

4

Quadrupling the Chinese economy again: constraints and policy options

Justin Yifu Lin

Since reforms started at the end of 1978, China has become the most dynamic economy in the world. Between 1978 and 2004, China's GDP growth rate averaged 9.4 per cent per annum and the international trade growth rate 24.6 per cent (National Bureau of Statistics of China 2005). In 2004, China's per capita GDP reached 10,561 yuan and is targeted to quadruple between 2000 and 2020 (National Bureau of Statistics of China 2005). To reach this target, the annual average GDP growth rate needs to be kept at more than 7.2 per cent for 20 years.

From an engineer's point of view, the long-term growth of an economy depends on the increase of inputs, especially capital, the relocation of inputs from the low value-added sectors to high value-added sectors, and technological innovation. Among these, technological innovation is the key. Without a continuous stream of technological innovation, high levels of investment leads to diminishing returns to capital, depressing the incentives to save and obstructing the accumulation of capital (Schultz 1964).

There are two methods for technological innovation: invention and technological borrowing. While the main source of technological innovation for industrial countries is invention, developing countries could borrow new technologies from industrial countries in addition to inventing technologies themselves, as there is a technological gap between industrial and developing countries. Developing countries could potentially benefit from this gap by borrowing technology from industrial countries by way of licensing, imitating and so on, and achieve a higher rate of technological innovation than that of industrial countries. In fact, a reliance on

technological borrowing is one of the main reasons why China has been able to maintain dynamic growth during the past two decades (Hayami 1997). The contrasting growth performance in China before and after the reforms in 1978 also supports the idea that technological borrowing is an engine of growth in low-income countries (Lin et al. 1994).

Potentially, developing countries can achieve dynamic economic growth by borrowing technology from industrial countries and can substantially narrow the income gap or even catch up with industrial countries. Only a small number of economies in East Asia have, however, narrowed the gap and converged to the level of per capita income in industrial countries. Whether or not a developing country can benefit from the technological gap and realise the convergence of income depends on the relationship between the developing country's development strategy and its endowment structure (Lin 2003). The failure of most developing countries to converge with industrial countries in terms of economic performance can be explained largely by their governments' inappropriate development strategies, that is, the comparative advantage defying (CAD) strategy, which attempts to encourage firms that ignore the comparative advantages of their industry or technology (Lin 2003).

For the newly industrialised economies in Asia, and recently China, the success of these economies in converging with industrial countries in terms of economic performance can be explained largely by their governments' appropriate development strategies, that is, the comparative advantage following (CAF) strategy. Such a strategy attempts to facilitate a firm's choice of industry or technology according to the economy's comparative advantage (Lin 2003a). When the government in a developing country chooses a CAF strategy, the economic growth rate can be much greater than that in an industrial country to utilise large potential gains from trade (Lin et al. 2006), leading to convergence.

In spite of rapid growth in the past two decades, China is still a developing country and there is a gap to close before it becomes an industrial country. Limited per capita inputs (resources) and the incomplete transition from a centrally planned economy introduce many constraints on China in reaching the targeted quadrupling of the economy between 2000 and 2020, including institutional weakness and potential macroeconomic instability. There are 12 issues that be associated with potential barriers to China quadrupling GDP by 2020: energy and land resources; education; capital; technological progress; an inefficient financial (banking) sector; market segmentation and local protection; sustainability of export growth; income distribution; employment; corruption; economic fluctuations; and state-owned

enterprises. This chapter analyses these 12 issues in turn, and provides suggestions and policy options for overcoming these constraints.

Energy and land resources

China's oil production continued to rise between 1990 and 2003: 31 million tonnes more oil were produced in 2003 than in 1990 (Table 4.1). If this momentum were maintained, oil production in China would reach 188 and 213 million tonnes in 2010 and 2020, respectively. For China to quadruple its GDP by 2020, there must, however, be a rapid expansion of industries such as car manufacturing, civil aviation and shipping. Therefore, demand for oil in China is bound to grow dramatically in the future, out of all proportion to the largest conceivable expansion of oil production.

In 2003, China overtook Japan to become the world's second largest importer of oil after the United States. Conservatively estimated, this oil demand will reach

Table 4.1 **Oil production and consumption in China, 1990–2020** (million tonnes)

	Production (million tonnes)	Consumption (million tonnes)
1990	138.3	110.3
1991	141.0	117.9
1992	142.0	1,290.0
1993	144.0	140.5
1994	146.1	149.5
1995	149.0	160.7
1996	158.5	174.4
1997	160.1	185.6
1998	160.2	190.3
1999	160.2	207.2
2000	162.6	230.1
2001	164.8	232.2
2002	166.9	246.9
2003	169.3	275.2
2010	188.0	345.5
2020	212.8	466.6

Note: Oil production in 2010 and 2020 are projected values, derived from a linear regression on the basis of the data for 1990–2003. The total amount of oil production from 2003 to 2020 is estimated to be 3.28 billion tonnes, slightly above total oil reserves.

Source: BP, 2004. *Statistical Review of World Energy*. Available from <http://www.bp.com/statisticalreview2004>.

345.5 and 466.6 million tonnes in 2010 and 2020 respectively, with a gap in oil supply of 157.5 and 253.8 million tonnes respectively. Thus, oil security will be an important issue in China's attempts to achieve its quadrupling target.

There are several responsible strategies for resolving the oil-supply issue and supporting sustainable development: importing oil through various channels; greatly expanding collaborative ties in petroleum exploitation with countries from Africa, Southeast Asia and eastern Europe; actively developing new energy forms such as nuclear, wind and solar energy; gradually loosening controls on energy prices and resorting to the market for energy distribution; promoting corporations and enterprises to enhance energy efficiency through market mechanisms, in conjunction with favourable energy policies.

China, with its population of more than 1.2 billion, has per capita natural resource endowments that are well below the world average. Official statistics show that China has a land area of 96 billion hectares, making it the third largest country in the world. The land area per capita, however, is only 0.1 hectare, much lower than the world average. Based on the projections by Chinese and overseas scholars for China's future grain demand, 99.6 and 112 million hectares of arable land would be needed in 2010 and 2020 respectively for China to supply food for itself. The lowest estimate (5 per cent of the total grain supply imported) is that in 2020, to meet its grain demand, there will be a gap in arable land supply of up to 10.1 million hectares. The most conservative official estimate published (10 per cent of total grain supply imported) indicates that this gap in arable land supply will be 4.7 million hectares in 2020.

As discussed by Chen (this volume, Chapter 12), as China's agriculture is integrated more deeply into the world economy, there will be a powerful tendency for China to specialise more in production of labour-intensive and in imports of land-intensive agricultural products. However, the amount of grain and other land-intensive agricultural products that it is efficient for China to import will be less the more efficient is Chinese production.

China should accelerate technological upgrading for food production, enhance the variety, quality and economic benefits of agricultural products, push forward innovations in the promotion of agricultural technologies and the trade systems of agricultural products, promote further international cooperation in agriculture and related fields, and introduce more advanced agricultural techniques and new breeds. China should also aim to establish an excellent mechanism for the planning and management of land use, and remove such planning and approval from local control. To avoid inefficiency, China's central government should take control of the approval of land planning and use.

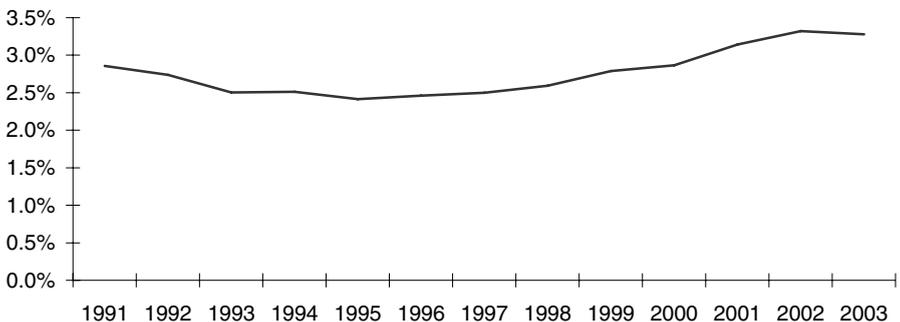
Education

The overall situation of educational development in China is satisfactory. There is still, however, a discrepancy between China and mid-level industrial countries, and current educational development cannot fully meet the needs of economic development in the era of diversification into more technologically efficient processes and products. Remaining problems and difficulties include the low overall educational levels and the comparatively high rates of illiteracy and semi-illiteracy among the whole population.

By 2000, Chinese 25 years or older had received an average of 5.48 years of education, in contrast with 7.33 years in the Philippines and 6.42 in Jordan. The percentage of Chinese 25 years old or older who had received higher education was only one-tenth that of the figures for Jordan and the Philippines. In the meantime, the rate of return on human capital investment in China is highly profitable (Heckman 2002; Zhang et al. 2005).¹ In addition, there are still large discrepancies between education levels in rural and urban areas.

If China successfully quadruples its economy between 2000 and 2020, the per capita GDP in 2020 is expected to catch up with that of Greece in 2000, namely US\$16,501 (calculated by the purchasing power parity [PPP] method). Therefore, we can use the education level of Greece in 2000 as a benchmark for China's education level in 2020. To enhance the education level of Chinese in 2020 to

Figure 4.1 **Changes in government appropriation for education, 1991–2003** (per cent of GDP)



Source: National Bureau of Statistics of China, 2005a. *China Statistical Yearbook 2005*, China Statistics Press, Beijing.

close to that of Greece in 2000, the mean years of education for Chinese will have to increase by approximately 60 per cent in the coming decade. The percentage of people with higher education experiences is expected to undergo a sixfold rise accordingly. This will be an enormous challenge for China.

To implement the strategy of reinvigorating the country through science and education, the central government has been intensifying support for education since the 1990s. As illustrated in Figure 4.1, the ratio of annual fiscal educational outlay to GDP has been increasing, from 2.4 per cent in 1995 to 3.3 per cent in 2002. This ratio is, however, overshadowed by a mean level of 4 per cent for all developing countries—far behind that of industrial countries, whose ratios range from 5–6 per cent. Hence, under-funding of the education system is an important reason for the overall low mean education attainment of Chinese residents.

The central government must further intensify its support for education, accelerate the universality of compulsory education, especially in rural and less-developed areas in the midwest of China, construct a multi-channel funding system for education, vigorously develop higher education to meet the needs of national integrated innovation capabilities and of future industrial structure upgrading, and promote vocational education to increase the total supply of skilled workers.

Capital

To quadruple the Chinese economy between 2000 and 2020 successfully, the annual average GDP growth rate needs to be kept at more than 7.2 per cent for 20 years. According to the Solow decomposition, in order to realise this growth rate, China's annual average capital accumulation growth rate must be 8.1 per cent, supposing that the annual average growth rate of total factor productivity (TFP) is 4 per cent, the annual average growth rate of labour supply is 1 per cent and the annual average capital share is 31 per cent. Furthermore, if we take the rise of investment prices into account, the annual average increase in the capital stock must be at least 13 per cent. There are, however, some challenges in achieving this growth rate in capital.

First, the potential for further increases in the saving rate in China is limited. Since 1992, China's average saving rate has reached a high of 41.3 per cent, lower only than that of Singapore, but far more than that of Japan and other East Asian economies since the 1980s. Some scholars might argue that the Chinese economy corresponds with that of the 'small dragons' (Korea, Taiwan, Singapore and Hong Kong) between 1961 and 1980, and that, as the small dragons all experienced a rise in the saving rate after 1980 (Table 4.2), China will also witness

Table 4.2 **The saving rate of Japan and the ‘small dragons’, 1961–81 and 1982–2002**

	Saving rate during 1961–81 (per cent)	Saving rate during 1982–2002 (per cent)
Japan	35.1	30.7
Hong Kong	27.7	32.9
Taiwan	-	30.0
Korea	16.9	33.4
Singapore	15.1	45.6

Sources: Data for Japan, Hong Kong, Korea and Singapore from the World Bank’s *World Development Indicators*; data for Taiwan from the Asian Development Bank.

a rise in its saving rate in the future. This argument might be true, but it is very difficult for China to make further sustainable increases in its saving rate because the current rate has surpassed the peak of the saving rates of all East Asian countries other than Singapore.

Second, the potential for an increase in foreign direct investment (FDI) is also limited. Although FDI flowing into China during 1992–2003 grew at the high rate of 31.2 per cent on average, this has slowed to 7.5 per cent since 2000. As a result, the ratio of FDI to capital formation in China has declined from 12.2 per cent in 1992–2003 to 9.9 per cent in 2000–03. Obviously, the growth of FDI in China is on a downward trend. In fact, the wave of increased FDI, mainly between 1992 and 1997, was simply a temporary burst resulting from deregulation policy in China, and had no dynamics to sustain it. It would be difficult for China to experience such a golden age in FDI again.

Furthermore, China faces serious inefficiencies in transforming domestic savings into investment. Based on data from the *China Statistical Yearbook* (National Bureau of Statistics of China various years), the domestic saving rate in China was 38.2 per cent between 1978 and 1992, but the capital formation rate was just 32.2 per cent. Since 1992, the domestic savings rate has increased to 41.3 per cent, but the capital formation rate is only 36.2 per cent. There is a gap of 5–6 per cent between the savings rate and the capital formation rate.

In conclusion, owing to the capital supply from domestic savings and because FDI has no potential to increase further, China must spare no effort to enhance its efficiency in investment and make full use of its high savings. Otherwise, investment growth is in danger of slowing down, increasing the difficulty of quadrupling the economy by 2020.

Technological progress

China is at the intermediate stage of industrialisation, and there is a significant lag in equipment and technology levels in traditional industries, meaning that many mature and general technologies from industrial countries could have great applicability in China. Consequently, we should import as many technologies as possible, in association with indispensable independent research and development to fit these technologies to local needs.

The current institutional system in China is, however, far from suitable for borrowing technology to achieve technological innovation. The majority of China's scientific manpower is distributed to national research institutions, which is kept away from industrial circles, and scientific research is out of line with application. Technologies from abroad have gradually become the primary source of technologies in China. The crucial industries that drive rapid economic growth after the reform and open-door policy depend heavily on importing production lines, while other pillar industries, such as the communication and automobile industries, are built by foreign direct investment or joint ventures. A wide gap exists between national research institutions and the manufacturing system. The lack of an enterprise-wide capability to digest and absorb imported technologies has resulted in the development of technology falling into a vicious circle of 'importing lagging behind reimporting'. Besides, some firms still ignore the existing comparative advantage of the economy in their entry/choice of industry/technology. In a situation where domestic enterprises' innovation is lacking and overall international competitiveness in technology is weak, China's economic development would be severely limited. Unless technical innovation can be improved, there will be an inadequate supply of technology to keep up with the accelerated structural adjustment and industrial upgrading.

The Chinese government must, therefore, encourage firms to utilise the existing comparative advantage of the economy in their choice of technology to benefit the technological gap between China and industrial countries. Meanwhile, the Chinese government should accelerate the process of reforming technological institutions; it should establish a multi-channel funding system for technological innovation; improve enterprises' technological innovation and absorption abilities; construct technology centres in large and medium-sized enterprises; speed up the formation of an effective operation mechanism that is favourable to technological innovation and the conversion of scientific achievement; strengthen coordination and cooperation between research institutes and universities; and encourage enterprises to actively increase their investment in technological innovation.

Table 4.3 **Banking structure in China, 1994–2004 (per cent)**

	ICBC	ABC	BOC	CBC	State-owned commercial banks total	Other commercial banks	Foreign banks
Assets							
1994	28.5	13.6	19.9	15.1	77.1	5.2	n.a.
2002	18.8	11.8	11.5	12.2	54.3	17.1	1.1
2003	17.8	11.8	11.0	12.0	52.6	18.6	1.4
2004	17.0	12.0	10.4	11.7	51.1	19.4	1.5
Loans in RMB							
1994	29.9	14.5	8.9	12.5	65.8	4.1	n.a.
2002	21.5	14.2	8.0	12.8	56.4	17.6	0.3
2003	20.0	13.9	8.3	12.7	54.9	19.4	0.3
2004	19.5	14.1	7.8	11.8	53.2	21.5	n.a.
Deposits in RMB							
1994	29.4	17.2	7.3	13.3	72.5	5.4	n.a.
2002	22.6	14.1	8.3	14.6	59.6	20.0	0.1
2003	21.0	13.9	8.6	13.8	57.3	20.7	0.2
2004	19.9	14.2	8.8	13.3	56.1	23.1	0.2

Note: ICBC = Industrial and Commercial Bank of China; ABC = Agricultural Bank of China; BOC = Bank of China; CBC = Construction Bank of China.
Sources: *Almanac of China's Finance and Banking*, 1995, 2003, 2004, 2005.

Inefficient financial (banking) sector

As the previous discussions about capital, land, energy and education show, the resources that can be used to support the Chinese economy to grow further are limited, so improving the efficiency of resource allocation should be the key factor in sustaining rapid economic growth in the future. The financial system will play an extremely important role in this process. The Chinese financial system is, however, dominated by a large but inefficient banking system, which presents a serious challenge for China.

Although financial markets have undoubtedly developed since they were established in the early 1990s, they are very small relative to the banking sector. In 2004, the 'negotiable market capitalisation' on the equity markets was only 6.6 per cent of the total bank loans and 8.5 per cent of GDP (National Bureau of Statistics 2004). In terms of fund flows, the capital raised by listed companies through initial public offerings (IPOs) or state-owned enterprises (SOEs) was only 7.9 per cent of the changes in total loans (a proxy of new loans), while the ratio for corporate bonds issued was even smaller, that is, 1.7 per cent. We can, therefore, safely conclude that the financial system in China is dominated by the banking sector.

The banking sector is further dominated by the 'big four banks', although their dominance has declined since the mid 1990s. As Table 4.3 shows, the big four banks made more than 65 per cent of the total loans made in RMB by the whole banking system in 1994, and this number was still larger than 53 per cent in 2004. The ratio of assets of the big four banks to the total assets of all banking institutions was about 77 per cent in 1994, and 51 per cent in 2004. In terms of deposits, the dominance of the big four banks was even more prominent. The big four obtained more than 72 per cent of all deposits in RMB in 1994, and 56 per cent in 2004. The ratios for assets, loans and deposits of the other commercial banks in 2004 were about 19 per cent, 22 per cent and 23 per cent respectively.

The big four banks have, however, been operating at extremely high costs compared with the shareholding banks and international standards. Profitability is usually measured as returns on average assets (ROA) and returns on average equity (ROE). The ROA and ROE of the big four banks in 2002 were about 0.2 per cent and 3.5 per cent, while for the 10 shareholding banks, the figures were 0.3 per cent and 9.1 per cent respectively (Table 4.4).

The gap between the big four and the shareholding banks in 2003 was narrowed sharply by the reform of the Bank of China (BOC) and the Construction Bank of banks. How the reform and financial support from the central government since

the end of 2003 will improve the performance of the BOC and the CBC needs to be the subject of future research.

Compared with international cases, the inefficiency of the banking system in China is even more worrying (Table 4.5).

The most serious problem facing China's banking system, however, is the huge amount of non-performing loans (NPLs). The ratio of NPLs to total loans for the big four banks combined was 16 per cent in 2004 (even after the reform of the BOC and the CBC), 5 per cent for the 12 shareholding banks and 1.3 per cent for

Table 4.4 **Profitability and non-performing loans of the big four banks and shareholding banks in China, 2002–2004** (per cent)

	ROA			ROE			NPLs		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
ICBC	0.14	0.05	0.04	3.35	1.42	1.39	25.69	21.24	18.99
ABC	0.11	0.06	0.05	2.15	1.40	1.85	36.65	30.66	26.73
BOC	0.34	0.93	0.62	4.31	13.56	10.23	22.50	16.28	5.12
CBC	0.15	0.68	1.30	4.01	15.26	25.40	15.28	9.12	3.92
State-owned commercial									
banks total	0.18	0.38	0.45	3.54	8.29	10.99	21.41	19.74	15.57
Everbright	0.09	0.12	n.a.	2.15	3.31	n.a.	13.12	7.50	-
BC	0.18	0.52	0.09	3.88	17.06	2.60	18.53	12.60	2.91
CITIC Industrial	0.45	0.41	0.07	15.03	11.79	1.74	10.81	7.85	5.96
Huaxia	0.45	0.38	0.37	21.73	13.12	11.15	5.97	4.23	n.a.
Minsheng	0.47	0.46	0.51	15.61	17.77	18.07	2.04	1.29	1.31
Guangdong									
Development	0.15	0.15	0.03	5.58	6.96	1.84	n.a.	n.a.	n.a.
Shenzhen									
Development	0.30	0.24	0.15	11.68	10.41	6.39	10.29	8.49	n.a.
China Merchants	0.54	0.51	0.57	16.56	13.01	16.07	5.99	3.15	2.87
Fujian Industrial	0.30	0.44	0.37	7.81	14.75	12.61	3.47	2.49	2.50
Pudong									
Development	0.57	0.48	0.47	17.10	15.68	15.13	3.38	1.92	n.a.
Hengfeng	n.a.	0.37	0.43	n.a.	5.60	9.11	7.67	4.77	3.49
Subtotal									
including BC	0.32	0.40	0.25	9.07	12.92	8.25	9.50	7.92	4.93
Foreign banks									
in China	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.19	2.87	1.34

Note: ICBC = Industrial and Commercial Bank of China; ABC = Agricultural Bank of China; BOC = Bank of China; CBC = Construction Bank of China; BC = Bank of Communication.

Sources: *Almanac of China's Finance and Banking*, 1995, 2003, 2004, 2005. China Banking Regulatory Commission (<http://www.cbrc.gov.cn>), People's Bank of China (<http://www.pbc.gov.cn>).

Table 4.5 **Profitability and non-performing loans in the banking sector in some Asian countries, 1997–2002** (per cent)

	1997	1998	1999	2000	2001	2002
ROA (ROE)						
Hong Kong	18.7 (1.8)	11.0 (1.0)	18.2 (1.6)	18.8 (1.6)	15.7 (1.4)	15.6 (1.4)
India	17.0 (0.9)	9.7 (0.5)	14.2 (0.7)	10.9 (0.5)	19.2 (0.9)	19.6 (1)
Indonesia	-3.8 (-0.3)	n.a.	n.a.	15.9 (0.3)	9.7 (0.6)	21.1 (1.4)
Japan	-18.6 (-0.6)	-19.2 (-0.7)	2.7 (0.1)	-0.7 (0)	-10.4 (-0.5)	-14.5 (-0.6)
South Korea	-12.5 (-0.6)	-80.4 (-3.0)	-34.0 (-1.5)	-7.0 (-0.3)	15.8 (0.7)	13.1 (0.6)
Taiwan	11.2 (0.9)	9.5 (0.8)	6.9 (0.6)	5.1 (0.4)	4.0 (0.3)	-5.2 (-0.4)
NPLs						
Hong Kong	1.3	4.3	6.3	5.2	4.9	3.7
India	n.a.	7.8	7	6.6	4.6	2.2
Indonesia	0.3	11.8	8.1	13.6	9.9	4.5
Japan	2.7	5.1	5.3	5.8	9.2	7.4
South Korea	2.9	4.8	12.9	8.0	3.4	2.5
Taiwan	2.4	3.0	4.0	5.2	6.2	4.1

Source: Allen, F., Qian, J. and Qian, M., 2006. *China's Financial System: past, present and future*, Working Paper, University of Pennsylvania.

foreign banks in China. At the end of 2005, the total for NPLs was still 1.3 billion yuan—7.2 per cent of GDP for that year and 8.6 per cent of the total outstanding loans, with 10.5 per cent for the big four banks, 4.2 per cent for the 12 shareholding banks and 1 per cent for foreign banks in mainland China. The figure of 8.6 per cent is still much higher than the corresponding number in other Asian countries, except during and immediately after the East Asian financial crisis.

As we look into the immediate future, more and more foreign banking institutions will enter the Chinese market, introducing cheap foreign capital and advanced management technology. The banks that might be affected the most are the big four banks. If the foreign banks attract a large share of deposits due to better service and greater efficiency, and if NPLs in the domestic banking system continue to accumulate, the ratio of NPLs in the big four banks—even in the domestic banking system—might increase again, instead of declining, as is the current trend, and could result in the bankruptcy of individual banks. This could even

spark a crisis in the banking sector that could severely disrupt economic growth and social stability.

To avoid this disastrous possibility, it is necessary for the government to invest capital in the big four and other banks to reduce NPL stock, to help improve the performance of the domestic banking system in the short term. The huge foreign reserves can fund this solution. Such actions can, however, create severe problems of incentives for the banks to accumulate new NPLs. The government must, therefore, commit not to do this again, although it is hardly possible for the government not to bailout banks in financial distress in the future.

Deeper reforms in the financial system are required in the long term. The most important reform is to adjust banking composition by allowing free entry for new regional banks so as to allocate savings more efficiently in the economy. As Lin et al. (2006c) argue, only by improving the allocation efficiency of investments can the financial system reduce its exposure to financial crisis.

One main reason for the huge stock of NPLs in the big four banks is that they have made a dominant part of their loans to large state-owned enterprises (SOEs), but it is the non state-owned businesses that have been the most active part of the economy. Such businesses have mostly followed the comparative advantage of endowments in the Chinese economy and usually have been small or medium-sized firms. As small and medium-sized regional banks have greater comparative advantage than large banks and financial markets to serve such businesses, developing small and medium-sized regional banks to provide more efficient and convenient services to the non-state-owned sector can fundamentally improve the performance of the banking sector and the whole financial system and support economic growth.

Local protection and market segmentation

It is well known that in China's labour, capital and goods markets there is serious segmentation, which distorts price signals and impairs the market mechanism for resource allocation. Since the mid 1980s, China's market segmentation has been characterised mainly as preventing local goods or basic raw materials from flowing into other regions. However, segmentation began to extend into the labour and capital markets as the buyers' market came forth in the mid 1990s.

The segmentation in China's labour is the result of local government motivations to deal with the emerging problems of employment and social stability. The segmentation in China's capital market is rooted in local government ambitions to accelerate regional economic development for its own sake. In the past, when

market segmentation was at its peak, many local governments even discriminated in favour of newly set-up endemic firms against acquired local firms and, at the same time, they took all kinds of action to restrain local firms from investing in other regions.

Now, in order to avoid policy constraints from the central government against local protection and market segmentation, more and more local governments are beginning to implement more implicit measures such as technical barriers and repeated check-ups for their own sake.

Obviously, local protection and market segmentation will handicap the process of trade liberalisation and the integration of markets and will impair the development of society and the economy to a large extent. This will be more damaging as China moves beyond the turning point of economic development at which labour becomes scarce, when, more than ever, continued rapid economic growth requires resources to move to where they are most productive.

To quadruple the Chinese economy between between 2000 and 2020, the Chinese central government must take measures to overcome local protection and market segmentation. These measures include shifting the government's functions into the role of providing mainly public goods and services; restraining the revenue of local governments to match their social obligations; constructing a scientific, normative and quantifiable system of achievement evaluation to assess and regulate local government behaviour; and upgrading infrastructure to enhance the linkages between different economic regions in China.

Sustainability of export growth

From 1980 to 2002, China's total exports rose from US\$18 billion to US\$438 billion (Table 4.6), with an average growth rate of 15 per cent. China's rising exports have put many other countries under tremendous pressure. Since 1996, China has been the leading target of international anti-dumping campaigns. Since China entered the World Trade Organization (WTO) in 2001, there have been 1,800 cases of anti-dumping, 250 of them against China. With 14 per cent of global anti-dumping actions, China ranks first in the world for cases directed against it.

China's comparative advantage will change with the upgrading of its factor endowment and economic growth. There will be an increasing overlap in trade between China and industrial countries because of the structural adjustment of China's export composition has been driven by changes in its comparative advantage. In the next decade, there will be more and more cases of anti-dumping measures against Chinese exports.

Table 4.6 **The structural changes of Chinese export composition, 1998–2004** (US\$ billion and per cent)

	1998	1999	2000	2001	2002	2003	2004
Total exports	183.7	194.9	249.2	266.1	325.6	438.2	593.3
Primary products	20.5	19.9	25.5	26.3	28.5	34.8	40.6
Industrial finished products	163.2	175.0	223.7	239.8	297.1	403.4	552.8
Share of primary products (per cent)	11.2	10.2	10.2	9.9	8.8	7.9	6.8
Share of industrial finished products (per cent)	88.8	89.8	89.8	90.1	91.2	92.1	93.2

Source: National Bureau of Statistics of China, 2005a. *China Statistical Yearbook 2005*, China Statistics Press, Beijing.

Meanwhile, since most developing countries are adjusting their development strategies and will adopt a comparative advantage following (CAF) strategy, international competition in exports of mainly labour-intensive products between China and other developing countries will intensify. As labour becomes more scarce and valuable, China's comparative advantage will shift into more capital-intensive and technologically complex production. China's production and exports will need to shift in that direction if strong export growth is to be sustained. Successful transition of industrial structure will ease competition from other developing economies shifting to export-oriented strategies.

It has been demonstrated that when China's exports increase by 10 per cent, the growth rate of GDP rises by 1 per cent, and the contribution of exports to economic growth is remarkable (Lin and Li 2003). Therefore, it is necessary for China to maintain sustainable export growth in the future in order to quadruple the economy successfully between 2000 and 2020.

China should play a more active role in the international division of labour, requiring the government to adjust its development strategy in accordance with China's comparative advantage. As international competition has become fiercer, there will be an increase in new protectionism obstacles and anti-dumping cases initiated against Chinese exports. The following measures should be taken immediately: the development of new products and the improvement of services that are consistent with the evolution of China's comparative advantage; cultivating new markets abroad; the establishment of joint ventures or branches abroad;

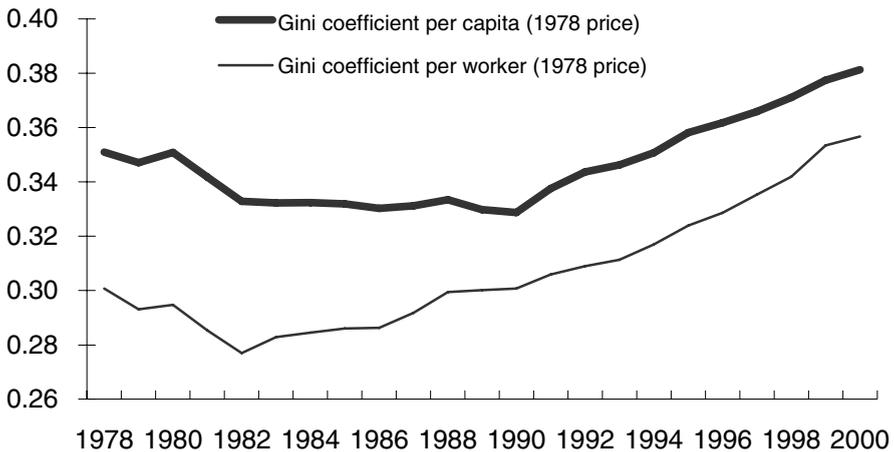
carrying out exchanges and dialogue with industrial-country counterparts; quick responses to anti-dumping cases against China.

Income distribution

Since the mid 1980s, the average income gap between urban and rural areas has increased. China's urban-rural average income ratio reached its highest point of 2.6 in 1994, but began to decrease after 1995; it was 2.2 in 1997, a 38 per cent reduction from 1994 (Figure 4.2). The gap increased again, however, after 1997. In 2000, the ratio of the average income of urban people to that of rural people increased by 25 per cent relative to that in 1997. If we take government subsidies for health care and education received by urban people into account, the urban-rural income gap would be even larger. At the same time, the income differentials among urban residents and regional income disparity are also widening.

The rise in the urban-rural average income gap will hamper human capital investment by rural people, and in turn impair human capital accumulation in China, because most Chinese are rural residents. Human capital accumulation is another engine for economic growth (Lucas 1998). Rapid human capital accumulation is essential for China to maintain sustainable economic growth in

Figure 4.2 Regional income disparity, 1978–2000 (Gini coefficient)



Sources: National Bureau of Statistics of China, various years. *China Statistical Yearbook*, China Statistics Press, Beijing, and produced statistics for all provinces.

the future. China's widening income gap is likely to trigger social instability after 2010 if the government finds no effective solution to end the disparity.

The Chinese government should take effective measures immediately to end the income disparity, including: adjusting development strategies so that more and more people can find a formal job and can share equally the benefits brought by economic development; redistributing income by a fiscal transfer payment system so as to reduce the gap between rich and poor; reforming and improving the tax system, such as by imposing a property estate tax, luxury tax and estate tax; avoiding a regressive tax system; reforming the Household Registration System (the *hukou* system) and treating peasants working in urban areas equally as urban residents.

Employment

Until recently, China has been faced with tremendous employment pressures. Growth in excess of the objective of 7.2 per cent has helped to ease the pressure in recent years.

The maintenance of 7.2 per cent per annum or higher rates of growth increasingly will require a better educated and trained labour force, to support a more sophisticated industrial structure.

Economic development and upgrading of industrial structures require more and more workers with relatively higher levels of educational attainment. Success in this endeavour will help to ensure that the requirements for unskilled workers will provide employment for rural workers with low levels of educational attainment.

China is now facing an imbalance in employment structures, which needs to be corrected.

Corruption

According to Transparency International's *Global Corruption Report 2005*, China is one of the countries suffering relatively severe corruption—and corruption ratings in China are thought to have deteriorated since the early 1980s. There are two kinds of corruption in China: rent-seeking and resource-losing corruption. Rent-seeking corruption was pervasive during the period when a two-track system for price-setting was being initiated.

After most product prices were gradually liberalised, the discrepancy between the prices of means of production set by state plans and the prices of goods set by the market narrowed on a large scale. As a result, this kind of corruption faded away. Considerable amounts of resources (including land, funds and licences) are

still under the control of the government. Currently, most rent-seeking corruption comes from the land market through illegal land licensing, arbitrarily reducing the price of land for private interest, and by changing the purpose of land use to permit significant trading of land on the illegal market. What is worse, a lot of arable land is appropriated by local governments secretly and fraudulently.

Resource-losing corruption involves the private appropriation of state assets. For example, up to the end of 2000, 51 per cent of firms under reform (*gaizhi*) (32,140 firms) did not repay their loans. These unpaid loans, which amounted to 185 billion yuan, which accounted for 32 per cent of all loans to firms and represented as much as 2.1 per cent of that year's GDP. That so many loans were not repaid cannot be attributed only to the low efficiency of state-owned enterprises; there must already have been resource-losing corruption in the reform of state-owned enterprises.

Corruption does not produce any goods and services by itself. It merely redistributes wealth from the public to a few monopolists, acts as a drain on assets owned by the State to some special interest group, or illegally transfers public resources to private use. Corruption might generate the wrong signals for resource allocation and reduce the rate of capital accumulation, thereby undermining economic development. Moreover, too much corruption can lead to social turbulence in the future.

In order to eliminate the scourge of corruption, much effort should be devoted to increasing government transparency, strengthening supervision of the appointment and promotion of officials, and ensuring fair competition among different parties seeking public resources.

Economic fluctuations

In the past two decades, China has experienced rapid growth accompanied by periodic economic fluctuations. In the years of rapid growth, the annual growth rates of GDP reached as high as 13–15 per cent; while during the years of slow-down, the annual growth rates of GDP were only 4 per cent. Since the end of 1978, China has experienced five economic cycles. Each cycle is self-propelling: vigour leads to disorder, disorder leads to retrenchment, retrenchment leads to stagnation, and stagnation leads to decentralisation.

There is no doubt that the international economy has to pay a great deal for cyclical fluctuations in economic growth. It is not unreasonable to fear that one day the national economy might suddenly collapse. Should this happen, China could not realise its goal of quadrupling the economy by 2020. It is worth examining

as an example of the challenges of macroeconomic instability the policy responses to the boom conditions that emerged in 2003.

In 2003, China's growth rate of GDP reached 9.1 per cent, and can be attributed to a surge in investment that focused mainly on three industries: the real estate sector, automobile manufacturing and the construction material industry. The investment growth rate in the real estate sector was 29.7 per cent, in automobile manufacturing 87.2 per cent, and in the construction material industry 96.5 per cent for steel, 92.5 per cent for electrolytic aluminium and 121.9 per cent for cement.

The investment growth rate jumped from 11.8 per cent in 2002 to 26.7 per cent in 2003. The fundamental reason for this rapid investment growth lies in the fast expansion of bank loans. In recent years, the Chinese government decided to list the four big state-owned banks, so that they could meet the challenges from the admission of foreign banks to operate on RMB business. Banks not only needed to increase the statutory capital ratio to 8 per cent, as required by the Basel Agreement, but needed to decrease the bad debt ratio from 23 per cent in early 2003 to 15 per cent in order to be listed. The simplest way to reduce the bad debt ratio is to extend credit so as to enlarge the denominator. As a result, banks were active in lending their money to huge investments such as projects in the real estate sector, automobile manufacturing and the construction material industry.

Had the rapid investment growth in these sectors continued in this economic cycle, the consequences would have been even more severe than in 1992. China's economy went through a heated investment period in 1993–96, leaving behind long-term shortages and signalling a period of over-production. What is worse, because the investment surge in this round is higher than before and focuses mainly on a few industries, there will be greater oversupply and deflation after the completion of these investments. Government tightening of policies after credit expansion will always lead enterprises to incur serious losses, which will turn latent and probable credit risk into real bad debt, thus further enlarging the bad debt ratio. The ever-growing bad debt ratio could not be controlled even if the savings rate in China was maintained at high levels in the future.

The credit expansion and contraction caused by direct governmental control on credit and investment is the unique cause of China's macroeconomic fluctuation. It is therefore urgent for the Chinese government to loosen direct controls on credit and investment to create a sound development environment. This cannot happen without thorough reform of the financial system. The fundamental solutions are to accelerate financial reform, realise market interest rates, commercialise

Table 4.7 **Main indicators of state-owned enterprises during 1997–2004**

Main indicators	1997	1998	1999	2000	2001	2002	2003	2004
Consolidated number of enterprises (10,000 units)	26.2	23.8	21.7	19.1	17.4	15.9	14.6	13.6
Profit-making enterprises (per cent)	34.1	31.3	46.5	49.3	48.8	50.1	47.4	48.0
Return on total assets (per cent)	2.3	2.1	2.7	3.3	3.3	3.6	3.5	4.5
Profit margin on net assets (per cent)	1.7	0.4	2.1	4.9	4.6	5.7	6.7	9.6
Profit margin on sales (per cent)	1.2	0.3	1.7	3.8	3.7	4.4	3.0	6.1
Assets–liabilities ratio (per cent)	67.1	65.5	65.4	66	65	64.8	65.9	65.7
Ratio of unhealthy assets to equity (per cent)	22.6	24.8	27.5	31.4	31.2	31.2	28.5	-

Source: *Finance Yearbook of China*, 2005.

the banking system, and regulate investment, consumption and bank deposits via interest rates to enable efficient enterprises to attract investments.

The main hurdle for financial reform lies in protection of state-owned enterprises, because at present the survival of many such enterprises depends on the support of cheap bank loans. The reform of state-owned enterprises has thus become the key to developing the economy and quitting the traditional economic cycle.

State-owned enterprises

State-owned enterprises play a vital role in China's economy, so reforming them will affect China's long-term growth (Garnaut , Song). Such reform has been far from successful; indeed, more serious problems have begun to emerge, including low profitability, high asset–liability ratios, increasing losses of the state-owned enterprises, and the drain of state-owned assets.

By the end of 2004, 136,000 or nearly half of all state-owned enterprises were making a loss (Table 4.7). In the eight years to 2004, the average return to total assets of the state-owned enterprises was only 3.2 per cent, far below the interest rate for the same period, 5 per cent. At the same time, the assets–liability ratio rose continuously from 30 per cent in 1980, to 40 per cent in 1985, 60 per cent in 1990 and recently to more than 65 per cent, on average.

If we take into account the ratio of non-performing assets to equity, which remained at a high of nearly 30 per cent recently, China's state-owned enterprises are in danger of insolvency. Meanwhile, the loss of state-owned assets has become more serious. According to the report of the National Audit Office of China in 2000, the total losses of state-owned assets were up to 22.08 billion yuan in 1,290 state-owned enterprises, 3.4 per cent of the total assets of these enterprises.

The root cause for the various problems in the state-owned enterprises is policy burdens resulting from China's CAD strategy in favour of heavy industries. These burdens can be divided into strategic policy burdens and social policy burdens. The former refers to the high production costs of the state-owned enterprises resulting from implementation of the government's development strategy for entry into heavy industries or the capital-intensive sector. State-owned enterprises following that strategy will enter or invest in the industries and production sectors that are not in accordance with the comparative advantages of China's economy, resulting in the enterprises in these sectors being non-viable.

Social policy burdens are the additional social functions assumed by the state-owned enterprises, such as worker redundancies and providing schooling, medical services and pensions to employees. State-owned enterprises can use policy burdens as an excuse to bargain for more government support and, because it is hard for the government to shun such responsibility, the firm's budget constraints become soft (Lin and Tan 1999).

Moreover, when a developing country adopts a catch-up strategy, the government cannot know how large subsidies need to be due to information asymmetry. Firms in the priority sector will have incentives to use their viability problem as an excuse and use resources to lobby government officials not only for more *ex ante* policy favours, such as access to low-interest loans, tax reductions, tariff protection and legal monopolies, but for *ex post* administrative assistance, such as more preferential loans or tax arrears. The economy will be full of rent-seeking activities and corruption. When soft budget constraints exist, firms will face no pressure to improve productivity and efficiency will be low.

In essence, the problems undermining China's long-term growth—including energy and land resources, education, capital, technological progress, the inefficient financial (banking) sector, market segmentation and local protection, sustainability of export growth, income distribution, employment, corruption and economic fluctuations—all originated from the problems in the state-owned enterprises. Therefore, substantial reform of these enterprises is essential for Chinese economic growth and development in the future.

Since the root causes for various problems with the state-owned enterprises are policy burdens, which resulted from China's CAD strategy, it is natural to conclude that the prerequisite for successful state-owned enterprise reform and for China successfully quadrupling its economy between 2000 and 2020 is to cancel the CAD strategy and release the state-owned enterprises from policy burdens.

Conclusions

This chapter's discussion of the problems that could block sustained, rapid economic growth suggest that there are solutions. If further reform succeeds in correcting the largest weaknesses, of state-owned businesses and of financial institutions including banks, the government's ambition of at least 7.2 per cent will be easily met. Indeed, in these circumstances, China would look forward to doing better than quadrupling of GDP in 20 years. At the beginning of the reforms, Deng Xiaopeng expressed that China would quadruple the volume of its economic output between 1980 and 2000. In the event, the quadrupling was achieved three to four years ahead of time. With active measures to remove barriers to growth under each of the 12 headings listed above, there is every reason to expect, again, China to achieve its objective well ahead of time.

Acknowledgments

I am grateful for the helpful comments of Ross Garnaut and Ligang Song and the capable assistance of Zhang Pengfei, Pan Shiyuan, Xu Zhaoyang, Sun Xifang, Li Feiyue and Ren Min.

Note

¹ The high profits from human capital investment might have some bearing on the low education levels.