the long- and the short-run properties of the data. In the first step, as suggested by theory, the relationship between the time series is estimated by using level variables and OLS. If the estimation yields a stationary residual series, a cointegrating relationship exists between these variables, and the regression yields an estimate of the cointegrating vector.\(^{115}\) The reformulation of the model in first differences produces a term representing the extent of the "error" in each time period in achieving the long-run equilibrium. Thus, in the second step, the short-run adjustment or error-correction mechanism can be estimated.

### Model Specification and Results

#### Model Specification

The general form of the long-run equations estimated in this appendix is given by

\[
(M/P)_t = \beta_0 + \beta_1 y_t + \beta_2 \pi_t + \epsilon_t, \tag{1}
\]

where \(M\) = nominal balances of the relevant aggregate,

\(P\) = the general retail price index,

\(y\) = real national income,\(^{116}\) and

\(\pi\) = quarterly inflation rate, as measured by the retail price index.

The long-run elasticity and semielasticity of real money balances with respect to real income and the opportunity cost variable are given by \(\beta_1\) and \(\beta_2\), respectively.\(^ {117}\)

The general form of the second stage error-correction equation is given by

\[
\Delta(M/P)_t = \alpha_0 + \sum_{i=0}^{n} \beta_i \Delta y_{t-i} + \sum_{i=0}^{n} \gamma_i \Delta \pi_{t-i} + \delta EC_{t-1} + \omega_t, \tag{2}
\]

where \(EC\) = residuals from the long-run regression.

The short-run dynamics are described by an equation whose exact specification is chosen on the basis of a general-to-specific testing-down procedure, in which insignificant lags are dropped until the most satisfactory and parsimonious representation is found.

Testing for stationarity and the order of integration of the relevant variables is done by means of unit root tests (described in detail below). The tests show that the variables are all nonstationary in level terms, but that they are integrated of order 1, or stationary, in first differences.

#### Summary of Main Results

There is evidence of a structural break in the late 1980s in the behavior of the demand for real balances of monetary aggregates. Some of the estimated dynamic equations—particularly those for narrow money—pass various specification tests, while others, particularly those for broad money, appear to be relatively poorly specified. This latter result is not surprising: with the rapid changes in the financial system, the holdings of broad money should undergo significant change both in terms of the long-run equilibrium relationship and the short-run dynamic behavior.\(^ {118}\)

For both subperiods, the long-run elasticities of all real monetary balances with respect to real income are greater than 1. Also, the behavior of each real monetary balance with respect to real income has remained relatively stable over the two subperiods. These balances are highly sensitive to the inflation rate, which has been used as an opportunity

\(^{115}\)The Engle-Granger approach used in this study has the advantage of transparency in obtaining and interpreting the results. However, its drawback is that the estimated cointegrating vector may not be unique. In general, in an \(n\)-variate model, there exist \((n-1)\) possible cointegrating vectors; therefore, the cointegrating vector estimated using the Engle-Granger methodology is not necessarily unique and may be a linear combination of the true cointegrating vectors. Johansen (1988) and Johansen and Juselius (1990) have developed a maximum likelihood procedure that allows the researcher to test for the number of cointegrating vectors that exist and to estimate separately the coefficients of the different vectors. If there is more than one possible cointegrating vector, the choice between the vectors is generally made on the basis of prior theoretical assumptions about the signs and/or the magnitude of the coefficients. In this paper, the Johansen procedure is used only to test for the number of cointegrating vectors. The actual values of the vector are estimated by using the Engle-Granger procedure.

\(^{116}\)See below for the method used to construct this variable.

\(^{117}\)For some of the equations, the most satisfactory first-step equation took the following form:

\[
(M/P)_t = \beta_0 + \beta_1 y_t + \beta_2 \beta_3 (M/P)_{t-1} + \epsilon_t.
\]

In these cases, the long-run elasticities with respect to scale and opportunity cost variables are given by \(\beta_1/(1-\beta_2)\) and \(\beta_3/[(1-\beta_2)(1-\beta_3)]\), respectively.

\(^{118}\)Many of the key series used in the empirical analysis are constructed by using strong assumptions. The results should therefore be viewed with an additional measure of caution, as they may be strongly influenced by the idiosyncrasies of the data and the methodology underlying their construction.
APPENDIX IV

cost variable in the estimated equations;\(^1\) in most cases, the degree of this sensitivity declined in the second subperiod.

With respect to the behavior of currency and narrow money holdings, the evidence from the second subperiod of the sample suggests that an increase in inflationary expectations raises the demand for currency (although inflation and currency holdings are inversely related in the long run). As discussed above, this finding suggests the existence of a "cash-in-advance" constraint, because of which agents must initially increase their currency holdings in order to switch from currency into goods.\(^2\)

The holdings of real M1 and M2 balances have been found to be sensitive to interest rates in the second subperiod of the sample. In particular, an increase in interest rates on short-term deposits appears to reduce the demand for narrow money in the long run. However, the short-run dynamic equation does not reveal that changes in interest rates significantly affect changes in narrow money balances. As for M2, an increase in the own rate of interest is found to lower the demand for real M2 balances both on impact and in the long run. This counterruitive result can arise if interest rates on time deposits, which remain administered, are increased only when the returns on alternative financial assets are increasing at a more rapid rate. To capture this effect, it would be necessary to include, in addition to the own rate of interest, interest rates on alternative financial assets.\(^3\)

Currency in Circulation

Using the two-step procedure described above for the sample period 1983-88, the long-run elasticities of currency demand with respect to real income and the inflation rate have been estimated as 1.9 and \(-1.2\), respectively (Table 21). As discussed above, if the vector of coefficients in equation (1) is a cointegrating vector, the residual series should be \(I(0)\), that is, stationary. Diagnostic tests on the residual series allow the rejection of the null hypothesis that the variables are not cointegrated, suggesting that the long-run demand function is well specified. The most satisfactory dynamic equation for currency demand is given in Table 22. The change in inflation rate lagged one period enters the dynamic equation with a significant negative coefficient, and the error-correction term, which has a statistically significant coefficient, indicates a moderately rapid adjustment of currency balances to their long-run equilibrium levels.

Table 21 also indicates that, for the 1989-93 subperiod, the long-run elasticity and semi-elasticity of currency demand with respect to income and the inflation rate have been estimated as 1.7 and \(-1.0\), respectively. These estimated values are not very different from those for the first subperiod; however, the short-run dynamics, especially with respect to inflation, are quite complex and markedly different from those estimated for the 1983-88 subperiod. In particular, the estimated short-run response of currency demand to an increase in inflation in the previous quarter is complicated: an increase in the current period rate of inflation induces a reduction in real currency holdings. The difference in response to inflationary developments between the two periods may be attributable to the greater options available to households in the later period, in particular the availability of higher-yielding financial assets, combined with the cash-in-advance constraint. This response is particularly evident in 1992-93 when currency holdings rose sharply, owing to shifts by households from deposits whose real returns had become highly negative into stocks and other financial instruments. The size of the error-correction coefficient is comparable to the one estimated for the 1983-88 subperiod.\(^4\)

Narrow Money

The estimated long-run elasticity and semi-elasticity of narrow money with respect to income

\(^{119}\) As argued by Burton and Ha (1990), this finding tends to undermine the argument that a substantial amount of money holdings in China was involuntary. One reason for this could be the introduction of the "two-track" pricing system relatively early in the reform process. Under this system, farmers and enterprises were required to sell products up to the plan amount and enterprises were forced to buy and sell goods at market-related prices. Thus, it was unlikely that money holdings were "involuntary." The results of several studies of repressed inflation or forced savings (Feltenstein and Ha (1991) and Portes and Santorum (1987)) suggest that the magnitude of repressed inflation in China was limited.

\(^{120}\) This is a reflection of the backwardness of the payments system, which continues to rely on cash as a main instrument of transaction.

\(^{121}\) The lack of a sufficiently long time series for interest rates on alternative, longer-term financial assets precludes their inclusion in this analysis.

\(^{122}\) Burton and Ha (1990) found that the long-run elasticities of currency demand with respect to income and the inflation variable were 1.66 and \(-1.01\), respectively—broadly similar to the results obtained in this study. However, the estimated short-run dynamics are considerably different. This partly attributable to Burton and Ha's use of an expected inflation term that is the average of inflation in the current period and inflation lagged one and four periods. The authors noted that this formulation was indicated by the general lag model that they fitted to the inflation process. In contrast, the finding in the present paper is that the stochastic term describing the behavior of inflation (and expectations) is best approximated by an autoregressive process of order 1. This would imply that the expectations for inflation in period \(t+1\), formed at time \(t\), would be equal to actual inflation in period \(t\).
### Table 21. Long-Run Currency Demand

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adjusted $R^2$</th>
<th>SER (In percent)</th>
<th>Durbin-Watson</th>
<th>Test of Cointegration (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$RC_t$ (1983-88)</td>
<td></td>
<td></td>
<td></td>
<td>0.90</td>
<td>5.0</td>
<td>1.98</td>
<td>-3.663 (0.04)</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.88</td>
<td>15.2</td>
<td>0.00</td>
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<tr>
<td>$RN_{t-1}$</td>
<td>1.90</td>
<td>23.2</td>
<td>0.00</td>
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<td></td>
<td></td>
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<tr>
<td>$INFL_t$</td>
<td>-1.23</td>
<td>2.3</td>
<td>0.00</td>
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<td></td>
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<tr>
<td>Long-run income elasticity</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$RC_t$ (1989-93)</td>
<td></td>
<td></td>
<td></td>
<td>0.90</td>
<td>3.0</td>
<td>0.35*</td>
<td>-6.042 (0.00)</td>
</tr>
<tr>
<td>Constant</td>
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<td></td>
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<tr>
<td>$RC_{t-1}$</td>
<td>0.51</td>
<td>1.7</td>
<td>0.06</td>
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<tr>
<td>$RN_{t-1}$</td>
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<td>2.3</td>
<td>0.04</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$INFL_{t-1}$</td>
<td>-0.50</td>
<td>-0.9</td>
<td>0.38</td>
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</tr>
<tr>
<td>Long-run income elasticity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>1.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 $RC = $ real currency holdings; $RNY = $ real national income; and $INFL = $ retail price inflation.  
Probabilities of accepting the null hypotheses for the tests reported.  
3 Durbin's h-statistic with the p-value in parentheses.

### Table 22. Error-Correction Equations—Currency

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adjusted $R^2$</th>
<th>SER (In percent)</th>
<th>Durbin-Watson</th>
<th>J-B3 (p-value)</th>
<th>ARCH4 (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Delta RC_t$ (1983-88)</td>
<td></td>
<td></td>
<td></td>
<td>0.48</td>
<td>3.0</td>
<td>1.96</td>
<td>0.85</td>
<td>0.08</td>
</tr>
<tr>
<td>Constant</td>
<td>0.04</td>
<td>3.4</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta RN_{t-1}$</td>
<td>0.52</td>
<td>2.3</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta INFL_{t-1}$</td>
<td>-0.73</td>
<td>2.1</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$EC_{t-1}$</td>
<td>-0.46</td>
<td>2.7</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta RC_t$ (1989-93)</td>
<td></td>
<td></td>
<td></td>
<td>0.72</td>
<td>2.0</td>
<td>2.02</td>
<td>1.18</td>
<td>0.01</td>
</tr>
<tr>
<td>Constant</td>
<td>0.00</td>
<td>0.4</td>
<td>0.73</td>
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</tr>
<tr>
<td>$\Delta RN_{t-1}$</td>
<td>1.29</td>
<td>5.2</td>
<td>0.00</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>$\Delta INFL_{t-1}$</td>
<td>-0.48</td>
<td>1.1</td>
<td>0.31</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$\Delta RC_{t-1}$</td>
<td>1.00</td>
<td>2.5</td>
<td>0.03</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$EC_{t-1}$</td>
<td>-0.46</td>
<td>3.0</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 $RC = $ real currency holdings; $RNY = $ real national income; and $INFL = $ retail price inflation.  
3 Probabilities of accepting the null hypotheses for the tests reported.  
3 J-B = Jarque-Bera test for normality of residuals.  
4 ARCH = Test for autoregressive conditional heteroskedasticity.
Table 23. Long-Run Narrow Money Demand

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adjusted R²</th>
<th>SER (in percent)</th>
<th>Durbin-Watson</th>
<th>Test of Cointegration (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMₜ₁ (1983-88)</td>
<td></td>
<td></td>
<td></td>
<td>0.96</td>
<td>5.0</td>
<td>1.99</td>
<td>−4.031 (0.02)</td>
</tr>
<tr>
<td>Constant</td>
<td>−4.03</td>
<td>8.0</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RNYₜ₁</td>
<td>1.53</td>
<td>19.1</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLₜ₁</td>
<td>−1.51</td>
<td>3.0</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run income elasticity</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>−1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMₜ₁ (1988-93)</td>
<td></td>
<td></td>
<td></td>
<td>0.09</td>
<td>4.0</td>
<td>2.08</td>
<td>−4.435 (0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>−3.64</td>
<td>6.1</td>
<td>0.00</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>RNYₜ₁</td>
<td>1.48</td>
<td>18.3</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLₜ₁</td>
<td>−0.94</td>
<td>2.5</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRₜ₁</td>
<td>−0.03</td>
<td>4.6</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run income elasticity</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>−0.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to interest rates</td>
<td>−0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1RM = real narrow money holdings; RNY = real national income; INFL = retail price inflation; and IR = real interest rate.
2Probabilities of accepting the null hypotheses for the tests reported.

and inflation in the 1983–88 subperiod are 1.5 and −1.5, respectively (Table 23). The short-run error-correction equation is given in Table 24. The error-correction coefficient is larger than in the case of currency demand, implying that narrow money balances adjust faster to disequilibrium than do currency holdings. However, the diagnostic tests suggest that this equation is relatively poorly specified.

As discussed above, changes in administered interest rates were made more frequently during 1989–93 than in the earlier period. Also, with the increasing availability of a wider range of financial instruments for household and enterprise savings, as well as with the introduction of secondary market trading in government securities, the demand for monetary aggregates can be expected to have been more sensitive to interest rate changes during the later period. For this reason, interest rates on one-year time deposits were included in the estimation of the demand functions for M₁ (and M₂, as discussed below) in the second subperiod.

For the 1989–93 subperiod, the estimated long-run elasticity with respect to income is 1.5—the same as in the earlier sample period—but the semielasticity with respect to inflation is −0.9, compared with −1.5 in the earlier period. Furthermore, the long-run demand for narrow money is found to be sensitive to changes in the interest rate on one-year time deposits.123

As for the short-run dynamics in the second subperiod, the change in income in the current period, i, as well as in the previous period, (i − 1), enters the equation significantly but with opposite signs. In particular, the coefficient for the current period change in income is positive while that for the term ARNYₜ₋₁ is negative, implying that the impact of an increase in income on narrow money demand is smaller when income growth is accelerating. As for the impact of inflation, the current period change in inflation has a negative impact on narrow money demand, while the change in inflation lagged one period has a positive impact. This latter effect probably arises for the same reason as in the case of currency demand. The error-correction term is statistically significant but considerably smaller than in

123The interest rate variable is specified as the annual rate on one-year time deposits. Thus, the estimated coefficient shows the contemporaneous response in real narrow money holdings in a given quarter to a change in the annual percentage rate on time deposits. That is, an increase of 1 percentage point in the annual interest rate on time deposits in a given quarter would lower real M₁ balances by 0.03 percent in that quarter.
the earlier subperiod, implying a less rapid adjustment to disequilibria in narrow money holdings.

**Broad Money**

The long-run elasticities of broad money with respect to income and the inflation variable in the 1983–88 subperiod are estimated to be 1.8 and −2.2, respectively (Table 25). The estimated error-correction equation describing the short-run behavior of broad money holdings indicates that, as in the case of M₁, the error-correction term (Table 26) is quite large and statistically significant, suggesting a relatively rapid adjustment of broad money balances to their long-run equilibrium.

For the subperiod 1989–93, the most satisfactory long-run broad money demand function included the interest rate on time deposits, which can be interpreted as an own rate on broad money balances. The income elasticity of broad money is 1.6, which is similar to that estimated for the earlier subperiod. The estimated semi-elasticity with respect to inflation is −1.5, significantly smaller than that in the earlier subperiod. In addition, the estimated own interest semi-elasticity is negative and statistically significant. This perverse result could arise from the fact that, although interest rates on bank deposits have been adjusted with greater frequency, they remain administered. In such circumstances, it is likely that the adjustments of deposit interest rates have typically occurred when interest rates on alternative financial assets (including those offered by fund-raising schemes outside the financial sector) have been rising by greater margins, and have therefore been insufficient to cause agents to maintain their real holdings of M₂ balances.

The estimated dynamic error-correction equation shows that the short-run response of broad money—unlike that of currency and narrow money—to inflationary developments is unchanged. Another notable feature of the results is that, although the estimated coefficient is very small, an increase in the own rate on broad money tends to lower holdings of broad money, even in the short run. The error-correction term, while having the correct sign, is not statistically significant.

**Possible Policy Implications**

The existence of relatively stable long-run demand functions for the monetary aggregates in the post-1988 period points to the feasibility of monetary targeting. At the same time, however, the difficulty in obtaining well-specified short-run dynamic equations—especially the response of narrow and broad money to changes in interest rates and other factors—remains a challenge. The estimated error-correction term reflects specification errors in both the long- and short-run equations.

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124 This suggests that the differential between the own rate and alternative rates may be a more appropriate variable to be used.

125 As argued in Kremers and Lane (1992), it is possible that finding a relatively low and statistically insignificant error-correction term reflects specification errors in both the long- and short-run equations.
### Table 25. Long-Run Broad Money Demand

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adjusted $R^2$</th>
<th>SER (in percent)</th>
<th>Durbin-Watson</th>
<th>Test of Cointegration (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$RM_2_t$ (1983-88)</td>
<td></td>
<td></td>
<td></td>
<td>0.98</td>
<td>4.0</td>
<td>2.08</td>
<td>-4.661 (0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.51</td>
<td>1.19</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$RNY_t$</td>
<td>1.81</td>
<td>24.6</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$INFL_t$</td>
<td>-2.21</td>
<td>4.8</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run income elasticity</td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>-2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$RM_2_t$ (1989-93)</td>
<td></td>
<td></td>
<td></td>
<td>0.99</td>
<td>4.0</td>
<td>2.05</td>
<td>-4.611 (0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.57</td>
<td>5.7</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$RNY_t$</td>
<td>1.38</td>
<td>18.3</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$INFL_t$</td>
<td>-1.24</td>
<td>5.6</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$IR_t$</td>
<td>-0.05</td>
<td>6.8</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run income elasticity</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to inflation</td>
<td>-1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-run semielasticity with respect to interest rate</td>
<td>-0.05</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

1. $RM_2$ = real broad money holdings; $RNY$ = real national income; $INFL$ = retail price inflation; and $IR$ = real interest rate.
2. Probabilities of accepting the null hypotheses for the tests reported.

### Table 26. Error-Correction Equations—Broad Money

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adjusted $R^2$</th>
<th>SER (in percent)</th>
<th>Durbin-Watson</th>
<th>J-B (p-value)</th>
<th>ARCH (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Delta RM_2_t$ (1983-88)</td>
<td></td>
<td></td>
<td></td>
<td>0.38</td>
<td>4.0</td>
<td>1.96</td>
<td>0.57 (0.75)</td>
<td>0.50 (0.50)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.02</td>
<td>1.3</td>
<td>0.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta RNY_t$</td>
<td>1.04</td>
<td>3.0</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta INFL_t$</td>
<td>-1.23</td>
<td>2.8</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$EC_{t-1}$</td>
<td>-0.78</td>
<td>3.1</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta RM_2_t$ (1989-93)</td>
<td></td>
<td></td>
<td></td>
<td>0.55</td>
<td>2.0</td>
<td>1.95</td>
<td>0.77 (0.68)</td>
<td>0.13 (0.72)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.04</td>
<td>4.4</td>
<td>0.00</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta RNY_t$</td>
<td>0.23</td>
<td>0.9</td>
<td>0.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta INFL_t$</td>
<td>-1.19</td>
<td>2.1</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta IR_t$</td>
<td>-0.02</td>
<td>2.7</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$EC_{t-1}$</td>
<td>-0.22</td>
<td>-0.9</td>
<td>0.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. $RM_2$ = real broad money balances; $RNY$ = real national income; $INFL$ = retail price inflation; and $IR$ = real interest rates.
2. Probabilities of accepting the null hypotheses for the tests reported.
4. ARCH = Test for autoregressive conditional heteroskedasticity.
opportunity cost variables—suggests that these aggregates will have to be monitored closely, particularly as interest rates become increasingly flexible and market determined. It would also be advisable for the authorities to continue to monitor credit developments closely.

Another issue that needs to be clarified with respect to the move to monetary targeting is the controllability of the monetary aggregates, that is, the relationship between operating instruments and monetary aggregates. The Chinese authorities have expressed the intention to use excess reserves of the banking system as the operating instrument to regulate the growth of their intermediate targets, namely, the monetary aggregates. However, given the wide-ranging implementation of institutional reforms in the financial sector, it would be prudent for the authorities to watch closely the relationship of excess reserves to the intermediate targets and to supplement excess reserves with other variables, including PBC credit to banks and foreign exchange reserves, as operating instruments.

* * *

Notes on Data Sources and Definitions

The sample covers the period 1983-93. All data are quarterly and have been seasonally adjusted prior to estimation. Data on currency, narrow money, and broad money have been provided by the authorities and deflated by the retail price index. In that connection, it should be noted that the Chinese authorities publish only an annual retail price index; for higher frequencies, all published data are in the form of percentage changes over the previous 12-month period. A monthly price index has been constructed by assuming that the price levels increased smoothly during the base year of 1980, so that the implied average inflation during those 12 months was the same as the actual average annual inflation, as measured by the published price index. The rest of the price index has been constructed by applying the published 12-month percentage changes to the levels established for 1980. The implied annual average percentage changes have then been calculated and compared with the published annual price index as a way of verifying the interpolation procedure. 126

Also, the authorities do not publish monthly or quarterly data on GNP or any other broad measure of economic activity. In this appendix, the methodology described in Burton and Ha (1990) has been followed to construct a quarterly series for national income. Annual national income data in nominal terms have been divided into three components: (1) agriculture; (2) industry, construction, and transportation; and (3) commerce. These components have then been converted into real terms by using the corresponding annual sectoral deflators. Next, quarterly data have been interpolated for each of these components on the basis of the seasonal pattern for the corresponding year in related variables for which quarterly data are available. For the agriculture component of national income, quarterly real rural household incomes have been used to interpolate the quarterly series. For industry, transportation, and construction, the variable used has been quarterly real industrial production, while commerce has been interpolated on the basis of quarterly real retail sales. The interpolated quarterly components of real national income have then been added together to obtain a quarterly real national income series. Again, the implied annual average percentage changes have been calculated and compared with the annual percentage changes as reported by the authorities as a check.

Finally, given that interest rates were changed only infrequently prior to 1988, inflation—as measured by movements in the retail price index—has been used as a proxy for the rate of return. Opportunity cost of holding money balances in the 1983-88 subperiod. For the period after 1988, the equations for M1 and M2 have been estimated with the difference between the interest rate on one-year time deposits and the inflation rate as the relevant opportunity cost/rate of return variable.

All variables, except for inflation and interest rates, are expressed in logarithms.

Explanation of Diagnostic Tests

In this analysis, a standard Chow test—an F-test for parameter stability over the two specified subperiods—has been used to test for structural breaks. The null hypothesis is that the coefficient estimates in the two subperiods are the same. Predictive failure tests or out-of-sample prediction tests have also been conducted to determine whether a new observation lies inside the confidence interval for the forecast.

The order of integration of the variables used in this analysis has been tested by means of unit root tests. Generally speaking, these involve testing the null hypothesis that \( \alpha = 1 \) (or that the process \( y \) has a unit root) in the following regression:

\[
y_t = \alpha y_{t-1} + \epsilon_t.
\]

By subtracting \( y_{t-1} \) from both sides of the equa-

---

126 Burton and Ha (1990) constructed an index based in 1982, but the implied annual average percentage changes are considerably different from those provided by the authorities.
tion, it can be rewritten as

$$\Delta y_t = (\alpha - 1)y_{t-1} + \epsilon_t.$$  

In theory, the null hypothesis of the presence of a unit root could be tested by using the t-statistic for the estimated coefficient of $y_{t-1}$. In practice, however, two problems arise with this general procedure. First, under the null hypothesis that the process has a unit root, the t-statistic does not have a standard t-distribution and is not asymptotically normally distributed. Thus, specially calculated critical values are required. Second, these specially calculated critical values depend on the specific form of the I(1) or nonstationary process that $y_t$ is under the null hypothesis. In particular, the values would differ if the process were a pure random walk or a random walk with drift. To take account of these possibilities, a slightly modified version of the above regression has been run to test for unit roots. This test is referred to as the augmented Dickey-Fuller (ADF) test and is based on the following equation, which includes a time trend:

$$\Delta y_t = \alpha_0 + \alpha_1 t + \lambda y_{t-1} + \epsilon_t.$$  

The null hypothesis is that $\lambda = 0$ or that the process $y_t$ has a unit root. Table 27 presents results of the ADF tests for the variables of interest in this model in levels and first differences. As noted above, the results show that the null hypothesis that the variables are nonstationary cannot be rejected at the 1 percent significance level. The tests performed on the first differences show that the variables are all I(1).

In addition to these tests, a variety of tests have been employed to check the properties of the dynamic error-correction equations. In the case of all reported test statistics, the p-values shown represent the probability of accepting the null hypothesis.

Serial correlation of the residuals has been tested for by using the Durbin-Watson statistic or, in the presence of a lagged dependent variable, the Durbin's h-statistic. The null hypothesis for both tests is that there is no first-order serial correlation in the error term.

The Jarque-Bera test for normality of the residuals is a Lagrange multiplier test for excessive skewness and kurtosis of the residuals relative to a normal distribution; it is distributed as $x^2(2)$.

A test for first-order autoregressive conditional heteroskedasticity (ARCH) of the residuals was conducted. Autoregressive conditional heteroskedasticity arises when the variance of the error terms follows an autoregressive process; in a regression of the type $y_t = \beta x_t + \epsilon_t$, the variance of $\epsilon_t$ is given by $\alpha_0 + \alpha_1 \epsilon_{t-1}^2$. The ARCH statistic tests the null hypothesis that $\alpha_1$ is equal to zero and is distributed as $x^2(1)$.

### References


### Table 27. Unit Root Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>(k,n) ADF(k,n)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrow money (RM1)</td>
<td>41,1</td>
<td>-1.252</td>
</tr>
<tr>
<td>Broad money (RM2)</td>
<td>41,1</td>
<td>-1.766</td>
</tr>
<tr>
<td>Currency (RC)</td>
<td>41,1</td>
<td>-1.716</td>
</tr>
<tr>
<td>National income (RNY)</td>
<td>41,1</td>
<td>-1.953</td>
</tr>
<tr>
<td>Retail prices (RP)</td>
<td>41,1</td>
<td>-2.389</td>
</tr>
<tr>
<td>Retail sales (RS)</td>
<td>41,1</td>
<td>-2.269</td>
</tr>
<tr>
<td>Industrial production (IP)</td>
<td>41,1</td>
<td>-1.900</td>
</tr>
<tr>
<td>$\Delta$RM1</td>
<td>41,1</td>
<td>-4.665</td>
</tr>
<tr>
<td>$\Delta$RM2</td>
<td>41,1</td>
<td>-4.747</td>
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<td>$\Delta$RC</td>
<td>41,1</td>
<td>-4.608</td>
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<td>$\Delta$RNY</td>
<td>41,1</td>
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<td>$\Delta$RP</td>
<td>41,1</td>
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<td>$\Delta$RS</td>
<td>41,1</td>
<td>-7.373</td>
</tr>
<tr>
<td>$\Delta$IP</td>
<td>41,1</td>
<td>-7.587</td>
</tr>
</tbody>
</table>


Appendix V  Summary of New Tax System

Enterprise Income Tax

**Liability:** SOEs, collective enterprises, private enterprises, joint-ownership enterprises, joint-stock enterprises, and any other organizations (except foreign investment enterprises and foreign enterprises) that derive income from production and business operations and other income defined by law, including income from sources both within and outside China, are subject to the enterprise income tax.

**Coverage:** Income from production and business operations, the transfer of property, interest (except from government bonds), leasing, royalties and license fees, dividends, and other income (including foreign exchange gains) are subject to the enterprise income tax.

**Tax rates:**

<table>
<thead>
<tr>
<th>Taxable Income (Yuan per year)</th>
<th>Tax Rate (In percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 100,000</td>
<td>33</td>
</tr>
<tr>
<td>30,000–100,000</td>
<td>27</td>
</tr>
<tr>
<td>Below 30,000</td>
<td>18</td>
</tr>
</tbody>
</table>

**Tax base:** Taxable income = business income — business expenses.

**Deductible business expenses:** Costs, expenses, and losses incurred by the taxpayer in earning income, including direct and indirect costs of production, sale of goods, or rendering of services; administrative, financial, and sales expenses; indirect taxes (consumption tax, business tax, urban maintenance and development tax, resource tax, real estate value-added tax, and education surcharge); and business, investment, and other losses.

Depreciation of fixed assets and amortization of intangible assets;

Interest expenses on borrowings from financial institutions during the course of production and business operations;

Salaries and wages paid to employees based on the amount of "tax salaries and wages" as determined by the governments of provinces, autonomous regions, and directly administered municipalities;

Employees' union expenses, employees' welfare costs, and employees' educational expenses, which are deductible at 2 percent, 14 percent, and 1.5 percent, respectively, of the amount of tax salaries and wages;

Donations for community benefits and charitable donations, which are deductible for up to 3 percent of the taxable income in a year;

Income tax paid to foreign tax authorities in respect of the income derived from sources outside China up to the amount of income tax payable under the provisions of Chinese tax law; and

Other costs, expenses, and losses (including business-related entertainment expenses, government-mandated pension and unemployment insurance premiums, property and transportation insurance premiums, fees on the lease of fixed assets, and foreign exchange losses) incurred by the taxpayers determined by laws, executive regulations, and relevant tax rules promulgated by the state.

**Nondeductible expenses:** Capital expenditure on the purchase and construction of, and investment in, other enterprises; expenditure on the license or development of intangible property; the portion of losses due to natural disasters or accidents for which insurance compensation is received; losses from fines for illegal business activities, and tax payment fines and penalties; donations in excess of deductible amounts; expenditure on all nonadvertising sponsoring fees; and expenditure not related to income-earning purposes.

**Tax treatment of assets:** Fixed assets include buildings, structures, machinery, equipment, transportation equipment, and tools and appliances used for the purpose of production and business operations with a useful life of more than one year.

Intangible assets include patents, trademarks, copyrights, land use rights, proprietary rights, goodwill, and so on.

Articles that are not major items of equipment,
cost less than Y 2,000, or have a useful life of under two years can be expensed currently.

Fixed assets are valued according to the original purchase value (including freight and installation costs and taxes); special provisions apply to fixed assets that are not purchased (self-built assets, leased assets, gifts, and so on).

Intangible assets are valued on the basis of the actual cost of acquisition.

Fixed and intangible assets are depreciated according to the straight-line method; in certain circumstances the tax authorities may allow accelerated depreciation.

Minimum useful life is 20 years for buildings and structures; 10 years for trains, ships, machinery, and other production equipment; and 5 years for electronic equipment, transportation equipment other than trains and ships, and appliances, tools, and furniture relating to production and business activities.

Inventories of finished and semifinished goods, raw materials, and so on are priced at cost. The actual cost may be calculated according to one of the following methods: “first in, first out”; moving average; weighted average; or “last in, first out.”

*Preferential tax treatment:* Tax reductions or exemptions are available for a specified period for enterprises operating in minority autonomous regions, subject to approval of the provincial governments.

Tax reductions or exemptions may also be granted for a specified period to certain enterprises under laws, regulations, and other provisions of the State Council.

*Payment of tax:* Enterprise income tax is levied on an annual basis and paid in monthly (or quarterly) installments 15 days after the end of the month (or 45 days after the end of the quarter); the final settlement has to be made 45 days after the end of the year. Enterprise income tax is payable to the local tax authority where the enterprise is located, except when provided otherwise. Income taxes payable by financial and insurance enterprises are governed by the relevant regulations.

### Personal Income Tax

*Liability:* Individuals who have residence in China or have stayed in China for more than one year are liable for individual income tax on income earned in China and the income earned outside China that is derived from sources within the territory of China. Nonresidents who live in China for less than a year must pay income tax on incomes earned within China.

### Coverage and tax rates:

<table>
<thead>
<tr>
<th>Taxable Income</th>
<th>Tax Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income from wages and salaries</td>
<td>Schedule A</td>
</tr>
<tr>
<td>Income derived from production and business operations by individual households</td>
<td>Schedule B</td>
</tr>
<tr>
<td>Income derived from contracting or leasing operations by enterprises or institutions</td>
<td>Schedule B</td>
</tr>
<tr>
<td>Other individual income</td>
<td>20 percent</td>
</tr>
<tr>
<td>Remuneration for personal services</td>
<td></td>
</tr>
<tr>
<td>Remuneration to authors</td>
<td></td>
</tr>
<tr>
<td>Royalties, interest income, and dividends</td>
<td></td>
</tr>
<tr>
<td>Income from lease of property</td>
<td></td>
</tr>
<tr>
<td>Income from transfer of property</td>
<td></td>
</tr>
<tr>
<td>Income from lotteries</td>
<td></td>
</tr>
<tr>
<td>Other kinds of income specified by the State Council</td>
<td></td>
</tr>
</tbody>
</table>

**Schedule A (wages and salaries)**

<table>
<thead>
<tr>
<th>Monthly taxable income (in renminbi)</th>
<th>Tax rate (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 500</td>
<td>5</td>
</tr>
<tr>
<td>501-2,000</td>
<td>10</td>
</tr>
<tr>
<td>2,001-5,000</td>
<td>15</td>
</tr>
<tr>
<td>5,001-20,000</td>
<td>20</td>
</tr>
<tr>
<td>20,001-40,000</td>
<td>25</td>
</tr>
<tr>
<td>40,001-60,000</td>
<td>30</td>
</tr>
<tr>
<td>60,001-80,000</td>
<td>35</td>
</tr>
<tr>
<td>80,001-100,000</td>
<td>40</td>
</tr>
<tr>
<td>Over 100,000</td>
<td>45</td>
</tr>
</tbody>
</table>

**Schedule B (production and business income of individual households; leasing and contracting income of enterprises)**

<table>
<thead>
<tr>
<th>Monthly taxable income (in renminbi)</th>
<th>Tax rate (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5,000</td>
<td>5</td>
</tr>
<tr>
<td>5,001-10,000</td>
<td>10</td>
</tr>
<tr>
<td>10,001-30,000</td>
<td>15</td>
</tr>
<tr>
<td>30,001-50,000</td>
<td>20</td>
</tr>
<tr>
<td>Over 50,000</td>
<td>35</td>
</tr>
</tbody>
</table>

**Tax base:** Taxable income = gross taxable income – deductions.

*Deductions:* With respect to income from wages and salaries, Y 800 a month is the standard personal allowance for Chinese residents, and Y 4,000 a month for foreign residents.

For production and business income, costs and expenses incurred in earning income and losses incurred during production and business operations are deductible.

For income from contracting or leasing operations, the standard personal allowance applies.

For income from remuneration to authors, 30 percent of the taxable amount plus the standard personal allowance is deductible if the monthly income does not exceed Y 4,000.

For income from remuneration for personal services, royalties, and the leasing of property, the standard personal allowance is deductible if the monthly income does not exceed Y 4,000; 20 per-
cent of the taxable amount is deductible if the monthly income exceeds Y 4,000.

For income from the transfer of property, the original value or the property and reasonable expenses is deductible.

Part of the donations made to educational and other public establishments can be deducted.

Individual income tax paid to foreign tax authorities by taxpayers who derive income outside the territory of China is deductible, provided that the amount of such tax is not greater than the tax payable under Chinese law.

No deduction is allowed for income from interest, dividends, and extraordinary dividends.

Payment of tax: Wages and salaries are taxed on a monthly basis; payment must be made by the withholding agent, or the taxpayer must submit the tax returns within the first seven days of the following month.

Income from production and business operations by individual households is computed on an annual basis and paid in advance in monthly installments by withholding agents within the first seven days of the following month; final settlement must be made within the first three months from the end of the tax year.

Tax payable by enterprises and institutions on income from contracting or leasing operations is computed on an annual basis and must be paid within 30 days after the end of the tax year.

Tax payable on income derived from sources outside China must be paid within 30 days after the end of the tax year.

All categories of income must be computed in renminbi. Income in foreign currency is taxed on the equivalent amount converted into renminbi, according to the exchange rate quoted by the SAEC.

Tax returns for payment and withholding of individual income tax are standardized.

Value-Added Tax (VAT)

Liability: All enterprises, institutions, or individuals that sell goods or provide processing, repair, and replacement services in China or import goods into China are subject to the VAT. Enterprises, institutions, or individuals with monthly sales volumes below the threshold level (Y 600–2,000 for selling goods; Y 200–800 for providing taxable labor services) are exempt.

Coverage and tax rates:

<table>
<thead>
<tr>
<th>Taxable Items</th>
<th>VAT Rates (In percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports</td>
<td>0</td>
</tr>
<tr>
<td>Other goods</td>
<td></td>
</tr>
</tbody>
</table>

Grains and vegetable oil for human consumption 13
Tap water, heating, air conditioning, hot water, gases used for heating, and charcoal 13
Books, newspapers, and magazines 13
Animal feeds, fertilizer, pesticide, agricultural machinery, and plastic materials for agricultural use 13
Other goods specified by the State Council 13
All goods that are sold or imported by taxpayers other than those listed in the above categories or those goods listed below under "exemptions" 17
Processing, repair, and maintenance services 17

Tax base: The sales or purchase value of taxable goods and services is the tax base.

Calculation method: Tax payable = Output VAT of the period – Input VAT of the same period, where output VAT is the tax collected by a seller from a buyer and input VAT is the tax payable by a buyer of goods and services. Sales values must be calculated in renminbi.

Input VAT is nondeductible on the following items: purchases of fixed assets; purchases of goods or services that are used in nontaxable activities, exempt from the VAT, or used for collective welfare or personal consumption; purchases of goods that are lost in abnormal circumstances (including natural disasters, theft, and mismanagement); or purchases of goods or services that are lost (other than in the ordinary process of production).

Small-scale businesses are permitted to adopt a simplified method of calculation for the VAT. Under this arrangement, no input VAT is deducted, but goods and services supplied by such businesses are subject to a flat rate of 6 percent. Taxpayers engaged in production activities are defined as "small-scale" if their annual sales volumes are less than Y 1 million; the same definition applies to taxpayers engaged in wholesale and retail trade with annual sales volumes of less than Y 1.8 million.

The purchasers of agricultural goods have to pay the VAT, but they can claim a credit for the purchase; the amount of the VAT is deemed to be 10 percent of the purchase price. 130

129 Most taxpayers are both buyers and sellers of taxable goods and services. When a firm purchases goods subject to the VAT, it pays the purchase price plus the VAT to the seller. When the same company sells goods, it receives the sales price plus the VAT. Only the difference between the VAT on the sales price (output VAT) and the VAT on the purchase price (input VAT) is turned over to tax authorities. Where the amount of input VAT during a period exceeds the amount of output VAT, the excess is carried forward and credited against the output VAT of the following accounting period.

130 The rationale for this practice is to compensate farmers for the VAT that they pay on their inputs without forcing them to register for the VAT or issue an invoice.
Exemptions: Agricultural goods produced and sold directly by farmers; contraceptive medicines and instruments; antique books; imported equipment and instruments that are used directly for scientific research, experiments, and education; imported equipment and instruments that are gifts from foreign governments and international organizations; equipment imported for the purposes of processing foreign goods, assembling foreign goods, and for compensation trade; goods imported by organizations for the disabled; and used goods are exempt from the VAT.

Payment of tax: Accounting and collection of the VAT are carried out through a system of invoices. Each seller of goods or services is required to provide a VAT invoice to each buyer for each sale; the amount of the VAT deductible is the amount shown on such invoices.

The VAT is collected by the NTS, except in the case of the VAT on imports, which is collected by customs authorities.

Payment periods for the VAT are 1, 3, 5, 10, or 15 days, or 1 month, depending on the amount of tax payable. Payment of the tax is due within 5-10 days following the end of the payment period.

Consumption Tax

Liability: The consumption tax is an excise tax, based on the previous product tax, that applies to all enterprises, institutions, and individuals that manufacture, subcontract for processing within China, or import into China certain types of consumer goods (see list below).

Coverage and tax rates:

<table>
<thead>
<tr>
<th>Taxable Items</th>
<th>Tax Rates (In percent or yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes, cigars, and tobacco</td>
<td>30-45</td>
</tr>
<tr>
<td>Alcoholic beverages and alcohol</td>
<td></td>
</tr>
<tr>
<td>Spirits</td>
<td>15-25</td>
</tr>
<tr>
<td>Yellow rice wine (tonne)</td>
<td>Y 240</td>
</tr>
<tr>
<td>Beer (tonne)</td>
<td>Y 220</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>5</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>30</td>
</tr>
<tr>
<td>Skin and hair care products</td>
<td>17</td>
</tr>
<tr>
<td>Jewelry made of pearls, gold, silver, or gemstones</td>
<td>10</td>
</tr>
<tr>
<td>Firecrackers and fireworks</td>
<td>15</td>
</tr>
<tr>
<td>Petroleum (liter)</td>
<td>Y 0.2</td>
</tr>
<tr>
<td>Diesel fuel (liter)</td>
<td>Y 0.1</td>
</tr>
<tr>
<td>Motorcycles</td>
<td>10</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td></td>
</tr>
<tr>
<td>Automobiles</td>
<td>3-8</td>
</tr>
<tr>
<td>Four-wheel drive vehicles</td>
<td>3-5</td>
</tr>
<tr>
<td>Minivans</td>
<td>3-5</td>
</tr>
</tbody>
</table>

Tax base: The tax is based on the sales price (for goods subject to ad valorem rates) or sales quantity (for goods subject to specific rates). Sales values must be expressed in renminbi.

For goods manufactured for a taxpayer’s own use, goods manufactured by subcontractors, or imported goods, the tax base is given by the “composite tax calculation price,” which is equivalent to the “full price” (cost and profit, cost of materials and subcontracting fees, or landed price plus customs duty, respectively) divided by (1 — the consumption tax rate).

Exemptions: Exports and goods manufactured for continuous production of other taxable consumer goods are exempt.

Payment of tax: Consumption tax is paid by the taxpayer to the tax authorities or, in the case of imports, to the customs authorities. Taxes are payable every 1, 3, 5, 10, or 15 days, or 1 month, or on the basis of transactions, depending on taxable amounts. Payment of the tax is due within 5-10 days following the end of the payment period.

Business Tax

Liability: The business tax is a turnover tax that applies to all enterprises, institutions, or individuals that provide certain types of services (see list below), assign intangible assets, or sell immovable property within China. Only enterprises with turnover greater than a threshold specified by the Ministry of Finance are liable for business tax.

Coverage and tax rates:

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Taxable Services</th>
<th>Tax Rate (In percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications and transportation</td>
<td>Transportation by land, sea, air, and pipeline; loading; unloading and haulage</td>
<td>3</td>
</tr>
<tr>
<td>Construction</td>
<td>Construction, installation repairs, decorating, and other construction work</td>
<td>3</td>
</tr>
<tr>
<td>Banking and insurance</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Postal and telecommunication services</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Culture and sports</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Singing halls, dance halls, karaoke parlors, music teahouses, poolrooms, golf courses, bowling alleys, and recreation halls</td>
<td>5-20</td>
</tr>
<tr>
<td>Services</td>
<td>Factorage, hotels, restaurants, travel agencies, warehousing, leasing.</td>
<td></td>
</tr>
</tbody>
</table>
### Coverage and tax rates (concluded)

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Taxable Services</th>
<th>Tax Rate (In percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer of intangible property</td>
<td>Transfer of land use rights, patents, unpatented technology, trademarks, copyrights, and goodwill</td>
<td>5</td>
</tr>
<tr>
<td>Real estate sales</td>
<td>Sales of buildings and other structures on land</td>
<td>5</td>
</tr>
</tbody>
</table>

**Tax base:** Total business turnover must be expressed in renminbi.

**Deductible expenses:** For travel agencies and transportation companies, the amounts paid for foreign portion of passenger or cargo transportation are deductible; for construction companies, the amounts paid to contractors or subcontractors are deductible; for banks and insurance companies, interest cost of borrowing funds is deductible; and for foreign exchange, securities, and futures traders, acquisition costs of financial assets are deductible.

**Exemptions:** Services provided by nurseries, kindergartens, old-age homes, matchmakers, and funeral arrangers; labor services provided by the handicapped; medical, educational, and agricultural-training services; and certain cultural and religious services are exempt.

**Payment of tax:** Business tax must be paid by the taxpayer (or the withholding agent) to the tax authorities where the taxable service is provided or, in the case of transportation companies and the transfer of intangible property, where the taxpayer's establishment is located.

Taxes have to be declared every 5, 10, or 15 days, every month, or on the basis of transactions, depending on the volume of turnover. Payment is due within 5–10 days following the end of the payment period.
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