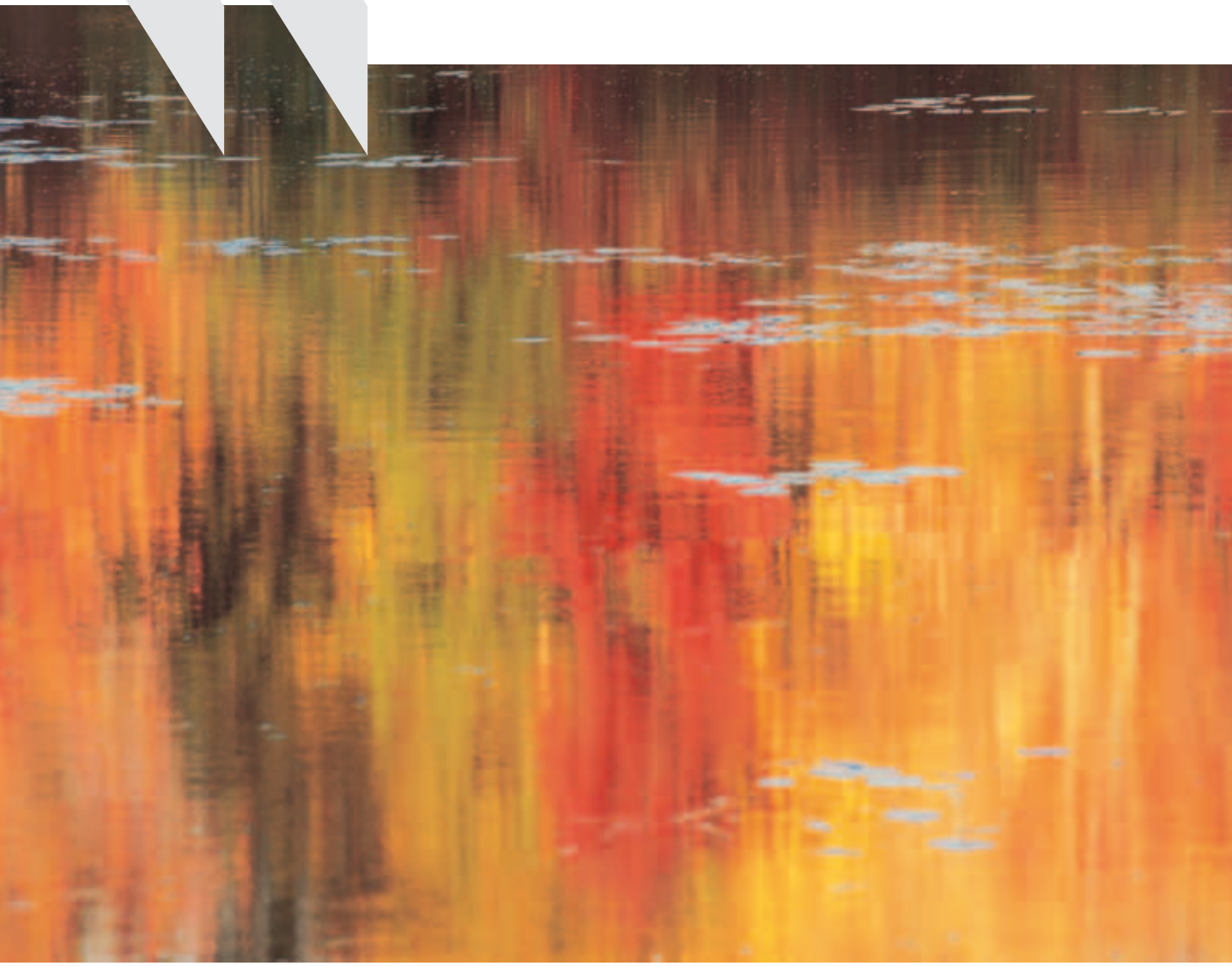
OECD Economic Surveys

CHINA



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BASIC STATISTICS OF CHINA

THE LAND

Area (thousand sq. km)		9 598
Agricultural area, 2005 (thousand sq. km)		1 433
Forests, 2005 (thousand sq. km)		1 973

THE PEOPLE

Population, 2008 (million)			1 328
Annual rate of change of population, 2008			0.51
Per sq. km, 2008			138
Major cities, 2007 (million, non-agricultural and total inhabitants):		Shanghai	12.0
		Beijing	9.3
		Chongqing	8.8
		Guangzhou	6.9
		Chengdu	6.0
		Tianjin	5.8
Civilian labour force, 2008 (million)			792
Civilian employment, 2008 (million)	Total		775
Distribution by sector, 2008 (%)	Agriculture, forestry, fishing		39.6
	Manufacturing, mining, utilities and construction		27.2
	Services		33.2

PRODUCTION

GDP (2008, billion CNY)		30 067
GDP per head (2008, USD)		3 260
GDP per head (2008, USD PPP)		5 962
Origin of GDP, 2008 (per cent of total):	Agriculture, forestry, fishing	11.3
	Manufacturing, mining, utilities and construction	48.6
	Services	40.1
Gross fixed capital formation (2008, billion CNY)		12 621
Per cent of GDP		42
Per head (USD)		1 368

THE GOVERNMENT

Government final consumption (2008, per cent of GDP)	13.5
Government expenditure – Central, local and social insurance (2008, per cent of GDP)	26.1
Government revenue – Central, local and social insurance (2008, per cent of GDP)	27.2

FOREIGN TRADE

Exports of goods and services (2008, per cent of GDP)	32.9
Main exports (per cent of total exports of goods):	
Telecommunications equipment	12.5
Computers	11.2
Electrical machinery and semiconductors	10.7
Clothing	8.4
Imports of goods and services (2008, per cent of GDP)	26.1
Main imports (per cent of total imports of goods):	
Electrical machinery and semiconductors	19.1
Petroleum and petroleum products	14.3
Iron and steel	8.8
Professional instruments	5.8

THE CURRENCY

Monetary unit: CNY	Currency unit per USD, average of daily figures:	
	2007	7.6
	2008	6.9
	Dec. 09	6.8

Executive summary

Since the OECD's first Economic Survey of China *in 2005, China has continued to expand rapidly. The economy is also weathering the global crisis remarkably well, not least thanks to prompt and vigorous macroeconomic policy action. Economic expansion is projected to continue over the medium run, and China's share in the world economy is set to grow further. Despite the recent decline in the current account surplus, some imbalances remain, notably an overly high national saving rate, but ongoing reforms can be expected to help alleviate them over time. Structural reform has continued on a broad front in recent years, with an increasing focus on the need for social cohesion. Even so, efforts are under way or still needed in a number of areas to sustain improvements in living standards over the longer run.*

Further upgrading the monetary policy framework. *China's monetary policy framework has gradually become more market-based, with money growth as the main intermediate target. Going forward, it will need to place less emphasis on quantity-based liquidity controls and more on interest rate changes. Allowing greater exchange rate flexibility and putting more weight on an inflation objective would offer greater scope to tailor monetary policy to domestic macroeconomic conditions.*

Continuing financial market opening. *Chinese financial institutions are now generally stronger and better regulated than a few years ago and the financial system is gradually opening up. However, further reforms are in order, including raising the ceilings on foreign investment in this sector, expanding the corporate bond market, creating a formal deposit insurance system for commercial banks and strengthening supervisory capacity. Moreover, continued vigilance is called for to avoid a build-up of loans that may underperform.*

Lowering product market barriers. *Competition is now robust in many sectors but product market barriers remain high overall, which may hold back growth over the longer run. Competition and productivity gains can be boosted by loosening the traditional ties between state-owned enterprises and central authorities, reducing administrative burdens, allowing greater private sector involvement in network sectors and lowering barriers to foreign direct investment in services.*

Unifying social safety nets. *Ambitious reforms have been launched in the social sphere in recent years and tangible progress has already been achieved, in particular with respect to education and to the coverage of the social safety net, albeit with the exception of unofficial migrants. Further progress will require overcoming the enduring fragmentation of the welfare assistance, pension and health systems, accompanied by greater fiscal solidarity across the country.*

Facilitating labour mobility. *The labour market is resilient but segmented. The registration system and the attendant restrictions on migrants' access to social services impede labour mobility and ought to be gradually relaxed.*

Consolidating pension regimes. *Providing sufficient replacement rates to pensioners will require shifting more of the cost of pensions, notably those in the rural areas, to the central government and raising retirement ages.*

Pushing ahead with health care reform. *Progressing towards universal, safe, affordable and effective basic health care will require that primary care play a greater role, hospitals be managed more efficiently, changes in some relative prices, better trained staff and ultimately merging the different insurance systems.*

Assessment and recommendations

China has weathered the global crisis remarkably well and its importance in the world economy is set to grow further

Since the OECD's first *Economic Survey of China* in 2005, China's economy has continued to expand rapidly, driven to a large extent by the development of the private sector. Exports were hit hard by the global crisis and activity slowed down sharply over the course of 2008. However, prompt and vigorous policy actions, as well as swift adjustment in the labour market, helped growth pick up by the second quarter of 2009, putting China in the lead of the global recovery. Going forward, China's importance in the world economy is set to increase further, as are living standards within the country. In fact, China already has the world's second-largest economy in purchasing power parity terms, and is expected to shortly achieve the same rank at market exchange rates. It already has the world's second-largest manufacturing sector and is the world's largest exporter of goods. Growth will likely continue to be driven largely by investment and a trend shift out of low-productivity agriculture, as the urbanisation rate, which is approaching 50%, continues to rise. While the size of the labour force is not projected to increase much, education levels have soared since the early 1980s, which will support future productivity growth.

Macroeconomic policy has helped limit the extent of the slowdown

In the face of the dramatic slump in exports in late 2008, both monetary and fiscal policy levers were used in China, even more forcefully than in many OECD countries. On the monetary side, policy interest rates were cut in steps, as were required reserve ratios. Meanwhile, the gradual appreciation of the renminbi *vis-à-vis* the dollar in motion since mid-2005 was put on hold, making for a sizeable effective exchange rate depreciation. Furthermore, a number of restraints on lending, put in place when the economy was overheating, were relaxed. On the fiscal side, low public debt and a high budget surplus facilitated the introduction of a massive stimulus package. Precisely quantifying the total additional fiscal impulse is difficult as some outlays and tax reductions were already programmed, but its scale clearly dwarfed fiscal responses in many OECD countries, both in absolute and relative terms. A major portion of the stimulus is in the form of extra outlays on transport, energy and other network infrastructure, where needs remain conspicuous. Some new spending is also directed at social programmes, notably in health care, and, to some extent, at environmental protection, areas that are key to ensure sustainable growth. The central government is slated to fund only part of the stimulus

measures, with local governments, banks and state-owned enterprises financing the rest. Against this backdrop, credit soared during the first half of 2009. An important concern is that the resources thus invested generate sufficient returns down the road.

Imbalances remain but are being addressed

Saving and investment have long been very high in China. In recent years, both household and government net saving have increased further, leading to a widening current account surplus, which reached double digits as a share of GDP in 2007. During the global slowdown, imports held up better than exports, not least thanks to the injection of macroeconomic stimulus. As a result, the current account surplus is projected to shrink to around 5½ of GDP by 2010 and economic growth is set to rebound back to double digits. At the same time, government saving is projected to fall, which is a welcome change. In fact, in recent years, the scale of general government budget surpluses has not been fully appreciated by most observers, not least because the social security system is not integrated into the national budget. More generally, the quality and relevance of public finance data would be improved by publishing aggregate financial data for all urban development infrastructure companies and by greater transparency in the use of funds from land use-right sales (which amounted to over 5% of GDP in 2007). Households' saving might also ease back gradually as the coverage and replacement rates of the broadly defined social safety net increase and weaken the precautionary motive. The deepening of household credit markets and population ageing might possibly work in the same direction. Other imbalances and tensions remain, such as the continued existence of inefficient capacity in some sectors of heavy industry, and severe environmental strains. On both scores, the government has recently made policy announcements, in particular regarding its intention to encourage more efficient energy use. Moving closer to market-based pricing could help create the right incentives in this area.

Higher levels of social spending need to be sustained

Looking ahead at the exit from the ongoing fiscal stimulus programmes, it will be important not revert to budget surpluses. China had an enviably strong fiscal position on the eve of the global economic crisis, and this will still be the case by 2010-11, even with higher levels of public spending. To support the social reforms launched or needed in areas such as education, welfare assistance, pensions and health, the composition of government outlays will need to continue to shift towards greater investment in human capital and social transfers, with more redistribution across the country. Greater public spending on education in particular can help both to boost productivity and to reduce inequality.

Further modernisation of the monetary policy framework is warranted

China's monetary policy framework has gradually moved away from a planned administrative system to a more market-based regime, with money growth as the main intermediate target. As part of this transition, some interest rates have been liberalised,

making them more responsive to market signals, and the tools of monetary policy have been modernised. The central bank now has considerable control over short-term interest rates in the interbank market and more influence over longer-term rates through the term structure. Going forward, the central bank's operational framework needs to place less emphasis on quantity-based liquidity controls and more on interest rate changes. Its benchmark commercial bank lending and deposit rates are losing relevance in the conduct of monetary policy and ought to be progressively phased out. The banking sector has also undergone significant reform and the economy has become far more responsive to market-based policy measures: investment at the firm level is more sensitive to interest rate movements and changes in aggregate demand pressures exert a stronger influence on inflation. Hence, the transmission mechanism has become more effective in China and monetary policy can play a greater role in fostering stability. However, the current exchange rate regime limits the effectiveness of this channel by preventing the value of the currency from adjusting to offset macro shocks. Allowing greater exchange rate flexibility and putting more weight on an inflation objective – while keeping a vigilant eye on asset prices – would offer the central bank more scope to tailor monetary policy to domestic macroeconomic conditions and reduce the costs and risks of sterilising foreign reserve inflows. Besides, real exchange rate appreciation is to be expected in any event over the medium run in an economy that is catching up rapidly.

Banking and financial market reforms need to continue

Considerable headway has been made in implementing key financial reforms, including those reviewed in the previous *Economic Survey*. This has been facilitated by the vigorous economic expansion and, together with a limited exposure to toxic overseas assets, has enabled Chinese banks to weather the global slowdown well so far. The recent surge in lending, however, carries the risk of imprudent borrowing by local authority infrastructure companies and of a resurgence in non-performing loans. Financial institutions have broadened the scope of their activities, housing and consumer credit have expanded rapidly and new financial instruments and facilities have been introduced. The corporate governance structures and risk management systems of the commercial banks have improved. Restrictions on the trading on the exchanges of state-owned and legal-person shares have been eased and securities market institutions have been modernised. In conjunction with banks' new ability to lend for mergers and acquisitions, this could create a market for corporate control. As yet though, there have been few examples of newly tradable shares actually being traded. Efforts have also been made to improve credit access for underserved segments, notably small and medium-sized enterprises and rural China. Steps have been taken to relax controls on international capital flows, and Chinese financial institutions are becoming a growing presence in OECD and other foreign countries, although liberalisation has been slow and the foreign share of their assets remains very small.

Over the longer term, financial system development is likely to be conditioned by decisions about broader economic reforms, for instance, with respect to pensions. While State ownership is likely to continue to prevail in the financial system for the foreseeable future, the pace at which such arrangements should evolve as the private sector expands is a major issue. Raising the ceilings on foreign investment in banks and other financial

institutions would put pressure on these institutions to upgrade their governance, management and technical capabilities, and would facilitate their international expansion. It would also help in light of the general need, in the wake of the global financial crisis, to bolster bank capital and improve risk management. Although the bond market has expanded, corporate bond issuance remains relatively small. Establishing a formal deposit insurance system would help equalise competitive opportunities between larger and smaller commercial banks. Strengthening the Banking Regulatory Commission's capacity to conduct regular on-site examinations of more commercial banks would help accelerate the implementation of banking reforms.

Product market competition has intensified but further regulatory reform is called for

Over three decades of liberalisation, including accession to the World Trade Organisation in 2001, China's product markets have become increasingly competitive and market forces are now generally the main determinant of price formation and economic behaviour. A competition policy framework has been established and regulation of firm entry and exit has improved. Administrative reforms have enhanced the capacity of the central government to oversee a market economy and regulation has become less reliant on microeconomic interventions and more focused on framework conditions, even though industrial policy is being stepped up in the context of the global economic crisis, in the form of ten sectoral plans. Moreover, the first vintage of the OECD's indicators of the extent of government intervention in products markets in China indicate that government intervention remains pervasive, both in absolute and relative terms, and is on a par with that in Russia. This may constrain growth more and more as the economy continues to develop. Loosening the traditional links between state-owned enterprises and the government is an ongoing challenge and one that can be best achieved by further reducing the size of the state sector, especially amongst the smaller public-sector companies. Reducing administrative burdens, making room for more private sector involvement in network sectors and lowering barriers to foreign direct investment in services would also spur competition and productivity growth going forward.

Major social reforms have been undertaken but safety nets remain overly fragmented

Ensuring a sufficient degree of social cohesion and stability throughout the country has been and will remain one of the overarching and increasingly prominent objectives of public policy in China. This will improve efficiency and the prospects for robust economic growth and, in any case, is a desirable outcome of rapid economic expansion. Many ambitious reforms have therefore been launched in the social sphere in recent years and tangible progress has already been achieved. In particular, the coverage of the social safety net has broadened, although much less so for unofficial migrants, who probably represent over 40% of total employment in urban areas. However, decisive further progress will require overcoming the enduring fragmentation of the labour market and of the education, welfare, pension and health systems, which some of the recent reforms have actually accentuated. Major improvements are also needed in the administration of benefits, notably the minimum living allowance, which fails to reduce poverty as much as it could.

The needed unification of social protection arrangements should transfer responsibilities for health care and pensions from cities to provinces and then to the national level. A nationwide system should involve greater fiscal solidarity across the country, but not uniform entitlements, which should depend on local conditions and/or personal histories. This would greatly facilitate labour mobility, both from rural areas to towns and from one city to another. Substantial further migration is needed to sustain growth and urbanisation.

Income inequality may no longer be on the rise though geographical disparities remain acute

Partly as a result of the various social reforms launched over the past decade, there are encouraging signs that the trend increase in nationwide income inequality may have paused in recent years. A set of new indicators suggests that it may even have receded somewhat in some respects. In particular, income disparities across provinces have tended to decline slightly in recent years, partly as a result of migration, which boosts incomes in the poorer areas via remittances and tends to raise the wages of the remaining workers. That said, geographical inequality remains very high by international standards, despite the Western Development Plan, which aims to boost the development of the sparsely populated and under-developed West. One reason for its limited success in that regard is that the bulk of the expenditure under this policy has long been focussed on large capital-intensive projects designed to bring natural resources to the coastal areas. More emphasis needs to be placed on education, especially in senior secondary schools, which would boost human capital and help reduce income differentials over time, and on the development of private entrepreneurship.

The labour market has been resilient over the past two years

The labour market has proved to be remarkably resilient in the face of the economic slowdown, notwithstanding the scale of layoffs a year ago and the attendant fears of mass unemployment. Employment contracted during a few months in late 2008 and early 2009, but has since started to expand anew, albeit at a less buoyant pace. The migrants who lost their urban jobs in large numbers in late 2008 had almost all found new urban employment by mid-2009, although not necessarily in the same workplace. This turnaround, which is far swifter than in many OECD countries, reflects the bounceback in activity as well as wage moderation, in particular migrants' readiness to accept sizeable wage cuts.

New labour laws were introduced in 2008

A set of new labour laws was introduced in 2008, replacing legislation from 1995 that needed to be adapted to current market realities. The objective was to better protect employees in a market that is now dominated by private-sector employers. This has involved more systematic use of labour contracts to ensure that all employers adhere to basic employee rights such as being paid on time. However, the government has underlined that the law is not meant to create life-time employment. The new law may also increase firms' costs insofar as it leads to greater compliance with minimum wage,

hours worked and social security legislation. In principle, individual employees will find it easier to have their rights recognised, even if enforcing any resulting judgement may be difficult. As in other areas, the extent to which the new legislation and implementing regulations will be enforced is of key importance. Currently, the power of labour inspectors to penalise companies is very limited. For the time being, *de facto* employment protection remains far less than *de jure*, with still a preponderance of fixed-term contracts involving few restrictions. In implementing the new laws, it will be important to avoid making open-ended contracts too rigid, which would only entrench labour market dualism.

Labour market segmentation hinders labour mobility and needs to be reduced

While the restrictions associated with the registration (*hukou*) system have been eased over time, especially in the inland and western regions, they still segment the labour market, impeding geographical mobility and splitting families. In larger towns, migrants can now register as temporary residents but without the same rights as permanent ones. The government emphasises that migrant children need to receive education in towns but, in reality, a large share of migrants' children are left behind with grandparents and regulations still stipulate that university admission examinations be taken in the locality of the student's *hukou*, based on the local syllabus. The local registration system needs to be phased out to end not just the distinction between the rural and urban populations in one locality, but also the distinctions between localities and provinces. More pilot programmes ought to be initiated in major Eastern cities easing local registration and hence access to social benefits such as education, subsidised rental housing and local medical insurance on the same basis as local residents. Extra grants from central or provincial governments may be needed to that effect. Other concurrent policy changes may also be called for. In particular, realistic compensation needs to be paid to the owners of land use-rights when the latter are purchased by the government.

Pension reforms have addressed only part of the challenges faced by an ageing population

China's population is ageing fast, owing to low fertility rates and rising life expectancy. With ongoing migration of the younger cohorts to urban areas, the old-age dependency ratio will rise even more in rural than in urban areas. A patchwork of pension arrangements exists across the country, with diverse and segmented systems in urban areas, belated retirement and low replacement ratios in rural areas, and special rules governing public sector pensions. This raises issues of efficiency, in that labour mobility is impeded, and fairness, to the extent that work experience in one sector is not recognised for pension purposes once the individual moves to another. Urban pensions underwent parametric reform around the turn of the millennium and again in 2005. On both occasions, benefits were reduced. Moreover, some geographical pooling has also been introduced. Nonetheless, contribution rates are low in areas that have experienced rapid population growth through migration but much higher in cities with a declining industrial base or a high share of elderly. Measures were also taken in 2005 to raise the coverage of the self-employed and those with flexible forms of employment. A new rural pension scheme was announced in mid-2009 and provisions to cover migrants have been proposed. Some

of the recent reforms have increased fragmentation, while others, notably those providing for greater geographical pooling, have not been fully implemented. Also, under current rules, effective replacement rates are fairly low and projected to decline further, both for rural and urban residents. This may be difficult to sustain, as the elderly are increasingly unlikely to live with their descendants. Furthermore, as most of the ageing population is likely to be concentrated in the countryside, much of the additional burden will be shouldered by local governments, many of which in poorer areas have insufficient resources.

The various pension regimes need to be gradually consolidated, and the average retirement age needs to be increased

These challenges can be addressed by gradually consolidating the various regimes, shifting more of the cost of rural pensions to the central government, pooling pension contributions nationally and increasing retirement ages. Even if different schemes for different categories of workers (employees *versus* self-employed in particular) are to persist, each should be unified geographically over time, first provincially and then nationally. In the process, the distinction between rural and urban residents ought to be phased out, in line with the recommended ending of the local population registration system. Retirement ages are currently very low and to ensure long-run pension system sustainability they should in due course be raised incrementally, at least in line with rising life expectancy, as is the case in some OECD countries. For the time being, pre-funding future government pension liabilities is not necessary, as national saving is already very high.

Progress with health care has been genuine but incomplete

In many respects, health outcomes in China have improved tremendously over past decades, in no small part thanks to the near eradication of some traditional infectious diseases. Overall, health outcomes are not so different from those in lower-income OECD countries such as Mexico and Turkey, despite lower incomes in China. However, health status varies widely across the country and in general death rates from chronic diseases have been on the rise, not least owing to changes in life styles, including greater tobacco consumption. Improving health outcomes will require addressing a number of imbalances and incentive problems plaguing the health care system, in a context of rapidly rising demand for care. Health care is overwhelmingly publicly provided and hospitals have been absorbing a growing share of public funding, at the expense of primary care. The number of doctors has increased rapidly but their qualification levels are often modest and their geographical distribution does not match local needs. Hospital budgets and their doctors' pay are partly based on the pharmaceuticals they prescribe and sell, the prices of which are regulated and involve considerable cross-subsidisation. Against this backdrop, household out-of-pocket medical expenses have soared. Many of these problems have long been recognised and since 2003 the government has launched several reforms to address them, notably the introduction of new urban and rural insurance schemes. As a result, coverage and use of medical facilities has increased considerably, except for migrants. Even so, both

catastrophic and chronic illnesses continue to push people into poverty, especially in the poorer regions. Given that risk pooling at the national level remains limited, it is often impossible to provide patients with the reimbursement rates they are legally entitled to.

A set of ambitious health care reforms are being rolled out but more may still be needed

A new set of reforms was announced in April 2009, aiming at universal, safe, affordable and effective basic health care by 2020. They involve additional spending of CNY 850 billion over 2009-11 (equivalent to 0.8% of GDP over that period). While sizeable, this represents just a down-payment on the extra spending that will be needed in the health sector over the longer haul. These reforms include investment in medical infrastructure, generalising insurance coverage, more focus on prevention, retraining less-qualified doctors, a new essential drugs system and far-reaching reorganisation, including of hospital budgets. It will be important to ensure that primary care plays a greater role in health care delivery to reduce the inappropriately high demands on hospitals for minor health problems. It will also be important that hospitals are managed more efficiently, with less hierarchical structures, and that the link between pay and prescriptions is abolished. Prices paid by the insurance system also need to reflect actual costs. Indeed, failing to address these supply-side issues would reduce the effectiveness of increasing insurance coverage, as many countries have found. Progress will also require changes in relative prices, in the form of more attractive wages for doctors, less distorted prices for pharmaceuticals and higher taxes on and prices for tobacco. Once near universal coverage is achieved, including of migrants in their place of residence rather than their place of origin, the different insurance systems should be merged and a greater portion of their funding should be shouldered by the central government.

Continued structural reforms will help boost living standards and alleviate macroeconomic imbalances

In sum, China has launched many reforms which are starting to bear fruit, by supporting domestic demand in the face of the global slowdown, helping to reduce internal and external macroeconomic imbalances and by restructuring China's economy. In many countries, undertaking structural reforms involves painful trade-offs between short run costs and longer-run benefits, not least because public finances do not allow such reforms to be undertaken without offsetting restrictive fiscal measures. In contrast, China is in the fortunate position to have room for continued, ambitious social reforms whose financing can help bring down an uncomfortably high national saving rate. By stepping up social expenditure even as public infrastructure investment reverts to more normal levels, China will enjoy higher living standards and greater internal social cohesion, and contribute to a more harmonious global economy.

Chapter 1

Achievements, prospects and further challenges

China's spectacular economic expansion has continued in recent years, making for impressive improvements in living standards. The slowdown associated with the global financial and economic crisis was contained by massive fiscal and monetary policy stimulus, which has boosted domestic demand. While the current account surplus is shrinking, some macroeconomic imbalances remain, in particular in the form of a high national saving rate. A key adjustment will be to durably lower government saving. Ongoing social reforms can be expected to help in this respect, provided they are sufficiently funded by the central government. Rapid further urbanisation will require greater labour mobility. This calls for gradually phasing out the still rigid registration system and the attendant differences in social entitlements, notably as regards education, welfare assistance, pensions and health care. More accessible and better public services will also strengthen social cohesion. To sustain vigorous economic growth beyond the ongoing recovery, it will be important to further liberalise product and financial markets.

Over the five years to 2008, the Chinese economy has grown at an unprecedented pace of about 11% per annum on average, before the upward revision to GDP as a result of the second Economic Census (Box 1.1). While the expansion lost momentum in the course of 2008, China has weathered the global economic crisis remarkably well and is at the forefront of the world economy's recovery. On the structural side, market mechanisms and the private sector have continued to gain importance, as foreshadowed in the first *OECD Economic Survey of China* (OECD, 2005). The current *Survey* documents the extent of the progress achieved in recent years, including the impressive improvement in living standards, and highlights a number of broad policy challenges now faced by China.

This Chapter focuses on internal and external macroeconomic imbalances, and on how macroeconomic policies have recently helped to ease them, cushioning the impact of the global slowdown. The issue of macroeconomic management is then dealt with in more detail in Chapter 2, which discusses monetary policy and options for reform. The *Survey* then turns to financial and product markets, building on the analysis in the first *Survey*. The structure and performance of these key markets has continued to evolve in a manner that supports development in the broader economy but further reforms are needed.

Hand-in-hand with the development of a more market-based economy, social policies need to be strengthened. The *Survey* therefore goes on to examine income inequality and how it is influenced by regional and social policies. This serves as the background for an in-depth analysis of policies in three areas directly affecting well-being – labour markets, income security in old age and health. In each of these areas, a recurrent theme is the urban/rural divide, and how it can be addressed.

Box 1.1. **Second Economic Census: China's economic size revised up**

After this Economic Survey was finalised, the initial results of the second Economic Census of the secondary and tertiary industries in China were published. As a result of the discovery of new enterprises and better measurement of the output of existing enterprises, the level of nominal GDP in 2008 was raised by 4.4%. Nearly 80% of the upward revision came from the service sector of the economy. While the 2008 growth rate of real GDP was revised upwards to 9.6% from 9.0%, real and nominal GDP data for the period 2005 to 2007 were not presented in the initial data. For this reason, the pre-Economic Census data for GDP are used throughout this publication.

Keeping up robust growth

Living standards have improved rapidly

Living standards have been improving at a stunning pace in China. The estimated growth in total real household consumption has been amongst the most rapid in the world at 9.6% per annum in the five years ending 2008, almost two percentage points faster than in the previous five-year period. Even so, the level of consumption remains low relative to

that in advanced economies. By 2008, measured in purchasing power terms, private consumption per head was just one-tenth of the average level in the OECD area and between one-fifth and one-quarter of those in low-income OECD countries such as Mexico and Turkey.

The gains in aggregate private consumption are reflected in increased ownership of consumer durables (Table 1.1). In urban areas, Chinese households are now well equipped with electrical appliances. Nearly all urban homes have washing machines and at least one air conditioning unit, colour TV and mobile phone, while ownership of microwave ovens and computers has spread. The size of an apartment in urban areas rose by nearly one-third since the early 2000s to 65 square metres for the average family of three. In urban areas, car ownership is becoming prevalent amongst the highest income decile. Indeed, the average household income level of this group (measured at purchasing power parities) now exceeds that of 30% of US households. However, the size of this relatively affluent group is small, with no more than 50 million household members.

Table 1.1. **Level and improvement of living standards**

	Rural	Urban	Highest decile urban	Rural	Urban	Highest decile urban
	Ownership per 100 households in 2008			Growth 2002-08		
Air conditioner	9.8	100.3	197.2	27.5	11.9	7.4
Automobile	n.a.	8.8	33.0	n.a.	46.9	40.9
Camera	4.4	39.1	82.0	4.8	–2.0	0.4
Colour TV set	99.2	132.9	165.0	8.6	0.8	0.5
Computer	5.4	59.3	101.5	30.2	19.2	11.1
Hi-fi stereo component	n.a.	27.4	47.3	n.a.	1.5	2.0
Microwave oven	n.a.	54.6	83.3	n.a.	9.9	3.5
Mobile telephone	96.1	172.0	210.7	38.4	18.3	8.6
Motorcycle	52.5	21.4	17.1	11.0	–0.6	–10.0
Refrigerator	30.2	93.6	104.7	12.6	1.2	0.2
Telephone	67.0	82.0	94.1	8.6	–2.2	–1.6
Video camera	n.a.	7.1	21.9	n.a.	24.4	20.8
Washing machine	49.1	94.7	101.8	7.5	0.8	0.0
Dishwasher	n.a.	n.a.	2.1	n.a.	9.8.	6.5
		Level		Real annual growth, local currency		
Income per household ($, market exchange rate)	2 750	6 609	18 317	7.1	8.7	10.7
Income per household (PPP)	5 636	11 013	30 522	n.a.	n.a.	n.a.
Consumption per household ($, market exchange rate)	2 115	4 709	11 332	7.7	7.0	8.8
Consumption per household (PPP)	4 334	7 846	18 882	n.a.	n.a.	n.a.
Saving rate	23.1	28.8	38.1	n.a.	n.a.	n.a.

Source: China Statistical Yearbook, *World Development Indicators*.

In rural areas, living standards are much lower. Household incomes are only 60% of those in urban areas, allowing for differences in price levels. Moreover, average household size is greater in rural areas, implying even lower per capita incomes. Nonetheless, there is wide diffusion of a number of basic consumer durables, especially those related to communication, including motorcycles, mobile phones and TV sets. Poverty has plummeted by two-thirds in the four years to 2007, to 4% of the population, when measured on a consumption basis using either the official low-income line or the similar World Bank poverty line (World Bank, 2009). The proportion of the population in poverty

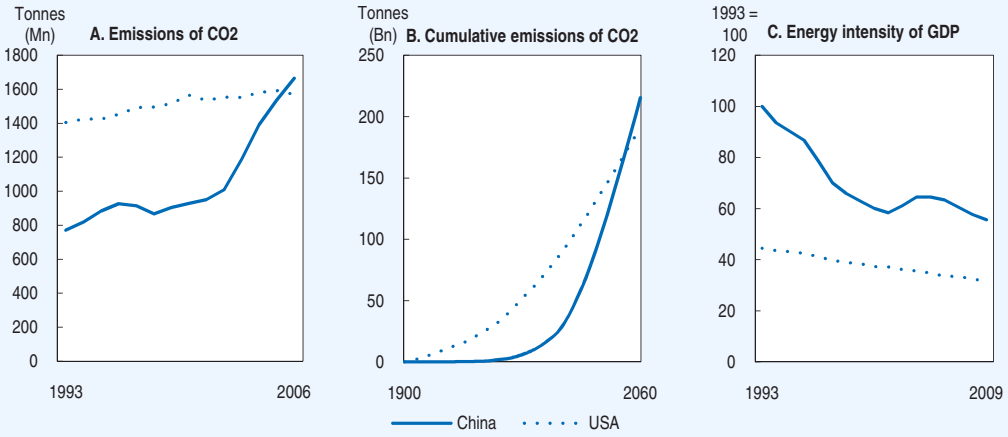
Box 1.2. **Improving energy efficiency and reducing pollution**

While delivering substantial improvements in living standards, sustained rapid economic growth has led to considerable environmental pressures, particularly in the form of air and water pollution (Vennemo *et al.*, 2009). Estimates indicate that China has become the largest emitter of greenhouse gases, even though in stock terms, that is not projected to be the case before mid-century. Ambient concentrations of particulate matter, the most damaging types of air pollution for human health, are high in almost all Chinese cities. Recently, over half of all rivers and freshwater lakes were deemed by the authorities to be suitable only for irrigation or industrial purposes.

Government efforts to reduce pollution have focused on energy conservation and efficiency (Zhou *et al.*, 2009; Wang and Chen, 2010). Following a sharp rise in the energy intensity of production after 2002, the government announced a target to reduce energy intensity by 20% between 2005 and 2010, as part of the 11th Plan. In order to achieve this target, a number of policies and initiatives have been adopted, many directed at industry, which is a major source of air pollution.

One element of the strategy focuses on improved monitoring of industrial energy usage and the dissemination of information on the use of energy-saving products and techniques. Specific targets have been set for the closure of inefficient and outdated capacity in energy-intensive industries, including steel and electricity generation, and funding has been allocated to upgrade and renovate industrial infrastructure such as coal-fired boilers. Revised corporate income tax arrangements introduced in 2008 grant preferential treatment for investment in energy-saving and environmentally-friendly projects. New labelling and energy-usage standards have also been adopted for consumer durable goods and tighter emissions standards have been introduced for vehicles (Zhou *et al.*, 2009).

Figure 1.1. **CO_2 emissions and energy intensity**



Note: Estimates of cumulative emissions of carbon dioxide from 1900 to 2060 are based on emission data from CDIAC available for the United States and China from 1900 to 2005 (prior to 1900, emissions are assumed to be nil). Projections beyond 2005 are taken from the unchanged policies baseline in OECD (2009) until 2050 and extrapolated using the final projection value thereafter. Energy intensity is measured as energy consumption divided by real GDP measured in constant US dollars at PPP exchange rates.

Source: *CEIC Database*, NBS, CDIAC, IEA and OECD.

StatLink http://dx.doi.org/10.1787/777143012120

Box 1.2. **Improving energy efficiency and reducing pollution** *(cont.)*

In November 2009, the government announced that it would aim to reduce carbon dioxide emissions per unit of GDP by 2020 by 40 to 45% compared with 2005. A major effort will be made to raise the share of renewable and nuclear energy in total energy supply from 8% in 2008 to 20% by 2020. Given such an increase in non-fossil fuels and the reduction in emissions intensity likely to be achieved between 2005 and 2010, the government should be able to achieve its emission reduction target with a fall in energy intensity of 2% per year between 2010 and 2020, half the rate expected between 2005 and 2010. The government also plans to reduce carbon emissions and to increase carbon sinks by expanding forest coverage by 40 million hectares by 2020 compared with 2005.

A number of reforms could be adopted to help achieve the government's objectives of further reducing energy and carbon intensity targets. Some reforms to better align domestic and international energy prices have been implemented, particularly for coal and oil. However, electricity prices continue to be heavily regulated and remain well below generation costs, thereby providing poor signals to end users. More broadly, new market-based policy instruments such as carbon taxes or cap-and-trade schemes could be introduced. Such instruments offer flexibility in meeting targets, are likely to be far more cost-effective than administrative restrictions and provide incentives for innovation (Herd *et al.*, 2004; Cao *et al.*, 2009). Finally, moving away from policies that favour manufacturing and investment in heavy industry over less energy-intensive services activities and consumption would yield environmental and other benefits.

would be lower still if measured by income, as even the poorest rural groups save a considerable portion of their income. Indeed, given past differences between the income and consumption measures of poverty, the number of people below the income poverty line may have fallen to less than 30 million, down from 99 million in 2001. Furthermore, numerous disparities remain across the country both between regions and between the rural and urban areas. These differences are assessed in Chapter 5, which looks at the evolution of inequality over the past decade and at the impact of some of the government programmes introduced in recent years.

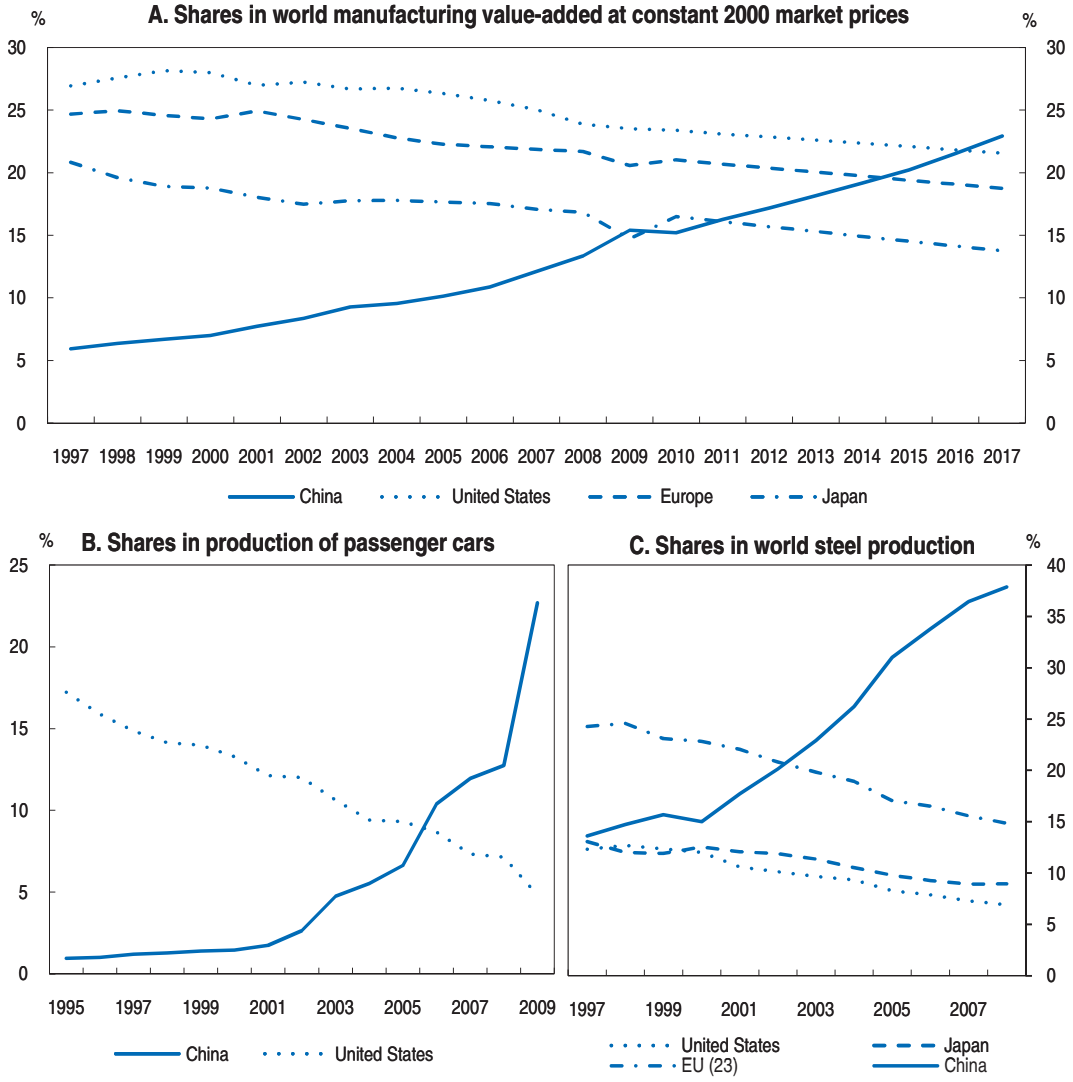
The provision of public goods has also increased considerably over the same period. Highway density more than doubled, access to tap water in urban areas became almost universal (in 2000, one third of urban households still did not have any access) and almost two-thirds of wastewater is now treated before disposal. Access to the gas network has expanded markedly, so that only one-eighth of the urban population does not have access to this form of energy. This should help reduce the use of coal for domestic heating, a major source of air pollution and CO_2 emissions. Against these improvements, while the use of desulphurisation facilities at coal power plants has risen to 66% of plants in 2008, from just 3% in 2000, rapid growth in coal use has kept sulphur dioxide emissions high and underpinned sustained growth in greenhouse gas emissions (Box 1.2).

China's importance in the world economy has grown as well

Sustained rapid economic growth has resulted in a sharp rise in China's share of world production. Differences in price levels across countries make international comparisons of the value of output difficult. Indeed, because of revisions to purchasing power parities made in 2007, China's share in world GDP in 2005 was revised down by 40% to 9.7% due to an underestimation of the price level in China – as foreshadowed in the first OECD *Economic*

Survey. Nevertheless, the latest estimates indicate that it had risen to 11.3% of world output by 2008. On the basis of current market prices and exchange rates, the share of China in world GDP is much lower, at 7.2% in 2008. Most of the difference between these two measures reflects lower prices in China for non-traded goods, particularly services or goods with a high services component. The Chinese manufacturing sector is highly integrated into world markets: between 30% and 40% of its value-added is exported and much of the remainder is highly substitutable with foreign goods. Hence, for this sector, market prices can be used in international comparisons (lower prices for Chinese products are then taken as signalling lower quality). China is estimated to represent about 15% of world value-added in manufacturing, similar to Japan and more than 50% greater than its share in world PPP GDP (Figure 1.2). Given the pace of expansion of the Chinese economy it may well overtake the United States in the next five to seven years to become the world's leading producer of manufactured goods. Indeed, for certain industries, China is already

Figure 1.2. **Shares in world manufacturing output**



Source: World Development Indicators; International Organization of Motor Vehicle Manufacturers; World Steel Association; OECD estimates for 2009 and later.

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the leading producer. For steel, it overtook the United States over a decade ago and Europe seven years ago. For passenger cars (excluding light commercial vehicles), China overtook the United States in 2006 and now represents 20 to 25% of world output.

Growth has been led by investment and sectoral reallocation

China's exceptional growth performance over the five years to 2008 primarily reflects a continued rapid expansion of the capital stock, which is estimated to have contributed around 6 percentage points annually to growth over this period (Table 1.2). Labour force growth has been fairly subdued, partly due to the one-child policy (Chapter 7). This leaves over 4 percentage points per year that is not explained by factor accumulation. Although the part of growth not explained by factor accumulation has varied significantly between five-year periods, most of this variation has been due to cyclical fluctuations: a smoothed series suggests that the unexplained part of growth has been quite stable (Chapter 4). By the standards of advanced economies, this would suggest an extremely vigorous growth in efficiency. However, in the case of China, it mainly reflects the re-allocation of labour away from agriculture towards services and manufacturing. After controlling for this re-allocation, the remaining growth of efficiency (or multi-factor productivity, MFP) is in fact estimated to have slowed down. One reason may be that productivity in the state sector has slowed down. To what extent MPF can accelerate going forward will depend *inter alia* on innovation and R&D policies (Box 1.3).

Table 1.2. **Factors contributing to output growth: 1988-2008**

	1988-93	1993-98	1998-2003	2003-08	2008	Change from 1998-2003 to 2003-08
	Percentage points					
GDP growth	9.0	10.2	8.7	10.8	9.0	2.1
Capital contribution	4.4	5.4	4.7	6.0	6.0	1.3
Labour contribution	0.7	0.5	0.5	0.4	0.3	–0.1
Residual factors	3.6	4.0	3.2	4.1	2.6	0.9
of which:						
Sectoral shifts	1.6	1.3	–0.1	2.7	1.5	2.9

Source: OECD estimates.

Box 1.3. **Enhancing innovation capacity**

The resources devoted to science and technology in China have expanded rapidly in recent years and it now ranks amongst the top countries in total research and development (R&D) spending and the number of researchers. Nevertheless, R&D intensity in China still lags behind OECD countries, with gross R&D expenditures amounting to around 1.5% of GDP in 2007 compared with an OECD average of 2.2%. When measured in terms of spending by industry, R&D intensity in China is even lower relative to OECD countries, especially in high-tech industries (Table 1.3). This holds also for high-tech export industries, which lack a large R&D base in China and continue to rely heavily on foreign-sourced technology embodied in FDI and imported inputs. For this segment, the share of value-added devoted to R&D was only one-tenth of that in the United States in 2005. Indeed the R&D intensity of Chinese high-tech firms is lower than that of medium-technology firms in OECD countries.

Box 1.3. **Enhancing innovation capacity** *(cont.)*

Improving innovation capacity and performance in China will become increasingly important for sustaining growth over the longer term as productivity levels approach those of OECD countries and growth becomes more dependent on improvements in technology. In addition to further expanding resources allocated to R&D a key challenge for innovation policy will be to improve the productivity of the innovation sector (OECD, 2008). While R&D output has risen, notably on measures such as scientific publications and patent applications, the strong growth in R&D-related inputs does not seem to have led to a commensurate rise in outputs. In addition, the nature of R&D in Chinese high-tech industries is different from their foreign counterparts and at least some measures of output are likely to overstate the true extent of innovation. For example, while patent registrations in China have soared in recent years, they tend to focus on incremental changes to production technology rather than fundamental innovation (Puga and Trefler, 2010).

As argued in a recent OECD *Innovation Policy Review of China* (OECD, 2008), reforms in this area should focus on improving the framework for innovation. This will require strengthening the intellectual property rights system so as to provide greater financial incentives for domestic innovators and bolster the confidence of foreign innovators investing in and exporting to China. Although the patent system in China is now in line with international standards and conventions, infringement of intellectual property rights remains a problem. This suggests that improving enforcement capacity, which remains relatively weak, should be made a priority. Modern institutions and other mechanisms are needed to ensure that public funding and other resources are allocated more efficiently and greater efforts are needed to nurture a high-quality science and technology human capital resource base. Moreover, many of the broader reforms detailed in this *Survey* will also support a stronger innovation performance. In particular, further liberalisation of the financial sector (Chapter 3) will help improve innovators' access to finance, while moves to strengthen market competition (Chapter 4) will provide a greater impetus for firms to innovate.

Table 1.3. **R&D Intensity of Chinese companies by level of technology**

	OECD	United States	Japan	Europe	China	
	2005				2005	2007
Per cent share of value added						
High-tech companies	30.2	38.3	29.2	24.3	3.9	5.0
Medium-tech companies	10.1	10.3	14.6	8.4	2.7	2.7
Low-tech companies	0.6	0.7	0.6	0.4	0.7	0.8

Source: OECD, *STAN R&D Database* and *National Bureau of Statistics Microdatabase*.

Making more efficient use of physical capital

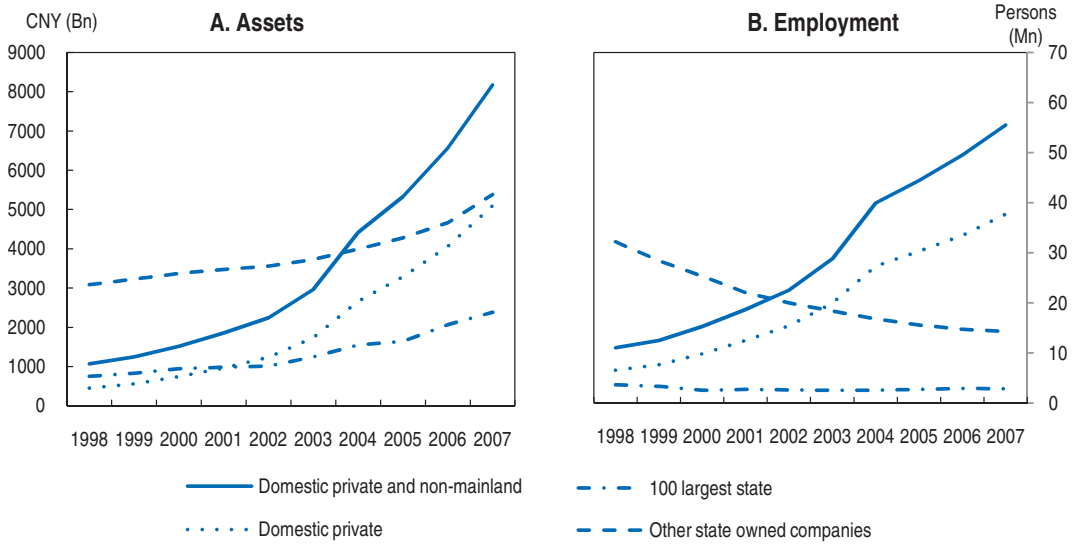
Gross fixed capital formation has soared over the five years to 2008, rising cumulatively by close to 90% according to OECD estimates. This corresponds to an annual increase in the capital stock averaging nearly 12%. During this period, the rate of return on capital in the more commercial part of the economy (excluding housing and general government) is estimated to have been stable at around 12%. In industry, rates of return on physical assets – measured at historic cost and before interest, dividends and corporate taxation – have risen, in contrast to the economy as a whole. Of particular note is the

increase in the rate of return for domestically-owned private companies in the industrial sector, to over 20%.

Amongst state-owned enterprises (SOEs), profitability varies considerably. For the 100 largest SOEs, rates of return on assets have been high – averaging nearly 25% in 2007. Such high returns occur because they are predominately engaged in resource-extraction industries or are in sectors, such as tobacco processing, where entry is prohibited. Owing to the absence of resource taxation or royalties channelling the natural resource rent to the State, SOEs in these two more narrowly-defined segments achieved a 39% rate of return in 2007. In other sectors, though, the SOEs achieve poor rates of return. They barely break even in petroleum refining and make low returns in electricity and water due to price regulation. Such controls effectively close these industries to competition. The third category of SOEs, comprising some 15 000 smaller companies in 2007, tends to display low rates of return compared with the private sector.

The high rates of return achieved by privately-owned companies have enabled them to grow rapidly, bringing a marked increase in economic efficiency. By 2007, the assets of companies owned by the domestic mainland private sector had almost reached the level of the state-held sector excluding the 100 largest companies (Figure 1.3). Once the assets of the companies owned by non-mainland companies are added to those of the domestic private companies, the private sector now has a bigger asset base than the total state-controlled sector – a striking reversal compared with 2003. Government policy has been to consolidate SOEs to create world-class companies. In industry, the 100 largest SOEs account for just over one third of the total assets of the state sector. Yet, in 2007, they generated less than 5% of total exports, 85% of which were accounted for by foreign-controlled and domestic private companies, a share that has been stable since 2004.

Figure 1.3. **Physical assets and employment in industry by ownership**



Source: National Bureau of Statistics Industrial Microdatabase.

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The shift in employment in industry has been even greater than the shift in assets. The 100 largest SOEs provide little employment in comparison to their use of assets, but the number of workers they employ has been stable. In contrast, employment in the remainder

of the state-owned sector has declined. An important factor enabling private companies to expand employment rapidly has been their ability to finance their expansion internally.[1]

Since 2003, continued SOE restructuring has raised their productivity (Chapter 4). However, the distribution of firm-level productivity differs substantially from countries without large state-owned sectors. For example, the tail of low-MFP firms in China is much greater than in the United States. The dispersion in MFP appears to be related to ownership, with higher state ownership being associated with a greater variance (Hsieh and Klenow, 2009). These authors suggest that had the dispersion of productivity in 2002 been as low as in the United States, MFP in manufacturing would have been 30% to 50% higher. As shown in Chapter 4, part of this differential had been eliminated by 2007, with reallocation generating productivity gains of around 1-2% per year.

The distribution of rates of return between the different sectors of the economy raises questions about competition. In a competitive market, rates of return should be similar across sectors. In China, private sector assets and employment have steadily increased but the pre-tax rates of return of private companies are more than quadruple the cost of borrowing from banks. This suggests that, despite the private sector's stellar performance, barriers have prevented it from growing even faster. The persistence of these extraordinary rates of return also points to financial markets inefficiencies (Chapter 3).

The regulation of energy prices and the failure to channel resource rents to the budget impose significant environmental and fiscal costs on society. The excess return on capital of the extractive industries amounts to almost 0.6% of GDP, about three quarters of the cost of the healthcare programme announced in April 2009 (Chapter 8). The low rate of return in petroleum processing and electricity represents a subsidy to both intermediate and final consumers. Further subsidies may occur in the retail distribution sector of the industry. The differences between domestic and world prices also act as a barrier to entry in oil distribution since independent retailers, using imported products, find it difficult to compete with outlets owned by vertically integrated SOEs.

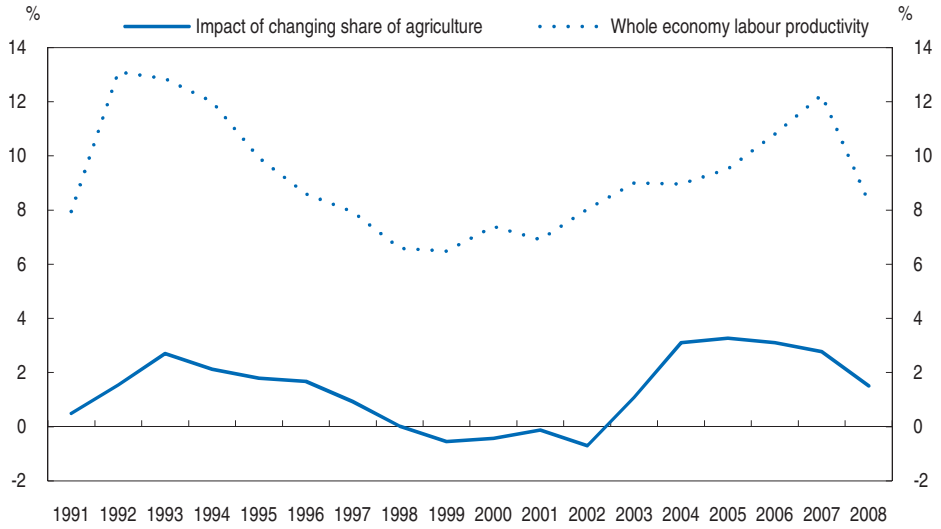
Mobilising and nurturing human capital

Since 2003, the reallocation of resources away from agriculture has contributed markedly to sustaining economic growth. During this period the absolute number of people whose principal activity is agriculture started to decline for the first time, though by 2008 just under 40% of the labour force was still employed in agriculture. At the household level, there is evidence that the marginal product of an additional worker in agriculture is low. This is also reflected in the sector's average productivity, which is six times lower than in the rest of the economy. This large differential in productivity across sectors has meant that the decline in the employment share of agriculture has provided a notable contribution to aggregate productivity growth. The contribution from this shift can be assessed by comparing actual productivity with productivity that would have resulted had employment shares remained unchanged (Figure 1.4). The extent of this contribution has varied over the past decade, and indeed was negative during the initial period of SOE downsizing. However, over the past five years, the contribution has been even larger than that observed earlier in the process of liberalisation.

Movement of labour from rural to urban areas also helps improve productivity. However, considerable barriers continue to hinder internal migration. This is due to the system of household registration (*hukou*): while it allows so-called temporary mobility, it

Figure 1.4. **Impact of changing sectoral employment shares on productivity growth**

Annual percentage change, using 1990, 2000 and 2005 employment shares



Source: OECD estimates, data from *China Statistical Yearbook* and CEIC.

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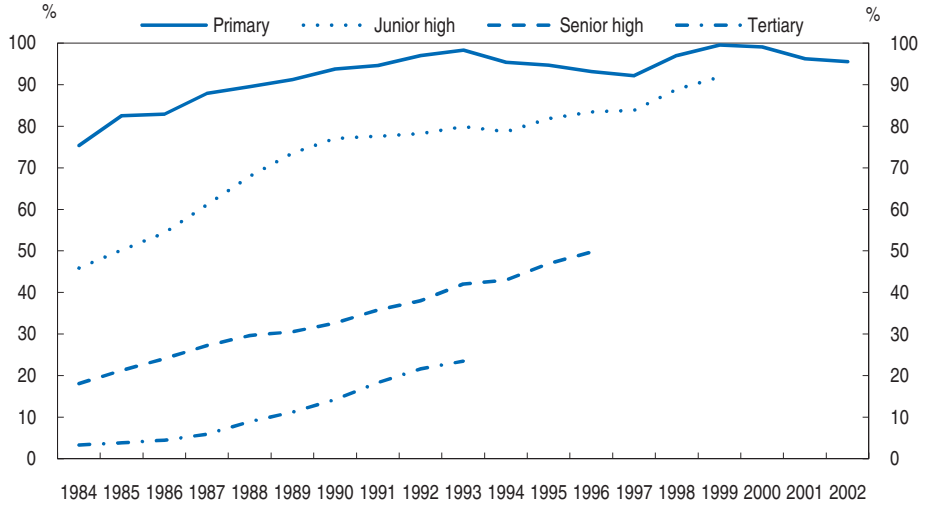
links most social and educational benefits to the area where the person is registered, rather than living. Medical benefits, in particular, are often linked to the area of registration, while pensions are rarely portable. Hence, people moving from one town to another typically lose the right to many benefits. Rural-to-urban migrants fare even worse, as they generally have no labour contract, are not affiliated to the social security system and are not paid the hourly minimum wage. Finally, rural residents do not have the same property rights as urban residents and may lose the right to use their land if they move. Population movement is essential to urbanisation as the existing natural growth of urban areas is very limited due to the one-child policy. The extent to which these barriers hold back migration is discussed in Chapter 6, which also considers how changes in the labour law will affect temporary residents and the labour market more generally.

In recent years, the education system has expanded rapidly, which will improve productivity over the longer run. Local governments have been pushed to ensure that all children complete primary school.[2] In addition, efforts have been deployed to ensure that by the age of 15, all children have had nine years of primary and junior high school education. By 2008, school fees had been abolished throughout the country for this level of schooling and textbooks were provided free of charge in the West. The result was that by that year, 90% of those children who had entered primary school in 1999 graduated with nine years of schooling (Figure 1.5). In addition, in the early 2000s, universities made significant investments with a view to more than triple the number of new entrants into tertiary education. Even though a large part of the cost of university education is met through fees charged to the students, the number of new entrants rose by 60% in the five years to 2008. By that time, over 23% of the children who had entered school in 1983 graduated from tertiary education. Chapter 5 suggests that one of the main reasons for the growth of inequality as the labour market became more market-oriented was the rise in the returns to education towards the levels found in advanced economies. This underlines

Figure 1.5. **Level of education by year of entry to primary school**

Percentage of age group graduating from each level of education in 2008



Source: *China Statistical Yearbook* and *China Data Online*.

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the importance of improving the quantity and quality of education in rural areas as a way of reducing rural-urban income differentials.

Weathering the global crisis

The onset of the crisis

Economic growth over the five years to 2008 was not uniform. Very rapid expansion in 2006-07 led to overheating, with an upsurge in inflation that was exacerbated by temporary disruptions in certain food supplies (Table 1.4). During this period the structure of demand became particularly unbalanced. World demand was buoyant, leading to a widening in the current account surplus. In addition, the share of output devoted to investment rose sharply (Table 1.5). All of the increase in investment came from the enterprise sector. In both the household and the government sector, saving grew much faster than investment – perhaps in response to the rapid growth in incomes. As a result, the principal counterpart to the increase in the current account surplus was the increase in household and government saving. In terms of the level of saving, all three institutional sectors have saving propensities well above those in the OECD area. In particular, household saving was 12 percentage points of GDP higher in China than in the OECD area during the period 1992 to 2002 (Table 1.6) but during this period the current account surplus average only 1.4% of GDP.

Table 1.4. **Macroeconomic developments and prospects**

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP growth	10.0	10.1	10.4	11.6	13.0	9.0	8.3	10.2	9.3
Inflation	1.2	3.9	1.8	1.5	4.8	5.9	–1.1	1.8	2.0
Fiscal balance (% of GDP)	–1.2	–0.4	–0.2	0.5	2.0	1.1	–1.8	–0.9	–0.3
Current account balance ($ billion)	46	69	161	253	372	426	321	282	302
Current account balance (% of GDP)	2.8	3.6	7.2	9.5	11.0	9.8	6.4	5.4	5.9

Note: Inflation is measured by consumer price index.
Source: National Bureau of Statistics and OECD projections.

Table 1.5. **Saving, investment and the current account balance**

	1993-97	1998-2002	2003-07	2002	2007	2008
	Per cent of GDP (expenditure)					
Gross capital formation	36.1	36.0	42.3	37.9	42.2	43.5
Households	7.6	7.7	8.4	8.9	7.3	
Enterprises	25.3	25.1	29.1	25.5	30.4	
Financial institutions	0.2	0.2	0.0	0.2	0.0	
Government	3.0	3.0	4.8	3.3	4.4	
Gross domestic saving	37.0	37.3	46.9	40.3	50.7	50.9
Households	19.6	18.6	20.0	17.2	21.7	
Enterprises	13.4	14.7	18.5	16.8	17.3	
Financial institutions	0.7	0.6	1.1	1.2	1.1	
Government	3.2	3.3	7.4	5.1	10.6	
Saving-investment balance	0.9	1.3	4.6	2.4	8.5	7.4
Households	12.0	10.9	11.6	8.3	14.4	
Enterprises	–11.9	–10.4	–10.6	–8.7	–13.1	
Financial institutions	0.5	0.5	1.1	1.1	1.0	
Government	0.3	0.3	2.6	1.7	6.2	
Difference between income and expenditure measure of GDP	1.8	0.8	2.1	0.0	2.2	2.0
Rest of world	–2.6	–1.9	–6.7	–2.4	–10.8	–9.6

Source: *China Statistical Yearbook*, CEIC, *ChinaDataOnline*.

Table 1.6. **Sectoral saving balances in China and the OECD area**

		Government	Households	Corporations
			% of GDP	
China	1992-2002	3.6	18.9	13.6
China	2003-2007	7.4	20.0	19.6
OECD countries (simple average)	2003-2008	2.8	6.7	13.7
China change from 2003 to 2007		3.7	3.5	0.1

Source: National Bureau of Statistics, OECD, United States Bureau of Economic Analysis

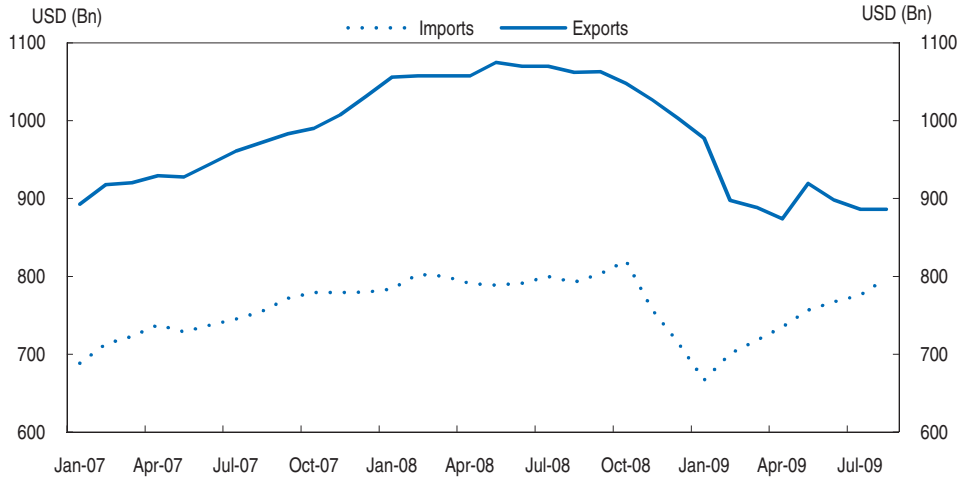
The overheating evident in 2007 led the People's Bank of China to hike reserve ratios, and, as inflation rose, interest rates. Combined with the ongoing global slowdown, this led the economy to slow markedly during 2008. By the third quarter of 2008, real GDP growth had declined to an estimated 6.4% rate (on a seasonally-adjusted annualised quarter-on-quarter basis). The intensification of the global financial crisis in that quarter was accompanied by a collapse in world trade and in China's exports (Figure 1.6). Even though China is less dependent on exports than may be suggested by the share of exports in GDP (Box 1.4), the magnitude of their drop made for a large dent in growth, especially if spillover effects are taken into account (Cui *et al.*, 2009). Imports also declined sharply, partly because a sizeable portion thereof serves as inputs for exported goods.

Crisis response

From mid-2008, the government reacted quickly as the world economic downturn was adding to policy-induced domestic weakness. *First*, the crawling exchange rate appreciation against the dollar stopped in July 2008. *Second*, monetary policy was relaxed with a series of cuts in interest rates and reserve ratios, which brought down the central-bank-determined one-year bank lending rate to 5.3% (Chapter 2). Last and not least, a series of fiscal measures wereannounced (Table 1.7). The largest of these was a two-year investment plan of CNY 4 trillion (over 6½ per cent of annual GDP in both years), involving among others a number of major infrastructure projects.[3]

Figure 1.6. **Evolution of exports and imports during the downturn**

Billion of USD annualised, three-month moving average, at constant 2000 prices



Source: CEIC.

StatLink http://dx.doi.org/10.1787/777340266414

Box 1.4. **How dependent on exports is China?**

In 2008, exports represented around one quarter of final demand in China, as against 28% in Germany, 11% in India and just 8% in the United States. This might suggest that a large decline in exports could impart a major blow to output and value added in the country. Indeed conventional input-output analysis would suggest that domestic value-added represents around 80% of the value of China's exports. However, such analysis ignores the very different nature of exports produced by companies registered under the foreign processing law and other companies. Such firms are able to import goods duty free, provided that they are subsequently exported and do not enter the domestic tariff area. Most of these firms are foreign owned and their gross production has a high import content.*

A more thorough analysis by Koopman *et al.* (2008), creating a specific input-output sector for the companies engaged in processing or assembly, suggested that the domestic value added of technology-related products is indeed low – ranging between 4% for computers and related equipment to 15% for telecommunications equipment. Overall, in 2002 – the latest available input-output table – processing exports had a domestic content of just 18% against 88% for other exports. Given that domestic private companies are less likely to be involved in processing trade, the total value-added component of their exports is high, at 84% against just 3% for foreign-owned firms. Overall, based on this approach, the domestic content of exports can be estimated at around 50%.

The relatively low value-added content of exports implies that the Chinese economy is less dependent on exports than demand-side indicators would suggest. Given that exports of goods were equivalent to 33% of GDP in 2008, and that the share of domestic value-added in exports of goods was 49% according to the calculations of Koopman *et al.*, the share of value added generated by exports in GDP was probably only around 16%. The dependence of gross national product on exports is even lower given that the foreign-owned firms typically have pre-tax profits exceeding half of value added.

* For example, Linden *et al.* (2009) show that while an Apple IPod sold for $300 in the United States in 2005 entered China's export data with a value of around $150, its local content did not exceed a few dollars.

Table 1.7. **Spending plans and tax cuts announced between October 2008 and April 2009**

	Spending	Share	Relative to GDP
	CNY, billion over two years	Per cent	% of 2008 GDP per year
Investment plan 2009-10			
Railways, roads, airports and electricity	1 500	37.5	2.5
Low-cost housing	400	10.0	0.7
Rural infrastructure and development	370	9.3	0.6
Innovation	370	9.3	0.6
Environment	210	5.3	0.3
Hospitals and schools	150	3.8	0.2
Earthquake reconstruction	1 000	25.0	1.7
1) Total of above	**4 000**	100.0	6.7
Financed by:			
Central government	1 180	29.5	2.0
Local government	600	15.0	1.0
Public enterprises	2 220	55.5	3.7
	Per year	Per cent	% of 2008 GDP per year
Spending and taxation changes			
One-off expenditure, 2009			
Rural household equipment subsidies	40	4.7	0.13
Cars-to-the-countryside programme	5	0.6	0.02
Agricultural subsidies	123	14.5	0.41
Subsidies for agricultural machinery	14	1.6	0.05
Interest subsidies for technology upgrading	20	2.4	0.07
Job-training programme	42	4.9	0.14
Tax cut on small cars from 10% to 5%	30	3.5	0.10
2) Total of above	274	32.2	**0.91**
New ongoing spending programmes			
Social security programmes	293	34.5	0.97
Health care reform (per year for three years)	283	33.3	0.94
3) Total of above	576	67.8	**1.92**
Miscellaneous programmes and tax changes (cost unknown, ongoing)			
Scrapping subsidy for old cars			n.a.
VAT on further selected exports reduced			n.a.
VAT rebates on 7270 export tariff lines increased (December)			n.a.
Corporate tax rate on infrastructure projects halved for up to 6 years			n.a.
Withholding tax on dividends cut from 5% to zero			n.a.
Stamp duty on share purchases cut from 0.1% to zero			n.a.
Minimum grain prices raised 15%			n.a.
Inventory purchases of soya beans and grains			n.a.
Deed tax cut from 3% to 1%			n.a.
Stamp tax on housing transactions cut to zero			n.a.
Land value tax on house sales cut to zero			n.a.
Exemption from business tax on second-hand house sales after two years			n.a.
4) Total of above spending and tax changes (2 + 3)	850	100.0	**2.83**
Investment plan spending by government (per year)	890	51	3.0
Current spending and tax cuts (where data is available)	850	32	2.8
Total government stimulus (per year)	1 740	100	5.8
Public enterprise spending (per year)	1 110		3.7
Total public-sector spending (per year, at least)	2 850		9.5

Source: Government websites and Reuters.

The total stimulus from the national government exceeds its part (CNY 1.8 trillion) of the investment plan since a large number of other stimulus measures have been introduced ranging from consumer subsidies to aligning the VAT regime on exports with standard international practice. Some of the measures concerned the housing market, where for instance the regulations of the mortgage financing of a household's second property have been relaxed. In addition, banks were encouraged to set the interest rate on mortgages at 70% of the one-year bank lending rate. All told, the fiscal measures additional to the fiscal plan will likely exceed CNY 850 billion (2.8% of GDP) in 2009. In December 2009, the government announced that these measures would be prolonged into 2010, with the exception of reductions in taxes on housing where it was judged that the market was sufficiently buoyant without any further stimulus.

At the same time, monetary policy was further relaxed. Informal lending quotas on banks were lifted. Liquidity was increased by lowering the extent of sterilisation of capital inflows, so that interbank interest rates fell below the regulated deposit rate. This initially produced a surge of commercial paper issuance by non-banks at close to interbank rates, which was bought by banks. The non-financial companies then deposited the proceeds, arbitraging the difference between the market and regulated rates of interest. With the normalisation of credit growth from July 2009, these opportunities disappeared and the short-term loans started to be transformed into longer-term ones.

The major part of the CNY 7 trillion credit growth between November 2008 and June 2009 went to local-authority-owned entities to finance infrastructure (these entities are also known as urban infrastructure development corporations or UIDCS).[4] Such lending was at the origin of many of the bad loans at the end of the 1990s. There are no national statistics on the size of these institutions but they do not appear to be as well managed as their counterparts in other countries (World Bank, 2007).

In conjunction with the stimulus package, the government made a series of policy announcements aimed at strengthening ten priority sectors: shipbuilding, petro-chemicals, light industry, equipment manufacturing, non-ferrous metals, textiles, electronics and information technology, autos, iron and steel and logistics. These include financial assistance measures, such as rebates on light commercial vehicle purchases for farmers and reductions in sales taxes for small passenger vehicles. Much of the focus is on restructuring and improving efficiency (including with respect to energy use) and innovation, with a view to boost the competitiveness of the larger incumbent SOEs. This includes efforts to address over-production in heavy industries, notably iron and steel, non-ferrous metals and cement. However, central government guidelines to that effect are not always effectively relayed and implemented at the sub-national level. For example, overall investment in the cement industry soared in the first half of 2009, even though excess capacity is already considerable and small, inefficient producers fail to be closed down.

Impact on the fiscal position

The general government sector entered the slowdown with a surplus of over 5% of GDP in 2007 (Table 1.8). The main reason for the increase in the surplus over the previous five years was a very conservative spending policy. Most of the fall in public spending came from lower government consumption and capital transfers relative to GDP. Capital formation and social transfers remained steady. As a result, there was some re-orientation of public spending towards social ends, in line with OECD recommendations (OECD, 2005). The rise in the government surplus also reflected buoyant tax revenues, especially receipts

Table 1.8. **General government appropriation account**

	1993-97	1998-2002	2003-07	2002	2007	Change 2002-07	2008
	Percentage points of GDP (expenditure)						
Indirect taxes net of subsidies	14.6	16.5	16.3	17.2	17.3	0.2	
Personal income taxes	0.2	0.7	1.1	1.0	1.2	0.2	
Corporate income taxes	1.0	1.3	2.2	1.7	2.7	1.0	
Financial companies income tax	0.4	0.1	0.3	0.1	0.6	0.5	
Social security	1.5	2.6	3.8	3.4	4.1	0.7	
Imputed depreciation	1.9	1.6	1.8	2.1	1.8	–0.3	
Other current transfers	0.6	0.1	0.0	0.0	0.0	0.0	
Current income	**20.2**	22.9	25.5	25.4	27.8	2.3	
Net interest paid	0.6	0.4	0.2	0.3	–0.1	–0.4	
Social security payments	1.4	2.4	2.9	2.9	3.0	0.1	
Welfare allowances	0.9	1.1	0.9	1.3	0.9	–0.4	
Consumption	14.0	15.5	14.1	15.9	13.4	–2.5	
Compensation employees	5.9	6.7	6.6	7.3	6.1	–1.2	
Depreciation	1.9	1.6	1.8	2.1	1.8	–0.3	
Procurement	6.2	7.2	5.6	6.5	5.5	–1.0	
Current expenditure	**16.9**	19.2	18.2	20.3	17.2	–3.2	
Saving	3.4	3.7	7.4	5.1	10.6	5.5	
Gross fixed capital formation	2.6	3.1	4.8	3.3	4.4	1.1	
Capital transfers	2.6	2.9	1.7	3.0	1.0	–2.1	
Balance excluding land sales	**–1.8**	–2.3	0.9	–1.3	5.2	6.5	
Memorandum items:							
Land sales	0.0	0.0	1.5	0.0	3.5	3.5	
General government balance	–1.8	–2.3	2.4	–1.3	8.7	10.0	
Statistical discrepancy	–1.3	–0.9	2.5	0.2	11.2	11.1	
Fiscal balance from budgetary accounts							
Government	–0.9	–2.1	–1.0	–2.6	0.6	3.2	–0.4
Social security	0.2	0.2	0.9	0.5	1.1	0.6	1.3
Off-budget accounts	0.2	0.3	0.2	0.5	0.3	–0.2	0.3
Total	–0.5	–1.6	0.1	–1.6	2.0	3.6	1.2

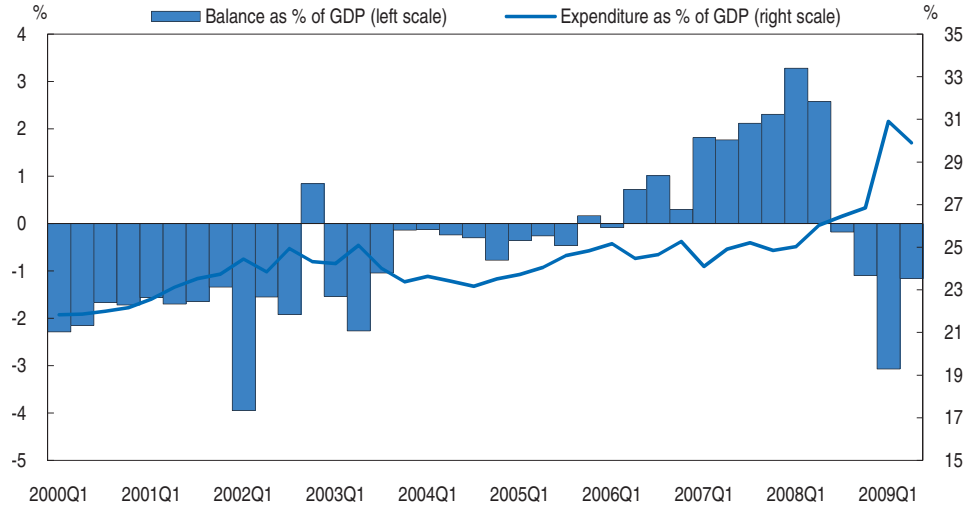
Source: China Statistical Yearbook and CEIC.

from corporates and the banking system, as the winding down of provisioning lifted banks' profits substantially. Social security contributions also rose, reflecting the widening coverage of the system.

A factor complicating the analysis of the government accounts is the sale of land-use rights – a major source of local government revenue. The associated receipts are supposed to be shared between the local and the central government but are usually kept off-budget locally. The government's share amounted to 3.5% of GDP in 2007, according to the national accounts, with a further 1.5% accruing to households. Even after controlling for these sales, the fiscal balance derived from the government's monthly data tends to be about 3% of GDP lower than the general government balance reported in the national accounts with a lag of two years.

Between the third quarter of 2008 and the second quarter of 2009, government expenditure rose by nearly 3½ per cent of GDP (Figure 1.7), somewhat less than the estimates of the cost of the package shown in Table 1.6. However, since the third quarter of 2008, tax receipts have started to rise markedly, offsetting about two-thirds of the impact on the deficit. Moreover, since public finances started from a strong surplus on the eve of the crisis, the fiscal deficit remains small. Of the stimulus measures that pass through the

Figure 1.7. **Government spending and deficit on a budgetary basis**



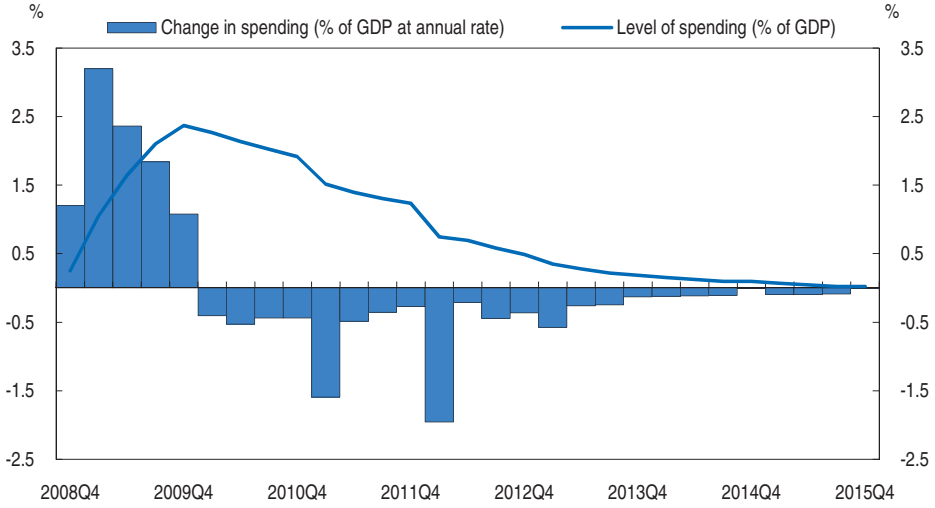
Source: Ministry of Finance, Ministry of Human Resources and Social Security, CEIC.

StatLink http://dx.doi.org/10.1787/777355107621

government budget, only one-third represents permanent increases in outlays, notably for rural pensions, better health insurance coverage and refunds of VAT on exports. This suggests that government spending may gradually fall by around 4% of GDP when the stimulus plan ends.

The spending on infrastructure in the stimulus package may last well beyond 2011. Outlays under most of the 285 projects announced since December 2008, with a total value of just over CNY 2 trillion, are to take place through 2015. If disbursements were spread out evenly over the lifetime of each project, spending would peak in early 2010 (Figure 1.8) or even later if the first months of a project are mostly devoted to planning and preparation.

Figure 1.8. **Quarterly outlay path for infrastructure spending**



Note: This chart is based on the announced data for the start and completion of 285 projects announced between December 2008 and October 2009. It assumes that outlays are evenly distributed over the life of the project. In reality, initial spending may be relatively low suggesting the peak may come somewhat later than indicated in the chart.

Source: Sun (2009).

StatLink http://dx.doi.org/10.1787/777373045588

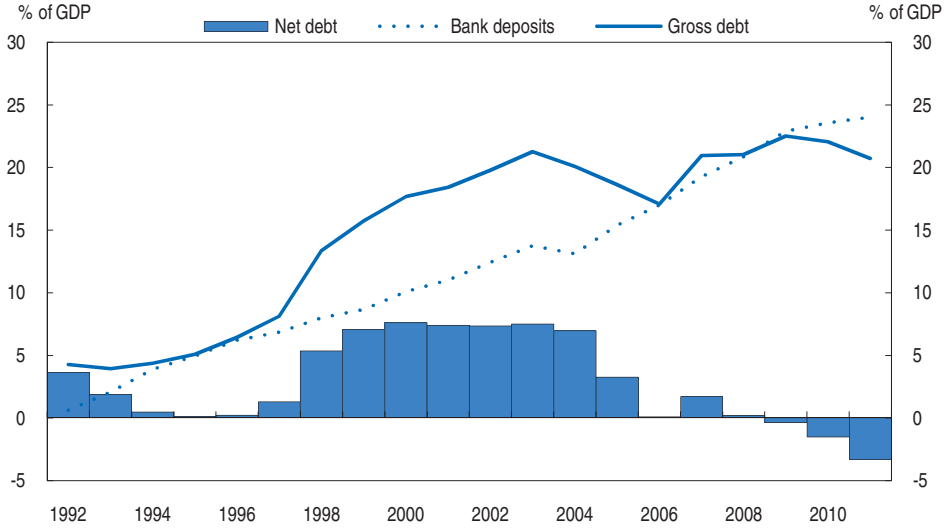
Rebalancing over the medium term

The fiscal outlook

China's public finance position is remarkably strong and can readily accommodate a permanently higher level of government spending. Moreover, a marked slowdown in government spending after the end of the stimulus programmes and a return to fiscal surpluses might lead to a renewed widening of the current account surplus. The balance sheet of the government will not deteriorate markedly as a result of the fiscal stimulus. In 2008, gross government debt amounted to only 21% of GDP (Figure 1.9). At the same time, the surpluses of the National Social Security Fund and the numerous local social security funds, which are largely held as bank deposits, were of the same order of magnitude. Moreover, the government does not carry the value of its stock holdings (worth 50% of annual GDP in mid-2009) on its balance sheet, nor the value of urban land it owns. In 2009-10, the deficits due to the stimulus plan will increase gross debt by about 3% of GDP. However, given rapid economic growth, the gross debt ratio will barely budge. After allowing for the projected continued increase in social security assets, government net debt will not exceed 3% of GDP in 2011. Beyond that horizon, and assuming an economic cruising speed of around 10% per annum over the medium term, the current level of public spending could be maintained, with the government still achieving a net creditor position over time. Hence, there is ample fiscal space to continue to step up public spending in the social sphere even as other types of stimulus spending are phased out.

Figure 1.9. **Financial assets and liabilities of the government**

Government includes the national government and local social security systems



Source: *China Statistical Yearbook* and OECD projections.

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Private consumption

Private consumption has not played a major role in sustaining domestic demand over the past five years. During the decade to 2002, household consumption remained fairly stable around 45% of GDP, with the saving rate fluctuating around 30% of personal disposable income (Table 1.9). Between 2002 and 2007, however, the share of household consumption in GDP fell sharply. In part, this reflected a drop in the share of employee compensation in GDP,

Table 1.9. **Household appropriation account**

	1993-97	1998-2002	2003-07	2002	2007	Change 2002-07
	Per cent of GDP (expenditure)					
Compensation of employees	50.0	50.8	48.0	50.4	47.6	–2.8
Imputed housing	6.7	8.0	7.6	6.7	7.2	0.5
Net interest	5.0	3.3	2.1	2.8	2.3	–0.5
Social transfers	4.4	5.1	5.5	5.5	5.7	0.2
Total income	66.1	67.1	63.2	65.4	62.7	–2.7
Income tax	0.2	0.7	1.1	1.0	1.2	0.2
Social security	1.5	2.6	3.8	3.4	4.1	0.7
Other transfers	0.8	0.2	0.1	0.2	0.1	–0.1
Personal disposable income	63.7	63.7	58.2	60.9	57.3	–3.6
Imputed housing consumption	6.7	8.0	7.6	6.7	7.2	0.5
Other consumption	38.0	37.3	30.7	37.0	28.4	–8.6
Household consumption	44.6	45.3	38.2	43.7	35.6	–8.1
Saving	19.0	19.9	19.8	17.2	21.7	4.5
	Per cent of personal disposable income					
Saving rate	29.9	30.7	30.4	28.3	37.9	9.7

Source: *China Statistical Yearbook* and CEIC.

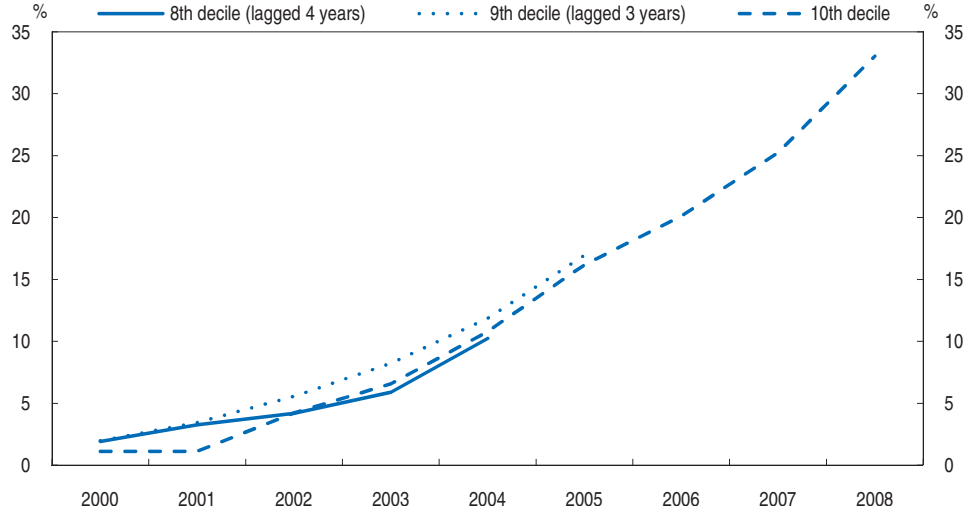
related notably to the shift of employment from agriculture, where the labour share is very high, to industry and services, where it is much lower. Another important contributor to the falling share of consumption has been the jump in the household saving ratio, by nearly 10 percentage points of disposable income between 2002 and 2007.

This jump in the household saving rate cannot be attributed to the absence of a social safety net. The absence of state pensions and health care in rural areas has been a longstanding feature of the economy, while in urban areas there has always been a form of social safety net. Overall, government transfers to households averaged just under 4.4% of household disposable income between 1992 and 2002. However, in the following five years, the safety net expanded somewhat and social benefits increased by almost 2.5 percentage points of personal disposable income, at the same time as saving rose. However, urban households may have tried to offset the prospective reductions in state pension benefits that came into effect during that period (Chapter 7) by saving more (Feng *et al.*, 2009). The rising cost of education may also have pushed up the saving rate (Chamon and Prasad, 2008), as a rising proportion of families sent their children to higher education. A further explanation could be that households in the two highest deciles (which account for half of total saving) experienced an unusually large acceleration in real income relative to the earlier period, when restructuring was occurring. To a large extent, each of these factors is of a transitory nature, pointing to the likelihood that the household saving rate may decline in the future. While the recent increase in household saving cannot be attributed to the low level of the social safety net, cross-country analysis of developing countries suggests the high level of household saving in China prior to 2002 may be related to the low social safety net. Indeed, one study of 11 developing countries found that an increase of government transfers to households amounting to one percentage point of household disposable income would lower the saving rate by 0.4 percentage points (Schmidt-Hebbel *et al.*, 1991).

Recent data suggest that this may have begun to happen. The growth rate of real retail sales has picked up from 12% per annum in 2006-07 to 16% by mid-2009.[5] Urban households

appear to be boosting their consumption of expensive consumer durables. The relative income of the highest decile of urban households has increased markedly in the five years to 2007 (Table 1.1), despite the overall stability in the distribution of income since 2005. This group, totalling around 50 million people, had an average household income of around $30 000 in purchasing power terms in 2007, sufficient to finance the purchase of cars. By 2008, over one third of these households had acquired a car. Moreover, the diffusion in lower-income deciles is following a similar pattern to that observed in the highest decile (Figure 1.10): the ownership rate in the 8th decile in 2008 was similar to that of the 10th decile four years earlier.

Figure 1.10. **Proportion of urban households owning cars by income decile**



Source: China Statistical Yearbook.

StatLink http://dx.doi.org/10.1787/777421234106

Cars are not the only form of consumer durable for which demand is expanding precipitously. Chinese households have begun to replace old colour TVs with flat screens. Domestic demand for such products may have risen by over 90% in 2009, with the Chinese market representing 19% of global sales, according to market research by Display Search. In order to reduce transport costs and be better placed to react to changes in consumer demand, a number of Korean, Japanese and local companies have announced investments to build plants (totalling $30 billion) to undertake manufacturing of screens in China, rather than just assembly.[6]

Implications for exchange rate policy

By early 2010, the annual growth rate of real GDP is projected to exceed 10%, helped also by the global pick-up in activity and trade. The recent fiscal expansion, however, is not projected to result in near-term economic overheating as there is currently ample spare capacity. Further out, maintaining strong domestic demand will require a continued fiscal deficit. Domestic rebalancing will require a reduction in the high dependence on exports witnessed in recent years. In the process, the real exchange rate will need to appreciate, as is normal for a rapidly developing economy where rising incomes push up the prices of non-tradeable goods and services. The current peg to the dollar – rather than to a more stable basket of currencies – has worked in the opposite direction since mid-2008. Over

time, it will be difficult for the authorities to avoid Chinese prices outpacing foreign prices measured in the same currency. The authorities will only be able to choose the manner in which real appreciation takes place – higher inflation and a stable exchange rate or lower inflation and nominal appreciation. The latter route would ultimately be better both for the Chinese and for the world economy.

The social policy challenge

The government wishes to continue the rapid transformation of China from a largely rural society to an urbanised one. At present, half of the population lives in cities but society remains divided as people whose parents were born in the countryside and those whose parents were born in urban areas have very different rights. This division was introduced at a time when the government felt it needed to ensure food production by keeping people on the land, but income per head has soared since and food shortages have disappeared. Moreover, differences in rights become more noticeable when the two groups live together in towns and cities, and may become unsustainable when those with fewer rights come to dominate the population of urban areas. By 2005, 39% of the urban population were not registered locally as urban residents and so had fewer social rights, notably in the area of pensions and health care. They had little opportunity to work for the government or SOEs. Moving towards more equal rights will be key to sustaining the flow of people to urban areas and ensuring longer-term social harmony, particularly in urban areas. This issue therefore features prominently in each of the *Survey*'s four social policy chapters.

Overcoming labour market segmentation

Labour relations have become much more market-oriented over the past decade, as documented in Chapter 6. This partly reflects heightened competition in product markets, and a diminishing role for SOEs and government institutions, which have rigid pay scales and employment contracts. The rise of private-sector employers has created a new labour market, where human capital is better rewarded. At the same time, the new private employers have little tradition of maintaining stable long-term employment relationships. In the past they have tended to employ people at will, with no written labour contracts, avoided paying social security contributions and, in the worst cases, failed to pay their staff.

Against this background, the government has enacted new labour laws in 2008. Their objective has been to introduce more formality into the relationship between employees and employers. All staff must receive a signed employment contract shortly after starting work. On paper, this new legislation is relatively strict by international standards, especially as regards employee protection for those with indefinite contracts. Unlike in most non-OECD countries that have been analysed and where labour laws only apply to a minority of the urban labour force, informal employment is low in China and most urban workers are employed by firms. However, the 2008 legislation may not hinder flexibility that much. One reason is that enforcement powers are weak, though a system where control is high on paper but low in reality creates uncertainty and is open to abuse. More fundamentally, fixed-term contracts, which private-sector employers are under no obligation to offer, provide far less protection than indefinite contracts. Hence, the law will probably encourage the use of fixed-term contracts. The authorities face a number of other challenges, notably increasing compliance with the obligation to pay wages on time[7] and

with the social security regime. A further challenge is to better integrate migrant workers into the labour force. It is essential that the provisions for short-term contracts do not result in a further fragmentation of the labour market.

The continued existence of the *hukou* system has led to a multiplicity of pension and healthcare insurance systems nationwide. In both cases, benefits can differ from one city to another, as can contribution rates. Benefits and vesting periods are not portable across administrative borders, hampering population movement as accumulated rights can be lost and systems in the town to which people move may be closed to outsiders.

Unifying pension systems

The government has introduced new schemes to improve pension benefits in both towns and the countryside (Chapter 7). While causing a further fragmentation of the benefits system, these changes represent a major step forward in improving coverage across the country. A new, portable pension system has been introduced for migrants and the government is considering a system for allowing portability of urban pensions across cities and provinces. Finally, a new rural pension system is being rolled out gradually. However, the rural and urban systems vary in generosity, in some instances even between neighbouring towns.

The different degrees of generosity and lack of portability hinder labour mobility and lead to substantial differences in wages across relatively small distances. As pension, health and welfare benefits are largely financed locally, the tax burden associated with funding these benefits is not adequately distributed across the country. This is most apparent in the pension system for urban employees where areas with a young mobile population have low contribution rates both because of demographic factors and because local people gain from the loss of the benefits of transitory workers. The employer contribution rate for urban pensions varies between 8% and 25% of the wage across the country for the same benefit.

Although urban pensions are supposed to be integrated at a provincial level, this reform is only being implemented slowly and even when reforms are complete will still not result in adequate solidarity across the country, given the different demographics of the various provinces. For the new welfare and rural pension systems, the dependence on local financing is even more problematic. While rural pensions are partly financed centrally, a large part of pensions and all of the newly-created rural welfare benefits will remain the responsibility of the local county government. As a result, the social benefits for the poorest people will be the responsibility of local governments with the weakest tax bases.

An additional challenge facing the pension system for urban employees and the new rural system is the low retirement age. The official retirement age is 60 for men and 55 for women. Moreover, people in manual jobs are allowed to retire five years earlier and there appears to be a tolerance for even earlier retirement. Drawing benefits so early in life will pose substantial problems as the population ages. Rapid urbanisation may postpone the emergence of major tensions for several decades for the urban system, but even with replacement rates that are declining steadily, funding will fall short in the future.

A major part of pension reform in China has involved the introduction of individual accounts for part of the state pension. Throughout the world nearly all state pension systems are based on some form of individual account, which typically takes the form of a book record of earnings and revaluation factors used to calculate a final pension. The main

specificity of the individual account in China is the parameter used to revalue past contributions: in most countries that parameter is the growth of average earnings or consumer prices; in China, it is the one-year bank deposit rate. This gives the impression that the account is invested in bank deposits. In reality, it is merely a method of keeping track of earnings over time.

On occasion, the government has attempted to make transfers to these accounts so that local authorities can deposit the proceeds with the banks or purchase government debt, but this should be avoided. Indeed, such transfers across levels of government do not affect the overall general government balance sheet. Moreover, they might lead the central government to increase its saving so as not to show a weakening of its own financial position, which would result in an undesirable increase in national saving. A similar argument applies to the transfer of part of the value of newly-listed SOEs to the pension reserve fund. The balance of the pension reserve fund may rise, but the assets of the organisation that originally held the shares for the government (SASAC) will decline and the general government balance sheet will be unchanged.

The extremely decentralised nature of the pension system is a major problem and a national system is needed. It has been argued that the differences in income levels between areas are so large as to make a national system inoperable. However, in principle it is relatively simple to devise a system that makes the part of the pension linked to local average earnings dependent on a weighted average of local earnings in the areas where a person has worked. The major problem is the need for national record-keeping and sharing of the revenue. Those provinces and municipalities that are able to charge low contribution rates and still enjoy surpluses are reluctant to share revenue nationally. A first step in addressing this problem would be to introduce centralised cash management for the social security system. Record management systems, which have proliferated and become difficult to link, would also need to be streamlined.

Education and land rights

Unifying the system of pension benefits for people in rural and urban areas is only the first step in reducing barriers to migration. Education represents another significant barrier. Even though fees have been abolished and most children of migrants living in urban areas now attend school up to the age of 15, they face higher charges than local residents. Beyond junior high school, migrant parents face a difficult choice. University examinations must be taken in the area of registration rather than the area of residence and the content of the entrance examinations varies across the country. Consequently, many children have to move from their new home to the place where their parents were born to obtain education between 16 and 18. Housing is a further barrier, as is the absence of health insurance, especially for children. As result a high proportion of the children of migrant workers are left with grandparents or other relatives.

Reform of the rural land-use system will also be necessary if mobility is to be improved. Chapter 7 sets out the main difficulties for migrants wishing to keep their land-use rights and to become urban residents and for rural people whose land is acquired for redevelopment. In 1998, 30-year leases for farmers were introduced with the requirement that there should be no land reallocation in the village during the period of these leases. The 2002 Land Management Law and the 2007 Property Law further improved security for farmers by making a lease a property, rather than a contractual, right. In practice, however, by 2008 less than half of farmers possessed a contract from the collective or a use

certificate from the provincial government (Riedinger and Yadav, 2009). Nonetheless, a market for the transfer of land-use rights is emerging. Families with a high proportion of non-agricultural income are more likely to lease their land while those dependent on agriculture are more likely to rent additional land. Most leases are valid for one year or are at will, with less than 10% being long-term. The great majority of transactions occur between relatives or people from the same village. The sale of leases is still forbidden and cannot be mortgaged. However, a small market for renting land-use rights to third parties is emerging. The key challenge will be to build on this development by extending the life of a lease to the length granted to individuals in rural areas, so that it is the same as in urban areas (70 years), to allow the outright sale of a lease and to allow the use-right to serve as collateral for a mortgage. This could boost farm households' wealth by at least CNY 1.2 trillion (4% of annual GDP) and would facilitate migration to urban areas (Zhu and Riedinger, 2009).

Health care reform

Major health care reforms have been launched in 2009 (Chapter 8). A new rural health care system is being been rolled out rapidly across the country but it is poorly funded, with the annual contribution to this system being only CNY 100 per person. Moreover, this system has apparently not reduced the cost of catastrophic illness and has even increased the cost of regular visits to village doctors in rural areas. The reform of the urban health care system puts an end to the failure of the employees' health insurance to cover dependents such as children. However, the new complementary urban system for residents (as opposed to employees) does not cover people in urban areas without a local urban residence permit. Such people can join the voluntary health scheme in their area of origin, but most of these schemes require health care to be consumed locally. The overall result of this lack of health care can be seen in the very high maternal mortality rate for migrants in urban areas. The key challenges are once again financial. Higher government payments are needed to ensure that the schemes do provide complete coverage of catastrophic health costs and to include migrants in the urban residents system.

Greater health care insurance without supply-side reform could lead to significant cost pressures. The health care system is unduly reliant on care delivered by hospitals, with patients fearing that doctors operating outside of the hospital system are under-qualified. Such fears may be justified as, outside major hospitals, many doctors have only three years undergraduate education and no post-graduate medical education or clinical training. The hospitals, while state-owned, are managed as independent units. Although there is some evidence that, like other state-owned industries, hospitals face soft budget constraints, they are generally required to balance their budget after receiving a fixed subsidy of around 10% of costs while also being subject to price regulation. The latter was intended to reduce the cost of health care to the consumer but this objective has not been achieved. Rather, doctors are encouraged by hospital management to choose treatments whose regulated price is high relative to costs (frequently via bonuses for each high-profit action prescribed by the doctor). Moreover, doctors are encouraged to prescribe non-generic medicines as the hospital makes more profit on such drugs. Finally, pharmaceutical companies have access to the prescribing records of hospital doctors and pay rewards to doctors in proportion to prescribing activity. Such a system leads to over-supply. Moreover, in rural areas, over-prescription is also rife. In this light, health insurance providers should take a more active role in supervising health care provision and prices.

Part of the government's 2009 health reform package aims to increase the use of primary health care facilities. This will be difficult as it requires generalising the teaching of family medicine; improving the qualifications of doctors and re-orienting community health care centres from being very-small-scale hospitals to providing primary health care. Indeed, it may be that more emphasis should be given to health care stations – which are much closer to the public – and increasing the status of the doctors in these units by making them purchasers of health care for their patients.

The need for greater fiscal solidarity

Many of the difficulties associated with establishing a uniform model for the delivery of social services are financial. Local authorities have limited financial resources (OECD, 2006). Grants from higher-level governments are partly based on the registered urban population, excluding people registered elsewhere. In these circumstances, a large influx of migrants would generate severe financial strains. Yet, the migrants contribute to economic activity and thereby the coffers of local governments. If they are affiliated to the local social security system, they and their employers raise the income of the local system. The problem of reducing and eventually abolishing the *hukou* system will require a revision of tax-sharing agreements. This is also required to achieve a national pension and health insurance system.

Notes

1. The 2004 Economic Census (the first one since the opening up of the economy in 1992) led to revise up the National Bureau of Statistics' estimates of the number of private companies and employment therein by 30%.
2. Compulsory school starts at age six in China. Currently, about half of the three-to-five year olds are enrolled in kindergarten. Going forward, this is an crucial area for further progress, not just for educational purposes but also on health grounds (China Development Research Foundation, 2010).
3. For example, the plan includes the creation of 5 500 km of high-speed railway track as well as track designed to relieve bottlenecks in the transportation of coal. In total, approval has been given for the construction of 30 000 km of track at a cost of CNY 2 billion, with one third of the amount to be spent in 2009. Subway systems will be started in 22 major cities. Also, missing links in the expressway system will be finished, extending the length of the system by 5 000 km to 65 000 km.
4. All levels of governments have UDICs and they are especially common in the eastern part of the country. Typically, the UIDCs are supposed to operate with a debt-equity ratio of around 2 to 1. The local authorities rarely provide capital for these companies from a budget surplus, rather they use bond finance to supply the equity, or transfer land-use rights or cash from the auctioning of land-use rights. For example, a UIDC might be set up to construct a ring road in a metropolitan area. The local authority would transfer land use-rights to the UIDC not just for the area of the road but also for 200 metres either side of the road. The UIDC would develop this land commercially, or sell the land-use right and hope to pay the cost of the ring road from the profit stemming from land development. The UIDC operates without a local authority guarantee but typically the banks receive a letter of comfort from the local authority.
5. Retail sales do not track private consumption exactly: a large portion of restaurant sales, for example, represents corporate or government entertainment. However, these elements seem unlikely to have increased more than proportionately during the recent economic downturn.
6. However, these plants are generally not technologically advanced, being usually 6th-generation plants capable of building smaller screens, compared with the 10th-generation plants under construction in Japan. In some cases, they are financed by local or provincial governments.
7. Which is being achieved for construction companies by requiring the payment of a wage bond to the government on the signing of new contracts.

Bibliography

Cao, J., M. Ho, and D. Jorgenson (2009), "The Local and Global Benefits of Green Tax Policies in China", *Review of Environmental Economics and Policy*, Vol. 3, No. 2.

China Development Research Foundation (2010), "Tackling Poverty at its Root: Providing Pre-school Education in Poor Rural Areas", *CDRF Working Papers*, forthcoming.

Chamon, M. and E. Prasad (2008), "Why Are Saving Rates of Urban Households in China Rising?", *NBER Working Papers*, No. 14546.

Cui, L., C. Shu and X. Su (2009), "How Much Do Exports Matter for China's Growth?", Hong Kong Monetary Authority, *China Economic Issues*, No. 1/09.

Feng J., L. He and H. Sato (2009), "Public Pension and Household Saving: Evidence from China", *BOFIT Discussion Papers*, No. 2/2009.

Herd, R., B. Cournède and D. Sutherland (2004), *Sustainable Development in OECD Countries: Getting the Policies Right,* OECD Publishing, Paris.

Hsieh, C.-T. and P. Klenow (2009), "Misallocation and Manufacturing TFP in China and India", *Quarterly Journal of Economics*, Vol. 124, No. 4.

IEA (2009), *Energy Balances of Non-OECD Countries, 2009 Edition*, Paris.

Koopman, R., Z. Wang and S.-J. Wei (2008), "How Much of Chinese Exports is Really Made In China? Assessing Domestic Value-Added When Processing Trade is Pervasive", *NBER Working Papers*, No. 14109.

Linden, G., K. Kraemer and J. Dedrick, 2007, "Who Captures Value in a Global Innovation System? The Case of Apple's iPod", *Communications of the ACM*, Vol. 52, No. 3.

OECD (2005), *OECD Economic Survey of China*, OECD, Paris.

OECD (2006), *Challenges for China's Public Spending: Toward Greater Effectiveness and Equity*, Paris.

OECD (2008), *OECD Reviews of Innovation Policy, China*, Paris.

OECD (2009), *The Economics of Climate Change Mitigation, Policies and Options for Global Action Beyond 2012*, Paris.

Puga, D. and D. Trefler (2010), "Wake Up and Smell the Ginseng: International Trade and the Rise of Incremental Innovation in Low Wage Countries", *Journal of Development Economics*, Vol. 91, No. 1.

Riedinger, J. and V. Yadav (2009), "The Impact of Legal Changes on Land Market Activity in China", mimeo, *http://siteresources.worldbank.org/INTIE/Resources/Riedinger_Yadav_paperRev.docx*.

Schmidt-Hebbel, K., S.B. Webb and G. Corsetti (1991), "Household Saving in Developing Countries: First Cross-Country Evidence", *Policy Research Working Paper Series,* No. 575.

Sun, M. (2009), *Asia Weekly Monitor*, Nomura Securities, Hong Kong, October.

Vennemo, H., K. Aunan, H. Lindhjem and H. Seip (2009), "Environmental Pollution in China: Status and Trends", *Review of Environmental Economics and Policy*, Vol. 3, No. 2.

Wang, Q. and Y. Chen (2010), "Energy Saving and Emission Reduction Revolutionizing China's Environmental Protection", *Renewable and Sustainable Energy Reviews*, Vol. 14, No. 1.

World Bank (2007), *The Urban Development Investment Corporations (UDICs) in Chongqing, China,* Technical Assistance Report.

World Bank (2009), *From Poor Areas to Poor People: China's Evolving Poverty Reduction Agenda: An Assessment of Poverty and Inequality in China*, Washington DC.

Zhou, N., M. Levine and L. Price (2009), "Overview of Current Energy-Efficiency Policies in China", *Energy Policy*, forthcoming.

Zhu, K. and J. Riedinger (2009), "Rural China's Nascent Land Market", *China Business Review*, US-China Business Council and Rural Development Institute.

Chapter 2

Further monetary policy framework reform

As a result of reforms and financial sector development, the People's Bank of China (PBoC) now exerts significant control over money market interest rates. With money market conditions increasingly influencing effective commercial lending rates, the PBoC is also able to affect the cost of credit without recourse to its benchmark commercial bank rates. Furthermore, interest rates are an important determinant of investment spending in China, via the user cost of capital, and aggregate economic activity influences inflation. Hence, greater use of interest rates in implementing monetary policy would enhance macroeconomic stabilisation while avoiding a number of drawbacks of the current quantity-based approach. In addition, increased flexibility in the exchange rate would enhance its role in offsetting macroeconomic shocks and offer the PBoC more scope to tailor monetary policy to domestic macroeconomic conditions. Concurrently, changes in the PBoC's policy stance should be predicated on informed judgments based on the monitoring of a set of indicators in conjunction with a flexible inflation objective.

Monetary policy has come a long way

The People's Bank of China (PBoC) began to function exclusively as a central bank in 1984. Since then, much progress has been made in improving the conduct of monetary policy. China's monetary policy framework has gradually moved away from a planned administrative system resting on credit rationing to a more market-based regime with money growth as the main intermediate target. As part of this transition, interest rates have been liberalised, making them more responsive to market signals, and the tools of monetary policy have been modernised. The banking sector has also undergone significant reform (see Chapter 3) and the economy has become far more responsive to market-based policy measures.

Officially, the objective of Chinese monetary policy is "to maintain the stability of the value of the currency and thereby promote economic growth".[1] It is not clear whether this refers to maintaining the domestic purchasing power of the currency – *i.e.,* the price level – or the exchange rate. In practice, the State Council has also charged the PBoC with achieving price stability, employment growth, external balance, and financial stability.[2] The PBoC is further responsible for promoting financial sector liberalisation. The central bank is not independent and needs the permission of the State Council to change policy settings.

The 11th Plan called for interest rate liberalisation and improvement in the transmission mechanism of monetary policy. From this perspective, this chapter evaluates China's monetary policy framework and suggests ways in which it could be strengthened. It begins by reviewing the targets and instruments used by the PBoC to influence money market conditions. As a result of a number of factors, including ongoing interest rate reform and a stronger banking sector, China's money market is becoming more integrated with different market segments increasingly linked via arbitrage. The PBoC has considerable control over short-term interest rates in the interbank market and increasing leverage over longer-term rates through the term structure. Going forward, the monetary policy framework needs to place less emphasis on quantity-based liquidity controls and more on interest rate changes. The PBoC's benchmark commercial bank lending and deposit rates, which do not influence economic activity and are becoming increasingly irrelevant in the conduct of monetary policy, ought to be progressively phased out.

The chapter then goes on to review the effects of monetary policy on the real side of the economy and presents evidence on the effects of interest rate changes on economic activity. In particular, capital formation at the firm level is shown to be sensitive to changes in interest rates via the user cost of capital. In addition, changes in aggregate demand pressures are found to influence inflation. These results imply that the transmission mechanism is effective in China and that monetary policy can play a greater role as a macroeconomic shock absorber and enhance stability. However, the current exchange rate regime limits the policy options available to the PBoC and the effectiveness of monetary policy more generally and prevents the value of the currency from moving to offset macro

shocks. Allowing more exchange rate flexibility and moving towards a flexible inflation objective would allow monetary policy to make a greater contribution to macroeconomic stability and reduce the costs and risks of sterilising foreign reserve inflows.

The *modus operandi* of the PBoC

China's monetary policy framework has evolved considerably since the mid-1980s. From 1984 until 1997, the PBoC issued base money and implemented monetary policy under a system of central bank lending and credit controls. The PBoC provided liquidity to state-owned banks, which then lent money to state-owned enterprises (SOEs), often at negative real interest rates. Since the establishment of the development banks in 1994, central bank lending has mainly been used to subsidise rural credit co-operatives or rescue insolvent financial institutions and no longer as a means of influencing monetary conditions.

More recently, money growth has replaced credit rationing as the main intermediate target of monetary policy. The PBoC sets annual target growth rates for money supply and bank credit that are deemed consistent with policy objectives. Over the course of the year, the PBoC adjusts policy settings in line with developments in intermediate targets and other macroeconomic variables. In practice, notwithstanding instability in the money multiplier and unpredictable liquidity growth given the current exchange rate regime, the PBoC has been reasonably proficient at hitting its money supply and bank credit targets (Table 2.1). In 2009, however, the full-year target for M2 growth was reached by end-March as liquidity was dramatically increased in response to the global economic recession. GDP growth targets have often been exceeded, particularly in recent years, whereas inflation targets have been both over- and undershot.

Table 2.1. **PBoC targets and outcomes**

	M1		M2		CPI inflation		GDP	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
1998	17	12.0	16-18	15.8	5	–0.8	8	7.8
1999	14	14.5	14-15	16.0	2	–1.4	8	7.6
2000	15-17	19.7	14-15	16.1	1	0.4	8	8.4
2001	13-14	14.0	15-16	14.1	1-2	0.7	7	8.3
2002	13	16.0	13	15.1	1-2	–0.8	7	9.1
2003	16	19.1	16	20.0	1	1.2	7	10.0
2004	17	16.4	17	16.2	3	3.9	7	10.1
2005	15	11.7	15	14.8	4	1.8	8	10.4
2006	14	14.5	16	18.1	3	1.5	8	11.6
2007	No target	21.0	16	17.5	3	4.8	8	13.0
2008	No target	13.6	16	16.6	4.8	5.9	8	9.0
2009	No target		17		3-4.8		8	

Source: PBoC and CEIC.

The PBoC has a number of instruments at its disposal to achieve its money supply and credit growth targets. Open market operations (OMOs) and changes in the required reserves of the commercial banks have become the predominant tools with which the PBoC influences base money and money market conditions more generally. The PBoC conducts OMOs using repos and central bank bills. Periodic changes in reserve

requirements have also become an important tool, mainly used in recent years to sterilise foreign reserve inflows.

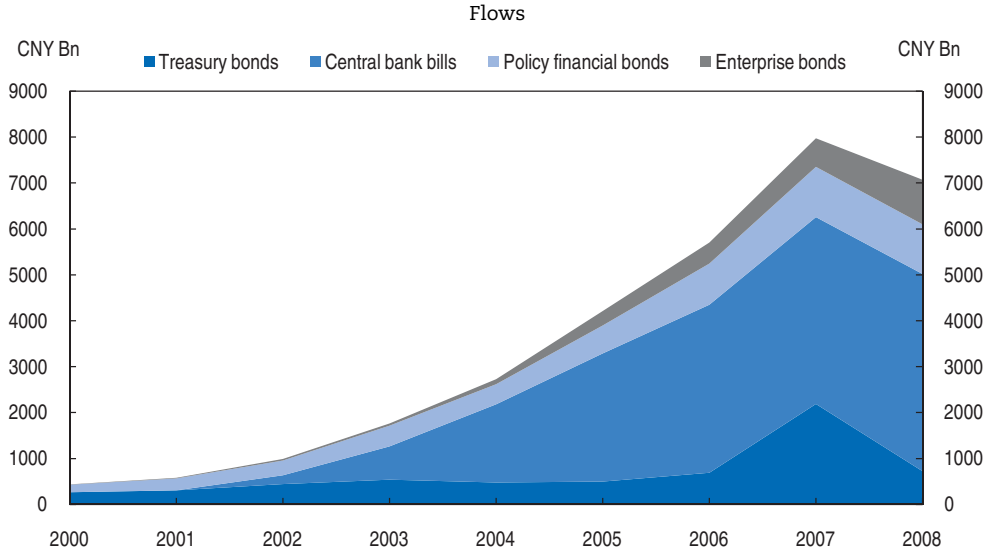
As well as using quantity-based tools to control liquidity, the PBoC controls a range of interest rates in the economy to varying degrees. The PBoC sets benchmark interest rates for commercial bank lending and deposits across a range of maturities. It also sets interest rates on refinancing credit extended to the banking system, the rediscount rate, and rates paid on the required and excess reserves of the commercial banks deposited at the central bank. The yields on PBoC bills, which are used in OMOs to sterilise foreign currency inflows, are also under the influence of the central bank. In comparison to OMOs and required reserves, policy interest rates play a secondary role in monetary policy implementation and the PBoC changes them less frequently and typically by a smaller amount than central banks elsewhere (Anderson, 2007).

As well as quantity-based and, to a lesser extent, price-based instruments, the PBoC still uses a form of administrative guidance to influence bank lending. Since bank-specific credit ceilings were removed in 1998, the PBoC has held monthly meetings with commercial banks to outline its concerns about credit conditions across sectors. The practice has since become institutionalised with the PBoC publishing notices aimed at curbing lending in particular sectors from time to time. The PBoC also regularly reports on its "window guidance" in its *Quarterly Monetary Policy Reports*. Administrative guidance has been instrumental in slowing credit growth during periods of rapid expansion, such as in the early 2000s, and increasing it more recently in response to the global recession. According to Geiger (2006), window guidance can be effective because in the Chinese political hierarchy, the governor of the PBoC ranks above officials in charge of the commercial banks.

The influence of the PBoC on the interbank market

The interbank market for bonds started operating in 1997 and has since developed quickly (Figure 2.1). As discussed in Chapter 3, the rapid growth in China's bond market has

Figure 2.1. **Bond market issuance**



Source: Chinabond.

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been facilitated by financial sector liberalisation and the market infrastructure for borrowing and lending reserves among banks is now well established. Although issued bonds have typically been short-term, bonds of longer maturities are being increasingly offered and turnover and liquidity have grown rapidly. In January 2007, a market-driven reference curve for the onshore money market – the Shanghai Inter-Bank Offered Rate (SHIBOR) – began to operate officially. With the notable exception of corporate paper, market interest rates, including interbank rates, bill discounting rates and bond yields are fully liberalised and move flexibly to clear markets for borrowing and lending reserves. Despite recent progress, however, China's bond market is still relatively small both compared with other countries and relative to the size of bank lending within China.

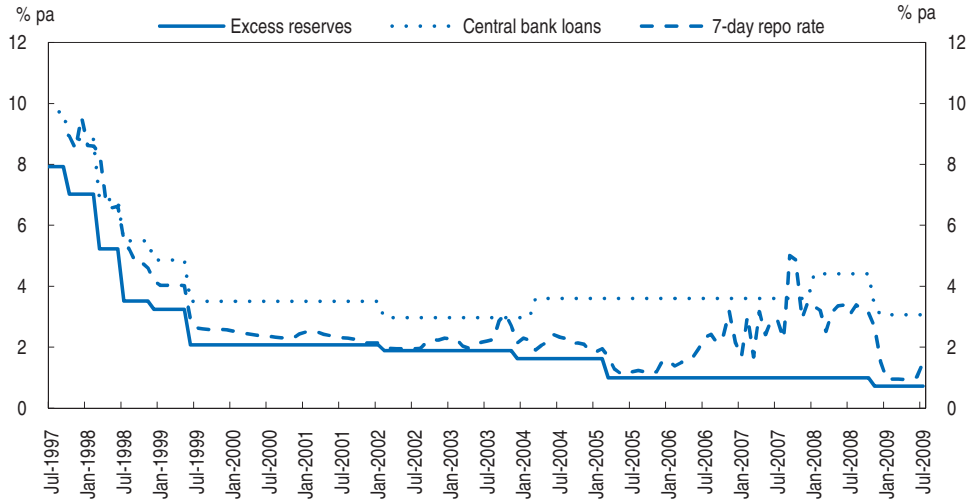
Since 2002, when PBoC bills were first issued, a relatively deep and liquid market has developed and they are now the largest bond type on offer. The central bank uses PBoC bills of various maturities to conduct OMOs aimed at achieving its liquidity targets. In 2004, the PBoC introduced a range of innovations to improve the effectiveness of its OMOs, including the introduction of a three-year and a one-year future dated bill. In addition, the PBoC increased the frequency of its OMO auctions, extended the length of the trading period and linked the bill trading system with the payment system so that settlement can be done on a payment-on-delivery basis. Consistent with the PBoC's reliance on quantity-based measures for implementing monetary policy, bill auctions are usually conducted as fixed-quantity tenders with a variable interest rate, although fixed-interest-rate auctions have been used as well from time to time. There is also an active repo market that the PBoC can use to manage the supply of reserves, although in practice it has not used it much.

The PBoC has considerable leverage over short-term money market interest rates. By setting the interest rate it pays on excess reserves, the PBoC effectively imposes a floor in the interbank market. In principle, the PBoC's base or benchmark rate, at which it lends to banks and other financial institutions, should impose a ceiling. In practice, however, the PBoC does not issue loans at this rate and there has been no lending through the base lending window since 2001. As a result, money market rates occasionally spike above the base lending rate when liquidity is short. Until the onset of the global financial crisis, the PBoC had progressively increased the spread between the interest rate on excess reserves and base lending to encourage banks to trade amongst themselves in the interbank market (Figure 2.2).

The interest rates under the control of the PBoC have started to have a stronger influence on interest rates in the interbank market. Indeed, both rolling correlations and time-variant coefficients estimated using an econometric model indicate that the pass-through of changes in three-month and one-year PBoC bill rates to interbank repo rates of the same maturity has increased markedly since 2006 (Conway *et al.*, 2010). Although these correlations are not as strong as in OECD countries, where central banks stand ready to lend or borrow at the policy interest rate, PBoC control over interbank interest rates is becoming increasingly significant.

Another important consideration for the effective transmission of monetary policy is the extent to which interest rate changes at the short end of the yield curve influence the long end. Policymakers typically influence short rates, but spending and consequently inflation are usually related to interest rates at longer maturities. The stronger the relationship between short and long interest rates, the more leverage the central bank has along the yield curve, thereby increasing the likelihood of real activity correlating with

Figure 2.2. **Short-term money-market interest rates**



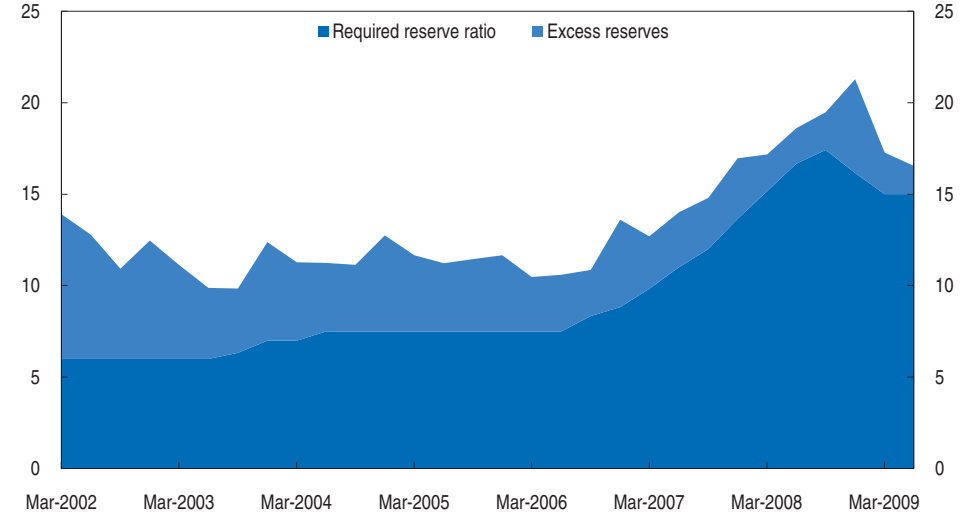
Source: CEIC.

StatLink http://dx.doi.org/10.1787/777472716224

changes in monetary policy. In OECD countries, this relationship has changed over the past few decades, reflecting the relative importance of inflation expectations as a driver of bond yields (Cournède *et al.*, 2008). In China, the impact of quarterly changes in 90-day interest rates on 10-year bond yields has increased since 2005 and is currently broadly comparable to that in a number of OECD countries (Conway *et al.*, 2010).

A significant reduction in the amount of excess reserves held by the banking sector is one important reason why China's money market has become more sensitive to the actions of the PBoC and different market segments have become more integrated. In early 2002, excess reserves accounted for almost 8% of bank deposits, more than doubling the size of bank reserves deposited at the PBoC (Figure 2.3). By the start of 2009, excess

Figure 2.3. **Required and excess reserves**



Source: CEIC.

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reserves had fallen to under 2.5%. Hence, banks are now more likely to need to borrow in the money market to cover their liabilities and are therefore more sensitive to money market rates.

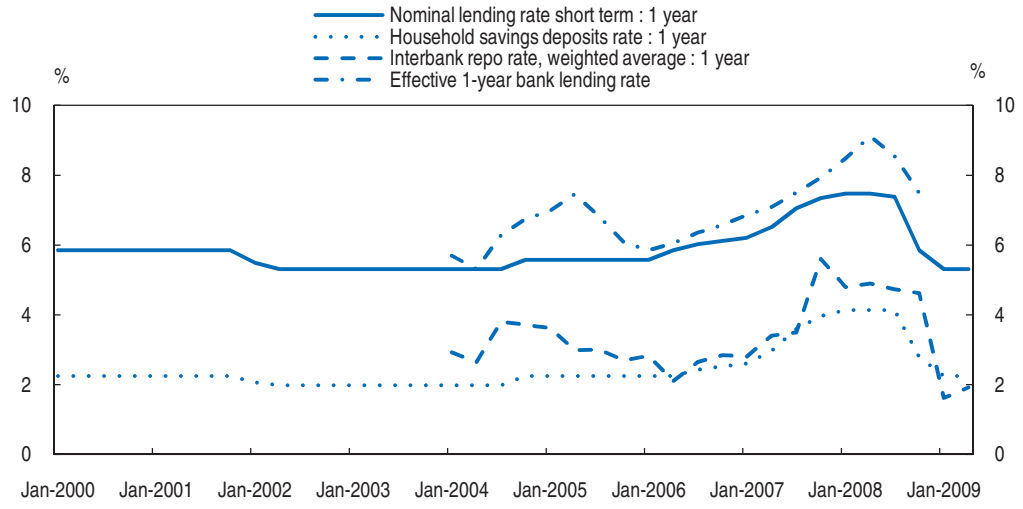
Even so, excess reserves in the Chinese banking system remain high compared with the norm in other countries for a number of reasons.[3] As discussed below, high liquidity in the banking system is an inevitable consequence of the current exchange rate regime coupled with generally large capital inflows. In addition, the relatively small size of China's bond market means that banks have only limited options for investing their large deposit base. Finally, the interest rate paid by the PBoC on excess reserves effectively lowers their opportunity cost.

How responsive is bank lending to money-market conditions?

Money markets are one of the key links between a country's financial system and its real economy. For that link to work, however, banks must be able to absorb and pass on changes in the cost of funds in the money market to bank clients. This point is especially salient in China given that bank lending is by far the largest source of outside financing for investment. Liu and Zhang (2007) report that the banking sector intermediates about 75% of financial capital in China, implying that bank lending rates, to a large extent, determine the marginal cost of capital for the entire economy.

As mentioned, the PBoC sets benchmark interest rates for commercial bank lending and deposits across a range of maturities. Until 2004, the rates set by the commercial banks were not permitted to deviate from the benchmark rates by more than 10%. Since then, the bands of permissible interest rates around the benchmark rates have been progressively widened and commercial bank lending rates are now only subject to a floor, and deposit rates to a ceiling (Figure 2.4).[4] This has significantly increased the extent to which commercial banks are free to set interest rates and has consequently reduced the role of the PBoC's benchmarks for macroeconomic control. However, the ceiling on deposit rates does appear to be binding, with effective deposit rates clustered around the benchmark and real deposit rates close to zero or negative for long periods (Porter and Xu, 2009).[5]

Figure 2.4. **Commercial lending rates and the repo rate**



Source: CEIC, PBoC, OECD.

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With commercial banks increasingly profit-oriented and relying more on the money market as a source of funding, and the central bank adjusting regulated rates more in line with market rates, the relationship between the effective commercial bank lending rate and money market rates is strong. For example, since 2004, the correlation between the effective one-year bank lending rate and the one-year repo rate has been 0.81, significant at the 99% level of confidence. Even so, as discussed in Chapter 3, commercial banks are not yet generally pricing loan risk efficiently and lending remains biased towards SOEs.

The way forward for interest rate reform

China's monetary policy implementation framework needs to evolve to keep pace with a rapidly-changing economy or risks losing its effectiveness. Targeting money growth with quantity-based instruments has been a natural evolution for Chinese monetary policy from the era of credit rationing. In addition, the PBoC's substantial sterilisation operations, which, as discussed below, are necessary to absorb large capital inflows under an inflexible exchange rate regime, also predispose the PBoC towards a quantity-based approach to liquidity management. Although quantity-based frameworks have an important role to play in countries with shallow and under-developed financial markets, interest rates are a key macroeconomic price in more advanced economies and ensuring that they operate freely and transmit changes in monetary policy is a crucial prerequisite for an efficient allocation of capital.

One important disadvantage of the PBoC's quantity-based approach is that day-to-day changes in money supply and demand translate into high-frequency interest rate volatility. As a result, realised interest rate volatility in the interbank market is typically higher in China than in countries with an implementation framework based around an overnight policy interest rate (Conway *et al.*, 2010).[6] While the SHIBOR benchmark yield curve was introduced partly to reduce short-term interest rate volatility, it has had only limited success to date. Moving to a policy interest rate framework would be much more effective in reducing high-frequency interest rate volatility given that it addresses its root cause. This approach would also enable the system to handle shocks better and allow changes in policy settings to be communicated to the public more effectively.

Making more use of policy interest rates would also reduce the PBoC's reliance on changes in required reserves as a means of controlling liquidity, which have been found to hamper financial market development (IMF, 2004). In addition, changes in required reserves and quantitative monetary tools in general risk becoming less effective as other forms of financial intermediation outside the banking system gain prominence. Moving to a policy interest rate would also lessen the PBoC's reliance on "window guidance" to commercial banks, which weakens competition and undermines the market determination of interest rates. The impact of window guidance on bank behaviour is also unpredictable and asymmetric, with banks following the wishes of the PBoC in times of tightening suffering commercial disadvantage.

This highlights another important difficulty with using quantity-based tools to implement monetary policy. Because SOEs still have preferential access to bank finance, a reduction in credit growth, for example, typically falls disproportionately on private-sector firms which, as a group, have been the most productive in China (Chapter 4). In contrast, an interest rate hike in a price-based framework is more likely to induce firms to suspend investment projects for which the expected stream of future profits is marginal or highly

uncertain, without the need for bank officials to make such judgements. Conversely, an interest rate cut will tend to stimulate investment projects with the highest expected rates of return, whereas mandated increases in bank credit, which have played a large role in the PBoC's response to the global recession, imply a greater risk of non-performing loans impairing bank balance sheets in the future.

As well as moving to a price-based implementation framework, interest rate reform in other areas of China's financial markets also needs to proceed. To continue reducing excess reserves in the banking system and improving the degree of central bank control over money market conditions, the interest rate on excess reserves deposited at the central bank needs to be set significantly below the other central bank rates. This would also eliminate the *de facto* interest rate floor in the money market and allow interest rates greater flexibility to respond to market conditions as well as lower the risk of the money market ceasing to function.[7] On the other hand, the interest rate paid on required reserves should be set more in line with market rates. As discussed below, this would lower the share of foreign reserve sterilisation costs that is currently borne by the commercial banks.

Some aspects of China's current interest rate framework also hinder competition in the banking sector. With commercial bank interest rates increasingly linked to money market conditions, the primary purpose of the PBoC's lending rate floor and deposit rate ceiling is to safeguard the profitability of the predominantly state-owned banking sector. By progressively widening the margin between benchmark lending and deposit rates, the PBoC has effectively pushed some of the cost of bank restructuring onto Chinese borrowers and savers, though it narrowed that gap in 2008-09. However, the benchmark rates weaken the incentive for commercial banks to price risk appropriately and stifle competition in the banking sector. They also weaken the pass-through of changes in monetary policy instruments on effective bank interest rates (Feyzioglu *et al*., 2009). Finally, the deposit rate ceiling results in Chinese savers not being sufficiently compensated, and consequently their financial income, as a share of total income, is among the lowest in the world (Feyzioglu *et al*., 2009). As the money market now provides banks with an interest rate benchmark, there is no longer a need for the PBoC to do so. Accordingly, the benchmark lending and deposit rates ought to be progressively phased out. Concerns about bank profitability should be addressed by fiscal and prudential policy, rather than interest rate regulation.

As underlined in Chapter 3, corporate bond market regulation is also in urgent need of reform. Restrictions in this market protect banks' large corporate lending business. If this market were better developed so that the issuing rates of corporate bonds were market-determined, competitive pressures on banks would intensify. As a result, bank borrowing costs for firms would better reflect market conditions, which, in turn, are affected by the PBoC. In essence, greater reliance on market prices in the valuation of corporate assets would work to reinforce the balance sheet channel of monetary policy.

The resilience of the banking sector to interest rates changes is a key issue for China in moving to a price-based implementation framework. As discussed in Chapter 3, reform in this area has moved a long way over recent years and the banking sector is now in significantly better health than in the recent past. With non-performing loans having been successfully reduced to low levels, the risk of financial stress in the banking sector in response to increased movements in PBoC policy interest rates has lessened. The key to

further improving the robustness of the banking sector is to transform it into a well-supervised system that effectively allocates credit to its most efficient use given prevailing market interest rates. Many of the policy recommendations in Chapter 3 are designed to do just that. Ultimately, in conjunction with the framework changes discussed below, moving to a policy interest rate would facilitate the modernisation of the financial system.

Given the strains placed on China's financial system by the current exchange rate regime, further interest rate reform needs to be carried out as part of a package that includes changes in currency market arrangements, as outlined below.

How sensitive is the real economy to interest rate changes?

The transmission of monetary policy to the real side of the economy requires that components of aggregate demand be sensitive to changes in financial conditions. A great deal of research in this area has focused on understanding the impact of interest rate changes on investment, which accounts for a particularly large share of GDP and growth in China and is an important driver of business cycle volatility.[8] In principle, firms adjust their capital stock so that its marginal productivity equals its user cost. As interest rates increase, for example, firms scale back projects for which the expected return is insufficient to cover the higher financing costs, and investment slows. In addition to this direct interest rate channel, higher interest rates may also reduce firm cash-flow which, in the absence of perfect capital markets, will reduce their spending (credit channel).

Monetary policy transmission is difficult to see at the macro level

As discussed in detail in Conway *et al.* (2010), the macro-based evidence of a significant negative relationship between changes in interest rates and capital formation in China is not particularly compelling. The most common and obvious explanation is that state-owned commercial banks are obliged to lend to SOEs that enjoy soft budget constraints, often have their debts forgiven and are therefore insensitive to changes in the price of credit. However, studies of monetary policy transmission in OECD countries also generally have difficulty finding clear evidence of a significant link between interest rate changes and investment at the macroeconomic level. This difficulty is often ascribed to simultaneity biases – investment moves pro-cyclically with the business cycle, which, in turn, is positively correlated with interest rates.[9]

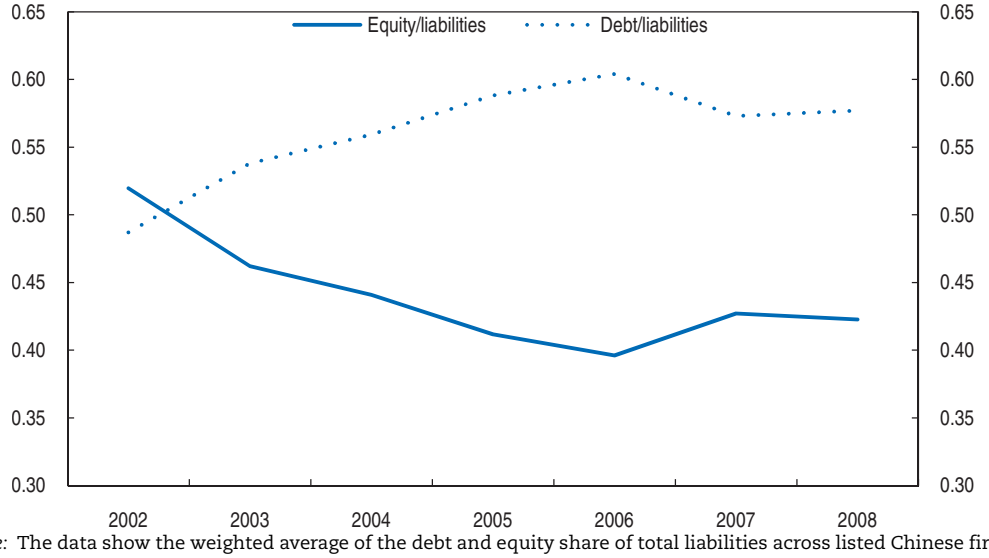
Micro-level studies are more revealing

In contrast to studies conducted at the aggregate level, micro-level approaches aimed at understanding the linkages between capital formation and its user cost have been more fruitful in OECD countries. For example, the impact of changes in monetary policy on investment at the firm level has been investigated using micro data in France, Germany, Italy and Spain. This work provides compelling evidence of an interest rate channel operating through the user cost of capital. In addition, it also uncovers a significant credit channel whereby firms with weaker balance sheets display a higher sensitivity of investment spending to cash flow.[10]

In the case of China, there are reasons to think that economic reforms over recent years would have increased the elasticity of capital formation to its user cost. Since the 1980s, the Chinese government has been progressively separating government functions from business operations across sectors, including banking. SOEs are now held more accountable for their successes and failures and access to finance at interest rates

that are (implicitly or explicitly) below market levels has become much more limited. At the same time, the rapid development of the private sector should also increase the sensitivity of aggregate investment to the user cost of capital. Listed Chinese firms have been relying more on debt funding over recent years, which should also heighten their sensitivity to interest rate changes (Figure 2.5).

Figure 2.5. **Equity and debt to total liability ratios in listed Chinese firms**



Note: The data show the weighted average of the debt and equity share of total liabilities across listed Chinese firms.
Source: Taiwan Economic Journal database, OECD.

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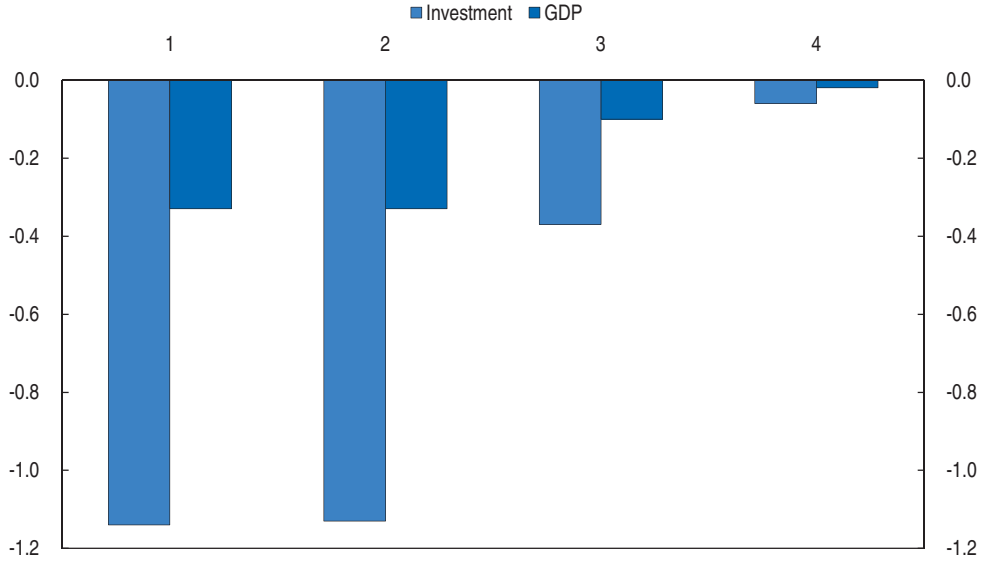
New OECD econometric analysis at the micro level reveals that the investment decisions of listed Chinese firms are indeed sensitive to the user cost of capital (Conway *et al.*, 2010). By influencing the cost of debt financing and the opportunity cost of equity financing, interest rate changes alter the user cost of capital for Chinese firms and thereby affect investment.[11] This effect is statistically significant across all firms but smaller for larger ones, perhaps indicating that SOEs are still somewhat less sensitive to the user cost of capital than the private sector. The analysis also points to a credit channel for monetary policy in that firm cash-flow is found to have a highly significant impact on investment. This may also reflect the effect of monetary policy operating through the firm's balance sheet – that is, a change in monetary policy translates into a change in the amount of funds available to the firm and thus affects its investment.[12]

Dynamic simulation of this firm-level model indicates that the impact of interest rate changes on business investment is not only statistically significant but also of a scale that is useful for macroeconomic stabilisation. In this simulation, the policy interest rate is raised by one percentage point while inflation is held constant. This policy rate shock is then reversed linearly over five years. Changes in the policy interest rate are assumed to gradually feed into the interest rate faced by firms according to the maturity structure of their debt and the extent of equity financing.[13] The cost of equity financing is driven by the cost of long-term debt, which, based on the observed behaviour of Chinese 10-year bond rates, increases by 0.2 percentage point for every percentage point rise in short rates. In total, reflecting the gradual impact of the policy rate on interest rates faced by firms, the user cost of capital increases by only one third of a percentage point in the first year in

response to a one percentage point increase in the policy rate. Even so, this relatively mild policy interest rate shock is estimated to lead to a cumulative slowdown in investment and GDP relative to baseline of 2.5% and 0.9% respectively over the next four years (Figure 2.6).

Figure 2.6. **Impact of a one percentage point increase in real policy rates on investment**

The increase in the policy rate is tapered to zero over four years, % change from baseline



Source: OECD calculations.

StatLink http://dx.doi.org/10.1787/777566228521

The impact of monetary policy on consumption is probably small but growing

China's consumer credit market is still relatively small compared with enterprise credit but is developing quickly. At the end of the 1990s, there was scarcely a housing market at all. However, as a result of housing market reforms that concluded in 1998, the sale of state-owned housing to occupants at less than market value resulted in a large number of owner-occupiers with little debt and created the potential for a buoyant market. Since then, a re-orientation of the banking system towards more commercial lending practices has significantly increased the dynamism of the residential mortgage market. Banks have rapidly expanded mortgage lending, which has increased by over 20% annually since 2006. By mid-2009, the value of total residential mortgages had risen to around CNY 3.9 trillion or 10% of total bank lending.

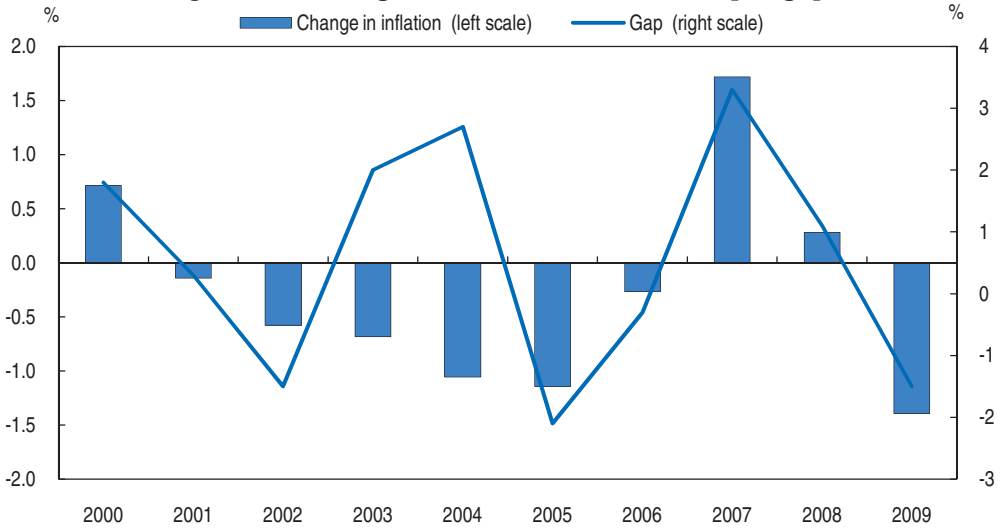
The housing market is therefore becoming a significant additional channel through which interest rate changes affect the real economy. At the current level of interest rates and assuming a 15-year mortgage, a two percentage point increase in interest rates would increase mortgage payments by an amount equivalent to 3.5% of consumer spending or 1% of GDP.[14] The effect of interest rates on house prices is another potential transmission channel through which monetary policy could affect economic activity. Over 1998-2005, however, there was no evidence for such an effect in China, although credit availability did appear to influence house prices (Zhu, 2006).

Do changes in aggregate demand influence inflation in China?

In market economies, the difference between aggregate demand and potential output is a key source of changes in inflation pressure: the output gap, as a summary measure of the extent of excess demand, is an important link between the real side of the economy and inflation. Given that the investment decisions of Chinese firms are sensitive to interest rate changes and the rapid growth of consumer credit, a significant relationship between aggregate demand and inflation would provide important evidence of an operative monetary policy transmission channel. Of course, for this link to work, prices need to be largely determined by market forces, which is generally now the case in China.[15]

The Chinese economy was very volatile from the mid-1980s to the mid–1990s, with wide swings in growth (and hence the output gap) and inflation. Since then, with the linking of the exchange rate to the dollar and greater experience in managing an increasingly market-oriented economy, the gaps between supply and demand have moderated and the volatility of inflation has declined. Prior to the global financial crisis, inflation began to pick up again, partly as a reflection of the global commodity cycle, with CPI inflation peaking at 8.1% in February 2008. From the beginning of 2009, however, as a result of the marked tightening of domestic policy one year earlier combined with the global economic recession, Chinese inflation has declined markedly, turning into deflation. Consistent with China's recent inflation experience, the OECD estimate of the output gap indicated significant excess demand in 2007 that was absorbed and turned into slack with the tightening of domestic policy and the global recession (Figure 2.7).

Figure 2.7. **Changes in inflation and the output gap**



Source: OECD and CEIC.

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An estimated Phillips curve equation indicates that the output gap does have a significant influence on inflation in China (Conway *et al.*, 2010). When aggregate demand is greater than the economy's supply capacity, inflation begins to move upwards in response to shortages in key markets. The converse applies when the output gap is negative. In addition, changes in the (trade-weighted) nominal effective exchange rate also

significantly influence inflation, with currency appreciation working to bring down inflation.

China's current inflation rate is also found to be significantly influenced by expected inflation one year in the future. This has important implications for monetary policy, which will be more effective than would otherwise be the case provided the PBoC's pursuit of low and stable inflation is credible. If it is believed that the PBoC will adjust policy settings to keep inflation low, this will, to some extent, become self-fulfilling through the impact of expected inflation. As a result, a given reduction in inflation can be brought about by smaller changes in the output gap than if expectations were based purely on past inflation. The estimated Phillips curve equation also indicates that in the long run there is no trade-off between excess demand and inflation. This implies that any sustained increase in output above potential would lead to ever-higher inflation.

Not surprisingly, given price and other reforms in China, Phillips curve estimates are sensitive to the sample period and to how structural change is accounted for in the model. However, with a larger share of economic activity being conducted by the private sector and subject to market conditions, the relationship between excess demand and inflation is likely to become more robust over time.

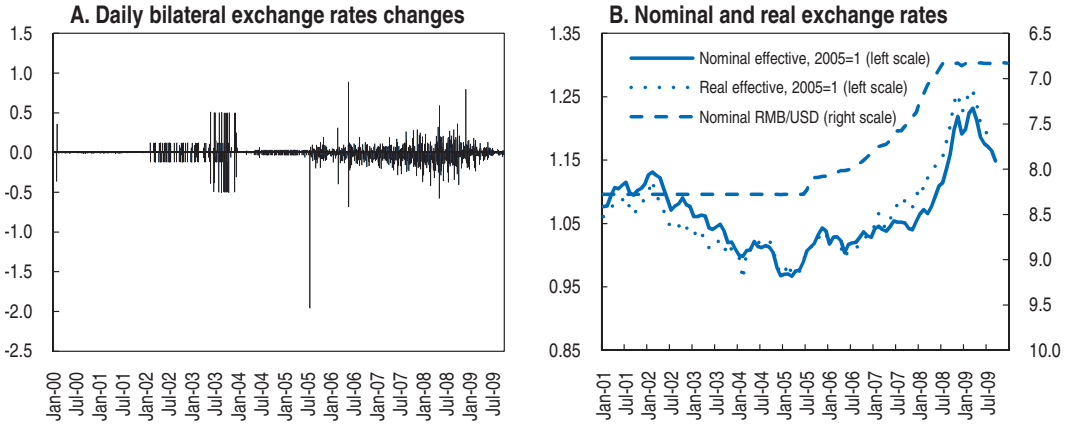
China's exchange rate regime

Since a system of dual exchange rates was abolished in 1994, China's exchange rate regime has officially been described as a managed float. During the first half of the 2000s, however, the renminbi was effectively pegged to the US dollar. In July 2005, the renminbi was revalued by 2.1% against the US dollar and the bands of permissible daily movements increased to ±0.3%. The authorities also announced that, going forward, the value of the renminbi would be set relative to a currency basket.

In practice, the authorities did permit the rate of renminbi appreciation *vis-à-vis* the US dollar to increase after the July 2005 announcement but daily changes typically did not test the ±0.3% bound.[16] Since August 2008, appreciation has stalled and the value of the renminbi has been broadly stable against the US dollar. Although the official weights in the renminbi currency basket have not been disclosed, estimates derived from an econometric model suggest that the weight of the US dollar may have fallen somewhat in 2008 but has still averaged over 0.9 since the 2005 announcement (Conway *et al.*, 2010). Since March 2009, movements in the renminbi against the dollar have been dwarfed by movements in the dollar against the euro, yen and other currencies and the renminbi depreciated by 9% in nominal effective terms from then until December 2009 (Figure 2.8).

Over recent years, China's exchange rate regime has been coming under increasing pressure. Since 2005, large current account surpluses and rising capital inflows, particularly of foreign direct investment, have resulted in appreciation pressure on the renminbi (Figure 2.9, Panel A). In response, the State Administration of Foreign Exchange has sold renminbi, leading to a large and sustained increase in foreign reserves to unprecedented levels. In late 2008 and early 2009, sizeable capital outflows slowed the pace of foreign reserve accumulation (Figure 2.9, Panel B). However, this proved to be temporary and since March 2009 reserve accumulation has averaged around $55 billion per month. By mid-2009, total reserves stood at $2.1 trillion, making China by far the world's largest holder of foreign exchange reserves, ahead of Japan.

Figure 2.8. **Bilateral and effective exchange rates**



Source: CEIC, OECD.

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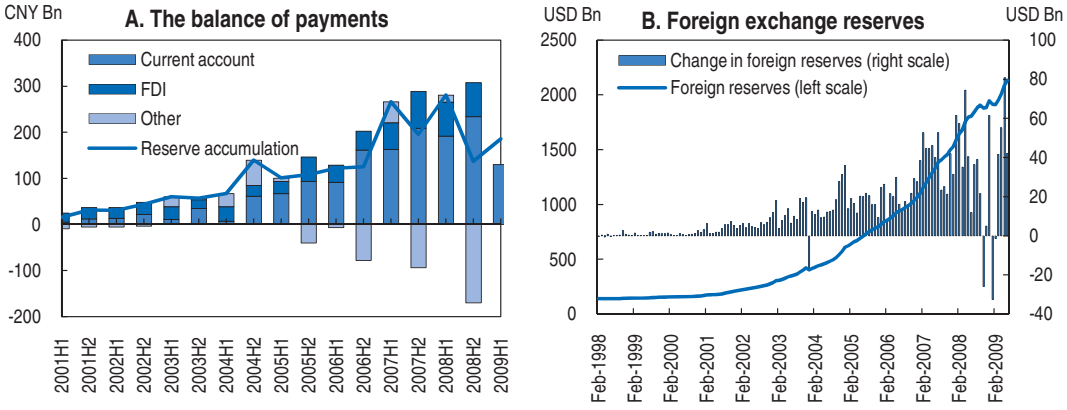
Figure 2.9. **The balance of payments and foreign exchange reserves**



Source: CEIC, OECD and BIS.

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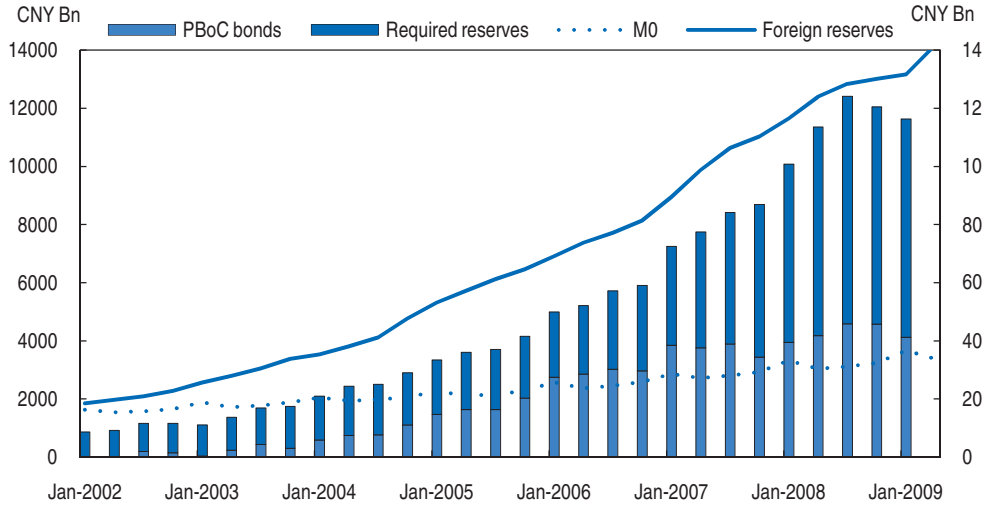
The PBoC has sterilised foreign reserve inflows

The rapid accumulation of foreign exchange reserves arising from currency intervention has the potential to spill over into China's domestic money market by affecting reserve money growth and wider monetary conditions. This has been an important consideration underpinning the policy actions of the PBoC over recent years. To limit such effects, the PBoC uses OMOs of PBoC bills and changes in commercial bank reserve requirements to drain liquidity from the banking system and sterilise the domestic monetary consequences of foreign reserve inflows.

Since 2002, the value of the PBoC's sterilisation instruments outstanding has risen roughly in line with the stock of foreign exchange reserves, indicating that the central bank has generally been successful in offsetting the domestic monetary impact of reserve inflows (Figure 2.10).[17] Accordingly, base money growth has been relatively stable, with little evidence of a trend pick-up in the mid-2000s when reserve inflows began to accelerate. Since then, the PBoC has primarily relied on reserve requirement hikes to offset

Figure 2.10. **PBoC sterilisation and base money**



Source: CEIC.

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increased inflows while the issuance of PBoC bills has slowed. In mid-2009, the total value of PBoC bills outstanding was CNY 4.1 trillion, equivalent to 8.25% of total bank deposits. With the required reserves ratio at 15% – equivalent to CNY 7.5 trillion – the PBoC is effectively removing 23.3% of bank deposits from circulation.[18]

The cost of China's exchange rate regime

Although the PBoC has generally managed to sterilise the effect of foreign reserve inflows on the domestic money supply, holding large reserves is not necessarily costless. The net costs are difficult to quantify, however, as they depend on several unknowns, including the maturity of bonds held as reserves and their currency composition. However, if all foreign exchange reserves are held in dollars, in instruments with short-term maturities and financed in local currency by short-term liabilities, then the financing cost depends on the short-term interest rate differential between US Treasury and PBoC bills. Since 2003, when the build-up in reserves took off, Chinese rates have been, on average, 20 basis points below US rates. Periods when financing was expensive, such as since the beginning of 2008, have been offset by periods when there was a profit in holding reserves, notably in 2007, when the Chinese authorities did not follow the Federal Reserve in raising short-term interest rates. The differential has been small despite capital controls that, in theory, prevent arbitrage between domestic and foreign money markets. In total, over the period from June 2003 to October 2009, and based on the somewhat contrived assumptions spelled out above, the cumulated interest cost of financing the reserves would have been close to zero.

While the interest rate cost of holding reserves has been minimal, the central bank has incurred substantial losses due to the appreciation of the currency against the dollar. If the reserves had been held entirely in dollars, the cumulative loss would have amounted to around 6% of annual GDP by October 2009 and would eventually require a recapitalisation of the central bank.

As well as exposing the central bank and indirectly the government to interest rate and exchange rate risk, the PBoC's sterilisation operations also impose considerable cost

on the Chinese banking sector. In particular, the interest rate paid by the PBoC on required reserves is typically lower than interest rates prevailing in the money market, implying significant opportunity costs for the commercial banks from having to hold reserves. This has worked against the impact of regulated interest rates on bank profits, described above.

Sterilisation costs are a fiscal problem and arrangements need to be put in place to pay commercial banks a competitive rate of interest on required reserves and ensure that any losses borne by the PBoC are transferred to the government in a timely manner without weakening the commercial banking sector.

The way forward on exchange-rate reform

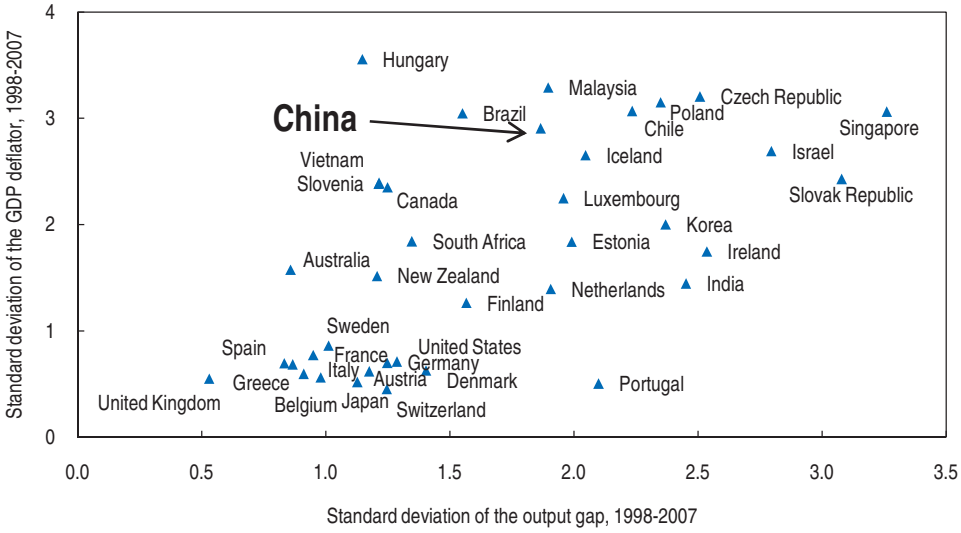
Perhaps the greatest cost of China's exchange rate regime is the constraint it imposes on the PBoC's ability to tailor monetary policy to domestic objectives. The essential problem stems from Robert Mundell's "inconsistent trinity" – the impossibility of running an independent monetary policy under a fixed exchange rate regime when financial capital is mobile across borders. This arises because, without exchange rate adjustment, cross-country differences in interest rates lead to capital flows that affect domestic financial conditions. Ultimately, the arbitrage opportunity closes and the central bank is prevented from running an independent monetary policy.

Intervening to sterilise changes in foreign reserves can forestall this adjustment but runs the risk of ever-increasing capital flows that could ultimately overwhelm central bank control of the money supply. For example, resisting currency appreciation and sterilising the foreign reserve inflow prevents the domestic interest rate from falling, which attracts more inflows, necessitating more sterilisation, etc. Eventually, as sterilisation costs become prohibitive, the central bank has no choice but to allow the currency to appreciate or interest rates to fall, sparking domestic inflation. In either case, an appreciation of the real exchange rate becomes unavoidable.

In the case of China, capital controls do provide the PBoC with some scope for independent monetary policy despite a heavily-managed exchange rate regime. Deviations from covered interest parity (CIP) *vis-à-vis* the United States have been relatively large and persistent at times (Ma and McCauley, 2007; Conway *et al.*, 2010). Expectations of renminbi appreciation against the US dollar – as measured in the offshore non-deliverable forward market – do appear to influence the direction and volume of estimated portfolio flows across China's border.[19] However, persistent deviations from CIP suggest that these flows are insufficient to equalise returns on broadly equivalent assets, implying that China's capital controls do still bind to some degree. In turn, this implies that the PBoC has some autonomy in its monetary policy settings, despite the exchange rate regime.

It remains an open question, however, whether the degree of autonomy afforded by China's capital controls is sufficient to allow the PBoC to conduct monetary policy in an optimal way. Assessing central bank performance in this regard is not straightforward given the difficulties of isolating the effect of monetary policy on the macroeconomy. Since the "boom/bust" cycles of the 1980s and 1990s, Chinese inflation volatility has fallen considerably. However, inflation volatility was also lower in most other countries after 2000 and Chinese inflation remains more volatile than in most OECD countries, including the United States, against whose currency the renminbi has been extremely stable (Figure 2.11).

Figure 2.11. **Inflation and business cycle volatility across countries**



Note: The standard deviations are calculated using the HP filter over 1998-2007 (annual data).
Source: World Bank and OECD.

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Although a range of factors are at play, the PBoC's policy actions seem often to reflect balance-of-payments concerns at the expense of domestic policy objectives. For example, Burdekin and Siklos (2006) find that changes in foreign reserves play a significant role in the PBoC's monetary policy reaction function. Similarly, Ouyang *et al.* (2007) find evidence that changes in foreign reserves have a significant impact on changes in the PBoC's net domestic assets, implying that maintaining a targeted exchange rate narrows the scope for monetary policy to address domestic objectives. Laurens and Maino (2007) argue that China's tightly managed exchange rate in the face of foreign exchange inflows prevents greater reliance on interest rates to manage aggregate demand given that a tightening may result in larger capital inflows.[20]

The monetary policy constraints imposed by China's exchange rate regime are reinforced by concerns over the impact of central bank actions on sterilisation costs and the value of China's foreign reserve holdings. Given that the existing stock of PBoC bills has an average maturity of less than one year, changes in domestic interest rates aimed at controlling inflation quickly affect sterilisation costs. Contingent losses on foreign reserves also temper the extent of renminbi appreciation permitted by the Chinese authorities. A preference to contain the increase in China's foreign reserve holdings has prompted recent efforts to promote the use of the renminbi in international trade and finance.[21] However, if the renminbi is to be used more widely internationally, China's capital controls will need to be eliminated so that foreigners can invest in renminbi-denominated assets and easily repatriate their capital and income.

China will eventually require a flexible exchange rate regime with open capital markets. A first step would be to link the Chinese currency to a basket of currencies and to announce the composition of the basket. This would help avoid some of the potential problems of linking the renminbi to a currency that is influenced by different factors than those affecting China. The next stage of liberalisation in this direction could involve a greater liberalisation of capital outflows and a degree of foreign investment in Chinese bond markets, either through allowing foreign investors access to the government bond

market or allowing greater issuance of renminbi bonds by foreign issuers. The recent moves to allow certain banks to issue bonds in the Hong Kong market are a step in this direction. The currency could move to a managed float against a basket of currencies of China's major trading partners. Under such a regime, in order to mitigate the potential for abrupt changes in the value of the renminbi to destabilise economic activity, the PBoC would smooth short-run exchange rate fluctuations while allowing the exchange rate to reach its market-determined level over longer horizons. Greater exchange rate flexibility would facilitate the implementation of a monetary policy geared to domestic objectives.

Greater exchange rate flexibility would also enhance the exchange rate's role as an automatic stabiliser that helps smooth business cycle volatility, as China becomes more integrated with the global economy. Empirical modelling work shows that the exchange rate can have an important impact on the Chinese economy. As well as the impact of the nominal exchange rate on inflation discussed above, estimates of an IS equation show that changes in the real effective exchange rate are a significant determinant of changes in aggregate demand in China, with currency appreciation damping output growth (Conway *et al.*, 2010).[22] At the moment, greater exchange rate flexibility would likely result in currency appreciation, increase the labour share of income and the purchasing power of households and help reorient investment towards the non-tradables sector. However, it would also likely entail a short-term output cost that might warrant offsetting measures to boost domestic demand. In these circumstances, the authorities may be inclined to wait until inflation becomes a problem once again before allowing an appreciation. Greater exchange rate flexibility would also reduce the pace at which China's exposure to US dollar assets is rising. Although this may entail an initial capital loss on existing reserves, as the renminbi appreciates, it would lower China's exposure to future losses.

The benefits of moving towards a flexible inflation target

Greater exchange rate flexibility raises the question of the most appropriate nominal anchor for Chinese monetary policy. Increasing the PBoC's reliance on the stock of money as an intermediate policy target is problematic. Although a number of studies have identified a link between money growth and inflation in the long run, short-run instabilities in the rate of money growth consistent with low and stable inflation indicate that a money target is not a good stand-alone nominal anchor (Laurens and Maino, 2007). In addition, simple quantity-based frameworks do not handle shocks very well and are susceptible to errors in forecasting money demand.

Instead, changes in the PBoC's policy stance should be predicated on informed judgements based on monitoring a set of indicators in the framework of a flexible inflation objective over the medium term. Because money growth and inflation are correlated in the long run, money aggregates would still have an important role to play as informational variables within this framework.[23] This would facilitate the PBoC "leaning against" excess credit creation and the build-up of related imbalances that have contributed to the recent failure of monetary policy in a number of countries to ensure macro and financial stability (White, 2009).

Incorporating an inflation objective into the PBoC's monetary policy framework would yield a number of additional benefits.[24] Specifically, an inflation objective is transparent and easily understood by the public. So when monetary policy is credible, an inflation objective can help condition inflation expectations, which can play an important role in

macroeconomic stabilisation. In addition, an inflation objective has the advantage of focusing the political debate on what monetary policy is able to achieve in the long run, namely controlling inflation, and away from what monetary policy cannot do, namely permanently increasing output growth, lowering unemployment or keeping the real exchange rate at some predetermined level.

Moving China's monetary policy framework in this direction would require a range of enhancements in other areas. Incorporating an inflation objective into the policy framework would allow a rethink of NDRC policies that attempt to influence inflation by controlling individual prices. China's macroeconomic statistics would also need to continue to improve to provide the PBoC with better information to monitor the economy and communicate its policy intentions. Improved macroeconomic statistics would allow for better conditional macroeconomic forecasts to inform policy decisions. The literature on Chinese macro-modelling is still relatively sparse, but the empirical models underlying the results in this chapter and used in other research suggest that relatively stable macroeconomic relationships are beginning to emerge.

The issue of central bank independence would also need to be addressed. Currently in China, decisions to adjust the PBoC's monetary policy instruments are made by the State Council. Modernising the framework would require granting the PBoC instrument independence so it can react promptly and decisively to changing economic circumstances without being swayed by political concerns. Operational independence would allow the PBoC to generate and sustain the credibility it needs to effectively influence inflation expectations. The State Council would still set the strategic objectives, but leave implementation to the PBoC.

As the exchange rate regime evolves towards greater flexibility, monetary policy should focus increasingly on domestic objectives, notably the goal of price stability over the medium term. The monetary policy transmission mechanism is operational and the PBoC needs to be able to move short-term interest rates in a wider range to enhance the role of monetary policy in buffering the economy from domestic and external shocks.

Notes

1. See the PBoC's website: *www.pbc.gov.cn/english/huobizhengce/objective.asp*.
2. According to Governor Zhou Xiaochuan, as cited in Liu and Zhang (2007).
3. For example, in the United States and euro area, excess reserves are typically of the order of 1% or less of total deposits.
4. Interest rate ceilings on loans still apply, however, for the rural credit co-operatives.
5. In the second quarter of 2009, however, reflecting high market liquidity, medium- and long-term enterprise deposit rates exceptionally floated below the PBoC benchmark deposit rates.
6. The PBoC attributes high-frequency interest rate volatility to announced increases in required reserves and large IPOs that are often heavily oversubscribed. Using a model of China's interbank money market, Porter and Xu (2009) find empirical support for this observation.
7. On occasion, including during the first half of 2009 when the Chinese banking system was awash with liquidity, repo rates in the money market have fallen to within a few basis points of the PBoC interest rate on excess reserves, inducing the commercial banks to stop lending and deposit excess cash with the central bank (Figure 2.2 above).
8. In China, gross fixed capital formation has grown by almost 20% per annum over recent years and currently accounts for around 40% of GDP. Accordingly, understanding the linkages between

financial conditions and investment is of key importance when assessing monetary policy's macroeconomic stabilisation role.

9. See, for example, Bernanke and Gertler (1995), Chirinko (1993) and Gilchrist and Zakrajsek (2007). Other potential sources of biases include misspecification of dynamics in investment equations, transitory time-series variation in the data and positively-sloped supply schedules which bias the estimated user cost elasticity towards zero (Chirinko *et al*., 2004).

10. See the overview by Chatelain *et al*. (2004) and the country-specific papers referenced therein. Other studies based on microdata that reach similar conclusions for other countries include Gilchrist and Zakrajsek (2007) for the United States and Nagahata and Sekine (2005) for Japan.

11. The results also indicate that the PBoC benchmark commercial bank lending rate does not have a significant impact on capital formation at the firm level whereas the effective lending rate (shown in Figure 2.4 above) does. This implies that the benchmark policy rate is becoming increasingly irrelevant for macroeconomic control and strengthens the case for its abolition.

12. Interpreting the coefficient on the cash flow variable can be problematic given that current investment also depends on expected future profits, which may be correlated with current cash flow.

13. This average interest rate is not the rate that enterprises should use in making their investment decision; rather the interest rate on new borrowing should be used. However, almost all firm debt is short term, so reducing this bias. For the average firm, 80.9% of debt has an original maturity of less than one year. Of the remaining long-term debt, 17% had a maturity of less than one year, suggesting an average initial maturity of 6 years.

14. Mortgage lending is regulated by the PBoC. Until recently, the mortgage interest rate had to be adjustable and linked to the regulated commercial lending rate of the banks. Rates are changed at the beginning of each year. Mortgages must be less than 80% of the assessed value of the property and payments must be less than 50% of income.

15. Price reform in China began in agricultural markets in the late 1970s and gathered pace in the mid-1980s. By the early 1990s, almost half of industrial prices had been deregulated. By 2003, this figure had increased to almost 90% (OECD, 2005).

16. From end-July 2005 to August 2008, the absolute value of daily changes in the renminbi spot rate *vis-à-vis* the US dollar averaged 0.06%, only a small fraction of the permissible maximum. The limit of ±0.3% was reached or exceeded on only three days.

17. Relative to the PBoC's desired rate of reserve money growth – derived from a money supply equation – Ouyang *et al*. (2007) estimate that the central bank was able to sterilise 92 to 97% of excess reserve inflows over 1999-2005.

18. Prior to the onset of the global financial crisis, the total value of PBoC sterilisation instruments peaked at 27.5% of bank deposits (required reserve ratio of 17.5% or CNY 7.8 trillion plus PBoC bill issuance of 10% of bank deposits or CNY 4.6 trillion). As part of its efforts to increase liquidity in late 2008 and early 2009, the PBoC used OMOs and cuts in the required reserves ratios to inject around CNY 780 billion of base money.

19. Although reserve accumulation over the past four years has in large part been driven by the current account surplus and FDI inflows, estimated portfolio flows have also become increasingly significant, exceeding 5% of GDP on occasion. A number of authors have investigated the drivers of portfolio inflows in China, finding that to some extent they are correlated with expected movements in the exchange rate, interest rate differentials and asset market returns (Anderson, 2007; Ma and McCauley, 2007). Ouyang *et al*. (2007) find that China's balance of payments is sensitive to changes in domestic money creation.

20. On the other hand, Ma and McCauley (2007) note that the correlation between US and euro-area interest rates is higher than that between US and Chinese rates and argue that this implies that the PBoC has at least as much autonomy in the conduct of monetary policy as the European Central Bank. However, in making this comparison, the wider macroeconomic context needs to be taken into account. For example, if, compared to the euro area, China's business cycle is less correlated with the US cycle, then, all else equal, Chinese interest rates will need to deviate from US rates by a relatively larger margin for monetary policy to be optimal.

21. From mid-2009, selected firms in five Chinese cities have been able to settle transactions in renminbi with businesses in Hong Kong and Macau. Foreign banks are able to buy or borrow renminbi from mainland lenders to finance such trade. The PBoC has also signed currency-swap agreements with Argentina, Belarus, Hong Kong, Indonesia, Malaysia and South Korea and will

make renminbi available to pay for Chinese imports if these economies run short of foreign exchange. The Chinese government has issued its first offshore renminbi-denominated bond. In addition, certain Hong Kong banks have been allowed to issue renminbi-denominated bonds, a step towards building an offshore renminbi market.

22. Shu and Yip (2006) also find that changes in the exchange rate influence aggregate demand, through the net exports channel, as well as inflation.

23. See, for example, Gerlach and Kong (2005) and Laurens and Maino (2007).

24. The pros and cons of inflation targeting in emerging economies are discussed in Mishkin and Schmidt-Hebbel (2007).

Bibliography

Anderson, J. (2007), *The China Monetary Policy Handbook*, UBS Investment Research, Hong Kong.

Bernanke, B. and M. Gertler (1995), "Inside the Black Box: The Credit Channel of Monetary Policy Transmission", *Journal of Economic Perspectives*, Vol. 9, No. 4.

Burdekin, R. and P. Siklos (2005), "What Has Driven Chinese Monetary Policy Since 1990? Investigating the People's Bank of China Policy Rule", *East-West Center Working Papers*, No. 85.

Chatelain, J.-B., A. Generale, I. Herando, U. von Kalckreuth and P. Vermeulen (2003), "New Findings on Firm Investment and Monetary Transmission in the Euro Area", *Oxford Economic Papers*, Vol. 19, No. 1.

Chirinko, R. (1993), "Business Fixed Investment: A Critical Survey of Modelling Strategies, Empirical Results, and Policy Implications", *Journal of Economic Literature*, Vol. 31, No. 4.

Chirinko, R., Fazzari, S. and A. Meyer (2004), "That Elusive Elasticity: A Long-Run Panel Approach to Estimating the Capital-labour Substitution Elasticity", *CESIFO Working Papers*, No. 1240.

Conway, P., T. Chalaux and R. Herd (2010), "Reforming China's Monetary Policy Framework to Meet Domestic Objectives", *OECD Economics Department Working Papers*, forthcoming.

Cournède, B., R. Ahrend and R. Price (2008), "Have Long-Term Financial Trends Changed the Transmission of Monetary Policy?", *OECD Economics Department Working Papers*, No. 634.

Feyzioglu, T., N. Porter and E. Takats (2009), "Interest Rate Liberalization in China", *IMF Working Papers*, WP/09/171.

Geiger, M. (2006), "Monetary Policy in China (1994-2004): Targets, Instruments and their Effectiveness", *Würzburg Economic Papers*, No. 68.

Gerlach, S. and J. Kong (2005), "Money and Inflation in China", Hong Kong Monetary Authority, *Research Memorandum*, 04/2005.

Gilchrist, S. and E. Zakrajsek (2007), "Investment and the Cost of Capital: New Evidence from the Corporate Bond Market", *NBER Working Papers*, No. 13174.

IMF (2004), "Monetary Policy Implementation at Different Stages of Market Development", *www.imf.org/external/np/mfd/2004/eng/102604.pdf*.

Laurens, B. and R. Maino (2007), "China: Strengthening Monetary Policy Implementation", *IMF Working Papers*, No. 07/14.

Liu, L. and W. Zhang (2007), "A New Keynesian Model for Analysing Monetary Policy in Mainland China", *Hong Kong Monetary Authority Working Papers*, No. 18/2007.

Ma, G. and R. McCauley (2007), "Do China's Capital Controls Still Bind? Implications for Monetary Autonomy and Capital Liberalisation", *BIS Working Papers*, No. 233.

Mishkin, F. and K. Schmidt-Hebbel, eds. (2007), *Monetary Policy Under Inflation Targeting*, Santiago, Central Bank of Chile.

Nagahata, T. and T. Sekine (2005), "Firm Investment, Monetary Transmission and Balance-Sheet Problems in Japan: An Investigation Using Micro Data", *Japan and the World Economy*, Vol. 17, Issue 3.

OECD (2005), *OECD Economic Survey of China*, OECD, Paris.

Ouyang, A., R. Rajan and T. Willett (2007), "China as a Reserve Sink: The Evidence From Offset and Sterilisation Coefficients", *Hong Kong Institute for Monetary Research Working Papers*, No. 10/2007.

Porter, N. and T. Xu (2009), "What Drives China's Interbank Market?", *IMF Working Papers*, WP/09/189.

Shu, C. and R. Yip (2006), "Impact of Exchange Rate Movements on the Mainland Economy", *China Economic Issues*, Hong Kong Monetary Authority, No. 3/06.

White, W. (2009), "Should Monetary Policy Lean or Clean?", *Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Papers*, No. 34.

Zhu, H. (2006), "The Structure of Housing Finance Markets and House Prices in Asia", *BIS Quarterly Review*, December.

Chapter 3

Progress on financial reforms: an update

Reforms to modernise and strengthen the financial sector have continued in recent years. The cleaning-up of the stock of non-performing loans is largely completed and considerable progress has been made in improving commercial banks' corporate governance structures and risk management systems. These reforms have given rise to stronger Chinese banks which have so far weathered the global slowdown well. Reform of capital markets has focused on phasing out trading prohibitions on non-traded shares and modernising securities market institutions. Efforts have also been made to improve credit access to underserved segments, notably small and medium-sized enterprises and rural China. Despite progress in opening up the financial sector to international investors and in allowing domestic investors to invest abroad, liberalisation has been slow and in most market segments the foreign share remains very small. Ownership of financial institutions remains dominated by the State, raising issues concerning the financial system's ability to serve the private sector as well as the extent to which banks lending decisions are based purely on commercial considerations. Although the bond market has continued to grow, corporate bond issuance remains relatively small and this segment will need to be further developed in order to address the current over-reliance on the banking system.

Financial reforms have accelerated and broadened since 2005

Much progress has been made in recent years with the key financial reforms reviewed in the previous *Economic Survey of China* in 2005. The financial health of the banking system has improved considerably and headway has been made with respect to the problem of non-traded shares. Laws on new companies, securities and investment funds have been enacted which together provide a more coherent, comprehensive and modern framework for the development of capital markets. Financial institutions have broadened the scope of their activities, housing and consumer credit have expanded rapidly and new financial instruments and facilities have been introduced. The pilot programmes to rejuvenate the rural credit system have developed into a nationwide and multifaceted reform effort. Steps have been taken to relax controls on international capital flows, and Chinese financial institutions are a growing presence in OECD and other foreign countries.

Despite the impressive progress, there are questions about its durability and sustainability. In recent years improvements in financial institutions' profitability and balance sheet quality have owed much to the booming economy. Moreover, while Chinese banks have so far weathered the global slowdown well, the acceleration in new lending since early 2009 raises the risk of a renewed surge in non-performing loans (NPLs) in the years ahead. Sharp increases in land prices, partly fuelled by low real interest rates and abundant liquidity, represent further risks to financial institutions. Over the longer term, financial system development is likely to be conditioned by decisions about broader economic reforms, such as pension reform. Under current policies, state ownership is likely to continue to dominate the financial system for the foreseeable future. At what pace such arrangements should evolve as the private sector expands is a major issue.

Banking reforms are coming to fruition

Over the past several years considerable progress has been made to restore and modernise China's banking system. The authorities have made good use of international experience in accompanying government financial assistance with reforms to establish banks' capabilities and incentives to lend prudently in the future.

Financial institutions' health has improved greatly

The massive NPLs the commercial banks carried in the late 1990s have largely been cleaned up. Their NPL ratio has fallen from 17.4% at end-2003 to 1.8% by mid–2009 (Table 3.1). In 2008, the NPL ratio of the state-owned commercial banks (SOCBs)[1] fell sharply, to 2.8%, mainly reflecting the decline in NPLs for the Agricultural Bank of China, which was the last SOCB to be restructured into a shareholding company. The joint-stock commercial banks (JSBs), which began reforms earlier than the other banks, along with the city commercial banks (CCBs), have also achieved impressive reductions in NPL ratios.

The fall in NPLs has been accompanied by an equally impressive improvement in bank capital adequacy. At end-2003, only eight banks (none of them SOCBs), accounting for less

Table 3.1. **Non-performing loans of commercial banks**

	2003	2004	2005	2006	2007	2008	2009H1
Outstanding balance of non-performing loans (CNY billion)							
Commercial banks	2 230	1 847	1 314	1 254	1 268	560	519
Major commercial banks	2 104	1 718	1 220	1 170	1 201	487	444
State-owned banks	1 590	1 575	1 072	1 053	1 115	421	376
Joint stock banks	154	143	147	117	86	66	67
City commercial banks	116	119	84	65	51	48	49
Rural commercial banks	n.a.	n.a.	6	15	13	19	19
Foreign banks	n.a.	n.a.	4	4	3	6	7
Non-performing loans share of total loans (%)							
Commercial banks	17.4	13.1	8.6	7.1	6.2	2.4	1.8
Major commercial banks	17.9	13.2	8.9	7.5	6.7	2.4	1.7
State-owned banks	16.9	15.6	10.5	9.2	8.1	2.8	2.0
Joint stock banks	6.5	5.0	4.2	2.8	2.2	1.3	1.0
City commercial banks	15.0	14.1	7.7	4.8	3.0	2.3	1.9
Rural commercial banks	n.a.	n.a.	6.0	5.9	4.0	3.9	3.2
Foreign banks	n.a.	n.a.	1.1	0.8	0.5	0.8	1.0

Source: China Banking Regulatory Commission.

than 1% of banking system assets, had achieved the minimum capital adequacy ratio (CAR) of 8% mandated by the Bank for International Settlements (BIS) and since adopted by the Chinese authorities (Box 3.1). By end-2008, 204 banks, including all the major commercial

Box 3.1. **China's rules for calculation of capital adequacy and loan classification**

The current rules for calculation of capital adequacy of Chinese banks (CBRC, 2004), which took effect 1 March 2004, are largely consistent with the international standards set out in the Basel I accord (Kudrna, 2007). However the 20% risk weight applied to claims on domestic banks – which is the same as that adopted by most OECD countries – seems low given their past problems and still limited experience as commercial entities. The 50% risk weight for enterprises owned by the central government (loans to State-owned enterprises (SOEs) owned by local governments receive a 100% weight), while not inconsistent with Basel I, tends to reinforce Chinese banks' traditional propensity to lend to large SOEs. Claims on policy banks and bank asset management companies receive zero risk weight even though they do not carry explicit government guarantees, which is contrary to Basel I provisions.

While some internationally accepted principles govern loan classification, specific standards and practices vary considerably. The five-part classification is the same as that used by other countries. Classifications are supposed to be based on forward-looking indicators of borrowers' ability to repay rather than only on past performance in meeting loan payments, as was the case under the earlier system. The largest Chinese banks' procedures for loan classification and provisioning appear to be fairly close to those of banks in Hong Kong, China (Kudrna, 2007).

The real key to effective loan classification, however, is the skill and experience of bank staff in analysing borrowers' current and prospective cash flow and the quality of their balance sheets. China's banks are relatively new to such analyses and their task is further complicated by the fact that the financial information provided by their customers, while improving, is still imperfect. While classification criteria are broadly similar to those used in OECD countries, they may understate the risks of default in China. Accordingly, loan classifications in China are likely to be less accurate for some time than would be expected in more developed financial systems. Implementation will need to be refined as experience accumulates. To this end, the CBRC and some of the major banks have been monitoring loan outcomes *versus* their original classification.

Table 3.2. **Progress in meeting minimum capital adequacy**

	2003	2004	2005	2006	2007	2008
Number of banks meeting minimum capital adequacy requirement[1]	8	30	53	100	161	204
Share of total banking system assets (per cent)	0.6	47.5	75.1	77.4	79.0	99.9

1. Figures refer to State-owned commercial banks, joint-stock commercial banks, and city commercial banks, for the end of each year.

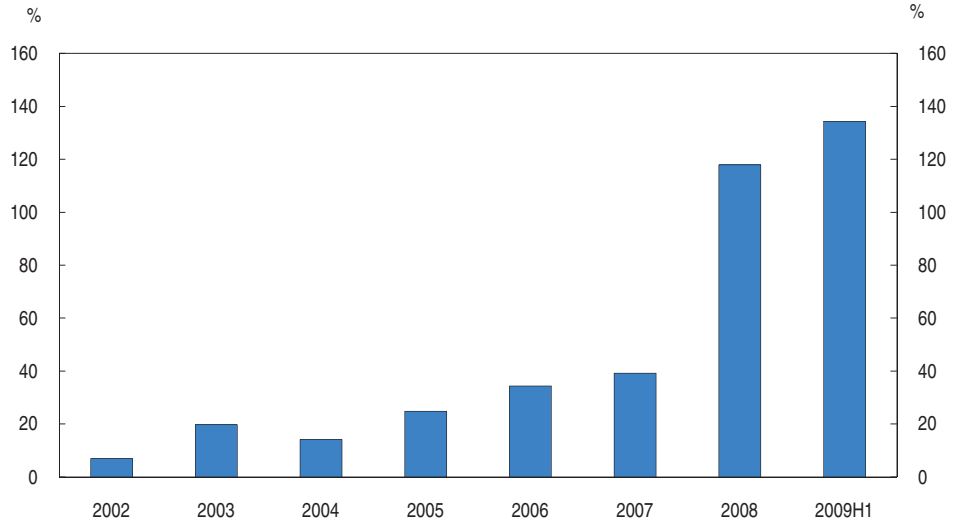
Source: China Banking Regulatory Commission.

banks, the CCBs and a significant number of rural commercial banks (RCBs), and accounting for 99.9% of total commercial banking assets, had achieved the BIS minimum (Table 3.2).

In response to the global financial crisis and sharp increases in bank lending the China Banking Regulatory Commission (CBRC) has recently been urging banks to increase their capital adequacy ratios further.[2] By mid-2009, all four of the large listed SOCBs had attained overall (tier 1 plus tier 2) CARs of at least 11%, and the weighted average core CAR of all 14 listed banks was 8.8%.

Banks have further improved their ability to deal with NPLs by increasing their provisions against loan losses. The provisioning ratio for the SOCBs and JSBs combined rose from nearly 20% at end-2003 to over 130% by mid-2009 (Figure 3.1). Since 2005 this increase has reflected both falling NPLs and rising loan loss provisions.

Figure 3.1. **Loan-loss provisions of major commercial banks**



Notes: Figures are expressed as a percentage of non-performing loans and are the average for the State-owned commercial banks and joint-stock banks.

Source: China Banking Regulatory Commission.

StatLink http://dx.doi.org/10.1787/777743426404

Improving balance sheet quality has been accompanied by a marked recovery in bank profitability (Table 3.3). Measured by net return on assets, profitability has risen from levels that were quite low by international standards.

Much of the improvement in banks' financial health in recent years has been due to the booming economy. Profits have risen given the substantial spread between loan and

Table 3.3. **Pre-tax profits of commercial banks**

CNY billions

	2003	2004	2005	2006	2007[2]	2008[2]
All commercial banks[1]	28.5	98.5	247.0	325.0	413.4	554.9
State-owned	–3.2	45.9	156.1	197.5	246.6	354.2
Joint-stock	14.7	17.6	28.9	43.4	56.4	84.1
City	5.4	8.7	12.1	18.1	24.8	40.8
Rural	0.1	0.8	2.9	4.1	4.3	7.3
Foreign	1.7	2.4	3.7	5.8	6.1	11.9

1. All commercial banks include State-owned commercial banks, joint-stock banks, city commercial banks, rural commercial banks, policy banks, the Postal Savings Bank, foreign commercial banks and rural and urban credit co-operatives.
2. After-tax profits.

Source: China Banking Regulatory Commission.

(still controlled) deposit rates and the rapid growth in lending. The transfer of NPLs to the four bank asset management companies brought down the level of NPLs considerably.[3] Since 2004, the decline in NPL ratios is almost entirely due to loan growth. Indeed, in 2007, the level of NPLs rose modestly, due to a small rebound for the SOCBs.

Banks' better performance also reflects important improvements in their capabilities. Efforts that began in the late 1990s to close unnecessary branches and cut labour have continued and banks have invested heavily in data processing and other facilities to improve the efficiency of their operations. Operating costs in relation to income have fallen to levels that are low not only in relation to OECD countries (due in large part to their lower labour costs) but also to other large emerging market economies such as India and Korea (McKinsey Global Institute, 2006). Income from fees and other charges have been rising gradually in relation to total income to around 10% for the major banks, but this remains below average levels of other BRIC and G7 countries (Feyzioglu, 2009).

Ongoing reforms to improve banks' governance and internal systems are improving the prospects that they will continue to perform profitability and prudently. All the major banks along with the CCBs and many RCBs have been converted into corporate entities subject to boards of directors and supervisors. These reformed governance structures incorporate most internationally-accepted best practices and should foster banks' transition from their traditional role as government agencies toward a commercial orientation. However, their effectiveness is presently constrained by limited experience with the new structures along with vestiges of past practices and ties to the government. Chinese bank boards are required to include several independent directors, but finding qualified people to fill this role is often difficult (Taylor, 2006; Thompson, 2005). The boards typically include audit, related-party transactions, and other committees that are widely regarded internationally as critical to effective governance, but the committees not infrequently lack effective authority or capability (Taylor, 2006). Former government officials and party members continue to dominate senior management and board positions. These limitations will probably ease as experience is gained with the new governance structures and as bank managements become more professionalised.

Internal reforms, also based on international best practices, to banks' loan assessment and risk management systems that have been underway since the mid-1990s are maturing. The issue in 2006 by the CBRC of *Guidelines for the Corporate Governance of SOCBs*, incorporating the elements of the 2002 guidelines for governance of the JSBs, was an important further step. They contain specific benchmarks for improvement in financial

ratios and internal controls along with timetables for their achievement. By end-2007, all of the SOCBs, JSBs, CCBs and many of the RCBs had met all or most of the targets. Also at the behest of the authorities, significant progress is being made in improving public disclosure of bank performance. All the SOCBs and JSBs, along with the majority of CCBs now publish annual reports.

More recently, the authorities announced a requirement that seven of the largest commercial banks, including the SOCBs, meet Basel II standards by end-2010. In addition to setting new standards for capital adequacy, the adoption of Basel II will require banks to meet new international benchmarks on the assessment and management of credit, market and operational risks. According to the CBRC (2009), the seven banks to which Basel II will apply are already well advanced in meeting the new standards.

The authorities have made good use of conditionality to encourage banks to effectively implement the reforms. For example, the SOCBs that were most successful in writing off or otherwise resolving NPLs and in reforming their risk management and governance structures became the first to receive capital injections and were first-in-line for listing on the exchanges. Progress on reforms has been a criterion for allowing selected banks to expand their business lines or (in the case of some CCBs) their geographic scope.

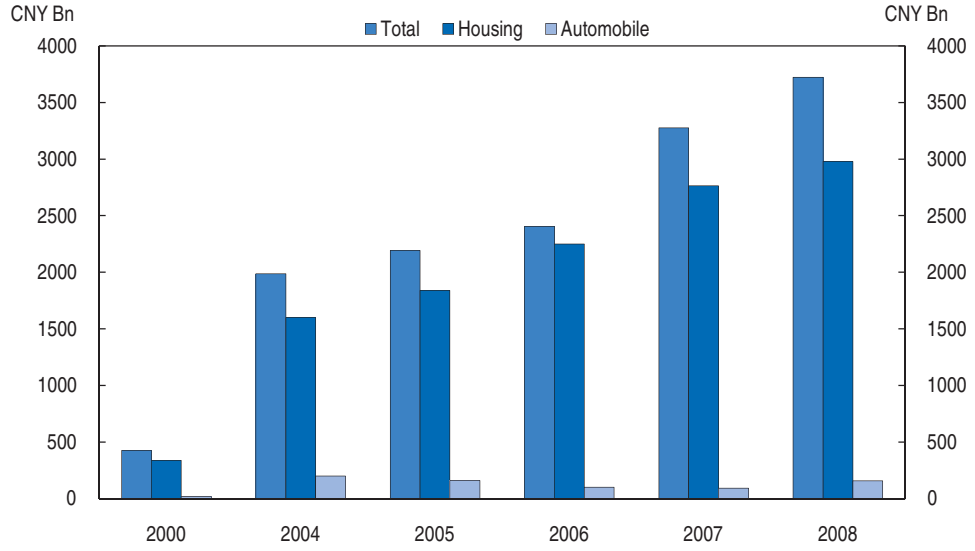
The government has been strengthening its supervisory oversight, which is crucial to ensure that reforms are effectively implemented and to contain problems before they become too big. In 2005, the CBRC began to monitor the migration of loans among classification categories, to make comparisons of original credit assessments *versus* the subsequent outcomes, and to develop peer group comparisons of the banks' progress on reforms (García-Herrero *et al.*, 2006). The authorities have also instituted ratings for individual banks based on the CAMEL system (capital adequacy, asset quality, management effectiveness, earnings, and liquidity) widely used internationally. In recent years there has been a trend increase in the coverage of on-site examinations, although it fell sharply in 2008, to 24% (CBRC, 2009). Greater coverage is probably needed, particularly given the changes China's banks are undergoing.

Banks are diversifying their activities but state control remains dominant

The improvement in banks' performance is facilitating diversification in their products, activities and overall scope. Credits to individuals, through consumer, housing and auto loans continue to be the fastest-growing segment of bank lending (Figure 3.2). Outstanding consumer credit reached 12.4% of China's GDP in 2008, a ratio which the experience of other emerging economies suggests is likely to continue to rise.[4]

Reported delinquency and default rates on consumer and housing loans have so far been low. However, experiences in other countries illustrate that problem housing loans can soar when real estate price booms, such as the one China has been experiencing in major cities over the past several years, give way to contraction. Moreover, Chinese banks already had problems with automobile loans: delinquent auto loans rose to nearly CNY 100 billion ($14.7 billion) by 2006, the bulk of which were held by the SOCBs, leading the CBRC to mandate tighter standards on auto loans in 2006 and again in early 2008, amid signs of renewed excesses. As the participation of households in the financial system increases through greater access to loans, as well as exposure to a broader range of investment opportunities, efforts to promote sound lending principles should be complemented by initiatives to improve financial literacy. Experience in OECD countries

Figure 3.2. **Consumer loans outstanding**



Source: People's Bank of China.

StatLink http://dx.doi.org/10.1787/777771524421

suggests that improving households' understanding of the risks associated with borrowing can help reduce the incidence of over-borrowing (OECD, 2005a).

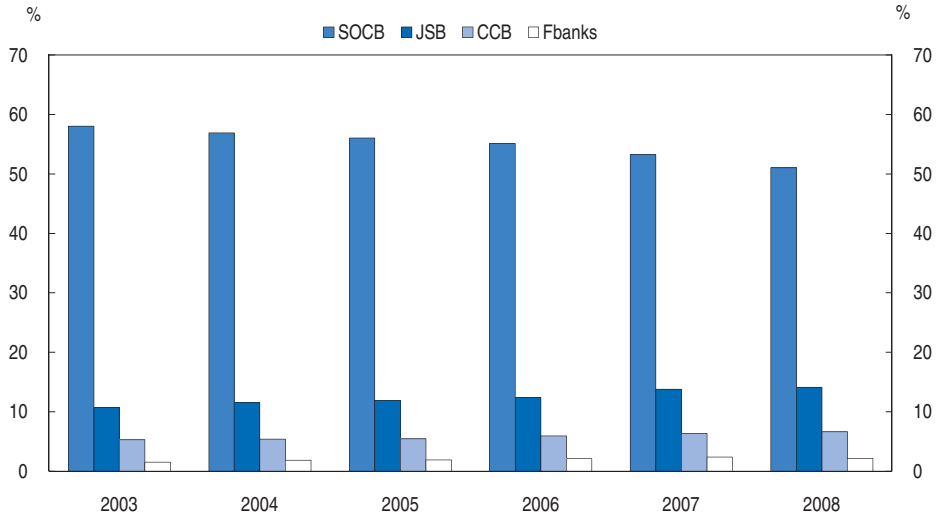
The authorities are gradually allowing banks as well as non-bank financial institutions to expand outside their traditional activities. In 2005, selected banks were authorised to establish fund management companies and in 2008 the authorities announced a pilot programme to allow banks to invest in insurance companies.[5] In 2009, the CBRC announced a pilot programme to allow the establishment of non-bank consumer finance companies in four cities. These moves should allow banks and other financial institutions to diversify their products and income sources, and foster the development of capital markets. The authorities have conditioned permission for individual banks to engage in these new activities on their progress in improving their balance sheets and reforming their governance and internal systems.

While banks are in much healthier condition, there has been limited change in the concentration of the banking sector and even less in the dominance of state ownership. The market share (of total assets) of the SOCBs continues to decline gradually, by about 1-1.5% per year, but remains above half of the total (Figure 3.3). Shares of the JSBs and CCBs have risen modestly but are still relatively small.

The creation of the Postal Savings Bank in 2006, along with the conversion of the Agricultural Bank of China and China Development Bank into commercial banks in 2008, is intended, in part, to help improve financing for the rural economy. Their entry, however, also tends to reinforce the dominance of large state-owned banks with traditionally strong ties to the central government.

Domestic as well as foreign private capital investment in Chinese banks has increased markedly. However, central and local governments retain the controlling interests in nearly all cases. Despite much earlier speculation about the creation of new private banks, there have been only a few, quite small, new entrants since China's accession to the World Trade Organisation (WTO) in 2001. Private investors and companies have gained significant ownership shares in some CCBs, in some cases sufficient to allow them to influence

Figure 3.3. **Bank market shares**



Note: Figures refer to share of total banking assets. SOCB- State-owned commercial banks; JSB- joint-stock commercial banks; CCB- city commercial banks and co-operatives; Fbanks- foreign banks. Total banking assets include assets of trusts and commercial finance and leasing companies.

Source: China Banking Regulatory Commission.

StatLink http://dx.doi.org/10.1787/777777816608

management decisions. However, early on this was followed by some abuses, witness the rise and fall of D'Long Investments, which used loans from banks it partially owned to fund its own speculative activities (Hirson, 2005). This has led the CBRC and other authorities to closely monitor investments by non-financial companies in the banking sector.

Institution of a formal deposit insurance system, which has been under consideration for some time, is key. A well designed deposit insurance scheme would bolster financial system stability and signal to the market that the government will not bail out (most) banks in the future and so reduce the moral hazard inherent in the present system (Box 3.2). It would also help level the competitive playing field between the SOCBs and the smaller banks. Their close ties to the central government and essential role in the payments system gives the SOCBs an implicit deposit guarantee that is not enjoyed by smaller banks (at least not with nearly the same degree of certainty).

Foreign banks' overall market share is low and had been growing only slowly prior to the onset of the global financial crisis. In 2008 this share fell slightly and it may fall further as foreign banks continue to offload assets to improve liquidity. Foreign banks have established a much greater presence in high-value and rapidly growing segments, such as investment banking, derivatives, and mergers and acquisitions. Their local-currency lending and other activities have expanded since China completed its fulfilment of its WTO commitments at end-2006 and a number of large multinational banks are developing retail banking services. Some have been highly profitable while others are making little or no profits. A survey by PricewaterhouseCoopers (2009a) paints a mixed picture for their near-term outlook. While foreign bank managers expect continued growth in the Chinese market, doubts were expressed as to the ability of foreign banks to increase their market share given the growing competitiveness of domestic banks.

Foreign banks and other foreign investors have also established a significant presence as strategic investors in Chinese banks. By mid-2006, all four reformed SOCBs, eight of the

Box 3.2. **Designing efficient deposit insurance schemes**

The central aim of deposit insurance is to protect depositors against bank insolvency and thereby bolster confidence in banks and prevent bank runs. Designing such schemes in a way that protects depositors while limiting the moral hazard that explicit guarantees on investments might induce is critical to ensuring their overall effectiveness. There are no generally agreed standards for designing deposit insurance systems and tailoring to individual country circumstances is important. In practice, the parameters of such schemes vary considerably across countries (Table 3.4). Nevertheless, a number of principles can help guide implementation (Schich, 2008).

It is important to set an appropriate limit on the level of coverage. Higher levels of coverage will tend to increase moral hazard while unduly low coverage will undermine the usefulness of deposit insurance. In many countries the response to this trade-off has been to establish limits which ensure that the vast majority of small depositors, who are likely to lack the resources to assess bank soundness, are protected while leaving large institutional investors exposed to market discipline. Setting clear and appropriate limits on coverage will also help limit implicit guarantees of state support. The experience during the recent financial crisis has highlighted how concerns about systemic failures, state ownership or political pressure can force governments into providing support beyond the explicit boundaries set by a deposit insurance scheme which is likely to increase moral hazard in the longer run (OECD, 2009).

A deposit insurance scheme can either be funded, by way of periodic contributions, or unfunded. Again, trade-offs exist between these two options. A fully-funded scheme is likely to give rise to opportunity costs as the proceeds from premiums will need to be allocated to low-yielding, liquid investments. Equally, an unfunded system may exacerbate liquidity problems, particularly in the event of multiple bank failures. Whatever the funding arrangement, it is vital that funds are available when needed. A related question concerns membership. Most deposit insurance schemes are operated by the government or are a mix of government and private sector and often participation is compulsory, thereby ensuring that all depositors have protection and adverse selection amongst deposit-taking institutions is avoided.

Finally, deposit insurance schemes represent just one element of the overall regulatory framework and their effectiveness will depend on the extent to which they can complement other institutional arrangements. In this respect promoting good governance in the banking sector and ensuring a sound regulatory and supervisory framework promotes financial stability and reinforces the effectiveness of deposit insurance by minimising moral hazard. Also, to the extent that different institutions are entrusted with different responsibilities in the event of a financial crisis a clear demarcation of responsibilities and details of procedures *ex-ante*, including how and when a deposit insurance scheme will pay out can help to reduce uncertainty.

JSBs, and 11 CCBs had foreign strategic investors. Foreign investments remain limited to no more than 20% of total equity for a single investor and 25% for all foreign investors combined. In most cases, however, the major foreign investors in a Chinese bank typically appoint one or two directors and do not take a management role, although they provide much-needed technical support and training.

Overall, China's opening to foreign banks has had neither the adverse effects on the domestic banks that many observers feared nor the benefits that many hoped for.

Table 3.4. **Deposit insurance in selected countries: main features**

	Coverage to GDP per capita ratio			Coverage to deposits per capita ratio	Co-insurance percentage	Per cent of deposits covered	Payment per depositor = Funded = 1 per deposit = 0		Funding private = 0 public and private = 1	Administration Official = 1 Joint = 2 Private = 3	Annual premiums	
	December 2008	January 2008	2003	2003	2003	2003	2003	2003	2003	2003	Risk-based	Flat rate
Australia	∞											
Austria	∞	0.6	0.7	0.8	10		0	0	1	3		Pro rata, *ex post*
Belgium	3.2	0.6	0.8	0.8	10		0	1	1	2		0.06%
Canada	2.2	2.2	1.6	2.5	0	34	0	1	1	1		0.33% maximum
Czech Republic	0.1	0.1		5.1	10	86	1	1	1	1		0.10%
Denmark	∞	0.9	1.2	2.3	0	45	1	1	1	2		0.20%
Finland	1.4	0.7	0.9	1.9	0	40	1	1	1	3	1	0.05% to 0.3%
France	2.2	2.2	2.7	3.9	0		1	0	0	3		On demand
Germany	∞	0.7	0.8	0.8	10		1	1	0	3		0.03% to 0.06%
Greece	4.6	0.9	1.4	1.7	0		1	1	0	2		0.025% (minimum)
Hong Kong, China	∞	0.4	0.0									
Hungary	4.9	2.3	1.6	4.0	0	87	1	1	1	2	1	0.30% maximum
Iceland	∞	0.4	0.7	1.5	0		1	1	0	1		0.15%
Ireland	∞	0.5	0.6	0.7	10		1	1	0	1		0.20%
Italy	3.9	3.9	4.6	8.6	0	62	1	0	1	2	1	*Ex post* 0.4% to 0.8%
Japan	2.5	2.5	2.5	2.1	0	88	1	1	1	2		0.0408%
Korea	2.4	2.4	3.3	4.5	0	81	1	1	1	1		0.05%
Luxembourg	1.3	0.3	0.4	0.1	10		1	0	0	3		*Ex post*
Mexico	3.5	3.5	489.1	1 955.0	0	81	1	1	1	1		Minimum 0.4%
Netherlands	2.8	1.1	0.7	0.7	0		1	0	1	1		*Ex post*
New Zealand	23.3	0.0	0.0									
Norway	3.8	3.8	5.8		0	76	1	1	1	3		0.015% of deposits
Poland	1.5	0.7	5.0	13.6	10		1	1	1	1		0.40% maximum
Portugal	6.4	1.6	1.9	2.1	0	53	1	1	1	1	1	0.1% to 0.2%
Russia	2.4	1.4	1.1	5.2	50	85	1					0.05%
Singapore	0.4	0.4	0.0									
Slovak Republic	0.0	0.1	4.3	7.4	10	47	1	1	1	2		0.1% to 0.3%
Spain	4.2	0.8	1.1	1.3	0	60	1	1	1	2		0.20%
Sweden	1.5	0.7	0.9		0	57	1	1	1	1	1	0.50%
Switzerland	1.4	0.4	0.5	0.4	0		1	0	0	3		On demand
Turkey	3.8	3.8	∞		0	100	0	1	1	1	1	1.0% to 1.2%
United Kingdom	2.2	1.5	1.9		10		1	0	0	3		On demand
United States	5.4	2.1	2.7	8.4	0	65/60	0	1	1	1	1	0% to 0.27%

Source: Schich (2008), *World Bank Deposit Insurance Database*.

International experience suggests that foreign banks can bring substantial positive benefits to domestic banking systems through transfers of technology and expertise and increased competition (Leigh and Podepeira, 2006). Recent studies suggest that foreign strategic investments have brought benefits to Chinese banks (Garcia-Herrero and Santábarbara, 2008; Berger *et al.*, 2009). For China to reap greater benefits from foreign participation, foreign banks' presence is likely to have to rise considerably further; they will need greater scope to acquire controlling interests in now state-owned banks, and political influence over bank lending decisions will need to recede.

Further improvements are still required

Evidence as to whether and how reforms are remedying the traditional weaknesses of China's banks is so far limited. While most individual banks are becoming more efficient in their operations, the efficiency of the system as a whole is limited by its dominance by the SOCBs, which tend to lag behind the smaller commercial banks (Shen *et al.*, 2009; Feyzioglu, 2009). The superior efficiency of the JSBs and many of the CCBs owes much to their greater exposure to market forces in the past. This suggests that more rapid growth in the share of these smaller banks would speed up the improvement in efficiency for the system as a whole.

A key question is the degree to which banks are now allocating credit according to strict commercial criteria. The traditional bias of banks, particularly the major ones, toward lending to larger SOEs seems to endure. Indeed, a case study based on interviews with SOCB bank managers suggested that giving SOEs greater priority in lending decisions was something ingrained and difficult to change (Yeung, 2009). Provinces in which SOEs account for a larger portion of total output also tend to have higher ratios of bank loans in relation to output (Dobson and Kashyap, 2006). The proliferation of credits for local infrastructure projects effectively backed by local governments during 2004-06, which led the central government to outlaw the guarantees in April 2006, is another indication of continued government influence over bank lending decisions (Dobson and Kashyap, 2006). Further evidence is provided by empirical studies reporting that even partial privatisation exerted a positive influence on access to bank lending for private firms (Firth *et al.*, 2009) and that a higher share of bank board directors appointed by SOEs was associated with a higher NPL ratio (Ferri, 2009).

Banks initially made little use of the allowed range for their lending rates when interest rate liberalisation first began, with most loans being made at the benchmark rate or slightly below. Since then the dispersion of lending rates has not increased much (Herd *et al.*, 2010). On average the bank lending margin was a mere 45 basis points above the bank regulated lending rate in June 2009 and only 12.9% of loans were for more than 159 basis points over the recommended rate. It would appear either that risk is markedly less in China, or that banks prefer not to take risks and ration credit to their smaller clients. Such a practice may be linked to reports that personnel policies make loan officers responsible for loans over their lifetime, without regard to risk-adjusted return on their lending portfolios.

Capital market development is accelerating on a firmer foundation

Significant progress has also been made since 2005 in strengthening the legal and institutional foundation of the capital markets and in removing major obstacles to their development. The much-awaited amended *Company Law* and *Securities Law*, which took effect in 2006, together with the *Securities Investment Funds Law*, which had taken effect in 2004, provide a comprehensive framework for the capital markets, supporting institutions, and institutional investors that previously had been scattered across many, sometimes incomplete or contradictory, laws and regulations adopted over a long period of time. Their effectiveness will be further bolstered by the implementation of the reformed bankruptcy law that became effective in June 2007 and by the amended *Law on Insurance*, that became effective in October 2009.

The new laws go a long way toward bringing China's capital market framework in line with international practices. They have provided essential support for the non-traded

share reform and restructuring of the securities industry discussed further below as well as for the development of new products and the gradual integration of the domestic capital markets with international markets. They further clarified responsibilities for the oversight of the capital markets, although it is still more divided among the major regulatory bodies than is usually the case in more advanced economies (CSRC, 2008b).

The non-traded share reform was a breakthrough toward a more mature stock market…

The plan announced in 2005 for a phased ending of the prohibition of trading on the exchanges of state-owned and legal-person shares (Box 3.3) was a major breakthrough in China's stock market development. By end-2007, 98% of listed companies had completed the reforms. In contrast to earlier reform efforts, the market reaction was positive.

Notable progress has also been made toward the goal enunciated in the 11th Five Year Plan of developing "multi-level" stock markets. After a slow beginning following its inception in mid-2004, listings on the second, small-and-medium-sized company board of the Shenzhen stock exchange have proliferated, reaching 273 by mid-2009. A third board, ChiNext, focusing on smaller high-growth/technology companies and also based in Shenzhen was launched in October 2009 with an initial listing of 28 firms. These boards mark an important first step toward expanding potential access of private companies to the capital markets. New market indices are also continuing to be developed and in August 2009 three indices comprising privately-owned enterprises were launched. Development of an over-the-counter market for equities trading, which could give access to a greater number and broader range of companies, would be an important further step.

Box 3.3. **Reform of the non-traded shares**

The prohibition of stock market trading of state-owned and legal-person shares (together known as "non-traded shares"), which jointly constitute nearly two-thirds of the equity of listed companies, has been a long-standing and major obstacle to development of the stock markets. The authorities have long recognised the importance of making all shares tradable to market development and ownership reform of SOEs, as well as the utility of being able to sell state shares to help finance the fledgling pension system. Legal-person shares have been transferable on off-exchange facilities for some time and their sale has resulted in the privatisation of some listed companies that were state owned when initially listed (Green, 2003). However limited steps toward making state shares tradable in 1999 and 2001 were aborted following adverse market reactions and outcries from individual stockholders worried that sales of state shares would severely depress prices.

The latest reform succeeded by making provision for compensation by holders of non-traded shares to owners of the tradable shares for the potential loss from the expected drop in the share price. Under the plan, owners of the state shares in a listed company were required to formulate a plan for conversion, including compensation, and obtain the approval of holders of at least two-thirds of the tradable shares. Most of the compensation has been made through transfers of state shares, although warrant issues and cash payments have also been used. To spread out the impact on market prices, the plan specified a "lockup" period prohibiting the market sale of converted shares for one year following the completion of a company's share reform, with the largest holders prohibited from selling for up to two further years.The authorities also took measures to forestall the near-term adverse market reaction to prior share reforms by suspending new public offerings for one year.

Incremental steps have also been taken toward the development of markets for derivative instruments that will become increasingly important for effective risk management by institutional and other investors. While the value of derivatives trading has grown rapidly, the range of products allowed remains relatively small and most activity is focussed on commodities futures.

... but more time and further steps will be needed to realise the full benefits

The share reform, together with the earlier reforms to the listing approval process (OECD, 2005b), are essential steps toward the development of a more mature and representative stock market. However their effects will take some time to be manifest and more will need to be done to ensure that their potential is realised. Because of the "lockup" period imposed on trading of major blocks of converted shares, only a small proportion of state shares have become tradable in the past couple of years. However, this process is expected to accelerate and to be completed in 2012 (Ahn and Cogman, 2007).

Improvement of the quality of listed companies has become a key policy objective but more priority needs to be given to diversification in terms of regional and industrial distribution, size and especially ownership. Progress toward both goals has been constrained by the pace of new IPOs. Very few new companies entered the market following the temporary suspension of IPOs imposed in mid-2005 to support the market in the wake of the non-traded share reform, although new listings have accelerated sharply since, both for A-shares and for H-shares (Table 3.5).

Table 3.5. **Stock market profile**

Number of listed companies	2000	2005	2006	2007	2008	2009H1
Total domestic (A and B share)	1 086	1 378	1 421	1 530	1 604	1 603
B-share listings	113	109	109	109	109	109
H-share listings	52	122	143	148	153	153
Listings on Shanghai Exchange	572	834	842	860	864	864
Listings on Shenzhen Exchange	514	544	579	670	740	739
Shanghai Stock Exchange :						
Total market capitalisation (CNY billion)	2 693	2 310	7 161	26 984	9 725	15 911
Tradable share market capitalisation (CNY billion)	848	675	1 643	6 453	3 231	6 524
Tradable share market capitalisation (% GDP)	8.5	3.7	7.8	25.1	10.7	21.1

Note: A-shares: companies incorporated in mainland China, whose shares can only be bought and sold by mainland Chinese and approved foreign investors; B-shares: mainland companies listed in foreign currencies; H shares: companies incorporated in mainland China, and traded on the Hong Kong and other international exchanges.
Source: China Securities Regulatory Commission, Shanghai Stock Exchange.

The new IPOs have been dominated by state-owned companies in the financial sector and in the utilities and infrastructure sectors. A considerable backlog of companies have been approved but not yet listed.[6] However, the authorities continue to control the timing of the IPOs by approved companies, as well as the total amount that can be issued, and have tended to slow the pace of new listings when the market weakens. Moving in the near term to a system that grants approved companies the right to decide when to carry out their IPO, similar to the registration system used in major foreign stock markets, would speed up improvement in the quality and diversity of listed companies.

The share reforms and the opening up of the IPO process, along with the development of the institutional investor base discussed below, should help to ameliorate long-standing

weaknesses in the Chinese equity markets. Transactions fees are high, even compared to other emerging Asian markets such as Korea and India, and liquidity comparatively low (CSRC, 2008b). The Chinese markets have undergone wide swings which have brought prices to levels that, in retrospect, were unsustainably high. There is evidence that individual share prices often poorly reflect company fundamentals (Feng, 2006). In particular, A-shares of companies listed on both the domestic and Hong Kong exchanges have generally traded at a noticeable premium over their H-share counterparts.

The authorities have attempted to counter market swings through variations in the stamp tax on transactions and, more recently, by exhortations to securities firms to hold on to their shares as prices fell. However, these and other official actions to influence the market are likely to have undesirable side effects, such as encouraging participants to underestimate the true risks of stock investments by encouraging a belief that the authorities will stabilise prices.

Market discipline of listed companies has been limited by the predominance of SOEs with still close ties and backing from the government (especially local governments) and by the inability of outside investors to acquire controlling interests of companies due to the ban on sales of state shares. Whether the reforms will be sufficient to establish a genuine market for corporate control remains unclear since it will depend on the willingness of controlling state shareholders to sell their stakes to outside investors.

Bond market development is progressing but the corporate segment remains limited

China's bond markets have continued to mature over the past three years, with total outstanding issues reaching around 45% of GDP by mid-2009 (Table 3.6). In overall size, the market compares favourably with those of other major emerging economies although it remains much more dominated by bonds issued by the central government and central bank. Central bank bonds, issued to absorb the expansion in bank reserves from the balance of payments surplus, have been the most rapidly growing component and are now around 25% of the total bond stock. Commercial banks remain the dominant bond holders while other institutional investors are less important than in OECD or some other emerging market economies. While shorter maturities – under three years – remain predominant, maturities of 10 years or longer are increasing in importance.

Table 3.6. **Outstanding bonds by type**

August 2009

	Value (CNY billion)	Share of GDP (per cent)
Treasury bonds	5 222	16.1
Central bank bonds	4 008	12.4
Policy bank bonds	3 953	12.2
Corporate bonds	352	1.1
Commercial paper	891	2.7
Total	14 427	44.5

Source: Chinabond, OECD estimates of shares and People's Bank of China.

There have been significant improvements in the inter-bank bond market, which accounts for more than 95% of secondary market trading. The number and range of institutions participating in the market continues to expand and now includes most domestic financial institutions as well as foreign banks. Facilities for settlement of

transactions continue to improve, with a growing portion of transactions carried out on a delivery-versus-value basis. Nevertheless, removal of the prohibition on bank trading of bonds on the stock exchange, which should no longer be needed, would help to improve the integration and overall efficiency of the market.

The corporate segment remains the least developed one in China. It is much smaller than the others or than corporate bond markets in other Asian emerging economies. As discussed in OECD (2005b), the corporate bond market has been hampered by fragmented regulation, the imposition of industrial policy criteria for primary issue, restrictions on the interest rates on primary issues, and regulators' very limited tolerance of default risk. Until recently, corporate issuers were required to obtain bank guarantees on their bank obligations. Not surprisingly, bond issuers have been largely limited to large SOEs.

The authorities have long acknowledged the importance of corporate bond market development to diminish the concentration of credit risk in the banking system and provide instruments needed by insurance companies and pension funds. The 2007 decision to transfer authority over bond market issues by listed companies to the CSRC was an important step. The CSRC has indicated that industrial policy criteria previously applied to issues by listed companies will be dropped and that bank guarantees on the bonds will no longer be required.[7] However, a complete set of rules necessary for bond issuance was delayed by some months and, partly as a result, very few corporate issues had occurred by mid-2008.[8] The development of the corporate bond market was again stymied when authorities halted approvals for all new issuances between September 2008 and June 2009 (China Economic Quarterly, 2009).

Considerable progress will be required before the development of a mature corporate bond market is assured. Bond issues by unlisted companies remain subject to the approval of the National Development and Reform Commission (NDRC). The NDRC will need to considerably relax its procedures and harmonise them with those applied by the CSRC if the market is to develop fully, and particularly if smaller and medium-sized corporations, whose needs are particularly great, are to gain access. Consideration could also be given to allowing commercial banks to trade bonds on the stock exchanges, since the improvement in their governance, internal systems, and regulatory oversight makes the traditional prohibition increasingly unnecessary. This would further encourage the development of the corporate bond market by improving the integration of the exchange and interbank secondary markets.

Further development of supporting institutions and market practices will also be needed. Credit rating agencies are critical to ensure that bond risks are adequately known and priced but their development has been stunted by the requirement of a bank guarantee. Domestic credit rating agencies have been overly dependent on the companies they rate, compromising the credibility of their judgements. Bond underwriters have had limited incentives to disclose information to the markets because they are not required to make a market in the securities they underwrite. Relaxation on the participation of foreign credit rating agencies, which are presently barred in most cases from rating domestic firms, could help.

The securities industry has been restructured but remains largely state-owned

The underpinning for capital market development will be further strengthened by the extensive reforms of the securities firm industry since 2004. They were intended to

recapitalise and restructure the industry, which fell into severe financial stress during the 2001-05 stock market decline, while addressing the main weaknesses that led to its problems. Securities companies had traditionally been confined to a narrow range of products, primarily based on cash trading, which left them heavily exposed to market fluctuations. Chronic weaknesses in governance of the firms, nearly all of which were originally state-owned and which continued to be effectively controlled by government entities even after being converted into corporations, were a major factor behind the problems. Inadequate governance led to poor management and periodic abuses that undermined investor confidence in the firms.

Reform of the industry entered a decisive phase following the transfer of authority over securities companies to the CSRC in 2004. The objectives were to weed out unviable firms; to recapitalise viable firms, through government injections of capital and subsequent listing; to create stronger entities through restructuring, mergers and acquisitions; and to strengthen governance and tighten regulation to prevent future problems. The authorities also began to widen the range of securities companies' products, services and funding sources. Strong conditionality has been used to provide incentives for firms to pursue the reforms. Opportunities to enter new lines of business were given first to the group of most viable firms, conditional on reforms. These were completed by end-2007. China's securities firms now are much stronger financially, although some further consolidation along with more diversification of their revenue sources is likely to be needed (CSRC, 2008b, Herd *et al*., 2010).

The industry remains overwhelmingly dominated by state-owned firms. The three state-owned investment companies that provided the capital injections and which now are major shareholders of many of the securities companies, along with the "pilot" companies, have the predominant position in the industry. Greater participation by foreign securities companies would help improve industry capabilities. The foreign presence is still modest, with eight joint-ventures in operation at end-2008. Foreign investors' participation has been discouraged by their restriction to joint-ventures and by their exclusion from trading A-shares (although they are allowed to underwrite) and other limits on their business. These limits have been relaxed somewhat in recent years. The authorities intend to gradually lift the restrictions on foreign securities companies, although no timetable has been specified (CSRC, 2008b).

Institutional investors are becoming a major presence

Spurred by regulatory reforms, institutional investors, particularly insurance companies and collective investment funds, have grown rapidly since 2004 and are becoming major presences in the stock markets. The portion of tradable A-shares held by all institutional investors reached 54% by end-2008, more than double the share in 2004 (CSRC, 2009). The portion of total equity (non-tradable as well as tradable) held by institutional investors is still relatively low compared to more advanced OECD countries, as is the share held by insurance companies and pension funds, but these are likely to continue to increase as the markets develop.

China's insurance industry continues to grow rapidly and the range of products and services is broadening. Total premiums increased at an average annual rate of 23% during 2005-08 and assets at a 30% rate. Market penetration, measured by the ratio of premiums to GDP, is now comparable to that of lower-income OECD countries.

The product mix is becoming more diversified, due in part to relaxation of regulatory constraints.[9] Automobile and health insurance are growing particularly rapidly. The authorities are encouraging development of agricultural insurance, which traditionally has been very limited, and have taken steps to stimulate the reinsurance sector, which has been lagging the industry as a whole and whose development is important to enable insurance companies to deal with especially large risks.

The authorities have considerably expanded the range of investment choices for insurance companies in recent years. The 2005 decision to allow the companies to invest directly in the stock market is an important step, both toward allowing the companies to diversify their portfolios into longer-term higher yielding assets more in line with the structure of their obligations and toward development of the capital markets. Direct holdings of equities were initially limited to 5% of total assets but the ceiling was raised to 10% in 2007. Together with their holdings via their asset management subsidiaries, insurance companies are now allowed to hold up to 25% of their total assets in stocks. By end-2007, total holdings of A-shares were about CNY 220 billion ($32.3 billion), making insurance companies the second largest institutional investor segment in the stock market (CSRC, 2008a). The ceiling on corporate bond holdings was raised in 2005 from 15 to 30% of total assets, and the range of fixed-income instruments permitted was expanded. As a result, insurance company portfolios are becoming more diversified and more similar in composition to those of counterparts in other countries. The amended *Law on Insurance* will provide further avenues for insurance companies to diversify their investment portfolios, including into real estate (China Law and Practice, 2009a).

In parallel with the expansion of investment opportunities, efforts have been made to improve the regulatory scrutiny of insurance companies and to bring standards for their governance and internal systems more in line with international best practices. In 2006, the China Insurance Regulatory Commission (CIRC) issued guidelines to strengthen corporate governance of insurance companies, followed by implementing measures concerning appointment of independent directors; rules governing connected transactions and the liability of senior management and directors; and guidelines on risk management and the conduct of internal audits (Allens Arthur Robinson, 2007). The amended *Law on Insurance* will also provide the CIRC with new sanctions to deter unregulated activities (China Law and Practice, 2009a).

Despite considerable progress to date, a number of long-standing industry features continue to limit its performance. The industry remains fairly concentrated and almost entirely state owned. Although there has been some decline in the dominance of the top two domestic insurers, China Life Insurance and The People's Insurance Company of China, they still have 40% and 44% of the life insurance and non-life insurance segments, respectively (Herd *et al.*, 2010).

China has fulfilled its WTO commitments on opening the insurance market to foreign participation, but foreigners' market share is still quite small. While foreign insurers are now permitted to operate nationwide, foreign life insurers remain confined to branches or joint-ventures in which they can have no more than a 50% equity share (non-life insurers are limited to a 51% share in joint-ventures but have the additional option of establishing wholly-owned domestic subsidiaries). The amended *Law on Insurance* further relaxes restrictions on access by foreign reinsurers but retains a requirement that Chinese reinsurers are offered at least 50% of reinsurance risks (China Law Insight, 2009). Overall,

China remains a very attractive market to foreign insurers (KPMG and Reuters, 2007) and allowing them greater scope could bring substantial benefits to the industry as a whole in terms of new products and greater competition.

Mutual funds are developing rapidly but prevention of abuses remains a challenge

Mutual funds have grown rapidly on the foundation created by the 2004 law and spurred by the 2006-07 stock market boom. By end-2008, there were 61 licensed fund management companies – nearly double the 35 companies in operation at end-2003 – managing more than 439 individual funds with total holdings of CNY 1.94 trillion ($284.5 billion) (CSRC, 2009). Mutual funds held 26% of all tradable A-shares by end-2007 (CSRC, 2008a), making them the largest holders among the major institutional investors.

Foreign companies have established a significant presence in the industry despite being limited for now to joint-ventures. At end-2008, there were 33 foreign joint-venture fund management companies (CSRC, 2009), with a market share of 45.4% (PricewaterhouseCoopers, 2009b). The ceiling on foreign investment in fund management companies was raised from 33% to 49% in 2005. Allowing foreign mutual fund companies greater access would help to dilute the now dominant role of state entities as owners in the sector as well as help to upgrade the skills and effectiveness of the industry as a whole.

Protecting investors in funds from abuses, who are mainly individuals, is increasingly a priority and a challenge for the regulatory authorities. The 2004 *Law on Collective Investments* requires the investment fund companies to adopt sound governance and internal management and risk controls comparable to those adopted by other financial institutions. The law prohibits insider transactions, such as the purchase by a fund of securities issued by the controlling shareholder of the fund manager. To suppress misleading claims to attract investors, funds are prohibited from including projections, offers of guaranteed returns, or guarantees against losses in their public disclosures.

The authorities' enforcement powers were further augmented by the 2005 *Amended Securities Law*, which allowed the CSRC to freeze the financial accounts of serious violators without first obtaining a court order and to suspend trading by individuals being investigated for insider trading or other insider abuses. Effective implementation of these powers, however, depends on the limited resources of the chief regulators of the firms (the CSRC along with the major exchanges).

Private investment funds pose another and possibly more difficult challenge. They typically manage the assets of one or several very wealthy individuals and are in most cases unlicensed, operating largely outside the regulatory net. A 2006 survey by the People's Bank of China (PBoC) estimated that holdings of private investment funds were nearly double those of the licensed fund management companies and accounted for nearly one-third of the trading activity on the domestic stock exchanges (Mu, 2007). As underscored by the failure of D'Long Holdings in 2004, the borrowing and investment relations between these funds and other financial institutions can pose serious risks (Hirson, 2005). A proposal to grant the CSRC new regulatory authority over private funds is to be considered in late 2009.

Pension funds will be a major force shaping future capital market development

Although in an early stage of development, China's pension funds are already a significant presence in the capital markets and are likely to be a major force shaping their

future expansion. The two main segments are the National Social Security Fund (NSSF), created in 2000, and the locally-managed enterprise annuity funds (EAFs), which hold the contributions from the second (occupational) tier of the pension system (see Chapter 7).

Due largely to regulatory restrictions, pension fund management has been quite conservative until fairly recently. While the NSSF was permitted in 2001 to invest up to 40% of its assets in domestic equities (and up to 10% in corporate bonds), it did not start investing in the stock market until 2003. EAFs were limited to bank deposits and government bonds until 2004. These restrictions, along with falling stock prices, led to low returns (around 3% on average for the NSSF) during 2002-05. However authorities have significantly relaxed the limits on capital market holdings of pension funds in recent years, although the funds remain subject to minimum shares invested in bank deposits and government bonds. By end-2007, the NSSF holding of domestic A-shares was nearly CNY 71 billion ($10.4 billion), or 35.7% of total assets, while EAFs held nearly CNY 50 billion ($7.3 billion) (CSRC, 2008a).

In recent years, a number of OECD countries have moved away from quantitative limits on pension fund allocation toward more flexible rules requiring fund managers to act "prudently", as if they were investing their own funds ("prudent person approach"). This regulatory strategy allows funds greater scope to adjust their allocations to changing market conditions and thereby achieve, in principle, a better return-risk outcome. In China's case, the present use of quantitative restrictions for pension funds is reasonable given the limited experience with such funds, their governance and their internal systems.

Once they are able to handle the risks, pension fund performance could be improved by relaxation of the limits to allow greater diversification. OECD analysis (Hu *et al.*, 2007) indicates that allowing the funds to invest more in domestic equities, a broader range of other domestic assets including real estate, and in overseas equities could boost overall returns and reduce their volatility. EAFs should also be allowed to make such investments as they demonstrate their ability to manage their investments prudently. In the nearer term, consideration might also be given to eliminating or at least lowering the minimum amounts required to be invested in bank deposits and government bonds.

Greater priority is being given to improving credit access for underserved segments

China's small and medium-sized enterprises (SMEs) and rural sector borrowers are subject to all the handicaps in obtaining credit that exist in other countries as well as additional obstacles arising from the transition to a market economy. These include legal ambiguities concerning property rights, collateral and bankruptcy; the financial problems of the traditional rural lenders; the tighter credit standards adopted by commercial banks as a result of financial reforms; and the withdrawal of local government backing for privatised SMEs (OECD, 2005b). As in other emerging economies, lack of access to formal credit has led to the development of a large informal financial sector, much of which operates outside of the law and regulatory net (Box 3.4). Improving access of SMEs and the rural sector to credit is recognised as essential to the authorities' broader goals of developing the private sector, fostering the growth of high-tech companies, and promoting rural development. Initial efforts focused on mandates to commercial banks to improve their lending facilities for these sectors and the development of credit guarantees. The reforms have broadened in recent years to place primary emphasis on the development of

Box 3.4. **China's informal financial facilities**

Informal financial facilities are the main sources of external financing for China's SMEs, farmers and others lacking access to commercial banks and other formal lenders. A survey conducted by Beijing's Central University of Finance and Economics estimated that informal lending reached CNY 2 trillion in 2007 ($290 billion), or 28% of total bank loans (Herd *et al.*, 2010). Much of the lending is funded by bank deposits channelled into the informal sector. This inflow was an estimated CNY 80 billion ($11.7 billion) per month in 2004 (McKinsey Global Institute, 2006).

Informal financial facilities encompass a wide range of arrangements including lending among individuals, businesses and business associations, borrowing through pawnshops, and lending by unlicensed banks. Some of these are legal, although unregulated, while others are "underground", that is wholly or partly outside the law. Informal lending is most important in rural areas, in the western regions and in Heilongjiang and Liaoning provinces in the north-east (OECD, 2005b, Herd *et al.*, 2010).

Low overhead costs, the ability to charge interest rates above regulatory ceilings, and knowledge of their customers have allowed informal lenders to serve small borrowers that have been shut out from formal credit channels. Informal lenders rely heavily on the community reputation of their prospective borrowers and default rates are reportedly low. This may help explain why informal lenders seem to place less emphasis on past performance in making their lending decisions compared to banks and other formal financial institutions (Tanaka and Molnar, 2008).

The authorities have not attempted to curtail informal financial facilities altogether, although they have at times acted vigorously against underground lenders when serious abuses have occurred. The provincial government of Zhejiang has announced a pilot programme to license a limited number of informal small lending companies. Well-performing companies will be eligible for conversion into commercial banks. This programme may signal a shift in official policy toward recognising sound informal lenders while subjecting them to regulatory supervision.

commercially-viable institutions, with capabilities to serve SMEs and rural borrowers, and on improving the legal and other infrastructure to facilitate their borrowing.

Lending to SMEs is being encouraged

For a number of years, the government and regulatory authorities have encouraged financial institutions, particularly commercial banks, to improve their lending to SMEs. In 2005, the State Council issued guidelines calling for expanding SME access to both bank and capital market finance. Banks were required to establish separate departments for SME lending. Government and regulatory authorities have periodically issued statements urging commercial banks to increase their lending to SMEs while cautioning that such lending must be based on sound credit assessments. These efforts were probably useful in helping offset commercial banks' traditional bias toward lending to state-backed enterprises and to develop better capabilities to assess SME loans. However, they may have sent mixed signals to banks as to whether they should follow government mandates or strict commercial principles in SME lending.

ICBC and CCB lending to private enterprises – mostly SMEs – had risen to 15.1 and 17.2% respectively of total corporate loans by 2007, up from 11.5 and 11.8% respectively

in 2005. More recently, the authorities have been stepping up pressure on the commercial banks to increase lending to SMEs and by mid-2009 SMEs accounted for just over half of all outstanding enterprise loans.[10] Over the longer term, further development of the CCBs would help to improve SMEs credit access since these banks are generally more oriented toward such businesses than the SOCBs or JSBs (Tay, 2006).

The second stock exchange board, opened in 2004 on the Shenzhen Exchange, and the more recent ChiNext high-tech board marked important steps towards giving some SMEs access to the capital markets. However, they can assist only a limited segment of SMEs. Moreover, reforms that would boost SME access to the bond market, which is now essentially out of reach for them, have yet to be undertaken.

Lack of collateral is a problem for SMEs everywhere but more so in China (International Finance Corporation, 2007). Antiquated legal provisions have in most cases prevented inventory and receivables from being used as collateral.[11] The use of land as collateral is often limited by ambiguities over property rights. Use of equipment and other moveable property that are in principle eligible as collateral is hampered by cumbersome registration procedures and lengthy, costly, and uncertain legal treatment by the courts in the event of default. As a result, only an estimated 4% of bank loans are collateralised, *versus* nearly 70% in the United States (Han, 2007). The authorities have recognised the need to improve the utility of collateral and key reforms, including allowing the use of receivables as collateral and a reformed property registry system, were incorporated in the reformed *Property Law* that took effect in October 2007 (China Law Reporter, 2007).

The authorities, along with a number of Chinese scholars, have viewed credit guarantees as key to improve SME access to bank loans. Credit guarantee facilities (CGFs) began to develop in the late 1990s under the sponsorship, and usually the control, of local governments (OECD, 2005b) but have proliferated since 2003. By 2005, an estimated 5 000 CGFs were in operation. However, most were devoted to segments other than SMEs,

Box 3.5. **International experience with credit guarantees for SMEs**

Credit guarantee facilities are most advanced in Japan, Korea, and Chinese Taipei in Asia and in a few European countries, notably Germany (Asian Development Bank, 2007b; Liu, 2007). Programmes in these economies have been able to cover as much as 40% of SMEs. Guarantee multipliers – the ratio of the loan principal to the amount guaranteed – are of the order of 10 to 20, much higher than in China.

International experience strongly suggests that large-scale successful credit-guarantee programmes are not viable without substantial ongoing government financial support. None of the most advanced programmes relies exclusively or even mainly on privately-funded companies and indeed there are relatively few examples of exclusively privately-funded CGFs that have remained viable over time. In effect, SME credit guarantee programmes involve substantial government subsidisation, which needs to be justified by the existence of market failures that cannot be remedied by other means.

The successful credit guarantee programmes also operate within a broader and coherent legal and regulatory framework for SME development. Guarantee facilities are usually incorporated as financial institutions and operate under national banking laws or laws specifically applying to the industry. The programmes operate under specific mandates targeting smaller and micro-sized firms that have the greatest difficulty in accessing commercial credit.

such as housing, and most were quite small. Nearly 90% were reported to be in financial difficulties (Asian Development Bank, 2007b).

Overall, guarantees for SMEs remain underdeveloped in China. Less than 1% of SMEs in China receive guaranteed loans, compared with nearly 20% in Korea and Chinese Taipei, and nearly 40% in Japan, the Asian economies with the most developed loan guarantee programmes (Asian Development Bank, 2007b). Chinese banks tend to demand that all or nearly all of a loan issued under guarantee be covered by the insurance. This limits the amount of loans CGF capital can support and reduces the incentives of the banks to monitor guaranteed loans. International experience suggests that to have a significant impact on SME access to credit, credit guarantee programmes need to have substantial ongoing financial assistance from the government and a more advanced legal and regulatory framework for SME development than now exists in China (Box 3.5). Accordingly, credit guarantees are unlikely to be a panacea for SME financing problems, at least for the time being.

Comprehensive reform of the rural credit system is underway

By around 2005, China's rural credit system was facing serious financial difficulties. The rural credit cooperatives (RCCs) – the backbone of the system – had a reported average NPL ratio exceeding 30% (OECD, 2005b). They were hampered by incoherent ownership structures, weak governance and poor internal capabilities to assess and manage risk, problems greatly aggravated by pervasive political interference (Scott and Jun, 2006). Commercial banks had largely withdrawn from rural lending in response to banking sector reforms. Lending was going mainly to larger businesses and infrastructure. Rural households had very limited access to formal credit facilities, and limited knowledge about the products and services that were available (Asian Development Bank, 2007a). The situation was aggravated by the intensification of the net outflow of funds from the rural sector through the Postal Savings System and other channels (Huang *et al.*, 2006; OECD, 2005b). These conditions have aggravated the rural sector's long-standing limited access to formal credit compared to urban areas: loans per capita in rural areas were only CNY 5 500 ($806) in 2006 compared to CNY 40 000 ($5 865) in urban areas.[12]

The experimental reforms of rural credit cooperatives in several provinces begun in 2003 have since been refined and extended nationwide. Efforts to improve rural finance have also been broadened considerably to develop a range of commercially-viable institutions that can meet the heterogeneous needs of rural borrowers, from micro-finance to large-scale financing for infrastructure. The rural financial reforms include the following specific objectives (PBoC, 2007, CBRC, 2009):

- Extension of the rural credit cooperative pilot reforms to the nation as a whole.
- Continuation and strengthening of the key role of the China Development Bank in financing rural infrastructure.
- Strengthening of the capabilities of the Agricultural Bank of China to support rural and agricultural development.
- Entry of more diverse sources of capital, including private and foreign interests, to invest in and develop local (county-level) rural financial institutions.
- Development of micro-finance institutions, using the assistance of non-government organisations and foreign micro-finance enterprises.

Although not yet complete, the reform of the RCCs has made considerable progress since 2005. It involves essentially the same steps taken in the reform of other commercial banks. Most of the RCCs deemed to be salvageable have been or are in the process of being converted into banks and incorporated with ownership and governance structures comparable to those of other commercial banks. The authorities, mainly through the PBoC, have provided substantial funds to remove or write down RCC NPLs and to raise their capital. However, the institutions are required to "match" the financial assistance by raising an equal amount of capital on their own and by implementing reforms. As a result, by end-2007 the RCCs' average NPL ratio had fallen to 9.3% (down from 37% in 2002) and their CAR had been restored to 11.2% (PBoC, 2007).

The establishment in 2007 of the Postal Savings Bank and its separation from the Postal Savings and Remittance Bureau marks a potentially important step to at least reduce the net outflow of funds from the rural economy. The new bank will be able to make loans to rural customers and could significantly augment the supply of loans to rural customers. The Agricultural Bank of China is also in a much stronger position to serve rural customers following its recapitalisation and restructuring.

To improve the quality of rural financial institutions and to increase competition, new domestic and foreign entrants are being encouraged. In 2006, the authorities lowered minimum capital requirements for rural lending institutions to facilitate entry. A number of foreign banks and micro-finance businesses have set up rural lending joint-ventures with Chinese partners. These new entrants are tiny in the aggregate and it is unlikely that foreign investors will gain any major share of the market. However, they may have a broader beneficial impact by providing examples of new and improved practices.

The greater reliance in the current programme on creating commercially-viable rural lending institutions is a significant improvement. However, such reform is a massive task (in any country) and there are a number of questions about how effective China's measures ultimately will be. While the reforms to the (former) rural credit cooperatives have clarified their ownership, the degree to which their prior ties to local governments and consequent vulnerability to interference in lending decisions, has been ended is less clear.[13] This is particularly the case given that party officials often still occupy key positions on the boards and in management and as ownership of a given institution tends to be relatively dispersed, reducing incentives for shareholders to monitor performance (Scott and Jun, 2006).

The financial system is gradually opening up internationally

China's participation in the international financial system has grown considerably over the past decade as a result of its economic development and accession to the WTO. As noted earlier, foreign financial institutions have gained a significant, if still small, foothold in China's banking, insurance, and securities sectors. Many of China's nationwide banks have had overseas branches and offices since the 1990s and in recent years the largest banks, major insurance, and a number of securities companies have markedly stepped up their expansion into foreign markets through acquisitions or strategic investments. The creation in September 2007 of a sovereign wealth fund, the China Investment Corporation, to invest part of China's huge foreign exchange reserves, will further increase China's financial presence in international markets. As noted in Chapter 2, steps have also been taken recently to internationalise the renminbi. Nevertheless, China's capital control

regime remains relatively restrictive compared with other economies in the region and to emerging economies generally (Kimbell and Xiao, 2006). Nearly every category of flow is subject to ceilings, limits on the type of instrument and other restrictions (Box 3.6).

Box 3.6. **Sketch of China's capital control regime***

- Inward FDI is generally permitted except in several "strategic" sectors and, in some cases (certain financial activities) subject to limits on the extent and form of foreign ownership. Foreign companies are free to withdraw from their foreign exchange accounts or convert local currency to make external current account payments consistent with their business scope (*e.g.* profits and dividends). Foreign-invested financial institutions are subject to prudential limits on their conversion of foreign currency into renminbi.
- Purchase of foreign currency for outward FDI is allowed for projects approved by the NDRC and the Ministry of Commerce, for imports of materials for processing, and for foreign-aid related projects. Establishment of foreign bank accounts requires approval by the State Administration of Foreign Exchange (SAFE).
- Capital account transactions by businesses and individuals are much more controlled and classified into several categories with separate rules. Purchase of domestic money and capital market instruments by non-residents is generally confined to qualified institutional investors (see text) except for B equity shares, which are open to non-residents generally.
- Non-residents are generally prohibited from issuing securities in the domestic Chinese market, with certain exceptions, notably several multilateral lenders.
- Purchase of foreign money and capital market instruments by resident businesses and other entities has been mostly prohibited until recently, but now is allowed for participants in the Qualified Domestic Institutional Investor (QDII) Programme. The range of permitted instruments does not include foreign real estate or most derivatives. Domestic residents are allowed to maintain accounts denominated in foreign currency with domestic banks for use domestically.
- Sale or issue abroad of securities or money market instruments by resident banks, other financial institutions and non-financial businesses are subject to approval by the relevant financial regulatory agency in the case of financial institutions and by SAFE.
- Individuals are now permitted to purchase up to $50 000 of foreign currency annually and more upon documentation of special needs. Individuals may use their foreign currency to purchase stocks and bonds on foreign markets through the QDII programme.

* See American Chamber of Commerce in China; Prasad and Wei (2005); and Prasad *et al.* (2005).

Vehicles for opening have been established but the process continues to be quite gradual

China achieved full current account convertibility in 1996 and has long been committed to ultimate capital account convertibility. However, in the wake of the 1997 Asian financial crisis the authorities adopted a rather cautious and gradual approach to opening. Liberalisation since then seems to have been driven by China's WTO commitments to open the financial system to foreign participation and by the need to afford domestic businesses the flexibility in foreign currency transactions necessary for

their growing international activities (Herd *et al.*, 2010). Reforms are being deliberately phased as a function of domestic financial reforms to ensure that Chinese financial institutions have the capabilities to manage the risks of cross-border transactions before they are permitted to do so. No target date has been officially specified for full convertibility.

The adoption in 2002 of the Qualified Foreign Institutional Investor (QFII) programme was the first major step toward the liberalisation of portfolio capital flows. The programme allows a limited number of long-established foreign institutional investors to bring in funds to invest in a specified range of domestic financial assets, subject to quotas for each institution as well as the overall amount. Seventy six foreign institutional investors were licensed to participate in the programme by end-2008 (CSRC, 2009).

The QFII programme has been managed rather cautiously. The original global ceiling of $10 billion was maintained until end-2007, when it was raised to $30 billion, while the limit for each institutional investor was increased from $800 million to $1 billion in August 2009. At end-August 2009, approved investment quotas totalled $15.3 billion. The authorities have imposed significant restrictions aimed at encouraging QFIIs to make longer-term investments in the capital markets and to discourage sudden outflows. The QFIIs were initially permitted to offer only closed-end funds, although this was later extended to open-end funds. Their investments were subject to a three-year lockup period before the full amount of the amount placed could be repatriated, with shorter delays before specified portions were withdrawn. While the repatriation restrictions were relaxed considerably in 2006, the authorities continue to attempt to influence the composition of the flows by requiring a higher minimum investment by banks and securities companies compared to mutual funds and insurance companies.[14] The effectiveness of this discrimination is doubtful, however, since differences in activities and strategies among institutional investors are much less pronounced than they were several decades ago.

The introduction in 2006 of the Qualified Domestic Institutional Investor (QDII) programme to allow domestic financial institutions to invest abroad represents an important step in broadening China's capital account liberalisation. While similar in structure to the QFII program, the QDII has expanded more rapidly in size and scope. Investments were originally limited to fixed-income instruments but in 2007 this was broadened to include equities. Investments have been concentrated in instruments traded on the Hong Kong exchange but are likely to diversify into other markets as a result of agreements between Chinese financial supervisory authorities and their counterparts in other countries. By September 2009 a total of 56 institutions had obtained QDII licenses and the global authorised total was $55.9 billion. However, the authorities appear to have been concerned by losses incurred by Chinese investors under the QDII during the global downturn and recently halted new approvals.[15]

With the advent of the QDII programme, the authorities have started to relax constraints on foreign investments by other domestic financial institutions and individuals. Insurance companies are now authorised to invest up to 15% of their assets in selected foreign securities. The NSSF began to invest in foreign instruments in late 2006 following its authorisation in 2005. This represents an important step toward diversifying NSSF assets and should provide experience for allowing foreign investment by enterprise pension funds at some future point.[16]

The pace of liberalisation could be accelerated

China is well advanced in establishing the macroeconomic preconditions for capital account liberalisation. Both the budget deficit and government debt are moderate in relation to GDP and inflationary pressures have been contained. The large current account and balance of payments surpluses have generated strains on domestic monetary policy and upward pressures on the exchange rate (Chapter 2), but they are better addressed through greater exchange rate flexibility than through capital controls. External debt is moderate and the exceptionally large foreign exchange reserves provide a considerable cushion against even large sudden capital outflows.

China's capital controls seem to have been effective enough to avoid major losses by domestic financial institutions and major businesses from unauthorised foreign currency transactions. The control regime has also given monetary authorities significant latitude to vary domestic interest rates independently of those abroad despite limited exchange rate flexibility (Ma and McCauley, 2007; Cheung *et al*., 2006).

However, international experience indicates that capital controls, particularly on outflows, are almost inevitably subject to substantial evasion (Kar and Cartwright-Smith, 2008). In China's case, the opportunities for misreporting of flows through legal channels and outright evasion are greatly enhanced by the proximity and close links between the Mainland and Hong Kong, China, as well as other Asian countries with large Chinese populations. China experienced large unrecorded capital outflows during the late 1990s and early in the 2000s, driven in part by the slowing economy and the possibility of a devaluation of the renminbi in the wake of the 1997 Asian crisis. These unreported outflows have since been reversed to become substantial unreported inflows. Enforcement of capital controls is likely to become progressively more difficult as China's financial system becomes more sophisticated and the involvement of Chinese businesses in international markets increases.

The most important constraints on the pace of China's capital account liberalisation are the incentives and capabilities of domestic financial institutions and non-financial businesses to prudently manage the risks of cross-border transactions and the ability of supervisory authorities to monitor external exposures sufficiently to contain systemic risk. As the prior discussion has indicated, these capabilities have improved considerably in recent years but they are still developing and their effectiveness has yet to be tested. This suggests that a phased approach is still preferable to a one-time complete liberalisation.

Nevertheless, more rapid capital account liberalisation would bring tangible benefits and could be achieved without serious risk to financial or macroeconomic stability. It would foster development of the foreign exchange market and make it easier to increase the flexibility of the exchange rate. Reduction in the extent of capital controls would reduce incentives for evasion, helping reduce misreporting and potentially improving the ability of the authorities to enforce remaining limits and to monitor the exposure of the domestic economy to foreign exchange and other external risks.

The QFII programme could be expanded considerably by increasing the overall quota to as much as twice the present level. The current restrictions on repatriation and the discrimination among types of investors could also be ended without serious risk. Such steps could significantly improve the institutional investor support for capital market development and should not add more than modestly to the already large capital inflows China is now experiencing.

Similar considerations suggest that foreign-invested businesses, including financial institutions, where qualified by the same criteria applied to residents, could in the near term be granted eligibility to list on the stock exchanges and to issue bonds. This would help develop domestic equity and bond markets.

Conclusions and recommendations

China has recorded major achievements since 2005 in restoring solvency to the banking system and securities companies, establishing a firmer foundation for capital market development, and improving the legal and regulatory framework. Compared to as little as five years ago, financial institutions are in much better financial shape and have improved capabilities to function prudently and profitably. However, especially given the legacy of the planning period and the continued dominance of state ownership, further experience with the governance, internal control, and supervisory systems that have been put in place will be required before the full effects of the reforms are manifest.

Future progress will depend increasingly on broader economic reforms. The macroeconomic environment has been supportive of financial reforms during the high-growth era but has recently become more problematic. The possibility of a rise in NPLs from the recent rapid expansion in lending is perhaps the most significant near-term risk to the improvement in the profits and balance sheets of the financial institutions. Prudential norms are now much more closely aligned with those in OECD countries but some of them may need to be tightened further to deal with the special risks entailed by China's development. In the longer term, the degree to which private, or at least more market-oriented, interests replace state ownership in the financial system may influence how strong China's financial institutions ultimately become.

The discussion points to a number of further reforms in the near to medium term:

- Active efforts by the authorities to promote greater private control of financial institutions would help to improve the financial system's capabilities to serve the private sector and to eliminate interference by government entities, particularly local governments, in lending decisions. Consideration should be given to requiring local authorities to reduce their ownership stakes in commercial banks over a reasonable period.
- In addition to promoting greater private control, raising the ceilings on foreign investment in banks and other financial institutions would help to improve their governance, management, and technical capabilities.
- Institution of a formal deposit insurance system for commercial banks within the next several years is key. It would help equalise competitive opportunities between larger and smaller banks and clarify the authorities' commitment to back those institutions.
- Resources for enforcement by financial authorities need to be augmented to ensure that they are able to keep up with market development and innovation. Strengthening the CBRC's capacity to conduct annual on-site examinations of a larger portion of commercial banks would help speed up implementation of banking reforms.
- Priority should be given not only to improving the overall quality of listed companies but also to increasing their diversity. Private companies need to be better represented in new listings. To that end, companies approved for listing should be given sole latitude to determine when they make their offering.

- Alignment of criteria for corporate bond issues by non-listed enterprises with the rules and procedures for listed companies specified by the CSRC will be needed. Allowing foreign rating agencies to rate domestic issues could help foster greater diversity in issuers and bonds.
- Consideration should be given to accelerating capital account liberalisation, especially with respect to controls on portfolio inflows. The rapid development of the QDII programme is a good step in this direction. The QFII programme could be expanded further in the near term, and restrictions on repatriation, investment options and the differential treatment of institutions eliminated or at least substantially relaxed with little if any cost to other objectives.
- Allowing foreign-invested companies and financial institutions to issue in the bond and stock markets would boost capital market development without prejudice to other policy objectives.

Notes

1. Since 2005, the official definition of the SOCBs has been changed to include China Construction Bank, which originally was included among the JSBs.
2. In July 2009 the CBRC also issued new guidelines on fixed asset loans designed to limit the amount of new lending that was flowing into stock markets (China Law and Practice, 2009b).
3. The reformed SOCBs did manage to write off or otherwise resolve a modest amount of their NPLs prior to 2004, as did a number of the JSBs and CCBs, but the portion was small compared to the overall reduction. The bank asset management companies have largely completed the resolution of the NPLs acquired from the SOCBs (see Herd *et al*., 2010).
4. For example, cconsumer loans are 18% of total loans in India and nearly 50% in Malaysia (McKinsey Global Institute, 2006).
5. "Banks Dip into Insurance Market", *China Daily*, 12 January 2008. Insurance companies were authorised to invest in listed banks in 2004 and in unlisted banks in 2006. By end-2008 banks had established eight fund management companies offering 46 different products (CBRC, 2008).
6. "China Has IPO Backlog up to 400 Companies, CITIC Says", *Bloomberg*, 16 May 2009.
7. The CBRC subsequently issued rules banning commercial bank guarantees for corporate bonds.
8. "Yuan Bonds Won't Help Developers Much – Fitch", *Reuters*, 28 May 2008. The previous month, the PBoC extended the permitted maturity on commercial paper issues, which trade on the interbank market, to five years in an effort to broaden medium-term funding sources for enterprises.
9. Notably, the traditional regulatory approach of model contracts and prices along with requirements that companies obtain approval for each new product has largely been replaced by procedures requiring only notification (OECD, 2005b).
10. "Credit for SMEs Leads Lending for First Time", *China Daily*, 21 September 2009.
11. Under the Securities Law, whose provisions govern collateral, an asset can be used as collateral only if its type, amount, nature and location can be precisely specified at the time the loan contract is validated (Han, 2007).
12. "Rural Banks Lend Hope to Country Businesses", China Government Web Portal, 8 January 2008.
13. The PBoC has warned of the risk of undue "administrative" influence on mergers and acquisitions of rural credit institutions and emphasized the need to observe market principles and protection of rights of shareholders and legal persons (PBoC, 2007).
14. As of June 2008, insurance companies, pension funds, mutual funds and endowments and charities were subject to a three-month lockup period on repatriation while banks and other institutions were subject to a one-year lockup period. SAFE retains the right to impose revised regulations on repatriation if and when it deems appropriate. QFIIs are presently allowed to invest in exchange trade stocks, bonds, and warrants and mutual funds, but not real estate.
15. "China Keeps Global Investment Quota Curbs, Funds Say", *Bloomberg*, 28 July 2009.

16. Other recent measures include: authorisation in 2007 for brokerages and mutual funds to invest client funds in certain overseas assets; permission for individuals to invest in the Hong Kong stock market; and a substantial increase in the amount of foreign currency individuals can purchase for overseas travel or study. Individuals will be able to purchase stocks on US exchanges under a 2008 memorandum of understanding between the authorities of the two countries.

Bibliography

Ahn, J. and D. Cogman (2007), "A Quiet Revolution in China's Capital Markets", *Perspectives on Corporate Finance and Strategy*, McKinsey&Company.

Allens Arthur Robinson (2007), "PRC Corporate Governance Rules for Insurers", *Focus: China-Insurance*, May.

American Chamber of Commerce in China, *Setting up in China: The Basics of Foreign Exchange*. *(www.amcham-china.org.cn/amcham/show/content.php?Id=119&menuid=04&submid=04)*

Asian Development Bank (2007a), *Rural Finance Reforms and Development of Microfinance Institutions in the People's Republic of China*, December.

Asian Development Bank (2007b), *People's Republic of China: Development of Small and Medium-Sized Enterprise Credit Guarantee Companies*, Technical Assistance Report 4350-PRC.

Berger, A., I. Hasan, and M. Zhou (2009), "Bank Ownership and Efficiency in China: What Will Happen in the World's Largest Nation?", *Journal of Banking and Finance*, Vol. 33, No. 1.

Cheung, Y.-W., D. Tam, and M. Yiu (2006), *Does the Chinese Interest Rate Follow the US Interest Rate?*, Hong Kong Institute for Monetary Research Working Paper 19/2006.

China Economic Quarterly (2009), *Debt to be Proud of,* Vol. 13, No. 3.

China Law and Practice (2009a), *A Long Wait for a Quick Insurance Fix*, April.

China Law and Practice (2009b), *New Standards for Loans and Finance*, September.

China Law Insight (2009), *Newly Amended Insurance Law in China*, April.

China Law Reporter (2007), *New Property Law*, Vol. 3, No. 4.

China Banking Regulatory Commission (2004), *Regulation Governing Capital Adequacy of Commercial Banks*, February.

China Banking Regulatory Commission (2008), *Annual Report, 2007*.

China Banking Regulatory Commission (2009), *Annual Report, 2008*.

China Securities Regulatory Commission (2008a), *Annual Report, 2007*.

China Securities Regulatory Commission (2008b), *China Capital Markets Development Report*.

China Securities Regulatory Commission (2009), *Annual Report, 2008*.

Dobson, W. and A. Kashyap (2006), "The Contradiction in China's Gradualist Bank Reforms", *Brookings Papers on Economic Activity*, No. 2.

Feng, X. (2006), "Irrational Exuberance and Stock Market Valuations: Evidence from China", *Journal of Post Keynesian Economics*, Vol. 29, No. 2.

Feyzioglu, T. (2009), "Does Good Financial Performance Mean Good Financial Intermediation?", *IMF Working Paper*, WP/09/170.

Ferri, G. (2009), "Are New Tigers Supplanting Old Mammoths in China's Banking System? Evidence from a Sample of City Commercial Banks", *Journal of Banking and Finance*, Vol. 33, No. 1.

Firth, M., C. Lin, P. Liu and S. Wong (2009), "Inside the Black Box: Bank Credit Allocation in China's Private Sector", *Journal of Banking and Finance*, Vol. 33, No. 1.

García-Herrero, A., S. Gavila and D. Santabárbara (2006), "China's Banking Reform: An Assessment of its Evolution and Possible Impact", *CESIFO Economic Studies*, Vol. 52, No. 2.

García-Herrero, A. and D. Santabárbara (2008), "Does the Chinese Banking System Benefit from Foreign Investors?", Bank of Finland, *BOFIT Discussion Papers*, No. 11/2008.

Green, S. (2003), *Two Thirds Privatisation: How China's Listed Companies are Finally – Privatising*, Briefing Note, Royal Institute for International Affairs, December.

Han, S. (2007), "Secured Transactions Law Reform in China", *The Secured Lender,* July/August.

Herd, R., C. Pigott and S. Hill (2010), "China's Financial Sector Reforms", *OECD Economics Department Working Papers*, forthcoming.

Hirson, M. (2005), "The Rise and Fall of D'Long: China's Private Conglomerates and the Quest for Capital", *Perspectives*, Vol. 6, No. 4.

Hu, Y., F. Stewart, and J. Yermo (2007), *Pension Fund Investment and Regulation: An International Perspective and Implications for China's Pension System,* OECD, Paris.

Huang, J., S. Rozelle and H. Wang (2006), "Fostering or Stripping Rural China: Modernizing Agriculture and Urban to Rural Capital Flows", *The Developing Economies***,** Vol. 44, No. 1.

International Finance Corporation (2007), *Reforming Collateral Law and Registries: International Best Practices and the Case of China*, Washington DC.

Kar, D. and D. Cartwright-Smith (2008), *Illicit Financial Flows from Developing Countries: 2002-2006*, Global Financial Integrity.

Kimbell, D. and F. Xiao (2006), "Effectiveness and Effects of China's Capital Controls", Paper presented to the conference on WTO, the Asian Economies and China, IV, Beijing, June.

KPMG and Reuters (2007), *Foreign Insurers in China: Opportunity and Risk,* 2007.

Kudrna, Z. (2007), "Banking Reform in China: Driven by International Standards and Chinese Specifics", *Tiger Working Papers*, No. 107.

Leigh, L. and R. Podpiera (2006), "The Rise of Foreign Investment in China's Banks – Taking Stock", *IMF Working Papers*, 06/292.

Liu, C. (2007), "SME Financing in China", Université Paris X-Nanterre Document de Travail 2007-29.

McKinsey Global Institute (2006), *Putting China's Capital to Work: The Value of Financial System Reform*.

Ma, G. and R. McCauley (2007), "Do China's Capital Controls Still Bind? Implications for Monetary Autonomy and Capital Liberalisation", *BIS Working Papers*, No. 233.

Mu, X. (2007), "Investment Funds in China", in S. Neftci and M. Ménager-Xu (eds.), *China's Financial Markets: an Insider's View of How the Markets Work*, Elsevier.

OECD (2005a), *Improving Financial Literacy, Analysis of Issues and Policies*, Paris.

OECD (2005b), *OECD Economic Surveys: China*, Paris.

OECD (2009), *OECD Economic Outlook*, No. 86, Paris.

People's Bank of China (2007), *Monetary Policy Report,* fourth quarter.

PricewaterhouseCoopers (2009a), *Foreign Banks in China*.

PricewaterhouseCoopers (2009b), *Foreign Fund Management Companies in China*.

Prasad, E. and S. Wei (2005), "The Chinese Approach to Capital Inflows: Patterns and Possible Explanations", *IMF Working Papers*, WP/05/79.

Prasad, E., R. Rumbaugh, and Q. Wang (2005), "Putting the Cart Before the Horse? Capital Account Liberalization and Exchange Rate Flexibility in China", *IMF Policy Discussion Papers*, PDP/05/01.

Schich, S. (2008) "Financial Crisis: Deposit Insurance and Related Financial Safety Net Aspects", *Financial Market Trends*, OECD, Paris.

Scott, D. and W. Jun (2006), "Developments and Prospects for Rural Finance in China", *Stanford Center for International Development Working Papers*, No. 292.

Shen, Z., H. Liao and T. Weyman-Jones (2009), "Cost Efficiency Analysis in Banking Industries of Ten Asian Countries and Regions", *Journal of Chinese Economic and Business Studies*, Vol. 7, No. 2.

Tanaka, K. and M. Molnar (2008), "What is Different About Monitoring by Informal Financial Firms? Financing of Private Firms in China", *Revue Économique*, Vol. 59, No. 6.

Tay, S. (2006), "Small Firms See Salvation from Loan Sharks", *Asia Times*, 11 May 2006.

Taylor, P. (2006), *Reforming the Governance of China's Banks,* International Finance Corporation.

Thompson, J. (2005), "Governance of Banks in China", *in* OECD, *Governance in China*, OECD, Paris.

Yeung, G. (2009), "How Banks in China Make Lending Decisions", *Journal of Contemporary China*, Vol. 18, No. 59.

Chapter 4

Product market regulation and competition

The extent of competition in product markets is an important determinant of economic growth in both developed and developing countries. This chapter presents and uses the first vintage of the OECD's indicators of product market regulation for China to assess the extent to which China's regulatory environment is supportive of competition in markets for goods and services. The results indicate that, although competition is increasingly robust across most markets, the overall level of product market regulation is still restrictive in international comparisons. These impediments to competition are likely to constrain growth more and more as the economy continues to develop and becomes more sophisticated. The chapter goes on to review various aspects of China's regulatory framework and suggests a number of policy initiatives that would improve the extent to which competitive market forces are able to operate. Breaking the traditional links between state-owned enterprises and government agencies is an ongoing challenge. Reducing administrative burdens, increasing private sector involvement in network sectors and lowering barriers to foreign direct investment in services would also increase competition and enhance productivity growth going forward.

Product market regulation has been transformed but could be improved further

China's transition from a centrally-controlled economic system to a competitive environment driven by the private sector has been nothing short of extraordinary. After three decades of liberalisation, product markets have become increasingly competitive and market forces are now generally the main determinant of price formation and economic behaviour. Since China's accession to the World Trade Organisation (WTO) in 2001, the government has enacted a raft of pro-competition measures including a landmark law explicitly recognising the equivalence of private assets with state and collective property. A competition policy framework has also been established and the regulation of firm entry and exit has been improved. In addition, administrative reforms have enhanced the capacity of central government to oversee a market economy and regulation has become less reliant on microeconomic interventions and increasingly focused on setting framework conditions. In conjunction with fundamental changes in the relationship between the government and state-owned enterprises (SOEs), these measures have redrawn the boundary between the state and market and made a strong contribution to China's increasing prosperity.

This chapter uses OECD indicators of the extent to which regulations that shape the business environment in markets for goods and services – henceforth referred to as product market regulation – are conducive to competition and highlight areas in need of further improvement. These indicators of product market regulation (PMR) are new for China, but are based on a standardised procedure that has been used extensively to evaluate the stance of regulation in OECD and other countries. The chapter first sets out the underlying methodology and presents the overall indicator results for China. Although the elements of a competitive market-based economy are becoming increasingly well established, these results indicate that the transition is far from complete and that the reduction in the extent of government intervention lags behind China's impressive economic development.

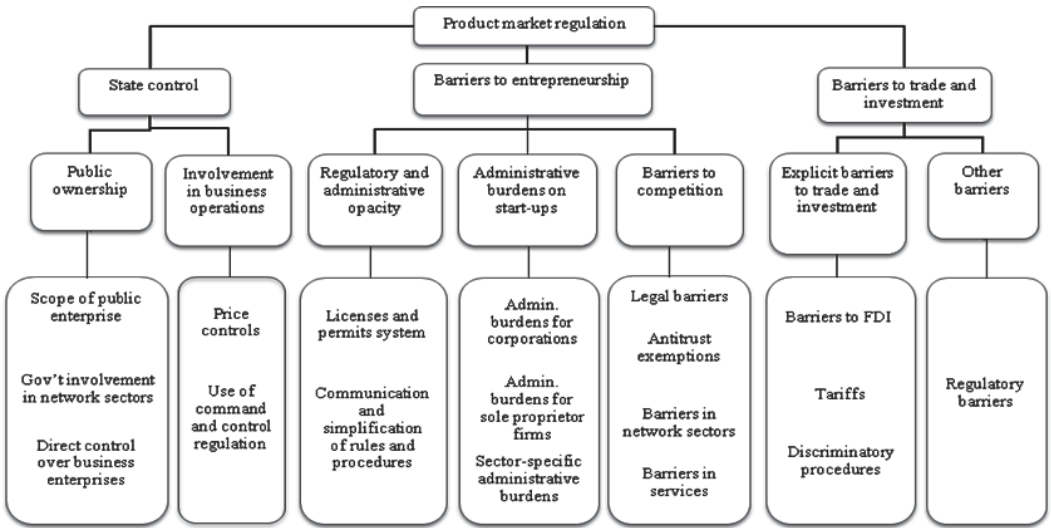
The chapter goes on to outline the detailed PMR indicator results and associated policy recommendations that would increase the role of competition in resource allocation and improve China's economic performance into the future. It also reviews the structure of the industrial sector of the economy using the methodology adopted in previous OECD studies (Dougherty *et al.*, 2007). If China is to maintain strong economic growth over the coming decades, policymakers must continue working to complete the institutional frameworks and processes that are already in place and strengthen implementation. In addition, ongoing improvements in SOE governance aimed at encouraging dividend payouts over industrial expansion would go a long way towards improving capital productivity in the state enterprise sector. Further reductions in the extent of state ownership in markets that are inherently competitive would also help in this regard. In some of the network sectors, regulatory changes have improved the scope for competition to some extent. However, ongoing work needs to focus on separating competitive and monopoly market segments and eliminating barriers to entry and public sector domination. In addition, the authorities need to develop the capacity and strengthen the hands of the sectoral regulators and further reduce direct intervention in the economy. Continuing to liberalise the regulation of foreign direct investment in services sectors would also benefit China's economic performance going forward.

The OECD's PMR indicators[1]

The OECD's PMR indicators assess the extent to which the regulatory environment promotes or inhibits competition in markets where technology and market conditions make competition viable. These indicators have been used extensively over the past decade to benchmark regulatory frameworks in OECD and other countries and have helped spur structural reforms that enhance economic performance.

The PMR indicator system summarises a large number of formal rules and regulations that have a bearing on competition. These regulatory data cover most of the important aspects of general regulatory practice as well as a range of industry-specific regulatory policies, particularly in network sectors. This regulatory information feeds into 18 low-level indicators that form the base of the PMR indicator system (Figure 4.1). These low-level indicators are progressively aggregated into three broad regulatory areas: *i) state control*; *ii) barriers to entrepreneurship*; and *iii) barriers to international trade and investment*.[2] In turn, at the top of the structure, the *overall PMR indicator* serves as a summary statistic of the general stance of product market regulation.

Figure 4.1. **The structure of the PMR indicator system**



Source: Wölfl *et al.* (2009).

The PMR indicators have a number of characteristics that differentiate them from other indicators of the business environment. First, in principle, the low-level indicators only record "objective" information about rules and regulations, as opposed to "subjective" assessments of market participants as in indicators based on opinion surveys. This isolates the indicators from context-specific assessments and makes them comparable across time and countries. Second, the PMR indicators follow a bottom-up approach, in which indicator values can be related to specific underlying policies. One of the advantages of this system is that the values of higher-level indicators can be traced with an increasing degree of detail to the values of the more disaggregated indicators and, eventually, to specific data points in the regulation database. This is not possible with indicator systems based on opinion surveys, which can identify perceived areas of policy weakness, but are less able to relate these to specific policy settings.

Product market regulation is still restrictive in China

OECD-type PMR indicators have been estimated for the first time for China based on regulatory data collected in 2008. They reveal that, despite liberalisation across a number of areas, product market regulation continues to substantially restrict competition. The *overall PMR indicator* is higher than in any of the OECD countries, including the emerging market economies within the OECD area (Figure 4.2).[3] All three of the high-level sub-components of the overall PMR index are elevated in China relative to comparator countries, particularly *state control* and *barriers to international trade and investment*, and the overall indicator is around the same level as in Russia (Figure 4.3). As discussed below, this

Figure 4.2. **The overall indicator of product market regulation (2008)**

The indicator score runs from 0 to 6, representing the least to most restrictive regulatory regime

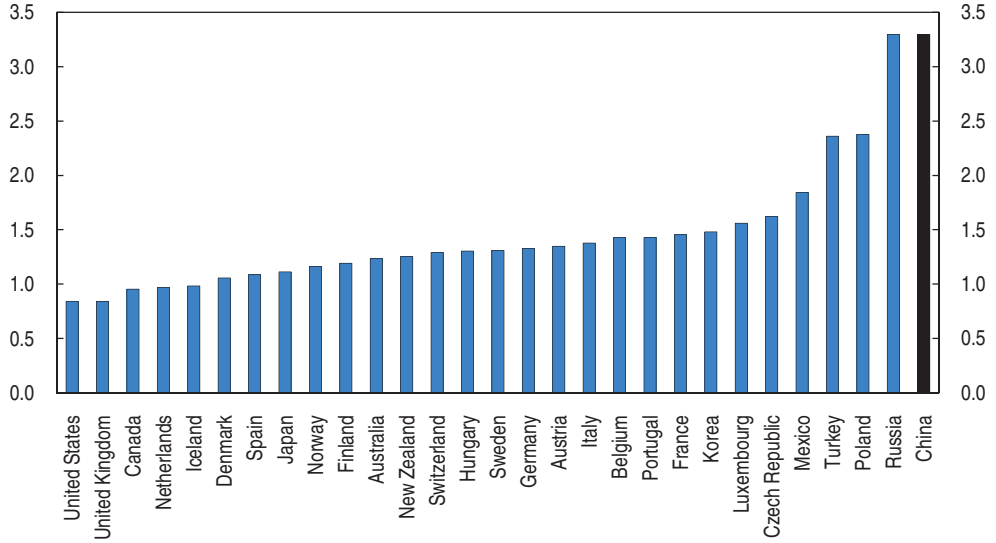


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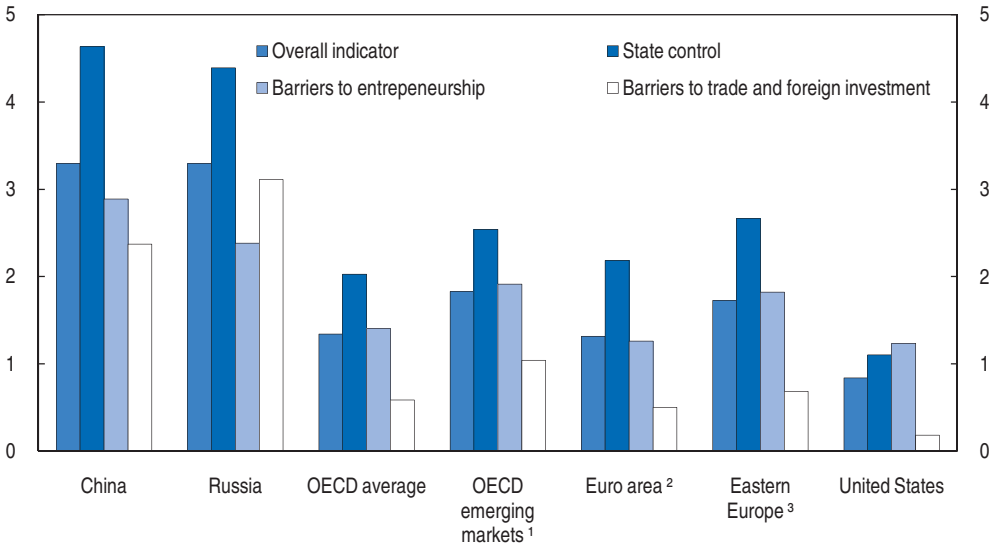
Figure 4.3. **Product market regulation in China, an international comparison (2008)**



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implies ample scope for improving the regulatory environment, which would help sustain China's impressive economic performance.

But competition is increasingly robust in most markets

Notwithstanding the overall PMR indicator score, competition is robust and increasing across much of China's industrial sector. Indeed, the number of industrial sectors at the four-digit level that are assessed to be highly or moderately concentrated has decreased from just over one in four in 1998 to around one in eight in 2007 (Table 4.1), which is low by international standards, including when comparing with the United States (OECD, 2005a).[4]

Table 4.1. **Market concentration in the industrial sector**

Number of industrial sectors in selected ranges of the Herfindahl-Hirschman concentration index[1] (grouped by the US Department of Justice merger thresholds)

	1998		2007	
	Number of industries	%	Number of industries	%
Highly concentrated (over 1 800 points)	88	15	34	7
Moderatly concentrated (1 000 to 1 800)	70	12	36	7
Unconcentrated (under 1 000)	433	73	453	87
Total number of industries	591	100	523	100

1. The Herfindahl-Hirschman index is the sum of squared market shares, out of 10 000; Industrial sectors used correspond to 4-digit ISIC industries for China.

Source: China *National Bureau of Statistics (NBS) Industrial Microdata* and joint NBS-OECD analysis.

Ironically, the foundations for robust product market competition in China are in part a legacy of the central planning era during which "complete sets" of manufacturing industries were established in many of the regions (Rawski, 2008). Compared to the Soviet Union, the management of industry was also significantly less centralised in China, with substantial authority given to provincial and local bureaucracies (Wong, 1986). Policymakers were also quick to see the benefits of competition early in the reform period and tended to divide the production bureaus of the line ministries into several SOEs within the same industry.[5] At the same time, restrictions on intermediate inputs were eased through the dual-track system, permitting a large expansion of the Township and Village Enterprises. Many of these enterprises began by supplying the SOEs, but ended up competing with them.

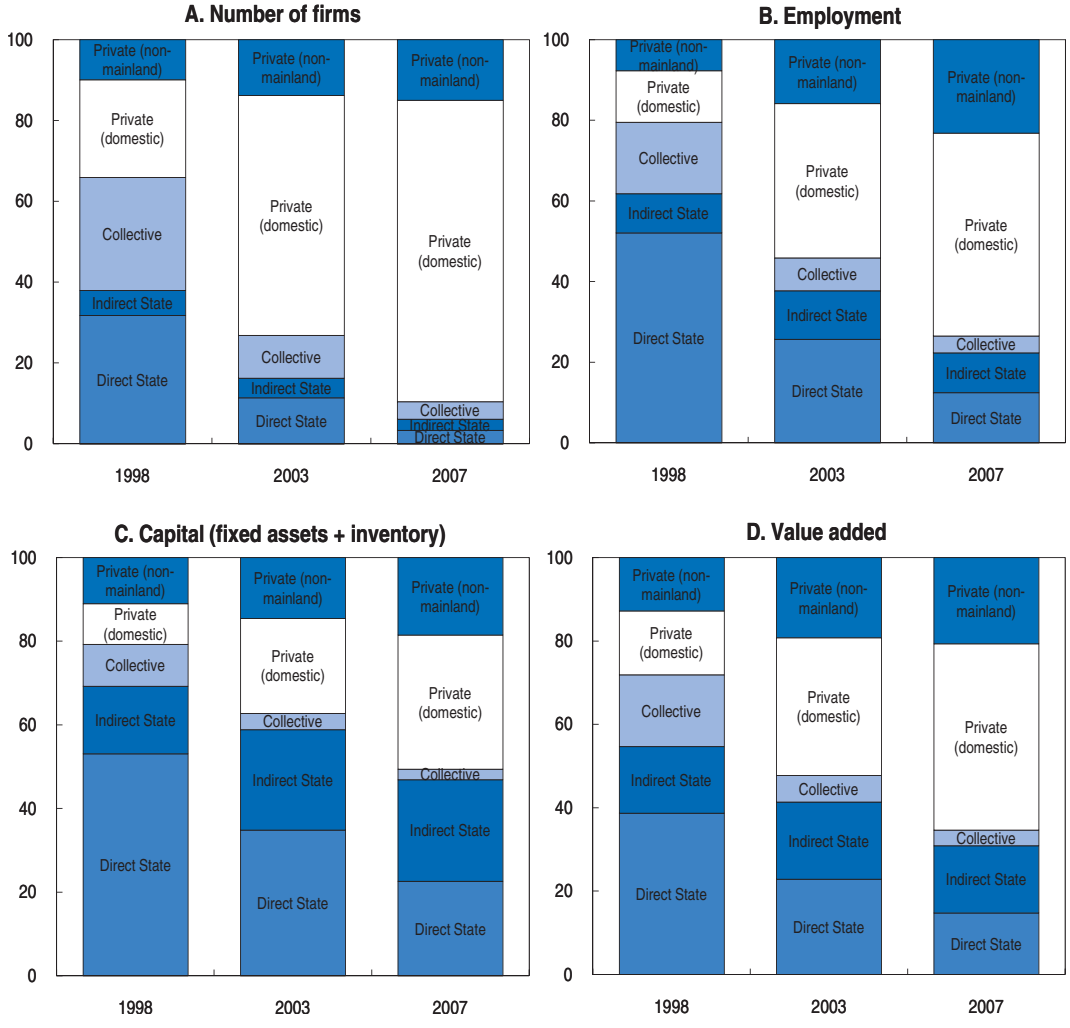
Increasing competition reflects the exit of SOEs…

Although these factors may have laid the groundwork, the rise of market competition in China largely reflects the exit of SOEs and the bourgeoning of the private sector. Thirty years ago the Chinese economy was virtually fully owned and operated by different levels of government. At their peak in 1978, SOEs produced 78% of total industrial output and employed 60% of the non-farm workforce. Collectively-owned enterprises accounted for the rest, with no other type of business enterprise permitted at the time. After the approval of private firms in 1979, the share of output produced by non-state and non-collective enterprises increased rapidly. Although SOEs continued to expand until 1990, their employment share gradually declined over this period as the private sector grew more quickly.

During the 1990s and early 2000s, the rationalisation of SOEs and liberalisation of the private sector were two key policy priorities underlying China's industrial development. The ownership of small and mid-sized SOEs was diversified and privatised and SOEs incurring large losses were encouraged to merge or go bankrupt. As a result, the state-owned sector of the economy was dramatically reduced. After peaking at over 112 million workers in the mid-1990s, SOE employment began to fall in absolute terms and from 1997 to 2001 the relative reduction in SOE employment was higher than in the previous 20-year period.[6]

In 2004, the privatisation process slowed. In the industrial sector, where the exit of SOEs has been the most rapid, the downsizing of SOE employment slowed down (Chapter 6). With rapid growth in the private sector, however, the SOE share of employment, fixed assets and value added continued to decline, albeit at a slower pace (Figure 4.4). By 2007, despite only accounting for 6% of firms, SOEs directly controlled by the state produced 31% of the value added in the industrial sector, employed 22% of the

Figure 4.4. **The relative size of the state-enterprise sector**



Source: Joint NBS-OECD analysis.

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workforce and controlled 47% of the stock of fixed assets, suggesting that SOEs tend to be relatively large and capital intensive.

... and rise of the private sector

The exodus of SOEs from China's industrial sector has been more than offset by rapid private sector growth. Exiting SOEs have generally been small and medium-sized enterprises (SMEs) and their departure has tilted the employment distribution of the remaining SOEs towards larger firms. However, the influx of private-sector firms has driven a large increase in the number of SMEs operating in China's industrial sector. Overall, since the late 1990s, average employment at the firm level has fallen slightly as fewer and increasingly large SOEs are more than offset by a proliferation of smaller private-sector firms (Table 4.4 below).

The development of the private enterprise sector began in China's eastern coastal provinces that were at the forefront of many of the early reforms – in particular, Zhejiang, Guangdong, Jiangsu, Tianjin and Fujian. In 1998, 64% of industrial value added in these regions was produced by the private sector, compared to an average of only 24% across China's other regions. By 2007, although the private-sector share of value added in the five leading eastern coastal provinces had increased to 80%, it had doubled to almost 50% in China's other regions, narrowing the gap relative to the coastal regions. This burgeoning of private enterprises across China displays a pattern of "convergence" whereby the private-sector share of value added has grown fastest in provinces previously dominated by the state-enterprise sector. This pattern of the private sector "spreading out" across China is clearly apparent across most regions with the exception of some of the relatively undeveloped western provinces and Heilongjiang in the Northeast.

Increased competition has improved productivity

Redrawing the boundary between the public and private sectors has heightened product market competition. In 1998, SOEs produced more than half of value added in 36% of industrial sectors. In turn, around 40% of these sectors were highly or moderately concentrated (Table 4.2). By 2007, the number of industrial sectors dominated by the SOEs had dropped to one in ten, although the percentage of these sectors with inadequate competition remained more or less unchanged. At the other end of the spectrum, in 1998 SOEs produced less than 5% of value added in only 8% of industrial sectors whereas by 2007 this figure had risen to almost 45%. The percentage of these sectors with inadequate competition fell markedly over this period, indicative of large increases in the number of private sector firms with dispersed market share.

This increase in product market competition has been a key driver of productivity gains. After a prolonged period of very low and volatile productivity growth, the commencement of economic reform triggered a large and sustained increase in total factor productivity (TFP). Recent studies find that the movement of total factor productivity has been relatively stable. Much of the variation in the growth of factor productivity between different periods reflects the varying state of the business cycle at the start and end of the comparison period. The study by Perkins and Rawski (2008), for example, shows a decline in the growth of factor productivity from 2000 to 2005, but if the estimation period is extended to 2008 (as in the last column of Table 4.3) no decline is evident. Such a growth rate compares favourably internationally (Table 4.3). Moreover, when the annual data for the growth of total factor productivity are smoothed to eliminate the impact of the business cycle, there is little fluctuation in the growth of total factor productivity.

Table 4.2. **Industry concentration and state ownership in the industrial sector**[1]

Share of SOEs in value added								
1988	Less than 5%		5 to 25%		25 to 50%		Greater than 50%	
	Number	%	Number	%	Number	%	Number	%
Highly concentrated	16	35.6	13	7.6	9	5.6	50	23.3
Concentrated	3	6.7	12	7.1	15	9.4	40	18.6
Unconcentrated	26	57.8	145	85.3	136	85.0	125	58.1
	Number	%	Number	%	Number	%	Number	%
	45	7.6	170	28.8	160	27.1	215	36.4
2007	Less than 5%		5 to 25%		25 to 50%		Greater than 50%	
	Number	%	Number	%	Number	%	Number	%
Highly concentrated	17	7.3	4	2.2	3	5.9	9	16.4
Concentrated	10	4.3	6	3.3	8	15.7	12	21.8
Unconcentrated	205	88.4	173	94.5	40	78.4	34	61.8
	Number	%	Number	%	Number	%	Number	%
Total	232	44.5	183	35.1	51	9.8	55	106

1. The extent of concentration across sectors is assessed using the Herfindahl-Hirschman index at the four-digit level.

Source: Joint NBS-OECD analysis.

Table 4.3. **Various estimates of TFP growth over the reform period**

	Various authors	OECD
	Perkins and Rawski (2008)	(2 010)
1978-2005	3.8	3.8
1995-2005	3.2	3.3
2005-2008		4.4
1978-2008		3.8
	Chow (2008)	
1979-2005	2.7	3.8
	Wu (2008)	
1993-2004	2.9	4.0
1993-1997	1.6	5.1
1997-2000	4.3	2.7
2000-2004	3.6	3.5
	Zheng *et al.* (2009)	
1978-2005	3.0	3.8
1978-1995	3.7	4.1
1995-2005	1.8	3.3

The relative contributions of productivity growth and factor accumulation to China's industrial performance have been hotly debated. Over the longer run, currently available data suggests that productivity growth has accounted for about 40% of total growth. The growth of physical capital has accounted for almost a further 50%, with labour accounting for the remaining growth. The proportion of growth attributable to the increase in the labour supply would be greater if the role of increased labour quality were taken into account. Since 2004, the contribution of capital to overall growth has risen as the expansion of the capital stock accelerated to be faster than the expansion of output, reflecting an exceedingly high share of investment in total demand.

SOE governance has been comprehensively reformed

Prior to reform, public enterprises were essentially production bureaus under the direct control of the line ministries. Over recent years, reflecting a strong commitment to improving the performance of the state-enterprise sector, SOE governance has been comprehensively reformed. Early reforms included corporatising SOEs and increasing managerial independence by delegating decision making from supervisory government bureaus to SOE management. More recently, as part of ongoing efforts to separate the ownership function from other aspects of government policymaking, the *ad hoc* institutional structures that oversaw the major SOEs were centralised in 2003. The newly-created State-owned Assets Supervision and Administration Commission (SASAC) was given the primary mandate of exercising the government's ownership rights in state assets, including overseeing SOE restructuring.[7]

With the objective of creating internationally competitive firms large enough to join the ranks of the global Fortune 500, SASAC has progressively overseen a number of mergers and currently supervises 141 SOEs, down from 196 at its inception.[8] Many of the larger companies in SASAC's portfolio were converted from the industrial ministries and operate as holding companies with a large number of subsidiaries. Collectively, SOEs under SASAC control at the central level employ around 8.5 million workers, implying an average firm size of more than 50 000 employees. SASAC plans further consolidation and aims to reduce the number of SOEs at the central level to between 80 and 100 by 2010. To speed up this process, SASAC has recently announced the formation of asset management companies to administer some of the smaller and underperforming SOEs.

As well as operating at the central level, a number of provinces and municipalities have also established local-level SASAC branches to oversee SOEs owned by lower levels of government, significantly helping to clarify local control over local SOEs. In terms of capital employed, the local state-enterprise sector is about as big as the central state sector but employs around 75% of the total SOE workforce.

The introduction of SASAC marked the beginning of a new phase in SOE governance during which the corporatisation was accelerated and a number of reforms aimed at improving governance implemented.[9] In many cases, SASAC is fulfilling an ownership function that had not always been fully legally exercised by government in the past, with negative implications for management incentives and monitoring. In addition, the overriding theme of recent reforms has been to lessen the government's direct involvement in SOEs. Boards of directors have been introduced in most SOEs, including independent directors, along with clearer corporate structures. SASAC has also strengthened managerial incentives by introducing monitoring systems and contracts that link the salaries of SOE management to performance.

With improved governance and other reforms, SOEs are, in some ways, operating more like private-sector firms. In the past, SOEs tended to carry larger inventories compared to private firms, perhaps reflecting greater access to credit and less exposure to competition (Table 4.4). However, this differential has fallen over recent years as the onus on SOE management to become more efficient and profitable has increased. In addition, government subsidies have heavily favoured SOEs in the past but this gap has also closed over recent years, reflecting the government's commitment, made as part of China's bid for WTO membership, to substantially reduce subsidies to the state enterprise sector.

Table 4.4. **Comparison of SOEs and private firms in industry**

	1998	2003	2007
Workforce[1]			
Public sector	662	717	888
Non-state sector	250	229	200
Capital intensity[2]			
Public sector	82.2	193.5	364.0
Non-state sector	51.6	68.1	97.7
Inventory[3]			
Public sector	27.2	16.2	12.6
Non-state sector	19.7	13.5	11.0
Long-term liabilities[4]			
Public sector	22.2	19.1	17.1
Non-state sector	11.3	8.0	6.9
Exports[5]			
Public sector	25.7	13.7	9.8
Non-state sector	74.3	86.3	90.2
Subsidies[6]			
Public sector	2.1	1.5	0.8
Non-state sector	0.6	0.9	0.7

1. Average number of workers per firm.
2. Fixed assets divided by employment, weighted average.
3. Inventory divided by sales revenue, weighted average.
4. Long-term liabilities divided by total assets, weighted average.
5. Share of total industrial exports.
6. Share of value added.

Source: Joint NBS-OECD analysis.

In other important ways, however, China's SOEs still differ substantially from their private-sector counterparts. First and foremost, as well as being larger, SOEs are much more capital-intensive. Since the late 1990s, capital employed per worker in the state-enterprise sector has increased enormously and is now almost four times greater than in the private sector. As well as reflecting the intrinsic nature of the sectors in which SOEs have become increasingly concentrated, this may also be indicative of a lingering lending bias towards SOEs in the predominantly state-owned banking sector (Chapter 3). Indeed, the share of long-term liabilities in total assets is almost 2.5 times larger in SOEs compared to private firms, indicative of preferential access to bank financing. Finally, private firms, particularly those owned by non-mainland investors, are much more likely to export than state-controlled firms.

SOE performance has improved but still lags the private sector

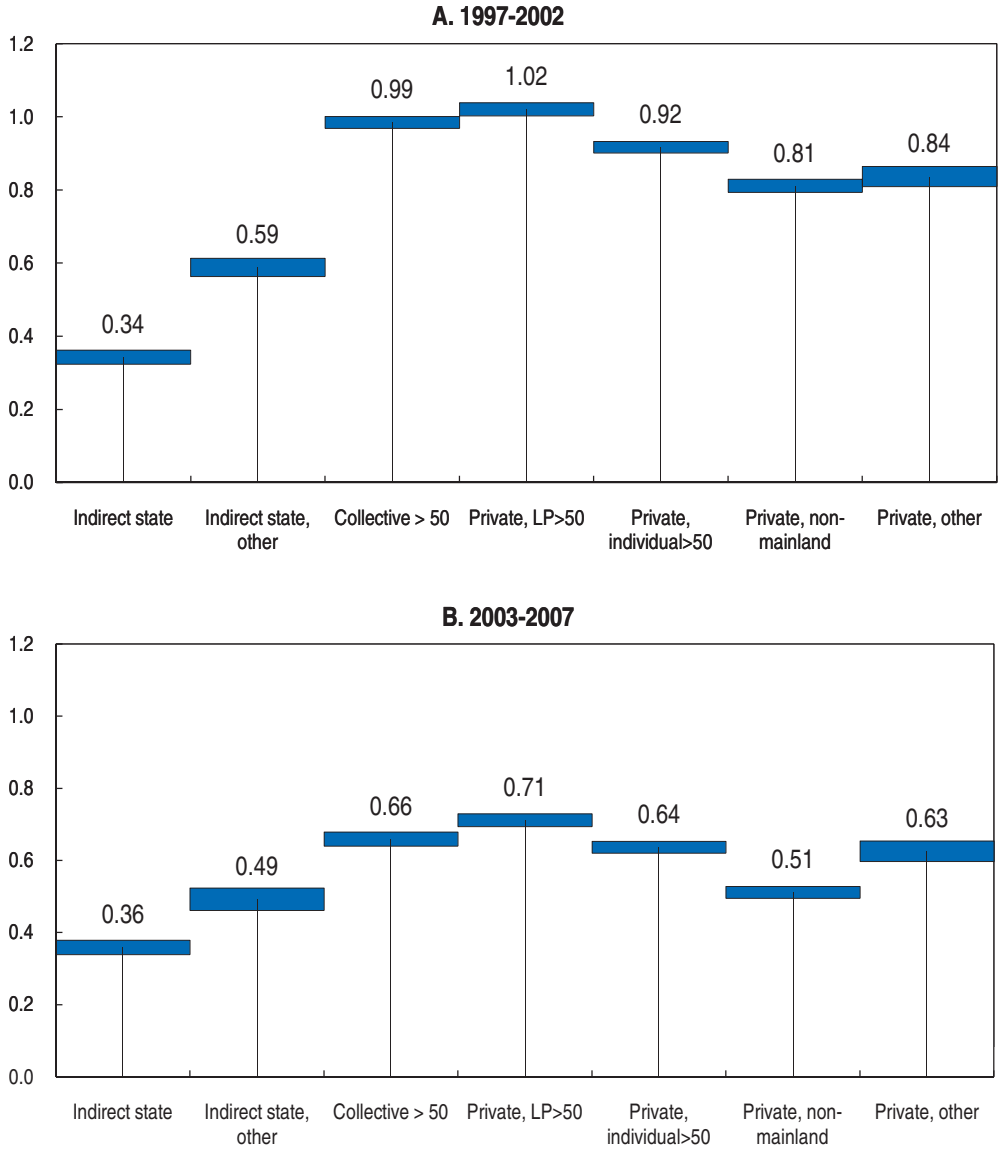
The impact of restructuring and governance improvements can be seen in the productivity performance of the SOEs. With larger declines in employment relative to value added and significant increases in capital intensity, labour productivity growth in the state-enterprise sector has been faster than in the private sector – 5.6% *versus* 3.6% per year respectively from 1999 to 2007. As a result, labour productivity is now higher in the state-owned industrial sector than the private sector. Nevertheless, this differential is largely driven by firms that are indirectly owned by government and labour productivity in SOEs that are 100% government-owned is still lower than in all other ownership classes.

TFP estimates derived from a production function that accounts for capital intensity (as well as firm size, location and industry) indicate that overall productivity is higher in private firms (Figure 4.5). This result is consistent with a long list of previous studies that

use a wide range of methodologies and generally conclude that China's SOEs are significantly less efficient than enterprises with other ownership forms. As with labour productivity, TFP has recently been growing faster in the state-enterprise sector: while it averaged half that of the private sector over 1997-2003, it rose to close to two thirds in 2004-07. Underscoring the benefits that even partial privatisation can bring, industrial firms with state ownership of less than 50% are around 40% more productive than fully-state-owned firms. Lower productivity in the SOEs is systemic across China's industrial sector and does not simply reflect regional and sectoral differences.

Figure 4.5. **Differences in total factor productivity by firm ownership**[1]

Relative to directly state controlled (state > 50%)



1. See Conway *et al.* (2010) for full regression parameters. The 95% confidence interval is shown by the thickness of the bar.

Source: Joint NBS-OECD analysis.

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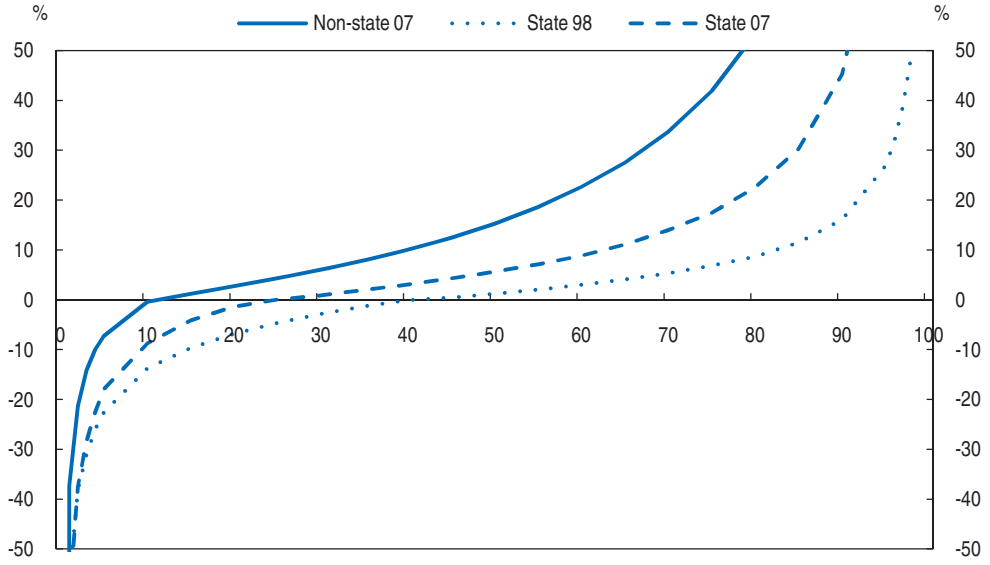
This pattern of relatively high labour productivity and low TFP indicates that SOEs use their capital stock less efficiently than private sector firms. With capital accumulation a key driver of GDP growth and SOEs responsible for a large share of total investment, low capital productivity in the state enterprise sector amounts to a significant drag on economic growth. For instance, Dollar and Wei (2007) find that systemic distortions in capital allocation arising from government ownership have a large negative impact on GDP. According to their simulations, if capital were allocated more efficiently, total investment could fall by 5% of GDP without any sacrifice of economic growth.

Reflecting the productivity results, the rate of return on assets employed by the state enterprise sector has significantly improved over recent years but still lags that of the private sector. In the mid-1990s, the entire public enterprise sector only just broke even as a plethora of technically insolvent SOEs cancelled out most of the profits of the SOEs in better financial health. Since then, the state enterprise sector has moved strongly into profitability with the average return on the assets of industrial-sector SOEs increasing almost ten-fold from 2.2% in 1998 to 21% in 2007. In 2008, however, and related to the global recession, the profits of the central SOEs fell by 30%, the first decline since 2002.

This impressive profitability improvement has not been even across all state controlled firms, with the largest gains occurring at the upper end of the distribution – from 1998 to 2007, 90% of the improvement in returns was generated by the top 30% of SOEs (Figure 4.6). Indeed, much of the resurgence in SOE profitability is explained by a relatively small number of central SOEs operating in resource extraction and processing sectors which experienced a period of unprecedented demand that massively boosted commodity prices. Although the best-performing SOEs earn the bulk of profits, there has been some improvement across the distribution and the median return for industrial SOEs increased from only 1.1% to 5.5% between 1998 and 2007. In no small part, this reflects reforms enacted at the firm level to restructure and rehabilitate unprofitable SOEs as well as a raft of bankruptcies that closed thousands of loss-making SOEs.

Figure 4.6. **Distribution of rates of return on physical assets**



Source: Joint NBS-OECD analysis.

StatLink http://dx.doi.org/10.1787/778076781764

In spite of these positive developments, many of the smaller SOEs still make losses or barely break even – in 2007 one in five SOEs earned a negative return. State enterprises under provincial and local SASACs have also increased profitability, but still lag behind the central SOEs. Overall, SOEs typically continue to be less profitable than private-sector firms in the same region and industry.

Detailed PMR indicator results and policy recommendations[10]

The paradox of China's stellar economic performance over the reform period is that it has occurred while the transformation of institutions is still far from complete and aspects of the regulatory environment continue to bear some of the hallmarks of the planning era. Indeed, the overall PMR indicator reported in Figure 4.2 above points to a regulatory environment that is significantly less conducive to competition than in OECD countries, suggesting that institutional development has, in some ways, lagged behind China's economic transformation. It would seem that the benefits of the substantial reforms that have been put in place as well as a legacy of competitive markets and the rise of the private sector – in conjunction with "creative improvisation" to bridge institutional gaps – have so far outweighed the costs implicit in the remaining policy-induced distortions (Brandt and Rawski, 2008).[11]

Going forward, the regulatory impediments implicit in the current framework are increasingly likely to constrain growth as the Chinese economy continues to develop and becomes more sophisticated. In what follows, the mid and low-level PMR indicators are used to outline regulatory areas where China's policy environment lags even the worst-performing OECD countries and which therefore offer the greatest scope for reforms to boost economic performance. The discussion is ordered according to the three broad regulatory areas summarised by the PMR indicators – *state control*, *barriers to entrepreneurship*, and *barriers to international trade and investment*.

State control is still pervasive compared with OECD countries

Despite rapid privatisation and widespread improvements in SOE governance, the extent of *state control* in the Chinese economy is, according to the PMR indicators, still higher than in any OECD country (Table 4.5). This arises from a high degree of both *public ownership* and government *involvement in business operations*.

Table 4.5. **State control in China, international comparison**

	China	Russia	OECD average	OECD emerging markets[1]	Euro area[2]	United States
Overall PMR indicator	3.30	3.30	1.34	1.83	1.32	0.84
State control	4.63	4.39	2.03	2.54	2.19	1.10
Public ownership	5.33	4.28	2.91	3.46	3.08	1.30
Scope of public enterprise sector	6.00	4.64	3.10	3.54	3.23	2.25
Direct control over business enterprises	4.50	4.19	2.86	3.67	2.93	0.68
Government control in infrastructure sectors	5.48	4.02	2.76	3.18	3.08	0.99
Involvement in business operations	3.94	4.50	1.15	1.61	1.30	0.90
Use of command and control regulation	3.50	4.00	1.52	1.94	1.88	1.30
Price controls	4.38	5.00	0.78	1.29	0.71	0.50

1. Czech Republic, Hungary, Korea, Mexico, Poland, Turkey.
2. Austria, Belgium, Finland, France, Germany, Italy, Luxemburg, Netherlands, Portugal, Spain.

SOEs still dominate some sectors

In December 2006, SASAC issued a policy directive unveiling plans to maintain absolute control through sole ownership or an absolute controlling stake in SOEs operating in seven sectors declared to be "strategic" – that is, defence, electrical power and distribution, oil and chemicals, telecommunications, coal, civil aviation and shipping (Table 4.6). In addition, the government also aims to maintain significant absolute or relative controlling stakes in a range of sectors described as "basic or pillar industries". This marked a shift in policy away from encouraging private-sector involvement in all competitive sectors of the economy to one of privatising smaller SOEs in non-strategic sectors while increasing state ownership in enterprises deemed to be strategic. This is consistent with the approach first expressed in the 9th five-year plan of "grasp the big, let go of the small".

Table 4.6. **Policy goals on state ownership across sectors**

Description	Sectors	Ownership goal
Strategic and key	Defence, power generation and distribution, oil and petrochem, telecom, coal, civil aviation, shipping	Maintaining 100% state ownership or absolute control; increasing state-owned assets in these sectors
Basic and piller industries	Machinery, auto, IT, construction, steel, base metals, chemicals, land surveying, R&D	Absolute or conditional relative controlling stake; enhancing the influence of state ownership even as the ownership share is reduced where appropriate
Other industries	Trading, investment, medicine, construction materials, agriculture, geological exploration	Maintaining necessary influence by controlling stakes in key companies; in non-key companies stage ownership will be clearly reduced

Source: Mattlin (2007).

In line with this policy, SOEs continue to dominate some key sectors. In particular, the upstream extraction and production of natural resources (oil, gas, coal and some ores) as well as large-scale machinery building are subject to a large SOE presence. State-run firms also control a number of the network sectors, particularly electricity generation and distribution, natural gas and water. In some of these sectors the share of value added produced by SOEs has declined very little since the late 1990s (Table 4.7). Outside of the industrial sector, SOEs continue to dominate banking, telecommunications and the media.

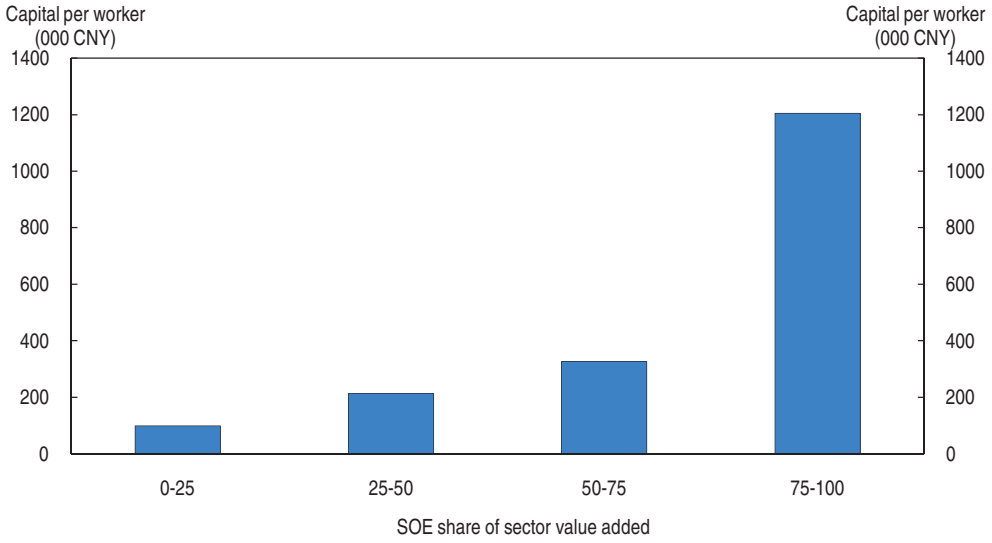
Table 4.7. **Industries with the highest degree of state ownership**

	Value added			Fixed capital and inventory	Employment	Number of companies
	1998	2003	2007	2007		
Manufacture of tobacco	98.9	99.3	99.8	99.2	95.5	78.6
Extraction of petroleum and natural gas	99.9	93.9	97.2	97.0	97.7	50.6
Production and supply of electric power and heat power	87.5	84.0	88.6	87.9	87.6	62.4
Production and supply of water	95.4	86.1	68.2	82.1	86.2	70.4
Mining and washing of coal	83.3	80.8	66.5	80.8	70.0	11.2
Processing of petroleum, coking, etc.	87.5	81.0	62.3	68.5	50.0	10.3
Manufacture of transport equipment	69.3	64.6	48.9	55.3	37.1	9.5
Production and supply of gas	82.7	74.9	46.2	61.0	65.8	36.8
Smelting and pressing of ferrous metals	78.7	66.0	45.4	61.2	43.9	4.6
Mining and processing of non-ferrous metal ores	57.1	44.5	34.6	45.4	41.9	14.1
Smelting and pressing of non-ferrous metals	58.5	48.1	34.1	47.2	36.3	6.5

Source: Joint NBS-OECD analysis.

In less capital-intensive industries the SOE share of value added is typically much lower and declining (Figure 4.7). However, despite the increasing concentration of state enterprises in sectors deemed to be strategic, SOEs continue to operate in all industrial sectors at the 2-digit level, as evidenced by the maximum value for the PMR indicator of the *scope of public enterprise sector* (Table 4.5 above).

Figure 4.7. **Capital intensity and state ownership**



Source: Joint NBS-OECD analysis.

StatLink http://dx.doi.org/10.1787/778136238573

SOE governance needs to be improved further

Given the prevalence of SOEs in key sectors of the Chinese economy, overcoming weaknesses in corporate governance under state ownership is a key issue. An overriding theme of recent reforms in this area has been to lessen the government's direct control over SOEs by allowing them to operate in their commercial interests while at the same time maintaining proper and efficient supervision. As detailed in the *OECD Guidelines on Corporate Governance of State-Owned Enterprises* (OECD, 2005b), priority areas include:

- ensuring a level playing field with the private sector;
- improving the transparency of SOEs' objectives and performance;
- strengthening and empowering SOE boards;
- reinforcing the ownership function within the state administration;
- providing equitable treatment of minority shareholders.

Although important steps have been taken along these lines, high PMR indicator values for *direct control over business operations* and *government control in infrastructure sectors* suggest that the line between government and the SOEs is still blurred. This indicates that SOE decisions still sometimes reflect the government's intentions, rather than purely commercial goals. Further reform and better implementation of existing policies is necessary to encourage greater commercialisation of the SOEs and improve competition.

Decisively cutting the traditional ties between SOEs, government agencies and the Communist Party is an ongoing challenge for SOE governance in China. This task is proving

difficult given that almost half of the chairpersons and more than one third of chief executive officers of central SOEs were appointed by the Central Organisation Department of the Communist Party and have civil servant status (Hu, 2007). In addition, party committees in SOEs imbue corporate governance with party principles and often play an active role in human resources and the strategic decision making of the enterprise.

If SASAC is to achieve its original intention of separating government ownership from policymaking and regulation, then its supervisory role needs to be clearly defined and adhered to.[12] The core business of SASAC should involve monitoring SOE performance and planning, participating in shareholder meetings, appointing SOE directors, and periodically organising and monitoring sales of SOE shares. Strategic decisions on human resources, budgets and investment strategies should be left in the hands of the SOEs and the government's ownership role should not be used to pursue the objectives of industrial policy. Government interference in corporate operations outside its scope of responsibility as capital provider has a negative impact on competition and runs contrary to the original principles on which SASAC is based. Experience in other countries indicates that mixing regulatory and ownership functions tends to degrade the quality of both.

Another ongoing challenge for SOE governance in China is to eliminate investment distortions arising from government ownership. Increasing the share of SOE profits paid as dividends would help in this regard. Instead of paying dividends, SOEs have generally ploughed increasing profits back into investments that have in some cases been undisciplined and contributed to a pattern of "boom and bust" investment cycles.[13] SASAC has been working to change this and since 2008 has required SOEs to distribute part of their profits as dividends. Although this is a useful start, the prescribed dividend rates are low by OECD norms and should be increased.[14] Larger SOEs also need to put formal dividend policies in place that return to shareholders surplus earnings on which management cannot expect to earn an adequate risk-adjusted return.

In 2005, SASAC announced its intention to introduce a state assets management budget to consolidate the investment funds of the central SOEs. Under this scheme, SOE dividends are remitted to SASAC which then allocates them in line with the government's industrial policy. This risks merely transferring the inefficiencies inherent in a non-market based approach to capital formation to SASAC. Instead, SOE dividends and privatisation proceeds should be paid directly to the Ministry of Finance and integrated into the budgeting process, as is standard practise in OECD countries.

SOE governance could also benefit from better implementation and increased enforcement of reforms that are already in place. For example, information disclosure and transparency of the SOEs lags behind existing rules and standards. SASAC's plan to require all 141 SOEs under its control to publish annual reports from 2008 should improve transparency and help untangle the opaque mass of cross-shareholdings between a number of the middle-tier SOEs and their subordinate firms. Although being strengthened, limited protection for minority shareholders also diminishes the effectiveness of the governance structures in promoting the interests of all owners (OECD, 2008).

Policy makers need to focus on setting framework conditions

A corollary of increased SOE independence in strategic decision making is that Chinese policymakers need to increasingly focus on setting framework conditions for private sector activity and maintaining an arm's length relationship between the state and

market. Organisational and administrative reforms taken over the past decade have considerably improved the capacity of the central government to effectively regulate a market-based economy. The 2003 government reorganisation, during which the industrial ministries – once the core of the planned economy – were abolished, marked a decisive shift towards market-based regulation. However, although policymaking has moved a long way from the previous system of open economic interventions, the PMR indicators still imply a degree of *command and control* type regulation that is higher than in most OECD countries, implying that further progress would be beneficial for competition.

Reflecting the lingering tendency for command and control regulation, *price controls* are, according to the PMR indicators, used to a much greater degree in China than in any OECD country.[15] Policy-induced price distortions can stifle industry development and impose major costs through inefficient resource allocation. Price controls continue to be applied to a range of goods in China including oil and natural gas, electricity, water, tobacco, and grains and fuel oils.

Privatisation is the best cure

Revitalising the privatisation process is the ultimate way of ensuring that SOEs operate on commercial grounds and ending the harmful practice of state-owned banks skewing lending towards the state enterprise sector. The rolling back of the state enterprise sector and rise of the private sector has been at the epicentre of China's economic reforms over the past 30 years and a key driver of improvements in capital allocation and TFP. This has also been the experience in many developed and developing countries in which privatisation has been found to improve firm profitability, real output and efficiency (*e.g.* Megginson and Netter, 2001; Kikeri and Nellis, 2004). In the case of China, further reductions in the scope of state ownership would help minimise government interference in business decisions and allow SASAC to focus on ownership oversight and transfer its regulatory responsibilities to other agencies.

When privatisation began in the 1990s, the Chinese government instigated a two-tier structure under which its original equity formed a class of non-tradable shares distinct from new equity. Although both share types had the same profit and voting rights in principle, the state's non-tradable shares were designed to be held in perpetuity and could not be sold on public markets.[16] In 2005, concerned by the negative impact of non-traded shares on the development of equity markets and corporate governance, the government abandoned this policy and required SOEs to implement plans to merge the two share classes (Chapter 3).[17] On current plans, all SOE shares are due to become fully tradable by 2012 (Ahn and Cogman, 2007). This reform entails a number of important benefits including improving corporate governance and liquidity in China's capital markets and facilitating mergers and acquisitions that will allow SASAC to consolidate and simplify the government's SOE portfolio. It also removes a significant barrier to privatisation, although several government agencies have stated that the objective of the reform is not to reduce state holdings, only to make non-tradable shares tradable.

Notwithstanding the benefits of privatisation, increasing concentration of state ownership in large companies has seen the stock market capitalisation of China's SOEs increase markedly over recent years. Currently, SOEs that have been corporatised and partially privatised account for well over 80% of market capitalisation. Although partial privatisation can improve firm performance, cross-country studies in OECD countries indicate that the gains in profitability and productivity are typically larger in firms that are

fully privatised (OECD, 2003). This is echoed in the firm-level performance results across different ownership classes reported above. The disadvantage of partial privatisation is that it usually does not result in management control being passed to private owners or an infusion of new technology necessary to improve firm performance to that of the private sector. If China is to maintain high rates of economic growth driven by productivity improvements, the share of productive assets controlled by profit-seeking entrepreneurs and managers must continue to increase.

First, and perhaps most easily, government-owned equity in small SOEs in non-strategic sectors could be disposed of through public auctions to the highest bidder. Indeed, SASAC's designation of strategic sectors leaves a lot of ground from which the government has effectively announced that it intends to withdraw completely. Many of these smaller SOEs are loss-making and non-transparent, implying additional liability risks. They also typically operate in sectors in which competition is robust. In addition, as discussed below, a sound competition framework has recently been introduced, implying minimal risk in privatising these SOEs. As such, the government needs to follow through on its decision to "let go of the small".

The list of "strategic" and "basic or pillar" industries also needs to be reviewed. All of the sectors included in the latter category are inherently competitive and typically not subjected to high rates of government ownership in OECD countries. Along with foreign firms, private sector enterprises in China now have the financial capacity to acquire large SOEs or significant parts of their equity.[18] Similarly, all of the network sectors deemed to be "strategic" by SASAC have competitive subsectors in which participation by private firms has lead to impressive gains in productivity in both developed and developing countries. In the non-competitive segments of the network sectors, as discussed below, an effective regulatory regime and oversight by independent regulators is required prior to privatisation.

Further privatisation of China's SOEs would necessitate a large number of transactions, implying a need for an efficient method of disposal. In the past, many ownership transfers to the private sector have been conducted through management-employee buyouts that have been closed to outside scrutiny and ultimately controversial, with widespread reports of asset stripping. These issues have been addressed with the passing of the *State-owned Assets Law* which establishes in legislation a number of principles for the transfer of state assets via management buyouts including an appraisal prior to the sale. This law also gives SASAC the power to terminate an asset transfer or declare it invalid if it considers malicious collusion to have occurred. This sends a clear warning signal that this issue is of high importance to law makers. Timely and proper enforcement of these new regulations will be key to ensuring that they change market practices. The OECD experience has been that more open processes of asset transfer are more beneficial for the state and enterprise concerned (OECD, 2003). In addition, golden shares, which allow the state to exercise a level of control beyond the level of risk implied by its ownership stake, carry the potential for abuse and should be avoided.

Barriers to entrepreneurship restrict private sector development

Low *barriers to entrepreneurship* are critical for encouraging private sector firms and creating competitive markets. China performs well in some of the regulatory areas covered by this indicator (Table 4.8). In particular, the indicator of *regulatory and administrative opacity* is below the OECD average, reflecting progress in improving the transparency of the

Table 4.8. **Barriers to entrepreneurship in China, international comparison**

	China	Russia	OECD average	OECD emerging markets[1]	Euro area[2]	United States
Barriers to entrepreneurship	2.89	2.38	1.41	1.91	1.26	1.24
Regulatory and administrative opacity	0.25	1.00	1.00	1.18	0.64	0.19
Licenses and permit system	0.00	2.00	1.78	2.00	1.20	0.00
Communication and simplification of rules and procedures	0.50	0.00	0.22	0.35	0.09	0.38
Administrative burdens on start ups	5.58	3.27	1.53	2.70	1.61	0.99
Administrative burdens for corporations	5.25	3.50	1.62	2.79	1.60	0.75
Administrative burdens for sole proprietor firms	5.50	4.00	1.61	2.75	1.78	1.25
Sector-specific administrative burdens	6.00	2.31	1.35	2.55	1.46	0.97
Barriers to competition	2.83	2.88	1.69	1.87	1.53	2.53
Legal barriers	1.43	2.00	1.07	1.14	0.81	1.14
Antitrust exemptions	0.00	4.64	0.50	0.61	0.00	2.25
Barriers to entry in network sectors	5.39	2.22	1.94	2.29	1.69	3.07
Barrier to entry in services	4.50	2.67	3.25	3.43	3.61	3.64

1. Czech Republic, Hungary, Korea, Mexico, Poland, Turkey.
2. Austria, Belgium, Finland, France, Germany, Italy, Luxemburg, Netherlands, Portugal, Spain.

regulatory system. Despite these efforts, however, the *administrative burden* that the government places on entrepreneurs is still very high and acts as an obstacle to entry, implying that efforts to improve the government bureaucracy are yet to pay significant dividends. *Barriers to competition* are also high compared to OECD countries, reflecting ongoing regulatory challenges in network and service sectors.

Regulatory and administrative transparency has improved…

Major efforts to reform China's systems of administrative governance and promote regulatory transparency have been an important part of the reform process (OECD, 2009). Most recently, the "Regulations on Open Government Information", which came into force in May 2008, provide a legal basis for China's first nationwide information disclosure system applicable at all levels of government. Increasing the transparency of public sector institutions will act as a powerful incentive for institutional reform and strengthen accountability and efficiency. The quality of legal drafting has also improved but is still less than plain language, with a tendency towards principle-like pronouncements that increase uncertainty over market rules. Public consultation on new regulations has increased and, although not legally required at present, has been included in recent rules for drafting regulations.

Beginning in 2001, major efforts have also been directed at administrative simplification. A number of programmes have been implemented with the aim of reducing the scope and impact of regulatory requirements inherited from the central planning era and curbing widespread bureaucratic fragmentation. Although Internet penetration remains low outside of the urban areas, an ambitious e-government programme is also being promoted as part of broader reforms in law and administrative institutions. As a result of these and other initiatives, China has been improving regulatory transparency and open access to government information and the indicators of *regulatory and administrative opacity* compare favourably internationally. The indicator of the *licence and permits system* is also low, given the introduction of one-stop shops and other initiatives

designed to reduce red tape and simplify the rules and procedures that enterprises must comply with.

... but administrative burdens on start-ups remain excessive and act as a barrier to entry

Despite efforts to improve the functioning of the public bureaucracy, *administrative burdens on start-ups* remain high compared with other countries, implying elaborate and cumbersome systems of administrative approval.[19] These high indicator values could also be indicative of more widespread inefficiencies in government administration and suggest that barriers to entrepreneurship stem not so much from formal regulations but in large part from difficulties in implementation. Recent attempts at administrative reform have repeatedly run up against certain intransigent aspects of the existing system and, as a result, China continues to have a complex array of institutions and agencies with varying degrees of legal power to make and administer new regulations. This allows government bureaucrats to make decisions that should be left to the market and creates corruption opportunities that serve as powerful incentives to block reform.

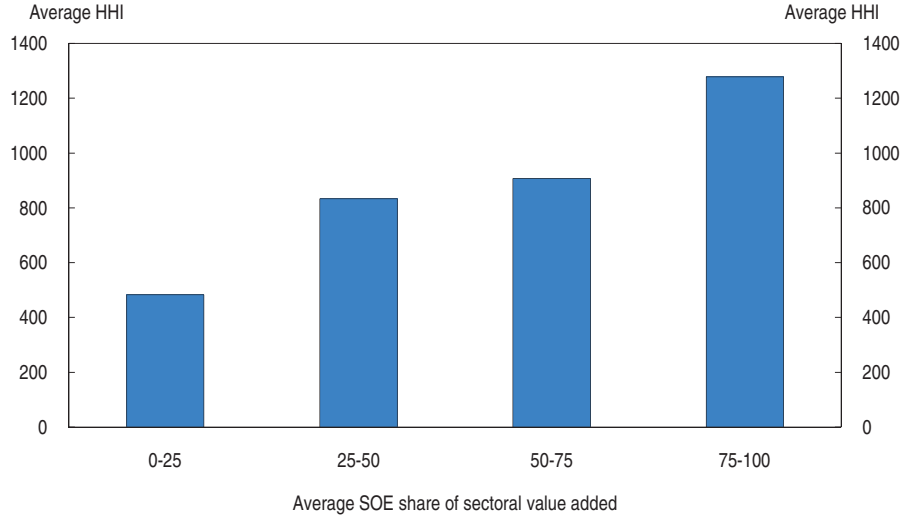
With an interventionist tradition and administrative structures that in many cases have not kept pace with economic liberalisation and are highly fragmented, a significant reengineering of administrative processes is needed to improve service delivery and simplify the interaction between government and firms. The OECD experience has been that a long-term strategy for regulatory reform needs to be explicit, coherent and supported by the highest levels of government. Recognising the scope of this challenge, most OECD governments have established regulatory oversight bodies with whole-of-government responsibility for regulatory policy to promote consistent reform across the entire administration. In China, although the Legislative Affairs Office of the State Council assumes some responsibility for regulatory quality, there is currently no centralised oversight body charged with reviewing regulatory proposals to ensure they do not impose unnecessary or unreasonable administrative burdens on firms and citizens.[20] This would involve the use of regulatory impact analysis, which is a process of evidence-based decision making designed to ensure regulatory quality. An oversight body could also help integrate regulatory functions across different levels of government, thereby ensuring that progress in regulatory reform is more uniform across the country.

Internal markets have been liberalised but SOEs still restrict entry in some sectors

In 2005 the State Council issued *Guidelines on Encouraging and Supporting the Development of the Non-Public Sector including Individual and Private Enterprises* with the intention of enhancing market access for private firms in previously restricted industries. Along with market-opening commitments made as part of China's WTO entry, these guidelines opened a number of sectors to non-state competition and moved a long way towards creating a level playing field. As a result, formal *legal barriers to entry* are, according to the PMR indicators, broadly comparable to those in OECD emerging markets.

As noted above, with the retreat of the state-enterprise sector and rise of private enterprise, fierce competition has developed in many industries, particularly labour-intensive sectors. However, in a number of the "strategic" and "pillar" sectors where SOEs have become increasingly concentrated, private-sector participation is much more limited or non-existent, with negative implications for market competition (Table 4.2 above and Figure 4.8). Although some of these sectors are technically open to private firms, discriminatory regulatory treatment is often used to discourage non-state entrants. In

Figure 4.8. **SOE penetration and market concentration, 1998-2007**[1]



1. Market concentration calculated as the un-weighted average of HHI scores at the 4-digit sectoral level.

Source: NBS and OECD.

StatLink http://dx.doi.org/10.1787/778138266220

addition, the government's explicit expectation that SOEs dominate these sectors acts as a powerful disincentive to entry.

The lack of competitive pressures in sectors dominated by state enterprises detracts from performance and increases the risk that SOEs will again become a major drain on public finances. Short of privatisation, increased private sector participation and competition in these sectors is necessary to ensure that incumbent SOEs strive to improve efficiency. Ensuring that the 2005 Guidelines on private sector participation are effectively implemented would go a long way towards removing implicit barriers to entry in "strategic" sectors. Rules discriminating against private companies need to be rescinded while access to bank, equity and bond financing for private-sector firms needs to be improved. Government procurement also needs to be made neutral between private and public enterprises, as required under the new *Anti-Monopoly Law*.

The new competition law is a big step forward[21]

The new *Anti-Monopoly Law* (AML) entered into force in April 2008 and addresses many of the gaps and other weaknesses in the 1993 *Anti-Unfair Competition Law*. The AML aligns China's competition framework with international practices and is an important step forward in safeguarding product market competition. The new law provides an updated and comprehensive legal framework for dealing with mergers and combating a wide range of anticompetitive practices including monopoly agreements, abuse of market dominance and the concentration of business operators. Importantly, the AML also addresses abuses of competition by SOEs and state-mandated actions, hence the low PMR indicator value for *antitrust exemptions*.

Implementation and judicial interpretation will be critical in ensuring that the new law performs as expected and resolving conflicts between competition considerations and China's relatively activist industrial policy. For example, previous government directives calling for rationalisation and consolidation in sectors with overcapacity have involved

agreements among firms that would be in conflict with the new AML. Some provisions of the new law also require further implementation rules, which need to be developed quickly.

Enforcement of the AML is divided between the State Administration for Industry and Commerce, the Ministry of Commerce and the National Development and Reform Commission. This is in contrast to typical arrangements in OECD countries where the implementation of competition law is typically vested in a single national competition body. The advantage of this approach is that it enhances information exchange and minimises outside interference in competition enforcement decisions. The new AML does, however, provide for the establishment of a State Anti-Monopoly Commission under the State Council, which should be given overall responsibility for competition law enforcement.

Major regulatory challenges remain in network sectors

Over the past decade China has made some progress in reforming the regulation of network sectors. In general, although the pace and scope has differed across sectors, the government has adopted a more liberal regulatory approach by vertically and horizontally unbundling state monopolies and mandating private-sector involvement in some sub-sectors. Despite some improvement, however, the PMR indicator of *barriers to entry in network sectors* is still high in China relative to comparator countries, implying that impediments to private sector involvement continue to restrict competition. In addition, the high value of the indicator of *government involvement in network sectors* implies that, despite the possibility of competition, SOEs continue to dominate.

In the electricity sector, The State Power Corporation, which took over most of the assets of the Ministry of Power in the late 1990s, was unbundled into two transmission companies and five generators in 2002. This, in conjunction with the 2002 *Electricity Law* allowing private-sector generation, was an important precondition for competition. In addition, The State Electricity Regulatory Commission began operating in 2003. Since these reforms, a number of private firms have entered the generation market and several regional wholesale electricity markets have been launched on a trial basis.

Price setting in the electricity sector continues to be a source of inefficiency that exerts a drag on productivity. In generation, prices vary according to generators' costs on the basis of a cost-plus methodology. Although this may encourage investment, it provides no incentives for efficiency improvements. At the retail level, the failure of regulated prices to keep pace with cost changes has increased fiscal pressures and led to other serious recurring problems; in 2008, price controls on electricity prompted suppliers to reduce generation leading to blackouts in some areas. Artificially low energy prices also lead to energy wastage, to the detriment of the environment. Future pricing reforms are expected to allow wholesale markets to determine tariffs on the generation side while the government will regulate transmission and distribution prices along with prices for end users. However, specific details of these reforms and implementation timetables are yet to be published. More generally, the government has adopted a gradual approach to the reform of the energy sector, which is deemed to be strategic. However, it remains to be seen whether this approach will be sufficient to address the challenges the sector faces, notably the tension between large and growing energy demand and environmental protection (IEA, 2006).

Regulatory reform in the telecommunications sector has, to some extent, encouraged competition and produced impressive results. The *Telecom Law*, adopted in 2000, calls for the separation of policy, regulatory and management functions within government and

prohibits monopolies. Leading telecommunication operators may not refuse requests for network connections and predatory pricing and unjustified cross-subsidies are prohibited. The rules are administered by the Ministry of Information Industry, which is the principal regulator of the telecoms industry. Since these reforms, China's telecommunications network has become the largest and fastest growing in the world. There are, however, still a number of regulatory areas that need to be spelled out in new legislation. For example, the rules around licensing new entrants and third-party access to networks need to be clarified and made more transparent.

Independent regulators have been introduced in a number of China's network sectors. In some cases, however, they are subordinated to the ministry of the sector that they regulate or appointed on the basis of political connections, which limits their independence and reduces the scope for efficient markets with increased private sector participation. Independent regulators need to strike a balance between promoting efficiency gains and attracting investment while protecting consumers from potential monopolist abuses and firms from political interference. This is no easy task, especially in a country such as China with a large concentration of SOEs in a number of industries. To generate the expected benefits of a high-quality regulatory environment, independent regulators need to be based on proper institutional design within strong governance frameworks. Independence should go hand-in-hand with accountability, stability and expertise. Accountability requires that the decision-making process be transparent and subject to clear and simple procedural requirements and checks and balances, including opportunities for public hearings and appeal provisions. In OECD countries, regulators have been most effective and credible when their independence and roles are made explicit in a distinct statute with well-defined functions and objectives.

Barriers to international trade and investment

China has benefited enormously from its rapid integration into the global economy. Both international trade and foreign direct investment have encouraged domestic firms to incorporate foreign technologies into the production process, thereby facilitating technological diffusion and productivity growth. Although China has committed to further liberalisation of its trade and foreign direct investment regimes, the PMR indicator of *barriers to trade and investment* is high compared to OECD countries. This indicates that ongoing reforms to open sectors of the economy that are still sheltered from the global economy would pay additional dividends (Table 4.9).

Table 4.9. **Barriers to international trade and investment, international comparison**

	China	Russia	OECD average	OECD emerging markets[1]	Euro area[2]	United States
Barriers to trade and investment	2.37	3.11	0.59	1.04	0.50	0.18
Explicit barriers to trade and investment	2.47	2.62	0.99	1.70	0.87	0.37
Foreign ownership barriers	3.22	3.50	1.29	1.68	1.38	1.11
Discriminatory procedures	2.21	1.38	0.54	1.09	0.24	0.00
Tariffs	2.00	3.00	1.13	2.33	1.00	0.00
Other barriers	2.27	3.60	0.18	0.38	0.13	0.00
Regulatory barriers	2.27	3.60	0.18	0.38	0.13	0.00

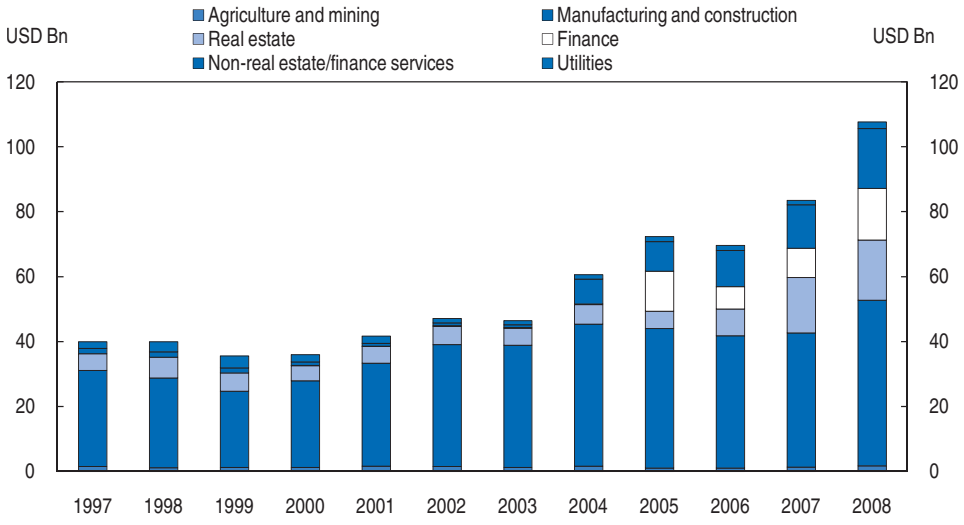
1. Czech Republic, Hungary, Korea, Mexico, Poland, Turkey.
2. Austria, Belgium, Finland, France, Germany, Italy, Luxemburg, Netherlands, Portugal, Spain.

Greater FDI in the service sector would produce large benefits

In contrast to tight restrictions on foreign portfolio investment, the Chinese government has actively encouraged foreign direct investment (FDI) and China is now the largest recipient of FDI in the world. Notwithstanding this impressive performance, the indicator of *foreign ownership barriers*, which measures FDI barriers in service sectors, is relatively high. In addition, the share of Chinese investment funded by FDI has been steadily declining since the mid-1990s.

These policy-induced barriers to FDI are reflected in the composition of inflows into China. Until the mid-2000s, FDI was heavily concentrated in manufacturing while services attracted far less foreign investment than in other developing countries (World Bank, 2007). More recently, driven in part by policy changes enacted as part of China's entry into the WTO in 2001, the service-sector share of FDI has risen markedly (Figure 4.9). Much of this increase in FDI has been in the real estate and financial sectors while inflows into other service sectors have remained relatively modest.[22]

Figure 4.9. **FDI inflows to China by sector**



Source: CEIC.

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In broad terms, foreign service providers face three types of FDI barriers in China: *i)* restrictions on the form of ownership and ceilings on the maximum equity stake they may hold in domestic firms; *ii)* restrictions on the geographic scope and lines of business; and *iii)* other requirements, such as minimum capital requirements that are not imposed on domestic competitors or imposed to a lesser degree (OECD, 2009). In some service sectors, barriers to FDI remain pervasive. For instance, foreign participants in the telecommunications and electricity sectors face ownership restrictions and are confined to value-added services and power generation respectively. Limitations on foreign participation also still exist in the maritime and air transport, legal and accounting, tourism, and postal sectors.[23] These restrictions limit not only the market share of foreign providers, but also the breadth and sophistication of the services they provide, given a reluctance to transfer technology and expertise to firms where their control is limited. In addition to explicit barriers to FDI, regulatory policies that restrict market access in one way or another also negatively influence the share of FDI (see Nicoletti *et al.*, 2003 for the OECD experience). This suggests that the intention of the Chinese government to dominate "strategic and pillar" sectors discourages FDI investment in those sectors.

In some service sectors, restrictions on FDI have been relaxed somewhat as part of China's WTO commitments. In particular, foreign banks and non-life insurance companies now enjoy close to national treatment, although ceilings on foreign investment in domestic banks and insurers remain in place.[24] However, further liberalisation of access for foreign investors and business would bring substantial benefits. As in manufacturing, countries benefit from FDI in services through employment creation, capital accumulation, foreign technology transfer, improved service and increased competition. These improvements can have important spill-over effects and contribute to productivity gains in manufacturing by improving the quality and availability of intermediate inputs. Moreover, in the case of China, increased FDI in service sectors would also help reduce the dominance of the SOEs. The government's plans to open the services sector further to private and foreign participation need to be actively pursued.

Other barriers also limit the benefits of trade and foreign investment

China has made significant efforts to reduce *discriminatory procedures* and other *regulatory barriers* to foreign firms. To enhance transparency, all laws, regulations and other measures concerning trade are published in the *Foreign Trade and Economic Co-operation Gazette*. There is also an enquiry point through which foreign firms can ask for clarification of laws and regulations affecting trade. The provision of draft legislation with adequate time for meaningful consultations with all relevant stakeholders has also been improved with the passing of the *Legislation Law*. Foreign businesses have had the opportunity to comment on the draft *Labour Contract Law*, the *Anti-Monopoly Law* as well as many industry-specific regulations. Efforts have also been made by China to move its standards regime towards international practice and efforts by Chinese regulators to reduce unnecessary trade restrictiveness in domestic regulation have been advancing.

Tariffs on manufactured goods are fairly low in China compared to some other large emerging economies. Moreover, the degree of discretion available for raising tariffs is limited, as the average actual rate is close to the bound rate, in contrast to other major emerging economies. In addition, the dispersion of tariff rates over all products is much lower than in nearly all other emerging markets, indicating that the tariff structure is relatively neutral and the degree to which tariffs are used to protect particular industries is relatively low. Even so, compared to OECD countries the average level of tariffs is still high (Table 4.10).

Table 4.10. **Tariff rates and their dispersion in China and selected countries**

2007

	China	Brazil	India	Russia	Indonesia	South Africa	United States
	Per cent						
Tariff rates (all goods, including agricultural)							
Simple average							
Actual	9.4	14.3	13.7	10.7	5.9	7.9	3.0
Bound	10.0	31.4	49.6	n.a.[1]	37.1	19.2	3.6
Most favoured nation	10.0	13.6	16.6	9.9	7.0	7.5	3.6
Standard deviation of rates							
Actual	6.7	7.7	14.9	5.4	10.6	10.6	9.4
Bound	7.2	8.4	39.1	n.a.[1]	12.5	23.8	10.5
Most favoured nation	7.5	8.3	19.7	5.4	13.7	10.7	10.9

1. Not applicable as the Russian Federation was not a member of the WTO in 2007.
Source: WTO Tariff Database.

With WTO accession, China has effectively locked in many of its trade liberalisation commitments. Important areas for future reforms include improving the transparency of regulations for foreign firms wishing to do business in China. Procedures for appealing against regulatory changes also need to be opened to foreign parties and specific provisions requiring that regulatory administrative procedures avoid unnecessary trade restrictiveness need to be introduced. Improvements could also be made in government procurement and China's accession to the WTO's Government Procurement Agreement is a high priority. Finally, although clear efforts have been made to move China's standards regime towards international practice, foreign enterprises continue to experience difficulties becoming members of private standards-setting bodies. Renewed effort to engage all stakeholders is needed to improve transparency in China's standards-setting process.

Notes

1. For a detailed presentation of the PMR indicators and the results for OECD countries, see Wölfl *et al*. (2009). A full description of the PMR indicators methodology applied to China can be found in Conway *et al*. (2010).
2. For ease of exposition, direct references to the names of PMR indicators are italicised throughout this chapter.
3. By design, all the indicators in the PMR system range from 0 to 6 from least to most restrictive of competition.
4. Because direct measures of competition do not exist, proxy measures are typically used in practice. Unfortunately, all proxies are imperfect and it is often possible to find examples where they do not accurately reflect competitive conditions. For example, economies of scale or scope may result in relatively high concentration ratios or prices that exceed marginal costs even when rivalry among firms may be strong. Despite these potential difficulties, concentration ratios are often used as a measure of competitive pressures.
5. For example, the telecommunications monopoly enjoyed by the Ministry of Post and Telecommunication (MPT) was disrupted in 1994 by the introduction of a competitor, China Unicom. In 2000, the assets of the MPT were corporatised into two companies – China Telecom and China Mobile. A fourth major company, China Netcom, was hived off from China Telecom in 2002. This pattern of creating competing SOEs was repeated in other industries including oil, aviation, steel and power generation.
6. Many of the privatisations that took place during this period simply involved recognising that a lot of the township and village enterprises formed in the 1980s were essentially private firms. Beginning in the mid-1980s, many firms registered as collectives, meaning they were controlled by local governments, re-registered as private firms when it became acceptable to "take off their red hats".
7. SASAC is a ministerial-level "special organisation" reporting directly to the Sate Council. Its mandate does not extend to the financial sector where the ownership role is performed by the Central Huijin Investment Company and supervision is the responsibility of the Central Banking Supervisory Committee.
8. The Chinese government aims to increase the number of Chinese firms listed in Global Fortune 500 to around 50 by 2015, up from 37 in 2009. In 1995, only 3 Chinese companies were in the Global Fortune 500.
9. At end 2006, the process of corporatising the SOEs was approaching completion with more than 80% of all SOEs, and virtually all of those controlled by the central government, incorporated under the Company Law (OECD, 2009).
10. Results for all of the low-level indicators for China *vis-à-vis* OECD and other countries are given in Conway *et al*. (2010).
11. As well as a legacy of competitive markets, a number of other potential explanations for China's strong economic performance given institutional shortcomings have been proposed. Rawski and Rawski (2008) argue that historical and cultural factors have endowed the Chinese population with a rich and flexible portfolio of organisational skills well suited to entrepreneurial development.

Knowledge transfers from foreign firms, which entered early in the reform process, and the influence of the overseas Chinese community may also be part of the reason productivity growth has been strong despite weaknesses in the regulatory framework.

12. This is the intention behind the "State-owned Assets Law of the People's Republic of China", which came into force in May 2009 after ten years of deliberation. Prior to this law, SOE policies were governed by the "Interim Measures for the Transfer of Enterprise State-owned Property Rights", issued in December 2003.

13. During the planning era the financing needs and profits of the SOEs were included as part of the state budget with more than half of the government's budget revenues in the late 1970s being generated by SOEs. The government stopped collecting dividends from SOEs in 1994 because their profitability was so weak that it was considered better for the SOEs to retain profits so as to strengthen incentives.

14. SOEs operating in the tobacco, petrochemicals, coal, electricity and telecommunications sectors are required to pay out 10% of gross profits as dividends. For SOEs in the steel, transport, electronics and retail trade sectors the analogous figure is 5% while SOEs in the defence sector and state-owned R&D institutions will continue to be exempt from dividend payments.

15. Price controls are established under the Pricing Law and set by the NDRC at the central level and by the Bureau of Commodity Pricing in each province. Government prices are fixed prices whereas government guidance prices are usually set as a basic price, and a range within which prices can fluctuate. In 2006, 4.7% of total retail goods were subject to price controls.

16. Until 2005, around two-thirds of the shares on China's equity markets were non-tradable. These non-tradable shares can be exchanged outside of the market in a number of ways including: arranged sale, indirect takeover, free or judicial transfer, or entrusted shares (Mattlin, 2007). Transactions involving non-traded shares have to be approved by SASAC.

17. The specifics of the merger were left to the discretion of the company, provided it was supported by two-thirds of tradable and non-tradable shareholders. These plans generally involved holders of non-tradable shares compensating tradable shareholders to offset the negative impact of a flood of shares on the market price. A consensus emerged that tradable shareholders receive a bonus, usually paid in equity, worth 30% of their stake.

18. This has not always been the case and there have been examples of private firms being unable to manage large complex SOEs in the past. For example, D'Long Group acquired four listed SOEs beginning in the late 1990s. As monetary policy tightened in early 2004, the group failed under the weight of excessive debt leaving debts of approximately CNY 10 billion.

19. By way of confirmation, the World Bank's *Doing Business* indicators, which also assess administrative burdens on start ups, ranks China 151st out of 181 countries in 2009 in terms of the ease of setting up a new business – a deterioration of 11 places compared to 2008.

20. Note, however, that the "Legislation Law" does endorse a more open and consultative legislative process.

21. See OECD (2009) for a comprehensive review of the AML.

22. The negative impact of barriers to FDI in China's service sectors is typical, with empirical work across developed and developing countries finding a strong negative correlation between indicators of policy barriers to FDI and FDI inflows (Golub, 2009).

23. In an important reform to separate government ownership and policy functions, China Post Group Corporation was formally established in January 2007.

24. Foreign securities companies and mutual fund companies are still prohibited from establishing wholly-owned subsidiaries and their maximum stake in a joint-venture or domestic company is subject to ceilings (Chapter 3).

Bibliography

Ahn, J. and D. Cogman (2007), "A Quiet Revolution in China's Capital Markets", *Perspectives on Corporate Finance and Strategy*, McKinsey&Company.

Brandt, L. and T. Rawski (2008), "China's Great Economic Transformation", Chapter 1 in L. Brandt and T. Rawski (eds), *China's Great Economic Transformation,* Cambridge, Cambridge University Press.

Chow, G. (2008), "Another Look at the Rate of Increase in TFP in China", *Journal of Chinese Economic and Business Studies*, Vol. 6, No. 2.

Conway, P., R. Herd, T. Chalaux, P. He and J. Yu (2010), "Product Market Regulation and Competition in China", *OECD Economics Department Working Papers,* forthcoming.

Dollar, D. and S. Wei (2007), "Das (wasted) Kapital: Firm Ownership and Investment Efficiency in China", *IMF Working Paper*, WP/07/9.

Dougherty, S., R. Herd and P. He (2007), "Has a Private Sector Emerged in China's Industry? Evidence from a Quarter of a Million Chinese Firms", *China Economic Review*, Vol. 18, No. 3.

Fan, G., D. Perkins, and L. Sabin (1997), "People's Republic of China: Economic Performance and Prospects", *Asian Development Review*, Vol. 15, No. 2.

Golub, S. (2009), "Openness to Foreign Direct Investment in Services: An International Comparative Analysis", World Economy, Vol. 32, No. 8.

Hu, R. (2007), "Governance of State Controlled Listed Companies in China: the Current Situation and Policy Suggestions", Presentation to the Third OECD-China Policy Dialogue on Corporate Governance, Shanghai, March.

IEA (2006), *China's Power Sector Reforms: Where to Next*, Paris.

Kikeri, S. and J. Nellis (2004), "An Assessment of Privatization", *The World Bank Research Observer*, Vol. 19, No. 1.

Mattlin, M. (2007), "The Chinese Government's New Approach to Ownership and Financial Control of Strategic State-Owned Enterprises", *BOFIT Discussion Paper* 10.2007, Bank of Finland.

Megginson, W. and J. Netter (2001), "From State to Market: A Survey of Empirical Studies on Privatization", *Journal of Economic Literature*, Vol. 39, No. 2.

Nicoletti, G., S. Golub, D. Hajkova, D. Mirza and K.-Y. Yoo (2003), "The Influence of Policies on Trade and Foreign Direct Investment", *OECD Economic Studies*, No. 36.

OECD (2003), *Privatising State-Owned Enterprises: An Overview of Policies and Practices in OECD Countries*, OECD, Paris.

OECD (2005a), *OECD Economic Survey of China*, Paris.

OECD (2005b), *OECD Guidelines on Corporate Governance of State-Owned Enterprises*, OECD, Paris.

OECD (2008), *OECD Investment Policy Review: China, Encouraging Responsible Business Conduct*, OECD, Paris.

OECD (2009), *OECD Reviews of Regulatory Reform – China: Defining the Boundary Between the Market and the State*, OECD, Paris.

Perkins, D. and T. Rawski (2008), "Forecasting China's Economic Growth to 2025", in L. Brandt and T. Rawski (eds), *China's Great Economic Transformation*, Cambridge, Cambridge University Press.

Rawski, T. (2008), "Can China Sustain Rapid Growth Despite Flawed Institutions?", Paper presented at The Sixth International Symposium of the Center for China-US Cooperation, University of Denver, 30-31 May.

Rawski, E. and T. Rawski (2008), "China's Economic Development and Global Interactions in the Long Run", Paper prepared for the Harvard-Hitotsubashi-Warwick Conference "Economic Change Around The Indian Ocean in the Very Long Run", Venice, 22-24 July 2008, 24 June version.

Wang, Y. and Y. Yao (2001), "Sources of China's Economic Growth, 1952-99: Incorporating Human Capital Accumulation", *World Bank Policy Research Working Papers*, No. 2650.

Wong, C. (1986), "Ownership and Control in Chinese Industry: The Maoist Legacy and Prospects for the 1980s", in Joint Economic Committee, US Congress, *China's Economy Looks Towards the Year 2000*, Vol. 1, Washington DC.

Wölfl, A., I. Wanner, T. Kozluk and G. Nicoletti (2009), "Ten Years of Product Market Reform in OECD Countries – Insights from a Revised PMR Indicator", OECD Economic Department Working Paper No. 695.

World Bank (2007), *Foreign Capital Utilisation in China: Prospects and Future Strategy*, World Bank Beijing Office.

World Bank (2008), *Doing Business 2009*, Washington DC.

Wu, Y. (2008), "The Role of Productivity in China's Growth: New Estimates", *Journal of Chinese Economic and Business Studies*, Vol. 6, No. 2.

Zheng J., A. Bigsten and A. Hu (2009), "Can China's Growth be Sustained? A Productivity Perspective", *World Development*, Vol. 37, No. 4.

Chapter 5

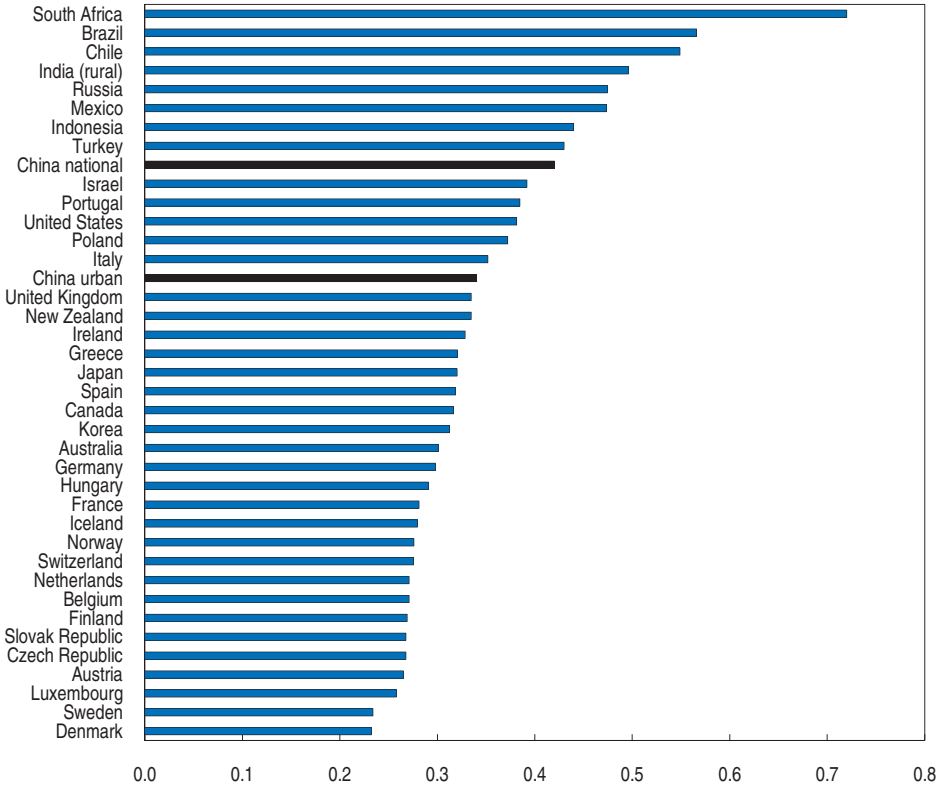
A pause in the growth of inequality?

In recent years, policymaking in China has put increasing emphasis on stemming the growth in inequality, which had been fairly steep since the 1980s. Policy action has taken the form of regional development measures and of reforms of various aspects of the social safety net broadly defined. The Western Development Plan has aimed at narrowing the income gap between the sparsely populated and under-developed West and the more prosperous and faster-growing East. The bulk of the expenditure, however, has been on large capital-intensive projects rather than on education and other social spending. More emphasis on education would help reduce the income gap, since human capital is a key determinant of income. Government policies to improve conditions in rural areas nationwide have involved a substantial reduction in the burden of regressive taxes and fees. Welfare assistance has also evolved: a minimum living allowance has been introduced in urban and more recently in rural areas, but it has not reduced poverty that much, not least because of how it is administered. Moreover, the financing of this allowance ought to rely more on national solidarity and its delivery needs to be better co-ordinated with that of other social benefits. A set of new indicators of nationwide inequality, based on household survey data, suggests that overall inequality has ceased to increase in recent years, and may even have inched down. Alternative measures of income inequality across provinces show that, if migration is taken into account, disparities are markedly less, and have tended to decline somewhat in recent years. Even so, geographical inequality remains very high by international standards. It reflects intra- more than inter-provincial differences, pointing to persistent, if diminishing, labour market segmentation.

Inequality rose rapidly in China through around 2005, reaching levels similar to those observed in the United States (Figure 5.1). Against this backdrop, government policy in recent years has become more oriented towards stemming the growth of inequality. The 11th Plan reflects this new focus with continued emphasis on regional development. At the same time, a number of reforms have been launched in the social sphere to improve various aspects of the social safety net broadly defined. This chapter looks at regional development policies and their impact on spatial inequality and then at how welfare assistance has evolved, with the aim of reducing inequality across households. The chapter then develops a new set of indicators of the extent of income inequality at the national level, which suggest that in some ways inequality may have ceased to increase in recent years.

Figure 5.1. **International comparison of inequality**

Gini coefficient of inequality, using household per capita income adjusted for family size
(except for countries that are not members of the OECD, where household income is measured per capita)
Mid 2000s for OECD countries, 2007 for non-members



Source: OECD members: OECD Income Distribution Questionnaire; China OECD estimate; India: Azam and Shari (2009); South Africa: Bhorat *et al.* (2009); Brazil: Paes de Barros (2007); Russia: Kislitsyna (2008); Indonesia: Suryadarma *et al.* (2006); *Israel and Chile: World Development Indicators*.

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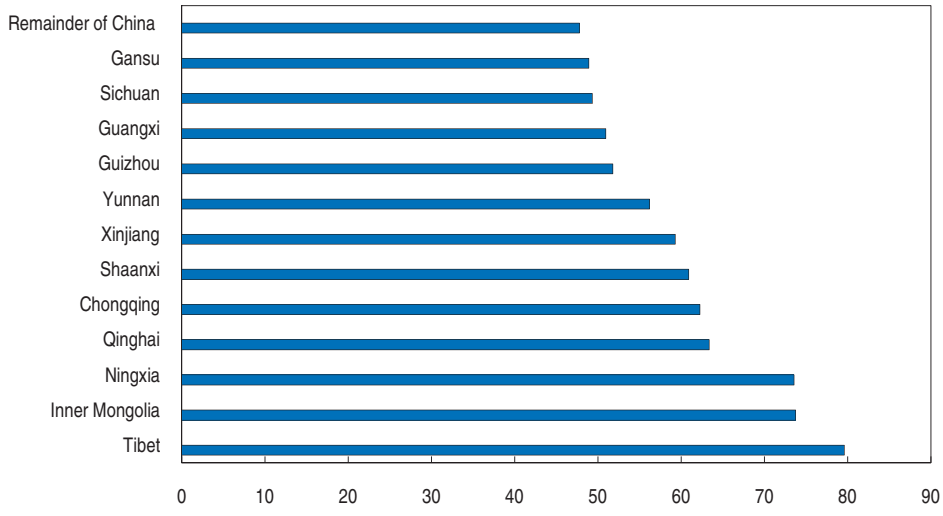
Regional development policies

The principal initiative for regional development has been the Western Development Plan, though other plans have also been put in place for the central areas and the north-east of the country, which suffered from a concentration of state-owned heavy industries. The Western Plan was introduced at the start of the 10th Plan, with a view to narrowing income differentials between the sparsely populated and under-developed West and the more prosperous and faster-growing East. Under the 10th Plan the primary goals were: improving infrastructures for communications and water conservation; strengthening environmental protection; adjusting the industrial structure and fostering growth poles; and deepening reforms and openness by attracting funds from domestic and international companies.

While the overarching objective of the Plan has been to reduce poverty, the main thrust of the expenditure has been on large capital-intensive projects designed to lower the cost of making the resources of the West available to the East. Of the 45 types of major mineral resources, the proven reserves of more than 20 minerals in the region account for over 50% of the national total. Total investment under the Western Development Plan during the period of the 10th Plan (2001-05) amounted to 1.4% of national GDP. This money was largely spent on 70 projects. The largest ones, accounting for over one-third of total spending, were the West-East Gas Pipeline project, a similar power transmission project and the Qinhai-Tibet railway (Zhang, 2005). Despite the new railways and expressways that were opened, the share of the West in the stock of major transport infrastructure fell for both railways and expressway (excluding Tibet, for which data are not available). However, the quality of the poorest roads improved markedly which, together with the energy projects, helped lift gross fixed capital formation to over half of regional product by the end of the 10th Plan. By 2007, this share stood at 57%, ten percentage points higher than in the rest of the country, and exceeded 70% in three western provinces (Figure 5.2).

Figure 5.2. **Investment share in the West**

Gross fixed capital formation as a share of regional product, in 2007



Source: China Statistical Yearbook.

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The initial impact of such high levels of investment on the local economy is limited because of the local supply capacity constraints of the western provinces. Their industrial base is weak and still reflects decisions taken in the central planning epoch. Much of the direct content of investment projects has to be imported from the rest of the country. As a result, the West has an excess of imports over exports of 11% of its regional product.[1]

The inability of the West to supply products for use in its investment boom appears to stem from the limited role of market forces in these regions. State-owned enterprises (SOEs) account for almost double the share of industrial value-added there compared with the rest of the country. Indeed in Xinjiang, they account for almost 90% of industrial value-added. The Xingjian Production and Construction Corps administers part of the region and is charged with promoting stability in a frontier area. It substitutes for the provincial government, providing education, health and general administrative services. More generally, regulation is more severe in the West, and the local administrations have not adapted to the marketisation of the economy to the same extent as elsewhere (Monash, 2003).

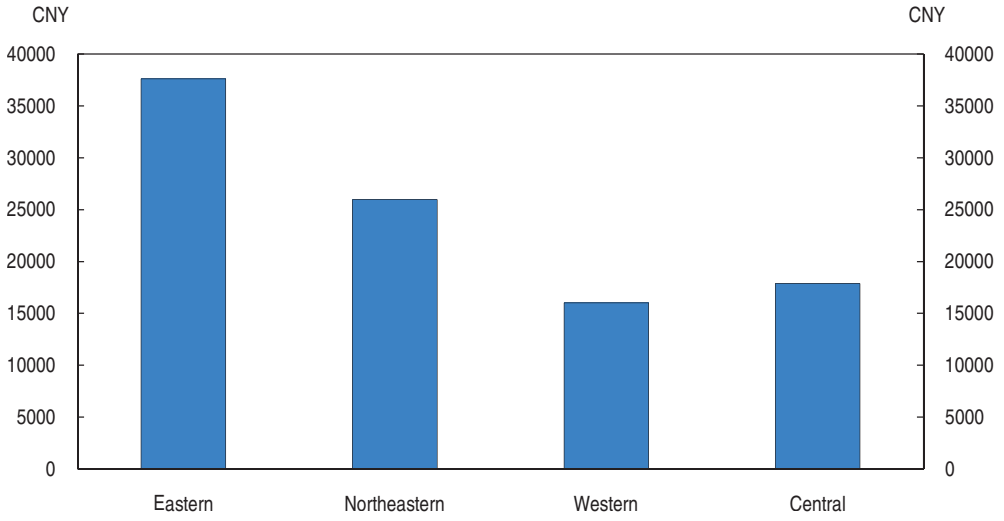
For the past ten years, government policy has emphasised opening up the West to foreign companies and stimulating exports from the area. Various tax incentives have been introduced. In 2001-05, these may have boosted the growth of FDI in the West to a pace similar to that in the rest of the country. However, at 1.6% in 2008, the level of FDI in the West relative to regional product is only just over one third that in the rest of the country, though it is not that different from what is observed in other developing countries with similar income levels. Most investment is financed by budgetary transfers to SOEs.

The rapid increase in investment did not initially boost the West's growth rate much, even if the growth differential with the rest of the country has been reduced. During the period of the 9th Plan, both GDP and GDP per capita grew much less in the West than in the rest of the country. This gap narrowed markedly in the 10th Plan period but only because of a slowdown in the rest of the country and largely because of extremely rapid growth of mining activity in Inner Mongolia – elsewhere in the region GDP growth was about a percentage point lower than in the rest of the country. Moreover, in level terms the gap across China's four main regions remains large (Figure 5.3). However by 2009, in the wake of the downturn in world trade and the emphasis in the stimulus to improving infrastructure in inland areas, growth has been more rapid in the western areas than in coastal areas. Five of the six provinces with the highest GDP growth in the first three quarters of 2009 were in the western area. In this period, output in the manufacturing, mining and construction sectors grew by more than 15% in Chongqing, Inner Mongolia, Guangxi and Sichuan. By contrast, the growth in output in Guangdong, Shanghai and Zhejiang in these sectors was less than 7%, with secondary sector output falling in Shanghai. Such a re-orientation in growth resulted in a marked increase in the flow of migrant workers to the western area (Chapter 6).

Owing to the Western Development Plan's focus on investment, spending on social objectives has represented a small fraction of total outlays. Social spending takes place outside the Development Plan, and predominately with local funding, which reduces the scope for national policy to influence outcomes. The emphasis on physical investment does not appear to have changed markedly in recent years: in 2008, a new tranche of projects was announced, amounting to 9% of GDP in the western provinces and entirely related to railways, roads, airports and projects for moving raw materials to the East.

Figure 5.3. **GDP per capita across China's main regions**

In CNY, in 2008



Source: China Statistical Yearbook.

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During the 10th Plan period, public outlays on education in the West rose by only 0.05% of national GDP. By 2005, government spending on education per child was only half that in the coastal regions (excluding Beijing, Shanghai and Tianjin, where much educational spending is of a national nature). In addition, as incomes are lower, private spending on education is also much lower.[2] No quantitative information is available on spending since 2005. The Government did, however, launch the abolition of elementary and junior school fees in the western rural areas in 2006 and had widened the policy to the whole country by March 2008, so that by 2009 all but 27 counties (out of 2 859) were able to provide nine years of free education (Sun, 2009). There have, though, been complaints about unauthorised and illegal charging of fees, including "choosing" fees (NDRC, 2007).

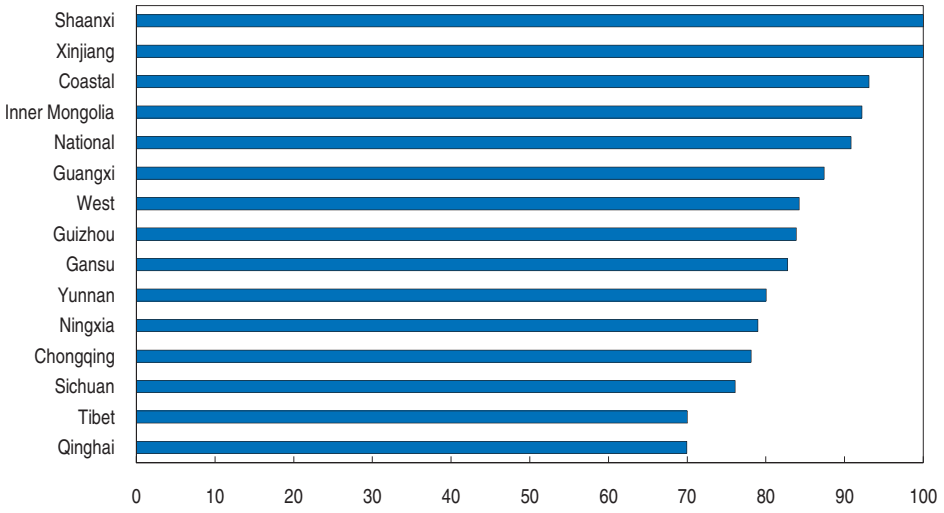
The shortfall in public spending on education in the West is such that an increase in public-sector spending on education of 0.6% of national GDP would be needed to bring outlays per pupil in line with spending in coastal areas. In addition, to cover the gap in private expenditure on education relative to coastal areas, a further 0.5% of GDP would need to be spent. Hence, the total required increase to match spending in coastal areas would need to be of the same order as the infrastructure-oriented Western Development Plan.

Despite low outlays, enrolment in primary schools in the West was almost universal by 2005, but the transitions to higher levels of education remained lower than in the rest of the country (Figure 5.4). There is more of a difference at the senior high school level but it is difficult to quantify as many 18 year olds have already migrated from poor to richer provinces.

There are also concerns about differences in the quality of education across provinces. This is clearly seen in the qualifications of teachers. In the western area, it is rare for a junior high school teacher to have attended university: only one in five have had undergraduate education, against three-quarters in Beijing. More generally, a similar pattern is found between urban and rural schools, with the share of highly-qualified junior high teachers in rural areas being half that found in cities. Public finance for education has

Figure 5.4. **Junior secondary school graduation rates by region**

Junior secondary school graduates as % of a 14-year old cohort, in 2005



Source: NBS.

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a relatively low redistributive impact. Between 1994 and 2001, four-fifths of the funding for compulsory education came from the lowest level of government. Hence, poor areas are only able to afford lower-quality schools (UNDP, 2008). Indeed, four-fifths of primary and junior high schools were indebted in 2003 (National Audit Office, 2004).

Policies in favour of rural areas

During the 10th Plan period government efforts to improve the position of rural areas centred on tax reform. Rural areas are subject to the same taxes as urban areas but as rural incomes are much lower, few residents pay income tax. Instead, until the early 2000s, rural households paid a series of taxes and fees. The largest of these was the agricultural tax, which was essentially a form of property taxation. It was levied on the imputed grain production of each parcel of land farmed by a family. A number of *de facto* taxes were also levied by township governments but the greatest levies were made by the village government, constituting 40-50% of the tax revenues of local government. On average, in 2000, these taxes and levies amounted to 13-15% of average rural income (Lin and Tao, 2002). As many of these taxes and fees were flat rate, they were regressive, accounting for 17.3% of the income of the peasants in the lowest income quintile but only 3.7% of income in the highest quintile (Tao and Qin, 2007). These agricultural taxes and fees were abolished during the 10th Plan period. By 2004, taxes had fallen substantially, to 5% of income. Moreover they had become markedly less regressive. Finally, all taxes and fees were abolished on 1 January 2006. Measures were put in place to ensure that local governments had sufficient revenue to provide unchanged service levels (Yip *et al.*, 2007).

At the same time, the central government specifically identified poverty-stricken villages and counties (about 20% of the national total of both) and introduced programmes to help these areas. The most noticeable since 2000 have been to help designated poor villages on a comprehensive basis; to retrain the labour force in poor counties and help people find employment in developed regions; to develop agriculture and industry in poor regions and to improve compulsory education in poor areas. Outlays have been relatively

limited, averaging less than 0.1% of GDP per year. However, there is evidence that between 2000 and 2006, the income of designated poor villages rose 2% per year faster than incomes in all villages (Xu, 2008).

Government policies to reduce household income inequality

Welfare assistance

Historically, welfare assistance was not provided by government. In urban areas it was provided through the employer, be it a SOE, a collectively-owned unit or the government. Once hired, the person remained with this employer, who paid her pension and insured her against adverse events. In the countryside, the responsibility for supporting people lay first with the family. In the event that the person had no family capable of offering support, the village collective provided the necessary aid from its income or reserves.

The movement towards a market economy put enormous stress on these arrangements. In urban areas, companies started to lay off staff and were unable to continue to pay the workers they no longer needed. In rural areas, the end of collective production and the move to individual farming meant that the collective lost it source of income. Nonetheless the village remained responsible for guaranteeing the food, shelter, health care, clothing and burial expenses (the so-called five guarantees) of those orphans, disabled and childless elderly and other people without families capable of supporting them. The only option for the village collective was to fund these through charges on the farmers in the village.

Gradually, a new welfare assistance programme was introduced called the minimum living allowance or MLA (Table 5.1). Under this system, the local authority establishes the minimum cost of living (MCL) for purchasing the products needed for a person to survive. This cost varies across the country, depending on local prices and earnings or household incomes. The MCL serves as the threshold income to qualify for the MLA. People with an income less than this level are entitled to a top-up payment equal to the difference between their income and the MLA threshold. Beneficiaries are also entitled to a number of supplementary health and education benefits.

The system was first introduced in Shanghai in the early 1990s. Other provinces and cities followed and by 1997, with 26 cities operating programmes, the State Council allowed the creation of such programmes nationally and put forward the necessary regulations in 1999. The introduction of this system in cities enabled SOEs to transfer the cost of supporting redundant staff to the local authorities. Between 1999 and 2002, the number of beneficiaries rose from 0.5 million to 21 million and since then the number has been broadly stable, although it increased during the recent economic slowdown.[3] Some richer cities have extended the programme to cover people just above the income threshold but who experience particular difficulties. The benefit provided by this programme amounts to just 10% of local per capita income. Consequently, with the coverage rate also low, the impact on overall family incomes has been small and the total cost manageable, at 0.13% of national GDP.

Some attempts were made to establish a welfare system in rural areas but progress was slow. After a pilot study in Guangxi and Shanxi, a national programme to launch a rural MLA was put in place. By 1999, 11 provinces had established rural MLAs in all county towns, and eight provinces had a MLA in place in over half of the county towns. In 2000, 3.2 million rural residents received MLA benefits (Zhang and Guan, 2003). In 2003, the government cautioned against the extension of the programme to poor counties and introduced a special programme (Assistance for the Extremely Poor Households), to be

Table 5.1. **Aspects of the minimum living allowance system**

	2005	2006	2007	2008
	Amount as % of area disposable income			
Income threshold for benefit				
Urban	17.8	17.7	15.9	15.5
Rural	28.0	23.7	20.3	20.7
Average benefit				
Urban	8.3	8.5	8.9	10.4
Rural	14.0	11.5	10.7	12.4
Average income of beneficiaries before benefit				
Urban	9.6	9.2	7.0	5.2
Rural	14.0	12.2	9.6	8.4
	Beneficiaries as % area population			
Coverage rate of system				
Urban	4.0	3.9	3.8	3.9
Rural	0.8	3.1	3.8	6.7
	% total household income in area			
Importance of benefit payment to households				
Urban	0.33	0.33	0.34	0.40
Rural	0.19	0.21	0.53	0.99
	% of GDP			
Public expenditure on MLA				
Urban	0.11	0.11	0.10	0.13
Rural	0.02	0.03	0.06	0.11
Total	0.13	0.13	0.16	0.24

Source: Ministry of Civil Affairs (2009), He *et al.* (forthcoming).

implemented there, aimed at providing temporary relief to households impoverished by major illness or loss of family labour. Policy changed again in 2007, when the State Council directed that all rural counties introduce a MLA by end-year. Three months later, 90% of counties had done so. The central government provided an annual budget of CNY 3 billion (0.01% of GDP) to help poorer counties implement the programme.

Spending under the programme rose rapidly. In 2008, benefits amounted to 1% of average rural income – almost twice the level in urban areas. This was mainly due to the higher income threshold in rural than in urban areas, resulting in a much higher proportion of the population receiving the benefit than in urban areas. However, the absolute level of the benefit is only one-third that in urban areas, so the overall cost of the rural programme is lower than that of the urban programme.

This rapid deployment represents a success. However, studies of the effectiveness of the MLA in urban areas suggest that there may be problems with the design and implementation of the system. It is meant to provide a complete top-up to the MCL line. Hence, if all people below that line received it, none should find themselves below the line after payment of the benefit. In fact, there is only an 11% reduction in the poverty rate after the payment of benefits (Wang, 2007). The reduction is much smaller still if the poverty line is set at half the median income (Table 5.2).

Furthermore, the 2004 Urban Employment and Social Protection Survey shows that there are substantial errors in MLA allocation: 40% of the recipients are not entitled to it,

Table 5.2. **Extent of poverty reduction through the minimum living allowance programme**

	Poverty line equals minimum cost of living			Poverty line equals 50% of median income		
	Before benefit payment	After benefit payment	Reduction in poverty	Before benefit payment	After benefit payment	Reduction in poverty
	% households below poverty line			% households below poverty line		
Wuxi	6.3	5.9	6.5	15.4	15.0	2.7
Shenzhen	9.4	9.3	1.1	22.5	22.2	1.3
Zhuhai	20.3	17.9	11.9	27.8	26.8	3.6
Zigong	11.1	6.8	38.6	20.0	16.2	19.0
Daquing	15.0	15.0	0.0	25.0	25.0	0.0
Hegang	13.5	12.5	7.6	18.3	17.8	2.8
Laiaoyuan	30.1	29.3	2.5	29.6	28.5	3.4
Fushun	19.8	16.1	18.8	23.8	20.4	14.1
Benxi	6.9	5.8	16.7	12.3	10.6	14.0
Jinzhou	11.4	8.5	25.0	17.7	16.3	8.0
Tongchaun	20.5	17.2	16.4	21.6	20.5	4.7
Baoji	9.9	7.8	20.5	16.7	15.9	4.6
Xiangfang	17.4	16.9	2.9	25.8	27.5	–6.9
Yichang	13.7	12.5	9.2	21.6	20.4	5.9
Average	**13.6**	**12.1**	**11.1**	**21.1**	**20.3**	**4.0**

Source: Wang (2007).

and 61% of those who are entitled to it fail to receive it (Wang, 2007). The origins of the failure to find many recipients may be due to the intrusive methods used to administer the system, which may deter some people from applying. In towns, the state has essentially delegated the administration of the system to the neighbourhood council. Its officer is responsible for assessing each benefit claim. The house of the individual concerned is searched, and the family and neighbours are questioned (Solinger, 2009). The report of the neighbourhood council is then sent to the county or district administration for approval and payment. At each stage, the dossier is publicly displayed. This should guard against false claims but apparently does not. As mentioned, acceptance of the dossier means that the school fees of any children in the household are waived. Until this year, each school displayed the list of children who were excused from fees because their parents were destitute. This practice has now been abandoned.

Measuring household inequality

Inequalities mainly stem from intra-region differentials (OECD, 2005), which largely reflect differences between rural and urban incomes (Li and Xu, 2008). To adequately measure these differences at a national level it is necessary to use household survey data and a new methodology (Box 5.1).

Household income inequalities have increased considerably over time as the role of the market in the economy grew. Prior to the start of liberalisation, the income distribution was very compressed (Figure 5.5). The rural income distribution began to change first (Figure 5.6), following the individualisation of agricultural production in the early 1980s. In urban areas, the movement started later, in the early 1990s, as the economy opened to foreign trade and the state-owned sector shrank. Returns to education began to increase and the number of jobs in SOEs with egalitarian pay structures fell. Overall and over the longer term, inequality has clearly increased, from a very low level.[4]

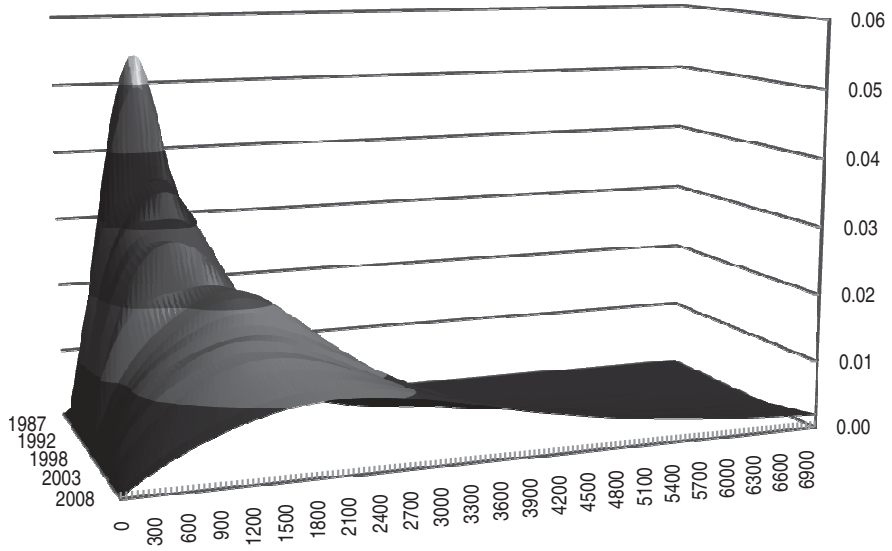
Box 5.1. **Estimating continuous income distributions for China**

The published data on the distribution of household incomes in China is sparse. For urban areas, it is limited to showing average incomes in the bottom 5 and 10% of the income distribution and in the five quintile levels for urban households. For rural households, the data is presented differently, as the proportion of people with nominal incomes between different levels. The latter intervals are only changed infrequently despite a generally-increasing price level. In addition, these presentational differences make it impossible to easily add the rural and urban income distributions to obtain a national income distribution. Indeed, the National Bureau of Statistics never presents data for the national distribution of income.

In order to overcome these problems, Chotikapanich *et al.* (2007) developed a method to transform the grouped urban and rural income distributions into a single continuous distribution. Their method estimates the parameters of a beta and Weibull distribution from the grouped data for urban and rural areas, respectively. The income levels used to estimate the distributions are deflated by the urban and rural CPIs, respectively. Chotikapanich *et al.* (2007) only present separate indices for the urban and rural populations. Here a national distribution is presented. The difference in price levels between rural and urban areas estimated by Brandt and Holz (2006) is used here to ensure that measured incomes in the two areas represent a comparable purchasing power. Finally, the two distributions have been combined by using series for the rural and urban population that take into account changes in the definitions of these sectors in the censuses of different years (Shen, 2006).

Figure 5.5. **National household income distribution**

Probability of household income being within a given CNY 50 interval (1990 urban prices)



Source: OECD estimates using the Chotikapanich *et al.* (2007) method and source data from NBS.

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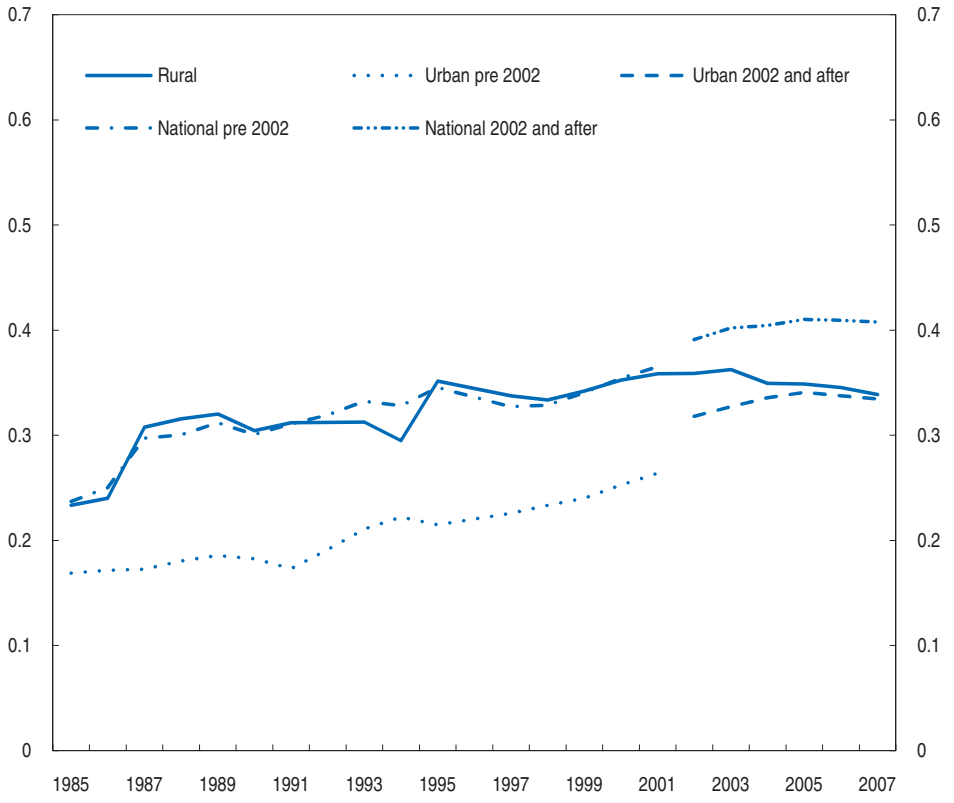
Through the 1990s, the rural and even more so the urban Gini coefficients started to rise, and so did the national Gini coefficient. However, since 2000 interpretation of these indicators has been complicated by the change in the nature of the two surveys. The rural survey has always tried to capture the income of those members of rural households who

Figure 5.6. **National rural and urban Gini coefficients**

Based on a continuous estimation of a probability density function from grouped data



Source: OECD estimates using the Chotikapanich *et al.* (2007) method and source data from NBS.

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were living and working as unofficial migrants outside their village of registration. Such information was necessarily indirect. Since 2002, the urban survey has included a direct estimate of the household income of unofficial rural migrants but only a small fraction of the migrants has been captured in the survey. This has led both to an increase in measured inequality in urban areas and double-counting at the national level.[5]

Even so, these new Gini estimates are substantially lower than previous estimates of inequality in China. In particular, they are about one fifth below those produced by Ravallion and Chen (2007). These authors had access to unpublished tabulation from the National Bureau of Statistics which may or may not explain part of the difference. Another difference pertains to use of different spatial price deflators. Ravallion and Chen calculate the cost of purchasing a basket of food typically consumed by households with incomes between the 15th and 25th percentile by province. This expenditure is then scaled to allow for non-food consumption. The resulting poverty line is turned into a price deflator by using the provincial rural and urban price indices. As the authors state, this is not an ideal procedure for measuring provincial cost of living indices for the average household. In contrast, the estimates presented here use provincial urban and rural price indices based on the consumption pattern of the average consumer (Brandt and Holz, 2006).[6]

There is some evidence that the relative position of poorer people in rural areas was deteriorating faster than suggested by these measures of the Gini index. The Atkinson index of inequality, which attributes greater weight to the income of the poor (Box 5.2),

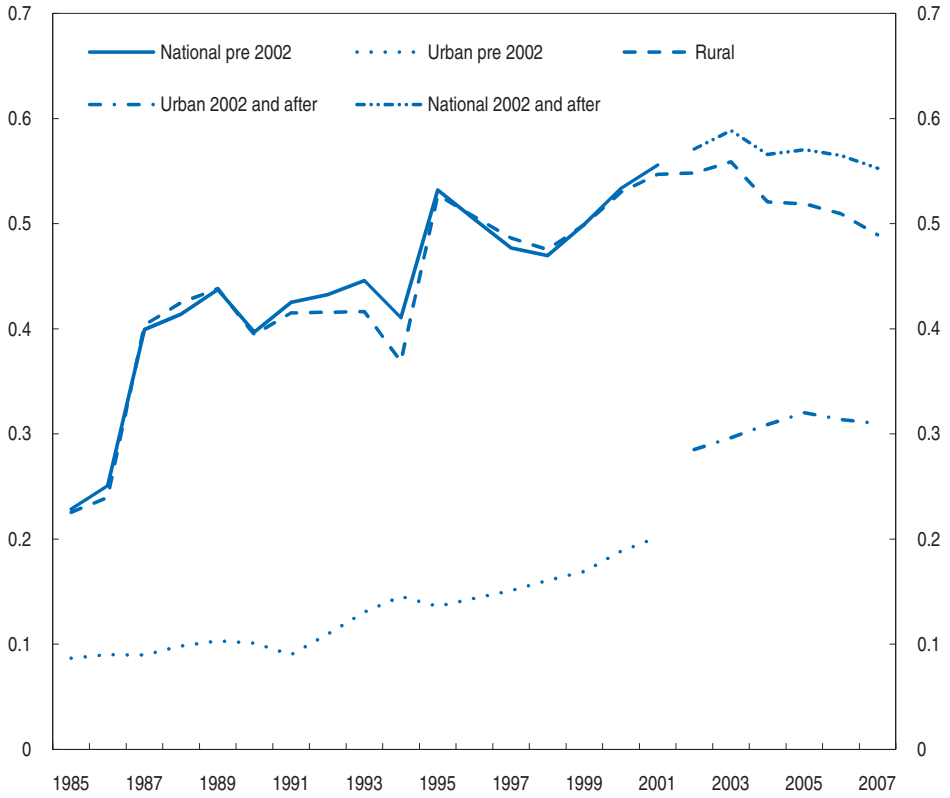
Box 5.2. **Inequality indices**

In order to measure the extent of inequality a number of indices can be calculated. The most widely used in studies on China is the Gini index, derived from cumulative density functions (Lorenz curves). It suffers from a number of drawbacks. One is that if the curves for different years cross, then no ranking is possible. Another is that it has no underlying measure of how society values the income of people at different points in the income distribution. Also, in practice, Cowell (2008) has shown that the measure is particularly sensitive to changes in the incomes of middle-income groups. Other indices have been proposed, such as the Theil index (average of the logarithms of the individuals' relative income weighted by the individuals' share in total income), the logarithmic mean deviation index or the ratio of the standard deviation of an income distribution to its mean. Another common measure is to compare the ratio of the incomes of the highest earners to those of the least well-off.

In order to overcome the absence of any underlying welfare function, Atkinson (1970) proposed a measure that explicitly takes into account the valuation that society places on incomes at different points of the income distribution. The index can be calculated on the basis that all incomes are seen as equal – in this case it is equivalent to the Theil index and is calculated with a distribution parameter set to zero. Alternatively more weight can be given to low than to high incomes. This corresponds to a generally-accepted proposition that the marginal utility of income declines as income rises, meaning that a transfer of a unit of income from a high-income to a low-income household raises welfare. Here, an inequality aversion parameter of 2 was used, though other analysts have used a value as high as 4 (United States Department of Commerce, 2000).

Figure 5.7. **National rural and urban Atkinson inequality indicator**

Using a value of 2 for the distribution parameter in order to give more weight to lower incomes



Source: OECD estimates using the Chotikapanich *et al.* (2007) method and source data from NBS.

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shows a much greater rise up to 2004 than the Gini index (Figure 5.6). After that date, the various policies designed to increase low incomes in rural areas appear to have had some impact, as the Atkinson index started to decline more than the Gini index.

Although inequality has increased markedly during the past two decades, especially in urban areas, the Gini coefficient does not appear that high by international standards (Figure 5.1 above). Overall, China's national Gini coefficient is below that of most major emerging market countries. The urban coefficient is lower than that in a number of OECD countries, especially once allowance is made for the fact that the Chinese data is measured on a per capita basis and the OECD data on an equivalence basis.[7]

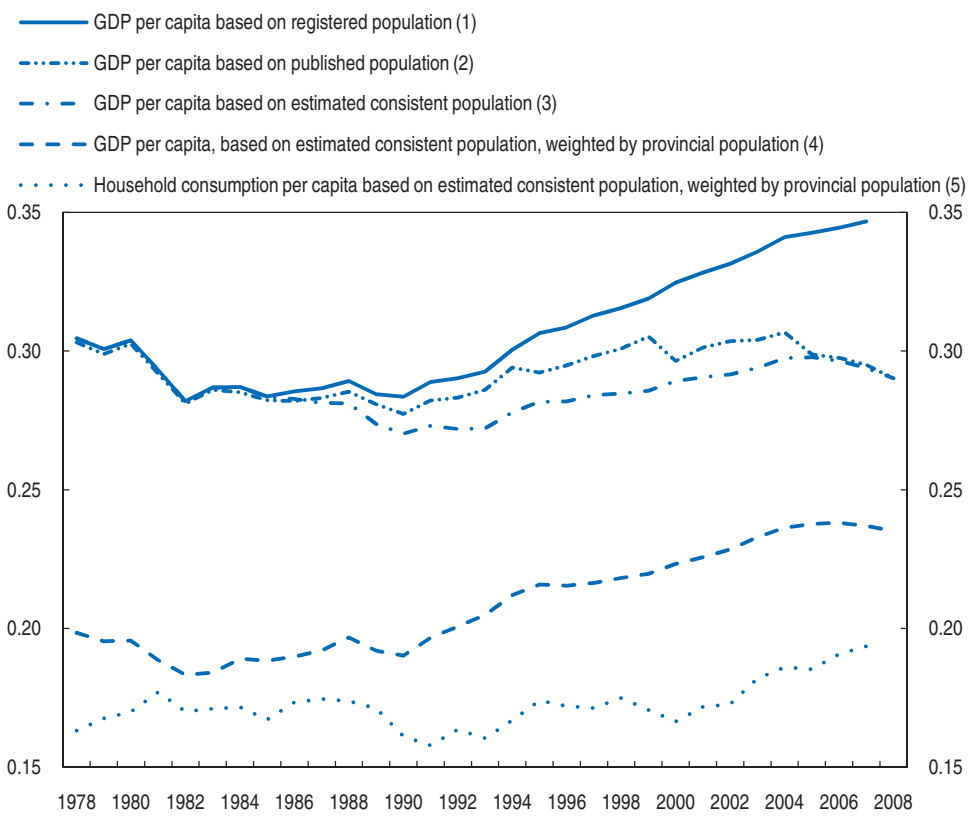
Measuring spatial inequality

Measuring inequality across provinces

The simplest method to measure regional inequality is to use registered population data. This series is consistent over time and available at the lowest administrative echelon, allowing inequality analysis down to the township level. This method has been used by Chinese researchers in the past and shows persistent and growing inter-regional and inter-provincial inequality (see for example Li and Xu, 2008 and Figure 5.8, line 1). However, it disregards intra-provincial population movement (Herd, 2010). A comparison of the provincial population from the 2005 Census and the registration data shows cross-province migration to amount to just over 30 million people, against a total of 140 million living

Figure 5.8. **Gini coefficients of different measures of inter-provincial inequality**

GDP per capita and household consumption per capita



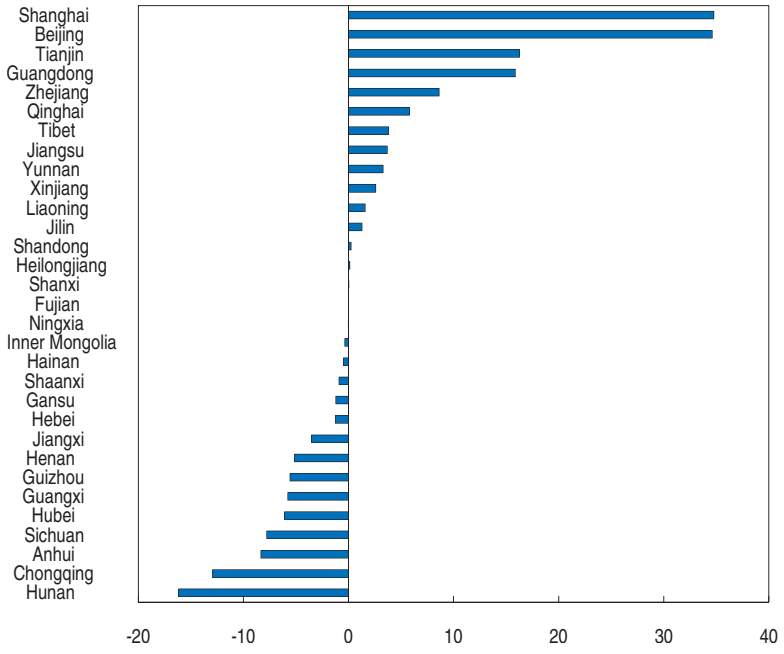
Source: China Statistical Yearbook, CEIC and OECD calculations.

StatLink http://dx.doi.org/10.1787/778454437583

outside their place of registration. This is a stock figure and implies a cumulative inter-provincial migration flow of 2.4% of the population since such movements became possible in the mid-1980s, which is not particularly large.[8]

In terms of proportionate inflows, the greatest gainers have been the three major eastern growth zones: Beijing/Tianjin, the Shanghai area and Guangdong (Figure 5.9). The relatively poor western areas have also been net absorbers of migrants rather than net exporters. The extent of the investment programmes in Inner Mongolia, Qinghai, Tibet, Yunnan and Xinjiang, together with programmes to encourage migration of ethnic Hans to these areas has resulted in significant flows thereto. Only the provinces close to the coastal areas (especially those close to Guangdong) have lost residents.

Figure 5.9. **Extent of inter-province migrant flows by province**
Difference between actual and registered population as % of registered population, 2007



Source: NBS and OECD calculations.

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The use of the published population data based on place of actual residence markedly reduces the extent of the increase in inequality (Figure 5.8, line 2). However, there are breaks in this index in 1995, 2000 and 2005, when definitions of residence were changed in the census. A straightforward, if somewhat artificial way, to adjust for these changes is to assume that inter-provincial migration has proceeded linearly and that there were no inter-provincial migrants in the mid-1980s when population movement first became possible. Such an extrapolation has been performed at the provincial level to construct a revised population series. Once again, the scale of the increase in inequality of inter-provincial GDP per capita is reduced (Figure 5.8, line 3). Moreover, inter-provincial inequality appears to have peaked around 2004, and to have declined during the past four years. This result appears to be driven by slower per capita income growth in Beijing and Shanghai rather than faster growth in the poorer provinces. However, an inequality measure that treats small provinces as equivalent to large ones biases the results, since we

are concerned about the individual and not the province. A measure of inequality that weights each province by its *de facto* population and also allows for differences in price levels between provinces clearly reduces the extent of inequality, and lowers the extent to which regional inequality fell during the 1980s after the 1978 agricultural reforms (Figure 5.8, line 4). Inequality still increases during the opening-up period from 1990 and falls slightly from 2004 onwards. Most studies show that inter-provincial inequality is more the result of intra-provincial inequalities, not just between rural and urban areas but also between urban areas (Box 5.3).

Box 5.3. **Inequalities in Guangdong province**

The economy of Guangdong is the largest amongst the provinces of China. In 2007, its GDP, measured at market prices, exceeded that of all but 13 OECD member countries. There has been substantial migration into the province, notably around the Pearl River Delta. For the province as a whole, there are about 13 million migrants from other areas of the country – accounting for slightly more than 40% of all inter-provincial migration. In addition, almost one-quarter of the employed with rural status work outside their registered township and are therefore internal migrants. By 2006, half of the population in the Pearl River Delta area were migrants, with three-quarters thereof in Shenzhen and Dongguan. The labour market was exceptionally strong in 2005-06 with employment in the Pearl River Delta area rising by nearly 25%.

Despite this strong labour market, characterised by significant real wage gains, the extent of intra-provincial inequalities remained as high as in China as a whole. In the non-agricultural sector, average compensation of employees across prefectures registered a coefficient of variation of 45% in 2006, while the ratio between the highest and lowest average earnings by prefecture was well over four (Table 5.3). Amongst people with urban registration, inequalities across prefectures were greater for publicly-owned units than for privately-controlled firms. The largest differences in average incomes were found in agriculture, with the highest incomes being in the areas with the highest urbanisation rates.

In high-income market economies, the extent of income inequality between different geographical areas is much less. For example in the United Kingdom, the coefficient of variation of average earnings across major regions was only 16% in 2007.

The incidence of income inequality within Guangdong suggests that the inequalities seen across China do not just reflect different economic and locational factors but also the segmentation of labour markets throughout China (Chapter 6). The degree of segmentation appears greatest in SOEs, which generally only hire people with local urban registration. In private enterprises, which hire mobile migrant workers, the coefficient of variation of earnings is lower. The greatest dispersion of earnings is in agriculture, where workers are tied to their registered land areas.

The Guangdong government has slightly changed the way in which the registration (*hukou*) system operated in the province. In many cities, the distinction between agricultural and non-agricultural *hukous* has been abolished but only for those who possessed a local *hukou*. This still leaves in place the distinction between *hukous* issued in different localities and prevents easy permanent resettlement from one town to another. Moreover, regulations are now set city by city, rather being the result of a national quota as was the case in the 1990s. In Guangdong, for example, Shenzhen has only allowed three groups of people to obtain local *hukou* status: professionals or those with university degrees; major investors and people eligible under certain national policies (Chan and Buckingham, 2008).

Box 5.3. **Inequalities in Guangdong province** *(cont.)*

Table 5.3. **Average earnings across Guangdong prefectures**

	Average non agricultural compensation employees	Average urban unit public sector	Average urban unit private sector	Average agricultural compensation employees	Urbanisation rate	Non agricultural employees
	USD per month				%	Millions
Provincial total	**245**	**324**	**249**	**103**	**63**	**34.1**
Guangzhou	411	521	307	180	82	4.9
Zhuhai	331	448	209	225	85	0.8
Shenzhen	324	516	327	424	100	5.7
Foshan	267	361	206	269	91	3.2
Zhongshan	238	411	199	193	84	1.7
Dongguan	235	433	241	128	85	3.7
Huizhou	234	254	166	118	61	1.5
Jiangmen	225	230	142	94	49	1.3
Shantou	214	240	178	65	70	1.1
Shaoguan	181	235	196	92	46	0.7
Zhanjiang	177	184	218	83	39	1.0
Heyuan	156	213	154	63	40	0.5
Yunfu	136	209	111	123	50	0.5
Chaozhou	130	135	126	67	63	0.8
Maoming	127	236	140	130	37	1.2
Zhaoqing	125	261	165	144	45	1.1
Shanwei	123	161	161	93	52	0.5
Yangjiang	118	191	121	119	44	0.7
Qingyuan	118	175	124	77	34	1.0
Jieyang	93	190	154	67	45	1.3
Meizhou	89	175	154	77	47	1.0
Mean (simple)	193	275	181	135	60	1.6
Standard deviation	87	120	57	86	20	1.5
Coefficient of variation (%)	45	44	32	64	34	91
High/low ratio	4.6	3.8	3.0	6.7	2.9	12.7

Source: Guangdong Statistical Yearbook (2007).

The extent of inequality across regions is also lower if consumption rather than GDP per head is used as the metric. GDP per head is more closely related to productivity and labour market participation than to income or consumption. For small open economies such as China's provinces, factor income flows and transfer payments can create a large wedge between output and income. Indeed, in China, cross-border migrants tend to remit a significant portion of their income to their home province. As a result, the geographical inequality in consumption per head is considerably lower than that of production per head. It does, however, exhibit the same movement over time. Of all the measures of inequality across provinces, consumption per head (weighted by the population in each province and adjusted for differences in provincial price levels) shows the lowest dispersion across regions but does not exhibit the same stabilisation from 2004 as do the other measures (Figure 5.8, line 5).

While there is some evidence that geographical inequality has stabilised or even fallen slightly from 2004, it still remains extremely high by international standards. Within the

OECD area, the median regional Gini coefficient for GDP per capita was 0.14, much lower than in China. Most OECD countries are physically small and so are more readily compared to Chinese provinces than to China as a whole. Therefore, comparisons of regional inequality cannot be made with most OECD countries. However, the United States is about the same size as China, and the US economy is far more integrated than China's, with the Gini coefficient for per capita GDP across states being half of that across Chinese provinces.

There is evidence that most of the inter-provincial inequality is the result of intra-provincial inequality. Specifically, if the Theil index of inequality is broken down into the part of inequality that results from differences in GDP per capita between counties within provinces and between provinces, then within-province inequalities dominate (OECD, 2005). This is despite the barriers of distance and language being much smaller at the province level than country-wide. Such results point to labour markets being segmented even when only short distances apart (Box 5.3). This can be attributed to the household registration system that inhibits permanent migration not only between rural and urban areas but also between different urban areas (Chapter 6).

Urban-rural inequality

Income inequalities

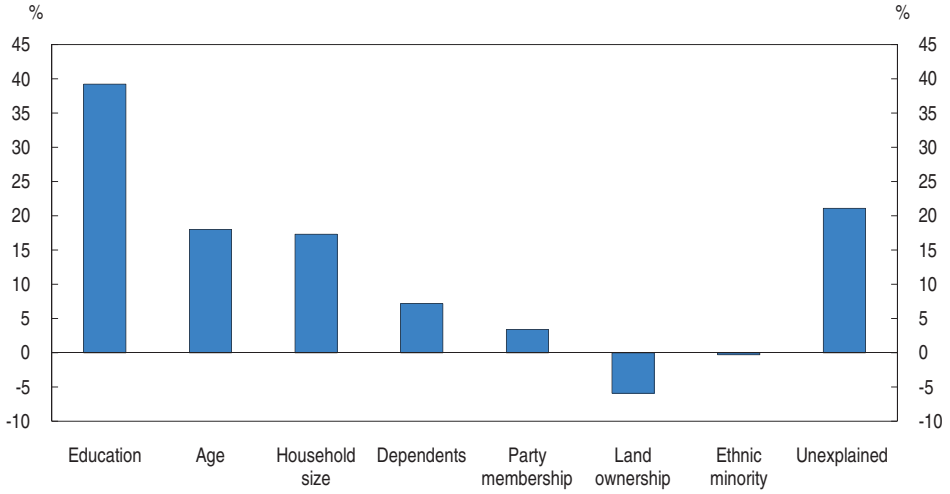
The extent and causes of the large gap between urban and rural incomes has been a source of concern to policy makers. The ratio between urban and rural incomes has been estimated at over three by official statistics and has been rising over time. The official statistics, however, overstate the difference between rural and urban incomes because they ignore the sizeable difference in price levels between urban and rural areas and because they do not fully capture the number of migrant workers in urban areas. The official statistics underestimate the prevalence of migrants by a factor of eight. This leads to an overestimation of the rural-urban gap as migrants earn less than rural residents. Furthermore, the exclusion of imputed housing incomes also tends to raise the gap between rural and urban incomes. Overall in 2002, correcting for these two sources of bias brings down the urban/rural ratio of income from 3.18 to 2.27 (Sicular *et al.*, 2007; Herd, 2010). If, in addition, the weight of migrants in the urban population is increased to reflect their true weight, the gap between rural and urban real incomes falls to 2.12.

Until 2005, most research suggested that the overall extent of inequality in China was driven by differences between rather than within provinces. Similarly, overall inequality was mainly determined by differences between rural and urban households, rather than within rural and urban communities. But once adjustment is made for the price differences between rural and urban areas and the urban incomes are measured including unofficial rural migrants the extent to which differences between provinces are responsible for overall inequality falls markedly. Without any correction to the official data, 45% of inequality is due to location, using the Theil T decomposition of inequality. Once prices differences are accounted for, the influence of location falls to 32%. It falls further to 26% once the weight of unofficial migrants in total urban households is correctly measured (Sicular *et al.*, 2007). Moreover, in the less marketised part of the country (the West), location is more important than in the eastern areas.

An analysis of household incomes in rural and urban areas suggests that three factors can account for almost three-quarters of the difference between rural and urban households (Figure 5.10). The average education level of urban households is much higher

Figure 5.10. **Sources of the rural-urban income differential**

Income is corrected for spatial price difference and includes migrant earnings in urban areas



Source: Sicular *et al.* (2007).

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and, moreover, higher education provides higher returns in urban areas. In addition, in urban areas the premium associated with experience grows as age increases, but in rural areas the premium declines after age 45, reflecting greater emphasis on purely manual labour. Finally, a significant part of the rural-urban differential is accounted for by the higher number of dependents in rural households, as the Chinese data does not use equivalence factors to reduce the weight of children, and additional adults, in determining household average income. Overall, once the differences in endowments and the returns to these endowments have been allowed for, only about one-quarter of the differential between rural and urban areas remains and can be attributed to locational factors.

Urban-rural inequality can also be seen in the types of income received by urban and rural households. The gap between labour income per household is relatively small, but that for pension income and the imputed income from house ownership are much greater (Table 5.4). This reflects the unequal coverage of urban and rural households for social security purposes, both for pensions and for social assistance. The inequality in pension coverage means that rural residents have a working life some nine years longer than urban dwellers. The need for pension reform is explored in Chapter 7.

Table 5.4. **Urban-rural income differences by income source**

2002, uncorrected for spatial price differences

	Urban	Rural	Ratio
	CYN per year		
Mean income	10 004	3 145	3.2
Labour income	6 421	2 524	2.5
Non-labour income	3 583	621	5.8
Asset income	49	18	2.7
Pension income	1 265	13	97.3
Government transfers minus taxes	237	–81	–2.9
Housing income	1 765	426	4.1
Private transfers and remittances	267	245	1.1

Source: Sicular *et al.* (2007).

Inequality within urban areas is aggravated by the different social coverage of varying occupational groups. Those working for SOEs have good coverage while those working in private companies and especially self-employed persons have much lower coverage.

A substantial part of the difference between urban and rural wages cannot be explained by the attributes of individuals and presumably reflects barriers to migration. In the early 2000s, hourly earnings in urban areas were CNY 3.43 per hour against CNY 1.25 in rural employment (Hertel and Zhai, 2006). After taking into account price differentials and the differences in personal attributes of rural and urban workers, the differential falls from 145% to between 70% and 40%, depending on the estimation methodology. Some of this difference can be attributed to the costs of migration, as not all wage differentials between locations are removed even in countries with completely free movement of labour. However, a substantial part of this unexplained differential is likely due to restrictions linked to the birthplace of the individual in the context of the *hukou* system. Over 1995-2002, migration has tended to lower overall national inequality – mainly because it slightly reduced the urban-rural income differential. On the other hand, it has tended to heighten urban inequality (Khan and Riskin, 2005). Given that the laws concerning migration were liberalised to a certain extent after 2003, the increase in migration over 2003-06 may have contributed to reducing national income inequality since 2003. The consequences of this system for the functioning of the labour market are examined in Chapter 6.

Inequality in other dimensions

Alongside differentials in income and wealth, there are also inequalities related to the supply of a number of public services both across provinces and between urban and rural areas. The differences in education are a case in point. Another important area of discrimination is the provision of health services and the consequences for health and life expectancy. A synthetic health condition indicator for each province can be calculated from a number of basic indicators that deal with the incidence and treatment of a number of diseases. Such an indicator correlates closely with life expectancy and varies systematically across provinces, in line with provincial income (Figure 5.11). Health policy issues are discussed in detail in Chapter 8.

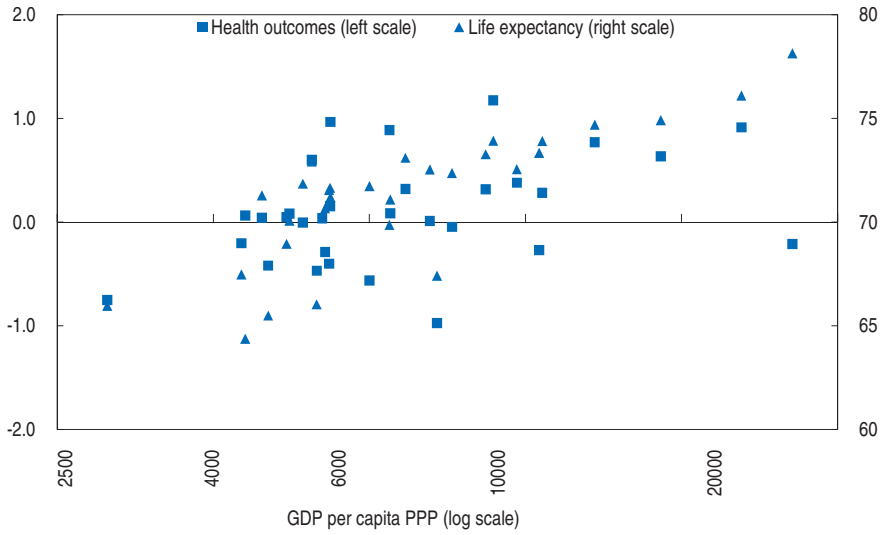
There are a number of composite indicators that bring together both monetary and non-monetary aspects of development, notably the Human Development Index (HDI), which is available for China's 31 regions and combines information on education, life expectancy and GDP per capita. Consistent with the evidence set out above, the HDI for the western provinces is lower than that in the East. It is even lower in the central regions, reflecting the limited fiscal transfers to these areas (OECD, 2005). Moreover, between 2001 and 2006, the HDI indicator grew faster in the eastern areas than in the West.

Conclusions

Inequality is relatively high in China by international standards, despite signs that it has lessened recently across provinces and nationwide for rural households. Even within urban areas, it may have receded a bit. This points to the success of a number of policies, notably those related to the easing of restrictions on movements of people introduced in 2003 and the progressive introduction of the minimum subsistence allowance in rural areas. On the other hand, high capital investment in the western provinces appears to have had limited impact on growth in its target areas. This failure to catch up may reflect slower movement towards market-based economic mechanisms on the part of local

Figure 5.11. **Inequality of health outcomes**

Health outcomes, life expectancy and provincial GDP per capita in 2003



Source: OECD calculations, *China Statistical Yearbook* and CEIC for economic indicators, Liu *et al.* (2008) for health indicators.

StatLink http://dx.doi.org/10.1787/778481706062

administrations. It may also be related to the low level of educational qualifications, both of the population as a whole and of the younger cohorts. While there has been a surge in the numbers attending primary school, this has not translated into more numerous graduations from upper secondary schools, in part because of much lower educational spending. More can be done in this respect since it appears that differences between earnings in urban and rural areas are driven by the human capital of the individuals concerned as well as by barriers to mobility.

There will always be those who, for one reason or another, are unable to compete in the labour market and need some form of social assistance. The government has expanded the social welfare programme to include rural areas, in the form of the MLA. The major problem with this programme comes from the lack of national solidarity built into the system. Financing mainly comes from the county and village collective even though it is difficult, and inequitable, for the authorities in the poorest counties and villages to finance the payment to their poorest inhabitants.

A further problem comes from the MLA's overlap with other programmes, notably the new rural pension programme (Chapter 7). That programme will likely pay a benefit of around 40% of local average earnings in exchange for lifetime payments of 8% of average local income while working. But contributions to the system are voluntary, so some people may choose not to contribute, relying instead on the MLA. This is especially the case since the medical benefits for an MLA recipient may exceed those for a person in the new rural medical scheme (Chapter 8).

For people who are neither orphans, disabled nor elderly, the MLA needs to be accompanied by advice and help to return them to the labour market. This needs to be backed up by a greatly improved administration system capable of verifying individuals' income and identity in order to avoid fraud.

There is also the problem that people are entitled to the MLA in their village of registration and not in the city in which they live. Over the longer term such distinctions should be abolished. In the short run, the benefit of such a measure might have to be limited to people who have been resident in an area for more than, say, five years in order to avoid overly rapid migration to higher-benefit areas. Benefit levels will need to be set in relation to local incomes. Last but not least, the central government needs to devote more resources to transfers to the poorest counties for equity reasons.

Notes

1. The difference between imports and exports also includes the statistical error.
2. In 2005, total private spending on education was almost 40% of total outlays.
3. Reflecting the sharp slowdown in economic activity in the fourth quarter of 2008, the number of claimants rose by 0.6 million (an increase of 2.7% or 0.2 percentage points of the urban labour force). With migrants affected more than official rural residents and forced to return to their village of registration, the number of rural people drawing the MLA jumped by 4¼ million in the fourth quarter of 2008.
4. As no official estimate of the national Gini is available from the National Bureau of Statistics (NBS), it is not possible to directly compare the OECD estimates with a national source. Official estimates for urban and rural areas are only available separately (NDRC, 2008). Their profile over the past two decades to 2005 is broadly similar to the one depicted here, insofar as they too point to a steep rise in inequality both in the urban and in the rural areas, with some stabilisation in recent years. They also show inequality to be much higher in rural than in urban areas. Other estimates, such as the ones by Li and Luo (2007), which adjust for local price levels, suggest that the national Gini coefficient was 0.40 in 2005, close to the OECD estimate.
5. Another problem in these as in most household surveys is that high-income households are almost certainly under sampled. Moreover, a number of subsidy and transfer payments that may end up increasing inequality are not fully captured in the household surveys.
6. The disadvantage of these series is they are based on a fixed 1990 basket of goods.
7. The Gini coefficient presented here for China makes no attempt to allow for the economies of scale in household consumption as the number of people in households increase. Calculations for OECD countries do make such a correction, which tends to reduce the extent of inequality. Within the OECD, this adjustment lowers the Gini coefficient by 7.2% based on a population weighted sample of 13 countries (Burniaux *et al*., 1998).
8. In the United States, states are somewhat smaller geographic entities than Chinese provinces and so a somewhat greater level of migration might be expected than in China, but the stock of inter-state migrants is actually an order of magnitude greater at over 30% (Rosenbloom and Sundstrom, 2004).

Bibliography

Atkinson, A. (1970), "On the Measurement of Inequality", *Journal of Economic Theory*, Vol. 2, No. 3.

Azam, M. and A. Shari (2009), "Changes in Income Inequality in Rural India: Decomposing the Gini by Income Sources", IZA and International Food Policy Research Institute, April.

Bhorat, H., C. van der Westhuizen and T. Jacobs (2009), "Income and Non-Income Inequality in Post-Apartheid South Africa: What are the Drivers and Possible Policy Interventions?", University of Cape Town, *DPRU Working Papers*, No. 09/138.

Brandt, L. and C. Holz (2006), "Spatial Price Differences in China: Estimates and Implications", *Economic Development and Cultural Change*, Vol. 55, No. 1.

Burniaux, J.-M., T.-T. Dang, D. Fore, M. Förster, M. Mira d'Ercole and H. Oxley (1998), "Income Distribution and Poverty in Selected OECD Countries: Annex 2", *OECD Economics Department Working Papers*, No. 189.

Chan, K. and W. Buckingham (2008), "Is China Abolishing the Hukou System?", *The China Quarterly*, No. 195.

Chotikapanich, D., D.S. Prasada Rao and K. Tang (2007), "Estimating Income Inequality in China Using Grouped Data and the Generalized Beta Distribution", *Review of Income and Wealth*, Vol. 53, No. 1.

Cowell, F. (2008), "Inequality: Measurement", *in* Durlauf, S. and L. Blume (ed.), *The New Palgrave Dictionary of Economics*, Palgrave Macmillan, Basingstoke.

He, P., Y. Wang and S. Li (forthcoming), "China's Minimum Living Allowance System", in China Development Foundation (forthcoming).

Herd, R. (2010), "A Pause in the Growth of Inequality in China?", *OECD Economics Department Working Papers*, forthcoming.

Hertel, T. and F. Zhai (2006), "Labor Market Distortions, Rural-Urban Inequality and the Opening of China's Economy", *Economic Modelling*, Vol. 23, No. 1.

Khan, A. and C. Riskin (2005), "China's Household Income and Its Distribution, 1995 and 2002", *The China Quarterly*, No. 182.

Kislitsyna, O. (2008), "Income Inequality in Russia during Transition: How Can It Be Explained?", *Economics Education and Research Consortium Working Paper Series,* No. 03/08.

Li, S. and C. Luo (2007), "Re-estimating the Income Gap Between Urban and Rural Residents in China", *Journal of Peking University*, No. 2 (in Chinese).

Li, S. and Z. Xu (2008), "The Development Trend of Regional Disparity in China", *China Development Review*, Vol. 10, No. 1.

Lin, J. and R. Tao (2002), "Urban and Rural Household Taxation in China: Measurement and Stylized Facts", China Centre for Economic Research, Peking University, Beijing.

Liu, Y., K. Rao, J. Wu and E. Gakidou (2008), "China's Health System Performance", *Lancet*, Vol. 372, No. 9653.

Ministry of Civil Affairs (2009), "Quarterly Statistics of the Civil Affairs in China", *www.mca.gov.cn/article/zwgk/mzyw/200902/20090200026278.shtml*, Beijing.

Monash (2003), *Attracting FDI to Western China*, Monash International Consulting, Monash University, Australia.

National Audit Office (2004), *Execution of the Central Government Budget and other Financial Revenue and Expenditure,* Beijing (in Chinese).

NDRC (2008), *Annual Report on the Distribution of Income of Chinese Residents,* in Chinese, Department of Income Distribution and Employment, National Development and Reform Commission, Beijing.

NDRC (2007), *Report on Pricing Complaints,* Beijing (in Chinese).

OECD (2005), *Economic Survey of China*, OECD, Paris.

Paes de Barros, R. (2007), "The Recent Decline in Income Inequality in Brazil: Magnitude, Determinants and Consequences", IPEA, Presentation Cuidadde Guatemala, July.

Ravallion, M. and S. Chen (2007), "China's (Uneven) Progress Against Poverty", *Journal of Development Economics*, Vol. 82, No. 1.

Rosenbloom, J. and W. Sundstrom (2004), "The Decline and Rise of Interstate Migration in the United States: Evidence from the IPUMS, 1850-1990", *in* A. Field (ed), *Research in Economic History*, Vol. 22, Elsevier.

Shen, J. (2006), "Estimating Urbanization Levels in Chinese Provinces: 1982-2000", *International Statistical Review*, Vol. 74, No. 1.

Sicular T., X. Yue, B. Gustafsson and S. Li (2007), "The Urban-Rural Income Gap and Inequality in China", *Review of Income and Wealth*, Vol. 53, No. 1.

Solinger, D. (2008), "The Urban Dibao: A Minimum Livelihood Guarantee to Guarantee Minimal Commotion", *in* Wu, F. and C. Webster (forthcoming).

Sun Y. (2009), Interview with the vice-director China Youth and Children's Research Centre, Xinhuanet *http://news.xinhuanet.com/english/2009-04/02/content_11117062.htm*.

Suryadarma, D., W. Widyanti, A. Suryahadi and S. Sumarto (2006), "From Access to Income: Regional and Ethnic Inequality in Indonesia", *SMERU Research Institute*, May.

Tao, R. and P. Qin (2007), "How Has Rural Tax Reform Affected Farmers and Local Governance in China?", *China and World Economy,* Vol. 15, No. 3.

UNDP (2008), "Access for All: Basic Public Services for 1.3 Billion People", *China Human Development Report*, 2007/8.

United States Department of Commerce (2000), *The Changing Shape of the Nation's Income Distribution*, Economics and Statistics Administration.

Wang, M. (2007), "Emerging Urban Poverty and Effects of the Dibao Program on Alleviating Poverty in China", *China and World Economy,* Vol. 15, No. 2.

Xu, J. (2008), "Poverty Reduction in China", *mimeo*, China Development Foundation.

Yip, R., J. Chan and N. Chow (2007), "Recent Reforms and Progress in Rural Development in Mainland China", *China Economic Issues, No.* 5/07.

Zhang, W. (2005), "Can the Strategy of Western Development Narrow down China's Regional Disparity", *Asian Economic Papers*, Vol. 3, No. 3.

Zhang, X. and X. Guan (2003), "The State of Welfare", *China Development Brief*, Beijing.

Chapter 6

A labour market in transition

Over the past decade, the share of jobs not controlled by the state has increased considerably, whilst employment in agriculture has declined, against the backdrop of ongoing urbanisation. Over 200 million people have been drawn into urban areas through official or unofficial migration, despite various obstacles to labour mobility, including the registration system and the associated restrictions to social service access. New labour laws were introduced in 2008 to better protect employees in a market now dominated by private-sector employers, notably via more systematic use of and adherence to written labour contracts, in particular of indefinite duration ones. To what extent the new legislation and implementing regulations will be enforced remains to be seen. For the time being, de facto *employment protection is far less than de jure, with an enduring preponderance of fixed-term contracts involving few restrictions. Minimum wages are set locally and have not kept up with average wages, nor are they effectively enforced. During the recent slowdown, average wages adjusted rapidly and employment was soon on the rise again. However, this episode also highlighted the need to integrate migrants better, not least by relaxing registration rules.*

The labour market has been in the throes of a major transformation over the past decade. The share of jobs in firms that are not controlled by the state has risen, ending lifetime employment and increasing the role of the private sector. All forms of contract law are difficult to enforce in China, even when the parties are of equal standing. The labour law that was in place during this transition was no exception to this rule. It has proved ineffective in many basic areas such as ensuring that workers are actually paid and that employers join social security. A new set of labour laws were therefore introduced in 2008.

At the same time, employment in agriculture has shrunk as has, more recently, the share of the population living in rural areas. As measured by agriculture's share in employment, the country is more than half-way between the 80 to 90% typical of pre-industrial societies and the 5% or less found in advanced economies, many workers having moved from the land to work in towns. This change has thrown into sharp relief the problems faced by the government in maintaining the long-standing divisions both between rural and urban residents and between the residents of different cities. The labour market has drawn over 200 million people into urban areas in a decade through official or unofficial migration. Further large population flows will be necessary as the country becomes more urbanised and in order to make the best use of its human resources. Current policies assume that unofficial migration is temporary but the recovery of the labour market after the late 2008 downturn has shown that unofficial migrants are a permanent feature of the urban labour market and that they quickly adapt their wage demands in order to secure employment. Nonetheless, the economic crisis caused social disruption in the short term, exposing the inadequacy of existing provisions of the social safety net for this group of employees; but it also demonstrated the potential advantages of a flexible labour market that can respond rapidly to new economic conditions.

This chapter first considers the major developments in the labour market over the past decade, before looking in more detail at migration from rural to urban areas, highlighting a number of factors that impede it. It then assesses the extent of government intervention in the labour market and the changes brought about by the new labour laws introduced in 2008.

Labour market developments: job creation, migration and persistent segmentation

Employment, unemployment and activity rates

Over the past decade, China has been faced with the need to increase employment sufficiently rapidly to cope with a growing labour force. Each year on average, the working-age population has increased by over 10 million people. Around the turn of the millennium, policy makers worried whether the economy would be able to create enough jobs to employ both the growing labour force and those laid off during the restructuring of state-owned enterprises (SOEs), which involved the loss of 4 million jobs per year. In the event, employment in manufacturing contracted substantially between 1998 and 2002

(Table 6.1), only returning to its 1998 level in 2004. Tertiary employment grew, however, especially in distribution and construction. Nonetheless, the unemployment rate rose, peaking in 2000 at nearly 10% of the urban working population, excluding those working in agriculture (Box 6.1), and then declined as the laid-off workers became self-employed.

Table 6.1. **Employment and unemployment**

End-year	Total	Urban	Rural	Primary	Secondary	Tertiary	Unemployment	Unemployment rate[1]
	Millions							Per cent
1998	706.4	216.2	490.2	351.8	166.0	188.6	14.5	7.1
1999	713.9	224.1	489.8	357.7	164.2	192.1	14.0	6.7
2000	720.9	231.5	489.3	360.4	162.2	198.2	19.1	8.7
2001	730.3	239.4	490.9	365.1	162.8	202.3	14.1	6.6
2002	737.4	247.8	489.6	368.7	157.8	210.9	16.2	7.5
2003	744.3	256.4	487.9	365.5	160.8	218.1	16.4	7.5
2004	752.0	264.8	487.2	352.7	169.2	230.1	16.2	6.9
2005	758.3	273.3	484.9	339.7	180.8	237.7	20.5	8.1
2006	764.0	283.1	480.9	325.6	192.3	246.1	18.4	7.0
2007	769.9	293.5	476.4	314.4	206.3	249.2	16.6	6.1
2008	774.8	302.1	472.7	306.5	211.1	257.2	16.0	5.7

1. The unemployment rate is measured as a percentage of the estimated urban non-agricultural labour force, see Table 6.2 for the employment data. If the labour force were taken as the total urban labour force, then the unemployment rate would be 0.7 percentage points lower.

Source: China Statistical Yearbook and CEIC.

Box 6.1. **Measuring unemployment**

The Chinese government does not publish an internationally comparable unemployment rate. However, the annual labour force surveys yield data for total employment and the number economically active. The difference between the two equals unemployment. The questions in the survey correspond to the normal job-search categories used internationally. In rural areas, by convention, no agricultural worker can be classified as unemployed because they all own land which requires to be tended. This is the case even if their main activity is outside agriculture. Following this convention, the unemployment rate should be computed as the number of unemployed divided by the urban working population not engaged in agriculture.

By 2003, GDP growth started to pick up under the influence of the global upturn and stimulatory monetary policy. As a result, employment expanded strongly, particularly in the secondary sector, where it expanded by nearly 6.5% annually between 2003 and 2007, adding an average of over 11 million jobs per year. Tertiary employment increased less rapidly, partly reflecting slower growth in the broad government sector, at only 2% annually (Box 6.2).

The decade to 2008 also saw a marked increase in youth enrolment in education, both at senior high (16 to 18 year olds) and tertiary levels. The number of university graduates rose six-fold between 2000 and 2008, substantially boosting human capital (Figure 6.1). The average new entrant into the labour market now has 11 years of schooling, while the average person leaving it has less than six years of education, implying an increase in

Box 6.2. **Measuring employment**

The nature of the Chinese economy has evolved greatly over the past three decades and this had implications for the way in which employment data are collected and presented.

Data collection and presentation

For years prior to 1990, the data are based on the Comprehensive Labour Statistics Reporting System (CLSRS) and the official registry of self-employed workers. The CLSRS data comes from all units in urban areas that maintained independent accounting records, together with information for the rural sector.

From 1990, a second presentation is based on an annual labour force sample survey. This data is presented for the nation, split down between rural and urban geographic areas and between three sectors of the economy (primary – agriculture, forestry and fishing; secondary – mining, manufacturing, utilities; and tertiary, including construction and other services). The level data are reported in the NBS *Statistical Yearbook*.

A third presentation of the labour force data is given in the *Population and Labour Yearbook*, but only in terms of the distribution of the labour force according to various criteria. Moreover, for some of the tables, only data for the urban sector of the economy is presented.

The fourth presentation focuses on the number of employees in the urban sector and uses the above CLSRS which comes from all employers that maintain independent accounting records. This reporting system was fundamentally changed in 1998, when local authorities started to pay benefits to laid-off employees. Prior to that year, all people paid by a company were counted as employees, even when they had been laid off. Henceforth, the primary series for employees excluded laid-off workers. As a result, the reported number of employees dropped by some 20 million in 1998.

This data is split into quarterly and annual, and by type of company registration and economic sector. The split by company registration separates all state units (including the following categories: enterprises – *i.e.* units not in company form; companies; public service units and state management units) from other companies (which are broken down into large and small companies – measured by capitalisation at registration), officially registered private enterprises, foreign-owned companies; companies owned by "Hong Kong, Macau and Taiwan capital" – to use the official Chinese nomenclature – and finally joint ventures.

Table 6.2. **Estimates of urban employment by sector**

Millions

	Total employment	Agriculture	Other workers	Registered self employment	Employees					
					Total	Private sector	State units			
							Total	Industrial	Services	Government
1998	216.2	25.5	31.5	22.6	136.6	46.0	90.6	34.3	24.1	32.2
1999	224.1	28.6	39.8	24.1	131.6	45.9	85.7	30.4	23.1	32.3
2000	231.5	32.4	49.2	21.4	128.5	47.5	81.0	26.7	22.0	32.4
2001	239.4	40.6	51.0	21.3	126.5	50.1	76.4	23.7	20.4	32.3
2002	247.8	48.8	47.6	22.7	128.7	57.1	71.6	21.6	18.2	31.8
2003	256.4	52.9	46.2	23.8	133.5	64.8	68.8	19.5	17.4	31.9
2004	264.8	46.7	53.5	25.2	139.3	72.2	67.1	18.0	17.0	32.2
2005	273.3	39.9	58.8	27.8	146.8	82.0	64.9	17.1	15.1	32.7
2006	283.1	38.3	60.3	30.1	154.4	90.1	64.3	16.4	14.7	33.1
2007	293.5	37.0	59.6	33.1	163.8	99.6	64.2	16.0	13.7	34.6
2008	302.1	36.0	59.0	36.1	171.0	106.5	64.5	15.5	13.1	35.8

Source: *Rural Statistical Yearbook*, *China Statistical Yearbook* and CEIC.

Box 6.2. **Measuring employment** *(cont.)*

The quarterly employment data does not include registered private companies, whereas the annual data does (this category is not the only form of private enterprise since, in this presentation at least, all non-state units are privately controlled). Registered private companies have been the most rapidly growing part of employment recently and accounted for 51 million jobs at end-2008. Thus the annual urban data shows 171 million employees, whereas the quarterly data for December 2008 shows just 121 million. This latter sample is used to calculate average wages. The NBS now uses a new system for measuring quarterly employment and wages that includes registered private enterprises and individually-owned businesses. Figures for 2008 are now available but have not yet been published because changing the measurement basis for average earnings by locality will affect future pension benefits and all parties have to agree on the changes (Feng, 2009).

A fifth presentation comes from the Ministry of Agriculture and reports the number of employees in the primary sector in rural areas. This source also gives data for secondary and tertiary employment in the rural sector. For 2005, the most recent year for which data is available (from the 2006 *Rural Statistical Yearbook*), the sum of the three sectors no longer agrees with the revised number for total rural employment published in the 2008 *Statistical Yearbook*: the sum of the components is 3.9% (19 million) lower than the revised total figure.

Interpretation of the data

China is not alone in having two basic sources for urban employment data. The United States has a similar structure of household and employer-based data. There, as well as in China, considerable effort is put into explaining why the two sources sometimes show different movements. In the case of China, the difference between the labour force survey and employer-based estimates amounted to 57 million in 1998 (26% of survey-based employment) and rose to a peak of 102 million in 2004. Since then the difference has stabilised and by 2008 it had dropped to 95 million, but this still represented 31% of total employment. It has sometimes been suggested that this gap indicates a growing informalisation of employment in urban areas (OECD, 2007, Cai *et al.*, 2009).

One reason for the size of the gap, if not its growth, is that the Chinese urban economy still has a substantial agricultural sector and estimates of the agricultural labour force in urban areas vary considerably across sources. Urban development has tended to sprawl and includes areas that are predominately rural. As a result, the areas considered as urban are large, even with the more realistic definitions of the urban geographic sector adopted by the NBS in 2006. The size of the agricultural sector in urban areas varies across the country, but amongst the 53 metropolitan areas identified by the OECD, only two have an agricultural share of below 10% and a further 13 have agricultural shares of between 10% and 30%.

Two separate sources give different results for agricultural employment in urban areas. The labour force survey shows it at 27% of urban employment. However, if the figure for primary sector employment in rural areas is correct, then the difference between rural and national agricultural employment represents the urban agricultural workforce, suggesting that only 13% of the urban workforce is in agriculture – a difference of 38 million workers.

Another reason for the big gap may be an under-estimate of the self-employed in the official figures. The latter showed only 30 million as registered self-employed in 2006. The labour force survey showed the total of self-employed, employers and unpaid family workers at 50 million – a difference of 20 million.

Box 6.2. **Measuring employment** *(cont.)*

Table 6.3. **Rural employment**

Millions

	Total	Agriculture	Non-state enterprises	Government	State enterprises	Self-employment
1998	490.2	326.3	117.7	5.1	2.6	38.6
1999	489.8	329.1	115.1	5.1	2.3	38.3
2000	489.3	328.0	124.9	5.1	2.0	29.3
2001	490.9	324.5	133.2	5.1	1.8	26.3
2002	489.6	319.9	138.3	5.0	1.6	24.7
2003	487.9	312.6	146.2	5.0	1.5	22.6
2004	487.2	306.0	154.2	5.1	1.3	20.7
2005	484.9	299.8	157.5	5.2	1.3	21.2
2006	480.9	287.3	165.6	5.2	1.2	21.5
2007	476.4	277.5	170.4	5.5	1.2	21.9
2008	472.7	270.5	173.1	5.7	1.2	22.3

Source: Rural Statistical Yearbook, *China Statistical Yearbook* and CEIC and OECD estimates.

By contrast, the estimates of employees in the employer and labour force surveys are in close agreement. The employer survey gives a total of 154 million in 2006, as against 156 million for the labour force survey – a difference of only 2 million. Thus, unmeasured employment in small businesses could account for only a tiny portion of the gap.

In sum, the main explanation of the missing employment is probably an undercount of agriculture in urban areas and a much smaller undercount of the self-employed, rather than a large informal economy. In any event, the size of the difference between the employer and household survey-based measures of employment in urban areas has been constant over the past four years and should not be taken as a measure of the evolution of the informal economy.

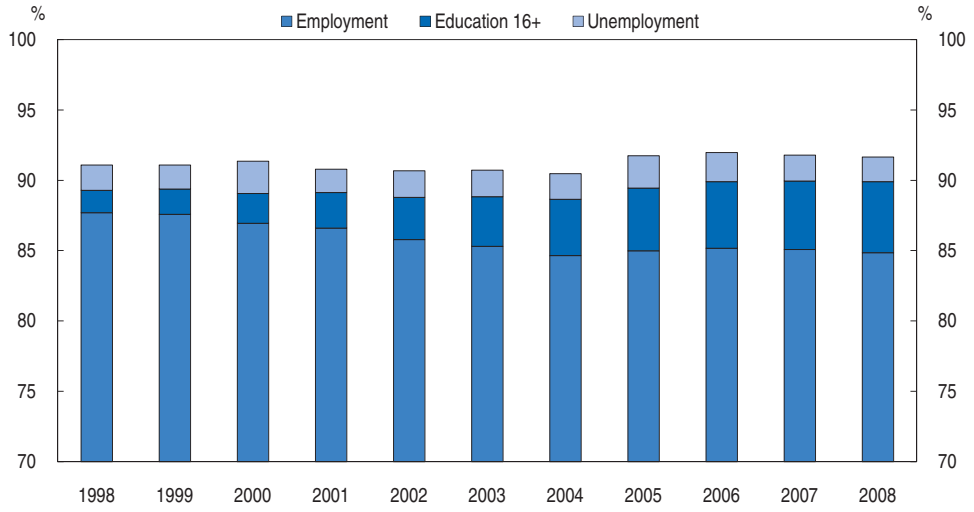
human capital of around 2% annually. The decrease in the participation rate in recent years has mainly been caused by this rise in the number of students. Hence, it should not be interpreted as a withdrawal from the labour force but as investment in human capital.

Labour markets developments in China cannot be fully understood, however, without distinguishing between its rural and urban components and further dividing the urban market into sub-sectors. Indeed, people wanting to move from the rural to the urban market face major obstacles and the conditions enjoyed by employees in the relatively protected SOE and government sectors differ from those elsewhere. Quantification of these movements, however, raises substantial problems (Herd *et al.*, 2010). The main difficulties stem from the failure of the aggregate employment data for rural and urban areas to distinguish between employment in the primary, secondary and tertiary sector. Given that a substantial, but unknown, proportion of urban workers are in agriculture, this complicates analysis of the urban labour market. In addition, the number of informal self-employed workers is difficult to measure.

The stress in the labour market as a result of SOE restructuring was clearly evident in the availability of urban jobs. The number of employees in state-controlled work units fell by over 14 million between 1998 and 2003 – a 25% downsizing of state-controlled

Figure 6.1. **Distribution of the population between work, studies and unemployment**

As % of the population aged 16 to 59



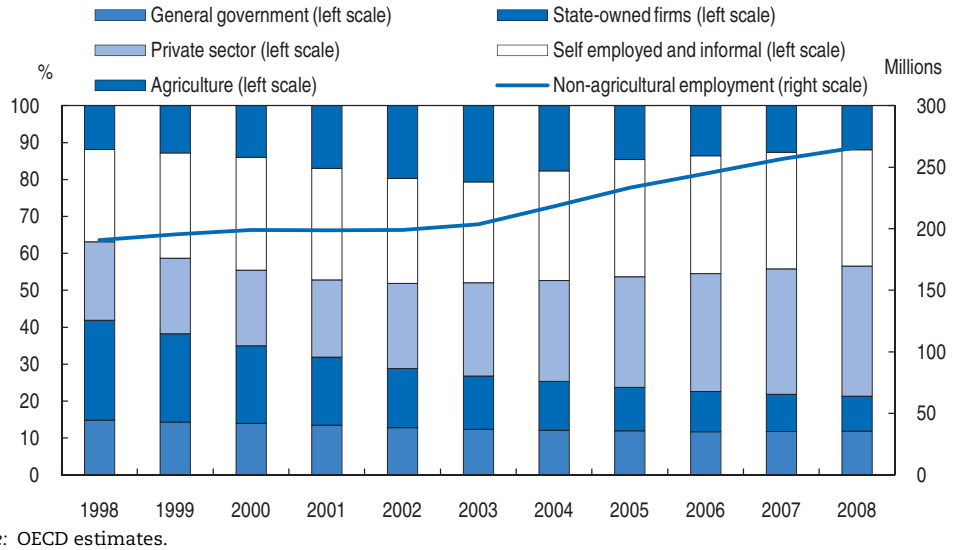
Source: China Statistical Yearbook.

StatLink http://dx.doi.org/10.1787/778547423853

commercial enterprises (*i.e.* excluding government employment, which remained stable). Some of those who lost their job may have returned to local agriculture (which expanded) or joined the growing number of unregistered self-employed (Table 6.2). Private enterprise employment did not increase much and, insofar as it did, this may have partly reflected companies moving from the state to the private sector. As a result, non-agricultural employment stagnated in this period. In the next four years, the downsizing of urban SOEs continued, albeit far more slowly, with less than one million jobs lost per year. However, in this period private sector employment rose markedly, by nearly 9 million jobs per year (Figure 6.2).

Figure 6.2. **Urban employment**

Share by sector and total non-agricultural employment



Source: OECD estimates.

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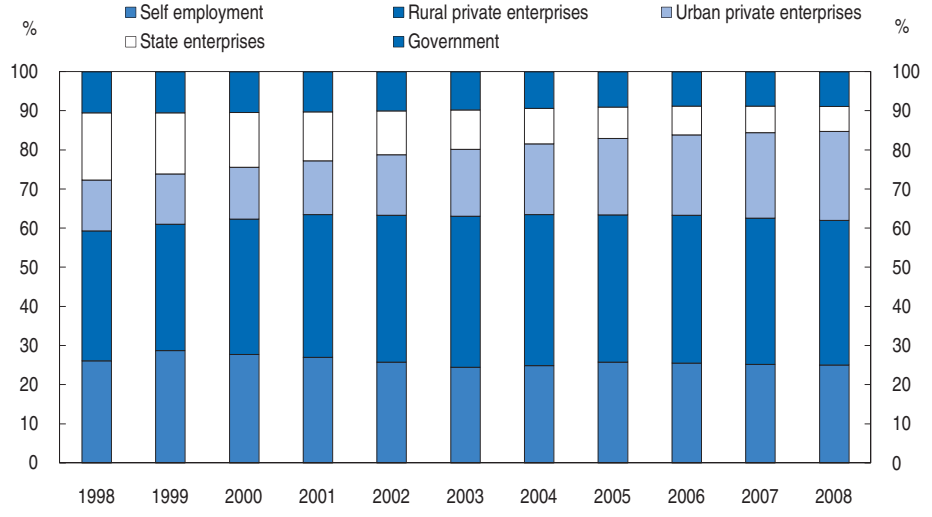
In rural areas, employment remains predominantly agricultural but enterprise employment has been growing rapidly (in this chapter, rural and agricultural refer to the actual employment or geographic status of the people concerned and not to their status under the population registration system). In the first half of the decade, total rural employment remained stable, with some movement out of agriculture into rural enterprises, which by 2003 were essentially all privately owned (except for a small state enterprise sector). These enterprises continue to be registered with township governments and village collectives and are hence sometimes referred to as "township and village enterprises", a label that referred to a completely different structure in the 1980s. During 1998-2003, nascent enterprises in the rural private sector created 30 million jobs, as against 18 million for their urban counterparts. Since then, the latter have moved ahead but they still provide a smaller portion of overall employment.

Overall, the share of the private sector in total non-agricultural employment has increased over the decade to 2008 (Figure 6.3). The state-enterprise sector now accounts for less than 7% of total non-agricultural employment, down by nearly 10 percentage points. At the same time, the share of employment in the government sector has declined and by 2008 the public sector accounted for only 15% of total non-agricultural employment, against 27% a decade earlier. Most of this transformation occurred in urban areas, where public sector employment fell from half of total non agricultural employment to one quarter.

Figure 6.3. **Composition of non-agricultural employment**

% of total rural and urban non-agricultural employment



Source: China Statistical Yearbook and CEIC.

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The impact of the business cycle on the labour market

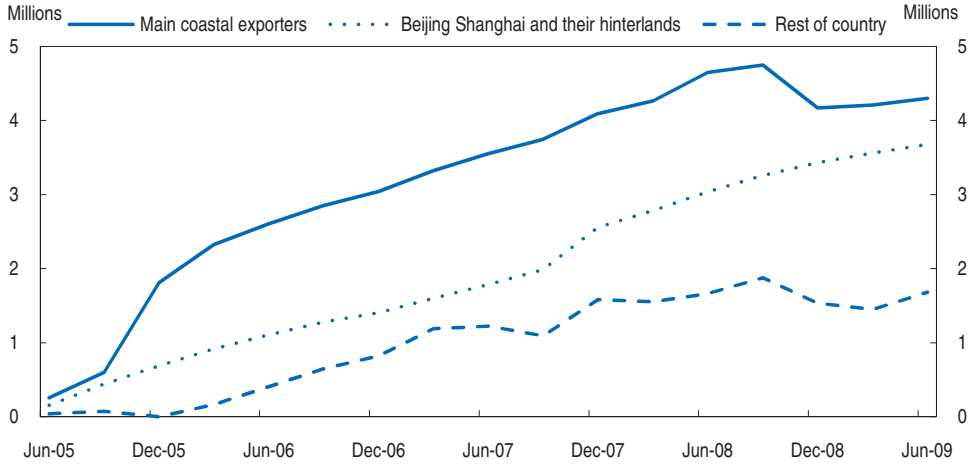
The impact on employment of the recent economic cycle varied considerably across the country. At least three different areas can be distinguished: the major coastal areas, most exposed to foreign trade and where exports generally exceed half of provincial GDP; the areas including and surrounding Beijing and Shanghai, which encompass the provinces of Hebei and Zhenjiang, as well as the provincial city of Tianjin; and finally the rest of the country – which could be split further into areas that are major suppliers of migrants to the rest of the country and the remainder. The exporting regions offer easier

access to migrants even if becoming an official migrant is difficult, whereas in the three provincial cities (Beijing, Tianjin and Shanghai) there are very strict restrictions on obtaining official migrant status (see below). In the rest of the country, there are effective barriers to leaving officially (in that land rights are lost, see Chapter 7), while unofficial migrants are often forced to leave families behind while they seek work, given the discrimination they face in obtaining basic public services in the areas to which they move.

During the upswing, employment grew most rapidly in the coastal areas (Figure 6.4), rising by nearly 5 million between mid-2005 and 2008 (excluding private-sector employees). It also grew rapidly in the main metropolis areas and their hinterlands. By contrast, employment in the rest of the country expanded very slowly, by less than 1% annually for a cumulative increase of under 2 million.

Figure 6.4. **Absolute growth in employment by region**

Millions (excludes employees of registered private enterprises), from June 2005



Source: CEIC.

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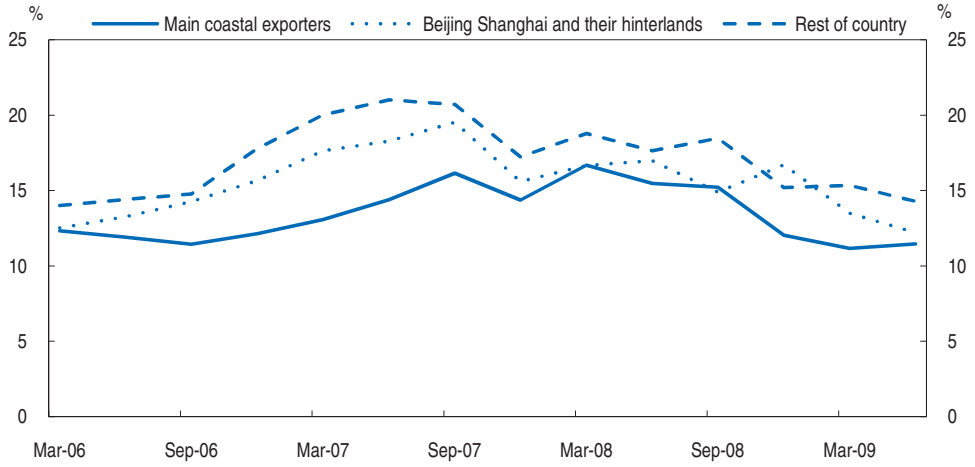
The downturn hit the exporting areas first. Employment in the coastal exporting provinces fell by at least 2% (the quarterly data do not cover registered private companies, which may react most vigorously to changes in output, although they do cover foreign-owned firms, which are major employers of unofficial migrant labour). In these regions, employers showed some reluctance to hire from late 2007, notably in Guangdong – well before the downturn in world markets. Possibly, this reflected the anticipated costs of the new labour laws, whose content was then well-known (see below). The abruptness of the downturn caused the departure of 70 million unofficial migrant workers (about one third of the total, including those working within their township's own geographical area but not in their own village). Most of these left in November and December, ahead of the usual Chinese New Year movement (National Bureau of Statistics, 2009). At the time, it was estimated that 11 million migrant workers were unemployed in cities and a further 9 million had returned back to their home villages. The rise in unemployment was short-lived, however, and employment has been rising since the beginning of 2009 across the country. By June, the number of unemployed migrant workers in cities had fallen to 4.2 million, representing an unemployment rate of around 3%. By September 2009, the number of migrants had risen by over 11 million from the level in December 2008, reaching almost 152 million. There was a marked geographical redistribution of these workers, with

their employment in the eastern part of the country barely increasing (and falling in the southern Pearl River Delta area), but rising sharply in central and western areas.

Regional labour market differences are also reflected in earnings (Figure 6.5). The rapidly growing coastal area, with the most open labour markets, saw the least rapid growth in earnings throughout the business cycle. Labour inflows kept down wage growth during the upswing and, when employment fell, the coastal regions experienced the sharpest slowdown in earnings. Earnings growth in the major metropolises, with the strictest controls over labour, was faster. However, earnings grew most in the interior of the country. There employment growth was limited and labour outflows ensured that wages grew rapidly. Indeed, in the five years to June 2009, the wage differential (excluding domestic private sector employees) between the urban coastal and interior areas fell from 45% to 27%. This suggests that migration is creating a much wider labour market and helps narrow wage dispersion (Cai *et al.*, 2007).

Figure 6.5. **Growth of average earnings by region**

Excludes employees in registered private firms



Note: The main coastal exports areas are Fujian, Guangdong, Jiangsu and Shandong. The hinterlands of Beijing and Shanghai are Hebei, Tianjin and Zhejiang.

Source: CEIC.

StatLink http://dx.doi.org/10.1787/778577542000

The government has taken measures to deal with the rise in unemployment amongst migrants. It announced a special programme to increase vocational training for migrant workers, college graduates and laid-off workers in 2009-10 with the objective of providing unemployed migrants with new skills to help them find better jobs or open businesses in their hometowns. Unemployed migrants will also receive central government subsidies to encourage them to take training. This programme will come in addition to those in force in 2008, when about 4 million laid-off workers attended vocational training.

Prospects for continued migration

The agricultural sector is still very large, at about 40% of employment, down from 50% two decades ago. The fall in agricultural employment has been modest, with a trend decline of less than 1.5% per year. This suggests that it may take another decade for the share of labour in agriculture to fall to 25%. In Japan, it was only when farming employment fell to this level that the wages of people moving from farms to cities started to take off rather than remaining at a subsistence level (Minami, 1968).

However, the availability of labour to move to new employment is determined not only by the exodus from agriculture but also by the natural increase of the rural population. Indeed, the shortage of migrant labour during the upswing, appearing first in 2004, may have been driven by short-term demographic developments, reflecting the very small size of the 18-22 age cohort. The cohort born between 1958 and 1961 was particularly small due the rural famines during the "Great Leap Forward". Thus the number of children born 20 years later, in the early 1980s, was small relative to surrounding cohorts. Family planning regulations also eased in the early 1980s, causing a wedding boom that explains the relatively large size of the cohorts entering the labour market in the period to 2015. This 18-25 age-group is most in demand by exporting companies in coastal areas. This demographic factor, coupled with the reduction in the agricultural labour force, suggests that, contrary to what Cai *et al.* (2009) argue, the Chinese economy has not yet reached a turning point at which demand for rural labour would exceed supply, ending the elastic supply of rural workers at the subsistence wage (Lewis, 1958). The key for further urbanisation would seem to lie in migration continuing to contribute to the growth of urban areas and raising incomes in rural areas.

Internal migration in China does appear to offer such a "win-win". Individuals generally see a three-fold increase in their average income when they move. And when employment in agriculture (or the primary sector) falls, the productivity, and hence incomes, of those who remain rises. A number of reasons may explain this: higher incomes may increase rural saving and investment and so boost agricultural productivity; land holdings may be consolidated, generating economies of scale; and the fall in employment may be concentrated amongst the elderly, whose continued activity had a mainly social aspect in three-generation households.

The gap between the level of productivity in the primary sector and the rest of the economy is still large, at almost six times. In most of the OECD countries, average productivity in the primary sector is similar to that in the rest of the economy (the exceptions being Austria, Greece, Ireland, Japan, Korea, Poland, Portugal and Switzerland). A further marked fall in agricultural employment and re-organisation of the agricultural sector would be needed to narrow the productivity differential in China. By implication, the flow of labour out of agriculture, and the movement to urban areas, still has a long way to go, provided that policies to improve living standards in rural areas do not result in protection and subsidies for farmers and the agricultural sector.

Unofficial migrants in the urban labour market

The estimates of the number of migrants vary considerably (Herd *et al.*, 2010) and many focus on the totality rather than the subset of most concern to policy makers: rural migrants who have moved to urban areas without obtaining official residential status there. The 2005 Census allows for a more accurate estimate of this category because it distinguishes the geographic origin of the people living in a given area without a local *hukou* (registration, see Box 6.3). However, even the 2005 Census data may be inaccurate because migrants are probably more difficult to count than the general population and hence the factors used to scale up the sample numbers to the national level may be incorrect. Bearing in mind this possible source of error, the total number of rural-to-urban migrants without a local *hukou* is estimated at just below 74 million, of which 62 million are active in the labour market using the 2000 activity rates of unofficial migrants (Table 6.4). People who move from one city to another may also be unofficial migrants. In fact, there

Box 6.3. **The *hukou* system**

The *hukou* registration system was introduced in the 1950s as a part of centrally-planned labour allocation. Policy was aimed at keeping as many people in farming as possible, in order to maximise food production for the towns. Movement from rural areas to towns was almost impossible. Central government authorisation was necessary and limited to about 0.2% of the population per year. If a person did move despite these barriers, he or she would be unable to obtain a local ration card to buy food. By 1984, migration to cities was allowed provided the individual brought his own food from the countryside. Since then, the *hukou* system has gradually evolved.

The *hukou* system involves a twofold categorisation of a person. First, the person is classified as having an agricultural or non-agricultural status, and then according to location. Thus, in any city a person may carry one of at least four types of *hukou:* local agricultural or non-agricultural (even urban cities can have residents with agricultural status) and non-local agricultural or non-agricultural. Sometimes the agricultural and non-agricultural *hukous* are referred to as urban and rural *hukous*, which is misleading because the words urban and rural are attributes of a locality. Thus, a person in city with an urban *hukou* from another urban locality would be treated differently from a local urban *hukou* holder.

In the 1990s, a number of provinces started to abolish the distinction between the agricultural and non-agricultural *hukous* within individual jurisdictions. Moreover, they abolished the annual quota for changing from agricultural to non-agricultural *hukou*. By 2005, the Ministry of Public Security announced that 11 provinces had been chosen to act as trial areas in this process; subsequently the number of provinces was raised to 13. No official figures are available on the extent to which this has happened. Press reports suggest that the merging of the two *hukous* has occurred mainly in areas that are heavily urbanised such as the Shijingsam district of Beijing or in urbanised areas of the Pearl River Delta, where there has been some resistance to losing a non-agricultural *hukou* because it would entail losing one's share of the income from the developed and urbanised land belonging to the inhabitants of the village.

In smaller towns, the barriers to obtaining a local urban *hukou* were greatly eased starting in 1998 (Reutersward, 2005). The principal conditions for obtaining a local *hukou* in these areas are that the individual has a stable source of income and adequate housing. The interpretation of these conditions varies according to localities. Typically, they require one or two years contractual employment. Sometimes only contracts from SOEs are accepted, together with evidence of a fixed and legal residence. Even in small cities, these conditions are not easy to meet for migrant workers. Few of them have a long-term labour contract (see above) and even fewer work for SOEs. As to the accommodation condition, most do not live in normal housing (see above). Perhaps as a result of these limitations, only 1.4 million new *hukous* were granted in the first five years of the policy (Chan and Buckingham, 2008). The relaxation, moreover, took place nearly entirely in inland and western areas (Herd *et al.*, 2010). In Guangdong, the government has only recently announced that conversion of migrant to local *hukous* may be undertaken in the next few years. On top of these conditions, non-local *hukou* holders are required to surrender all land-use rights in their village of origin (Chan and Zhang, 1999).

Box 6.3. **The *hukou* system** *(cont.)*

In larger towns the possibility for a migrant to obtain a local *hukou* still remains practically nil. In 20 years, 30 million migrants have worked in Shenzhen and yet until 2004 only one had obtained a local *hukou* (IHLO, 2004). The city has given 70 000 urban *hukous* per year between 2000 and 2007, mainly on the basis of education, skills and capital, for an annual inflow of 875 000 rural migrant workers. The average rural migrant thus has little chance of gaining a local *hukou* from the city. It imposes the requirement of a high level of education and a reasonable quality local residence, qualifications that rural migrants would have difficulty in meeting. Many other cities offer local *hukous* on the basis of the investment that the newcomer will make in the local economy. Shenzhen is now considering relaxing these criteria but would still require a five-year residency, ownership of property and an employment contract.

Table 6.4. **Origin and destination of unofficial migrants: population and employment**

2005

	Coming from urban areas	Coming from rural areas	Total
	Absolute number (millions)		
Population			
Living in urban areas	52.6	73.6	126.3
Living in rural areas	5.2	18.1	23.4
Total	57.9	91.8	149.6
Employment			
Living in urban areas	45.2	61.7	106.9
Living in rural areas	4.9	15.0	19.9
Total	50.1	76.7	126.8
	As % of population or employment living in an area		
Population			
Living in urban areas	13.1	22.5	9.4
Living in rural areas	2.4	3.1	0.7
Total	7.0	11.4	4.4
Employment			
Living in urban areas	16.5	22.6	39.1
Living in rural areas	1.0	3.1	4.1
Total	6.6	10.1	16.7

Source: Tabulations of 1% sample census, ChinaDataOnline; employment rate from 2000 Census, as quoted in Fan (2008).

are almost as many of this type of unofficial migrants (53 million) as unofficial rural migrants. In urban areas, unofficial migrants represented 80% of workers in construction and 68% in manufacturing (Research Office Project Team, 2006). By 2005, unofficial migrants in urban areas represented 39% of the urban labour force and nearly 46% of non-agricultural employment.

New arrivals in the urban labour market appear to face some discrimination. People born in rural areas but living in urban areas are much less likely to work in public sector jobs. Over half of locally-born residents work in either the government or SOEs (Table 6.5, top panel). Nearly all unofficial migrants work in the private sector and are over-represented in services and manufacturing, whereas the locally-born workers are mainly

Table 6.5. **Sector and occupational status of urban workers**

2005

Sectoral status	Total			With contract			No contract		
	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant
Public sector	**0.52**	**0.05**	**0.15**	**0.67**	**0.06**	**0.23**	**0.47**	**0.05**	**0.11**
Government	0.26	0.01	0.05	0.28	0.01	0.07	0.34	0.01	0.04
State-owned enterprise	0.26	0.04	0.1	0.39	0.05	0.16	0.13	0.04	0.07
Private sector	**0.47**	**0.94**	**0.86**	**0.33**	**0.94**	**0.78**	**0.54**	**0.95**	**0.90**
Collective enterprise	0.05	0.03	0.04	0.06	0.05	0.05	0.06	0.03	0.05
Family business	0.19	0.35	0.35	0.07	0.22	0.21	0.15	0.28	0.27
Private enterprise	0.12	0.34	0.32	0.10	0.36	0.33	0.23	0.47	0.45
Other work unit	0.04	0.13	0.1	0.04	0.26	0.16	0.04	0.10	0.08
Others	0.07	0.09	0.05	0.06	0.05	0.03	0.06	0.07	0.05
Occupation status	Total			With contract			No contract		
	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant
White collar	**0.42**	**0.07**	**0.30**	**0.49**	**0.11**	**0.41**	**0.44**	**0.06**	**0.23**
Manager or official	0.04	0.02	0.06	0.05	0.03	0.1	0.04	0.01	0.02
Professional or technical	0.23	0.02	0.15	0.28	0.03	0.19	0.23	0.02	0.13
Administrative	0.15	0.03	0.09	0.16	0.05	0.12	0.17	0.03	0.08
Blue collar	**0.57**	**0.92**	**0.71**	**0.51**	**0.89**	**0.59**	**0.57**	**0.93**	**0.76**
Services	0.26	0.34	0.45	0.18	0.25	0.33	0.27	0.29	0.47
Farming	0.04	0.02	0.01	0.06	0.04	0.01	0.02	0.01	0.00
Manufacturing, transport, etc.	0.27	0.56	0.25	0.27	0.60	0.25	0.28	0.63	0.29

Source: 5% random drawing of the 2005 1% Census in Gagnon *et al.* (2009).

in professional or technical jobs (Table 6.5, bottom panel). This contrast may partly reflect differences in education: less than 2% of migrants have tertiary education qualifications against 22% for local inhabitants.

Most migrants work in the flexible sector of the labour market. A significant portion of them are self-employed. Moreover, when they work in factories or services they are likely not to have signed labour contracts. Overall, nearly half of all migrants do not have a wage contract and this proportion rises to three-quarters for those who are employees (Table 6.6). Hardly any have a long-term contract. Overall in 2005, the share of rural migrants in self-employment, with short contracts or no employment contract, at 91%, is 30 percentage points higher than that for local inhabitants. Even migrants with higher levels of education are still much more likely to have short-term contracts than their official resident counterparts.

The difference in the choice of employment sectors might be expected to lead to much lower income for unofficial rural migrants but this is not the case, at least for monthly cash earnings. Overall, rural migrants earn only slightly less than local inhabitants. Hourly earnings are significantly lower, but migrants work on average six days a week against five for local staff. Unofficial urban migrants, however, earn considerably more than unofficial rural migrants. There is some controversy about whether this difference in hourly earnings reflects discrimination or individual endowments (Herd *et al.*, 2010).

Table 6.6. **Employment status and earnings of urban workers**

2005

	Contract status			Monthly earnings			Hourly earnings		
	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant	Local	Unofficial rural migrant	Unofficial urban migrant
	Share of total			CNY per month			CNY per hour		
Employer	0.03	0.05	0.09	–	–	–	–	–	–
Household worker	0.02	0.03	0.03	–	–	–	–	–	–
All below	0.95	0.92	0.88	1 058	973	1 527	6.12	4.61	8.25
Self-employed	**0.13**	**0.19**	**0.17**	**848**	**982**	**1 231**	**4.23**	**4.57**	**6.11**
All employees with contract	0.51	0.26	0.38	1 188	1 100	1 905	7.04	5.38	10.62
All employees	0.82	0.73	0.71	1 079	958	1 542	6.24	4.80	8.87
Long-term contract	**0.34**	**0.01**	**0.07**	**–**	**–**	**–**	**–**	**–**	**–**
Flexible	**0.48**	**0.72**	**0.64**	**–**	**–**	**–**	**–**	**–**	**–**
Short-term contract	0.17	0.25	0.31	–	–	–	–	–	–
No contract	0.31	0.47	0.33	902	878	1 133	5.19	4.07	5.92

Source: 5% random drawing of the 2005 1% Census in Gagnon *et al.* (2009).

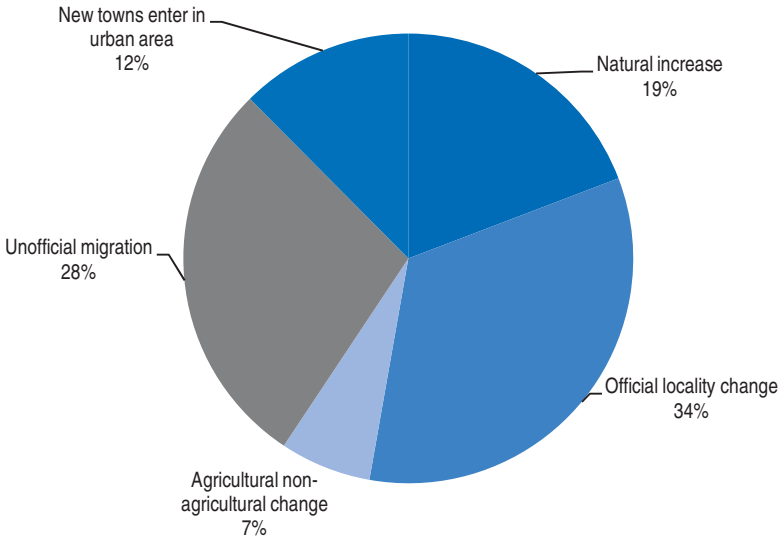
It is not just rural migrants who suffer from differential treatment in urban areas. The barriers to migration mean that even people who live in smaller cities with lower earning opportunities are unable to move to take advantage of higher wages elsewhere. Chapter 5 has shown that wage differences across cities in the same province are much higher than in OECD countries. These differences cannot be explained by the employees' endowments (Frijters *et al.*, 2009). This suggests that the restrictions on migration engendered by the registration system result in significant losses of economic efficiency not just for rural migrants, the usual focus for policy interest, but also for city dwellers who face barriers to moving to other cities (or even across districts within a large city) where their skills would be better rewarded.

Official rural migrants in the urban labour market

Nearly all discussion of rural-to-urban migration focuses on unofficial migration, but over time official migration from rural to urban areas has been larger. Official conversion from rural to urban status is granted by various government departments and concerns mainly university students, communist party cadres and people leaving the military. The number that obtains such official permission to move is low each year, at 0.7% of the rural population. Over several decades, though, the stock accumulates and had grown to more than 100 million by 2002 (Quheng and Gustafson, 2006). It has been the largest source of increase in the urban population since 1990 (Figure 6.6).

Official rural-to-urban migrants are markedly different from unofficial migrants. They are well integrated into the local economy and earn more than the average local resident, provided that they receive their urban *hukou* before the age of five. Later converts have more difficulty integrating. The people who received their *hukou* through a career route integrate better. Those who receive it through other routes (such as spouses who are granted a local *hukou*, rural people who receive a *hukou* in exchange for land or people who buy a *hukou*) fare less well. Given personal characteristics, official rural migrants earn 50% more than unofficial migrants, suggesting that an urban *hukou* is worth about 6.5 years of the average urban earnings. Indeed, in larger cities where *hukous* were sold in the 1990s,

Figure 6.6. **Sources of growth of the urban population**
Estimates for the period 1990 to 2007



Source: Urban population pre-2000: Shen (2006); Official conversion of rural to urban *hukou*: Wu and Treiman (2003); Conversion agricultural to non-agricultural *hukou*: Chan and Hu (2003); Urban population 2000 and after, *China Statistical Yearbook* (2008).

StatLink http://dx.doi.org/10.1787/778611311377

their price approached that level, though with a discount reflecting the uncertainty of future income streams.

Barriers facing unofficial migrants

Overall, the *hukou* system is still very much in force, acting as a major constraint on migration and hence on urbanisation. The continued use of *hukous* does not mean that there are legal barriers to movement any more. Migrants can now freely register as temporary urban residents and the right of the police to expel unofficial migrants was abolished in 2003. However, the main problem remains: migrants do not have the same social rights as local permanent residents, raising equity as well as efficiency issues.

Indeed, household surveys show that the decision to migrate is heavily influenced by social rights. Migrants settling in a nearby county-town can generally access social services. Accordingly, a person living close to a county-town where social services are available is much more likely to migrate there (Lee and Meng, 2009). Equally, the factors that generally inhibit migration (such as the absence of grandparents, the presence of a young child in the absence of a grandparent, higher age, poor health and the presence of an elderly parent) all cease to be significant when the probability of migrating to a nearby county-town with social services is considered. The removal of social service barriers has a much larger impact on female than male migration, presumably because of child care.

Migration as a key to urbanisation

China's migration policies restrict the growth of cities. Larger cities generate economies of scale thanks to specialisation, information spillover and clusters. Restricting city size through limiting social services to their inhabitants entails large costs in terms of forgone productivity. Au and Henderson (2006) for instance estimate that a decade ago, more than half of China's prefectural cities were considerably undersized and county-level

cities even more so. They estimated that each doubling of city size can add an extra 3–14% to city GDP over and above its proportional increase, through economies of scale and scope, a broadening of the labour market and the clustering of firms. The extent of the loss of productivity in Chinese cities was put in the range of 10 to 35% by Yusuf and Nabeshima (2006), depending on whether the cities were 30% or 50% of the optimum size. Such differences are appreciably greater than the scale differences found in Europe (Combes *et al.*, 2009). Metropolitan areas in China, as defined by Kamal-Chaoui *et al.* (2009), could also increase productivity levels by allowing a quicker reduction in the share of population engaged in agriculture, as these shares are particularly high for the lower-income areas.

Despite the remaining restrictions and barriers to movement to cities, China has been urbanising quickly. The right of migrants to have temporary registration in cities led to a marked acceleration in the pace of urbanisation in the decade ending in 2008, with urbanisation rising from 32% to nearly 46%. Such a pace of urbanisation has been markedly faster than that seen in the United States when a similar increase in urbanisation occurred in the twenty five year period between 1885 and 1910 (Craig and Weiss, 1998). The movement to 60% urbanisation took a further 35 years, whereas in China such a level may be reached in a further decade. The pace of urbanisation could even accelerate following the decision of the 2009 Central Economic Work Conference to relax restrictions on obtaining local registration in medium sized cities. This represents an easing of current policies which, since the issuance of a State Council notice in March 2001, restricted the transfer of rural to urban *hukous* just to small cities and towns. In these areas, migrants could transfer their *hukou* status if they had a "stable job or source of income" and a "stable place of residence" for over two years. Applicants who satisfied these criteria could obtain *hukou* registration in the given small city or town and receive education and other public services on equal terms with other local residents. In addition, migrants to small cities or towns are permitted to keep their land rights in their villages of origin. No details of the new policy were given, but a key element would be whether migrants in medium sized cities who obtained urban *hukous* would be allowed to keep their land-use rights in the countryside.

New labour laws

New labour laws were introduced in 2008 to create a more equal basis for co-operation between employers and employees in a market now dominated by private-sector employers. A minority of workers have been subjected to unjust practices by employers, notably by their refusal to pay wages on time. Long working hours are the norm in many industries, with very limited payments for overtime. Finally, only half of employees hold a written employment contract. The new labour laws are meant to address these problems. Some of them might ease when eventually the excess supply of rural labour dwindles, but this is a longer-term prospect.

General labour legislation and employment protection

The 1995 Labour Law covered all employers and employees and required the use of written labour contracts, adherence to social security, payment of wages on time and redundancy payments. In practice, this legislation was not enforced. Only slightly more than half of urban employees had labour contracts in 2005 (Table 6.7). The situation was much worse in some groups: nine out of ten migrant workers in domestic private

Table 6.7. **Employees without contracts by type of enterprise**

2005

	Total employees			No contract						
	Official urban residents	Unofficial rural migrants	Unofficial urban migrants	Official urban residents	Unofficial rural migrants	Unofficial urban migrants	Official urban residents	Unofficial rural migrants	Unofficial urban migrants	All urban residents
	Millions			Millions			Per cent			
Public sector	53.9	2.3	4.8	18.4	1.4	1.6	34.2	64.4	34.1	35.3
Government	27.0	0.5	1.6	13.3	0.3	0.6	49.4	64.4	37.2	49.0
State-held enterprise	27.0	1.8	3.2	5.1	1.2	1.0	18.9	64.4	32.5	22.8
Private sector	48.8	42.3	27.6	21.2	27.5	13.4	43.4	65.1	48.6	52.4
Collective enterprise	5.2	1.4	1.3	2.4	0.9	0.7	45.4	64.4	58.1	50.7
Family business	19.7	15.8	11.2	5.9	8.1	4.0	29.8	51.5	35.9	38.6
Private enterprise	12.4	15.3	10.3	9.0	13.6	6.7	72.5	89.0	65.4	77.2
Other work unit	4.1	5.9	3.2	1.6	2.9	1.2	37.8	49.5	37.2	42.8
Others	7.3	4.1	1.6	2.4	2.0	0.7	32.4	50.1	46.5	39.7
Total	102.7	44.6	32.4	39.6	29.0	15.1	38.6	65.0	46.5	46.6

Source: 2005 Sample Census as tabulated by Gagnon *et al.* (2009) and OECD calculations.

companies did not have written contracts and according to Census tabulations, even a large number of government employees did not have written contracts.

Three new laws came into force in January 2008:

- The Labour Contract Law makes it mandatory to use written contracts, which can be fixed-term, open-ended or for a specified project. The law instructs the Labour Inspectorate (under labour bureaus at county level and above) to oversee labour contracts and to respond to complaints from workers and trade unions. It also lays down a revised, sharpened and much more detailed version of the employment protection rules that had been briefly outlined in the 1995 Labour Law. In particular, it lays out rules for the payment of wages, sets out payments for terminating a labour contract unilaterally and specifies the conditions under which the contract can be terminated.
- The Law on Arbitration and Mediation in Labour Disputes specifies the procedures workers and trade unions can use to file complaints against employers in the arbitration tribunals or the courts.
- The Employment Promotion Law makes the government responsible for employment and for providing employment services, unemployment insurance, vocational training and active labour market programmes. It also rules out discrimination in employment, notably when it is based on gender, ethnicity, or disability, or on rural *versus* urban residence.

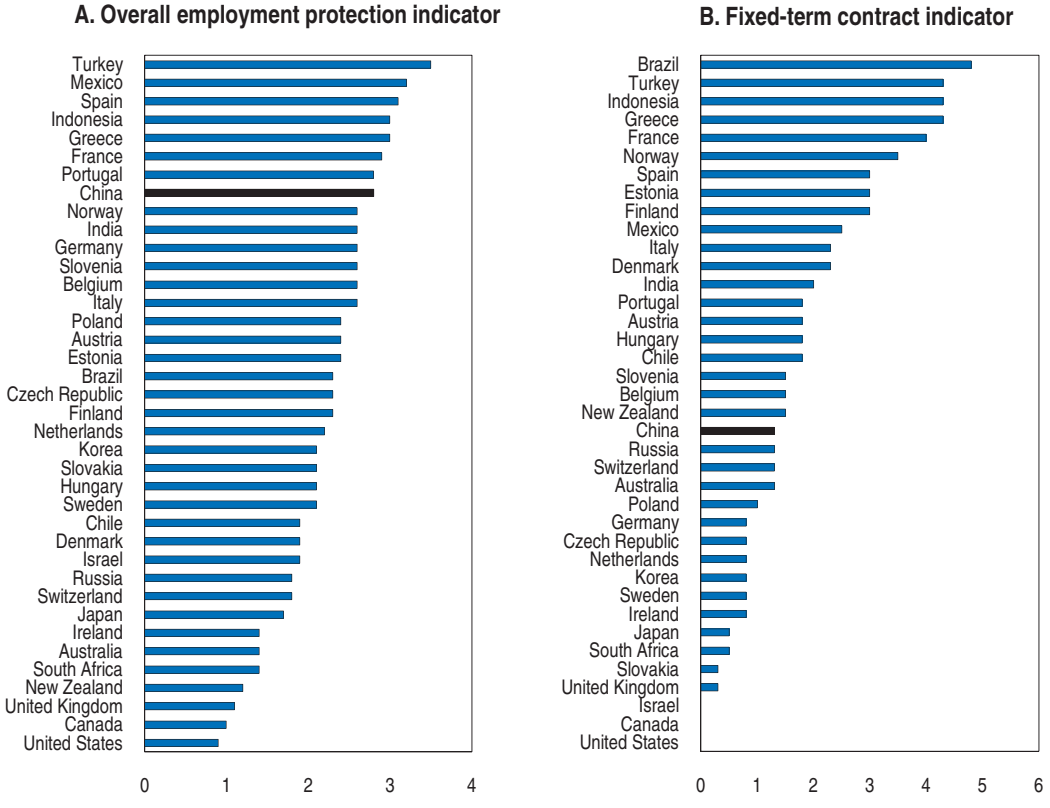
The Labour Contract Law makes major steps in improving the ability of workers to ensure that they are actually paid for work that has been undertaken. One of the most important improvements concerns underpayment of wages, which is addressed in two ways. First, broad obligations are imposed on employers to pay employees their remuneration on time, in full and in accordance with their contracts and employment law. Second, the new law prohibits specific strategies that employers have used to reduce their wage bill, such as forced overtime. Penalty rates for overtime must now be paid in accordance with the law. The new law prohibits bonded labour: an employer may not retain an employee's property or money as security. It also prevents an employer including

penalty clauses in employment contracts (Cooney *et al*, 2008). If no contract has been signed (as is the case for most private sector employees), the law specifies that after working for one month the person is deemed to have been employed on an indefinite contract.

The new law is particularly strict with procedural requirements to consult employees in the event of changes to work conditions and prescribes relatively high severance pay (one monthly wage per year of service, with some limitation for high wages, paid even at the end of fixed-term contracts). Translating this into the overall OECD indicator measuring the strictness of employment protection, China appears in the upper quintile of countries for which the indicator is compiled, along with Mexico, Turkey, Spain, France and Indonesia and only slightly above India (Figure 6.7, left panel). In the four above emerging economies, employment protection laws have until now been applicable mainly to large enterprises and those in state ownership, as in China until 1998. The Chinese government has emphasised that the current legislation does not represent a return to the pre-1998 regime when employment in SOEs was for life. It has stressed that there are 14 grounds on which an employee's contract can be terminated.

Figure 6.7. **Strictness of employment protection laws**

Synthetic OECD indicator, range 0 to 6



Source: Venn (2009).

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The rules governing fixed-term contracts are more liberal by comparison with other countries (Figure 6.7, right panel). Cumulated job durations for fixed contracts of up to ten years are allowed, though not with more than two consecutive contracts. However, the

change in law grandfathered previous employment with companies, requiring some to quickly move their staff to indefinite contracts. The ten-year rule was also in the previous labour law, but not the provision on the number of contracts. The possibility to use fixed-term contracts has facilitated the recruitment of migrants under formal conditions – a result that must be welcomed, although it cannot be excluded that their continued use will maintain the unequal treatment of local residents and unofficial rural migrants.

The private sector in China has little experience of indefinite labour contracts, which are almost exclusively found in government employment and SOEs. Nearly all private-sector labour contracts, where they exist, are for fixed terms. In OECD countries, the use of fixed-term contracts tends to be most common where employment protection laws are rigid – *e.g.* in Spain and Portugal, where it has also been associated with an undesirable segmentation of the labour market. Based on this experience, the OECD Reassessed Jobs Strategy recommended that future employment protection law reforms should aim primarily to make open-ended contracts more flexible. China has done the reverse, but without tightening the rules too much for fixed-term contracts. This suggests a desire to avoid placing too much of a burden on the private sector. Overall, the new Contract Law may turn out to be less restrictive than suggested by the overall indicator. Even so, the new law will certainly increase firms' administrative costs. They will need to be much more careful than in the past in documenting the treatment of workers and in separating the contents of labour contracts from the content of workplace regulations that are not covered by the law.

Enforcement of the new labour laws

As in many other countries, the key to the impact of the new law will be enforcement. This has been a weak spot in many areas of legal regulation of the economy, witness social security and the environment. The problems of enforcing law are systemic in China (Herd *et al.*, 2010) but are aggravated by the fact that there is no freedom of association for workers and all unions are under the All-China Federation of Trade Unions which is, effectively, controlled by the Communist Party.

Workers have always been able to demand redress for infringements of labour law through arbitration tribunals. After the enactment of the 1995 Labour Law, the number of cases brought for arbitration tripled between 1996 and 2001. Following the new labour laws, the number of cases almost doubled in 2008 (Herd *et al.*, 2010). In 2007, about two-thirds of the cases were linked to pay and social security questions (mainly wage arrears, overtime and failure to enrol an employee in social security). The remaining disputes were mainly about the terms, or non-existence, of a labour contract. Disputes about the employer ending a contact accounted for only 4% of cases. While the number of cases has continued to increase, by 2008 only two cases could be expected annually for each thousand employees. Moreover, most of the cases are settled in mediation although the proportion going to arbitration has increased since few private firms have mediation committees. Most cases now concern private-sector firms. On average over the decade to 2007, employees were successful in more than 85% of cases. However, while workers were successful in claims for wages amounting to CNY 6 billion in 2007, only a small portion of the total due was actually repaid to workers in 2007. Overall, enforcement to date has thus been very limited.

It is still too early to evaluate the impact of the new labour laws. The use of fixed-term contracts still seems the norm (Herd *et al.*, 2010). In the area of social security, the number

of participants in the basic pension scheme rose by 11% in the 18 months ending June 2009, a substantial increase in coverage due in part to the signing of new labour contracts that clearly indicate that an individual must be enrolled in social security. A survey of 300 workers in Shenzhen suggested that large employers with over 1 000 workers were signing contracts with nearly all of their employees, but only half of the employees of smaller domestically-owned companies had contracts and these employers used many devices to lessen the impact of the contracts when they were signed (Dagongzhe Migrant Worker Centre, 2009).

The new law was meant to lessen the incidence of wage arrears, where employers await the end of a contract before paying outstanding wages. At end-2008, 5.8% of migrant workers were owed wages, ranging from 4.4% of those who were returning to the same job to 13% for those whose firms had closed. This appears to be markedly lower than in 2005 when the same report showed the proportion was around 10% (Rural Migrant Survey, 2006 and 2009).

Wage setting

Minimum wages were first introduced in 1993, but new regulations were put in place in 2004 to cover part-time workers via a minimum hourly rate, and to increase the penalties for non-compliance (Baker and McKenzie, 2004). The minimum monthly wage is set on the assumption that the employee works a standard 40-hour week and the labour law specifies that extra hours should be paid at 150% of the normal hourly rate. Decisions to introduce a minimum wage and to determine its level are usually taken at prefecture level, with effect in all prefectural-level cities but not in county-level cities.

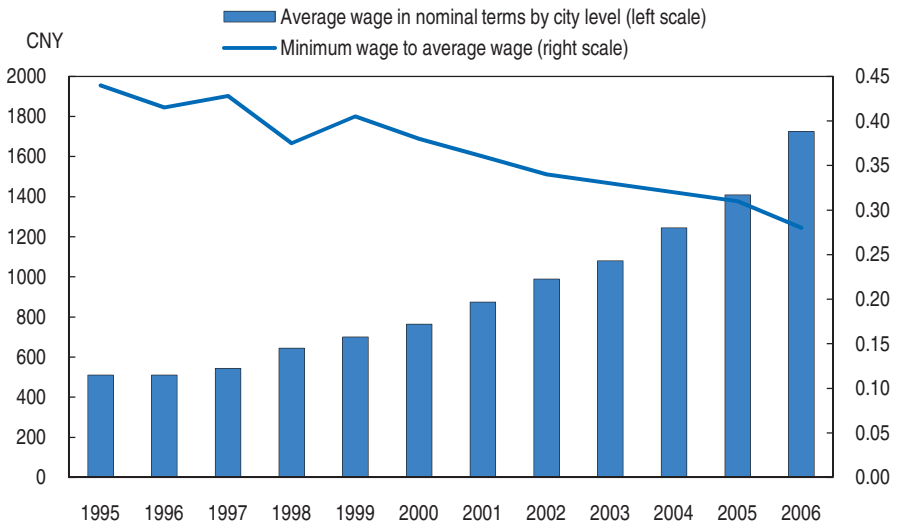
The regulation specifies that the minimum wage should be changed at least every two years, if necessary, and should take into account a range of local economic factors. It offers three methods that the local authorities can adopt. The first two are based on determining the basic living needs of an individual. The first takes a sample of local households and adjusts the income of the lowest group upwards by the amount needed to support elderly relatives and sets the minimum wage at a proportion of this level. The second sets the minimum wage at the point where food expenditure exceeds a certain proportion of income. The final method takes a fixed proportion of local wages of between 40% and 60% of local average wages, said to be the international norm. Most local authorities use the first two methods. Once the level is set, the adjustment methods also vary. In Shenzhen, for example, the increase was taken as the average of the price increase, the wage increase and the productivity increase (Liu and Wu, 1999).

No national data are available on the level of minimum wages, but for 253 prefectural cities, the minimum wage increased by only 6.5% per year between 1995 and 2006, about 4 percentage points less than the growth of average wages in these cities. As a result the minimum wage fell from 44% of average local wages in 1995 to 28% (Figure 6.8), a low level by international standards. Also, the ratio of the minimum wage to the average wage varied considerably across provinces (Herd *et al.*, 2010). Typically, it was lowest in the higher-wage provinces.

While the minimum wage exists on paper, there is little evidence that it is effectively enforced on the ground. While only one tenth of employees earned less than the monthly minimum wage in 2005 in five major cities, only just over a fifth of unofficial migrants were paid the minimum hourly wage (Table 6.8). Even about half of local workers were paid less than the hourly minimum wage.

Figure 6.8. **Minimum wages in cities relative to local average wages**

Wages are measured in 253 prefectural cities



Source: Du and Pan (2009).

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Table 6.8. **Coverage of minimum wage rate in five major cities**

	Monthly earnings		Coverage		Hourly earnings		Coverage	
	Unofficial migrants	Local *hukou*	Unofficial migrants	Local *hukou*	Unofficial migrants	Local *hukou*	Unofficial migrants	Local *hukou*
	CNY		Per cent		CNY		Per cent	
Men	1 140	1 282	88.6	88.9	4.4	7.0	26.3	52.0
Women	879	963	79.1	80.0	3.3	5.4	14.4	34.9
Total	1 022	1 144	84.4	85.0	3.9	6.3	21.1	44.6

Source: Du *et al.* (2009).

Wage guidelines

In parallel to minimum wages, the state has also established a system of wage guidelines. These were originally designed to regulate the pay of employees in SOEs, before public sector enterprise reform (Rawski, 2002). Despite the growing role of the market economy, the guidelines have continued to exist. They serve to give indicative guidance to firms about current wage levels in their districts for many occupations. These pay levels are determined through surveys. The system is meant to provide an external reference standard for the employers and employees. It was expected that this might improve the success rate of applying for jobs for labourers and so promote overall labour market efficiency. In 2006, 167 cities had established such systems (People's Republic of China, 2006). The mission statement of the Ministry of Human Resources and Social Security indicates it should draft the measures concerning the wages of enterprise employees; work out enterprise wage guidelines and wage income regulatory policies for industrial sectors and the income distribution policies for managers of the SOEs (MOLSS, 2004).This role was confirmed by the first session of 11th Party Congress in 2008 (Central Translation Bureau, 2008).

It is difficult to assess the impact of the guideline system but official statements suggest that in some cities it is more than purely indicative. For example,

the 2007 guidelines in Guangzhou had a fairly interventionist tone (China Law and Practice, 2007). In contrast, the Guangdong provincial labour and social security office publicized the 2009 baseline for wage growth as 7%, but specified that enterprises experiencing zero or negative growth, or enterprises with normal production and operation but poor cost-effectiveness, or enterprises experiencing instability in production and operation because of the financial crisis, could stop increasing wages temporarily. Likewise, when Shenzhen issued its 2009 guidelines in June, suggesting a pay cut of 3.8% for the average worker, the Municipal Office indicated that the guidelines were not mandatory (CSC staff, 2009).

The tax burden on formal employment

In China's urban labour markets, the "tax wedge" for an average-wage earner is estimated at around 32% of the total labour cost, or 41% of the wage (Box 6.4). It consists almost entirely of employer and employee contributions to social insurance. This figure, however, represents an approximate average for workers in China's urban formal enterprises and is not fully comparable with the tax wedges calculated for OECD countries, which refer to the entire labour market. Keeping this caveat in mind, the national average tax wedge in Chinese cities appears similar to those in Canada, Japan, the United Kingdom and the United States, and lower than in most of Continental Europe (Figure 6.9).

Box 6.4. **Income tax and social insurance contributions**

Income tax mainly concerns workers with above-average urban incomes. It is charged at progressive rates from 5 to 45%, which are applied to taxable income after deduction of a basic allowance of CNY 2 000 per month. For a person with an average income in 2008 (CNY 2 408), the marginal tax rate was thus 5% of CNY 408, corresponding to nearly 1% of total income.

Contribution rates to social insurance vary across provinces and cities. The national reference rate (and approximate average) is 40% of earnings, of which 29 percentage points are to be paid by the employer and 11 by the employee – and 21% for the self-employed who choose to participate. Contributions are charged on incomes of at least 60% of the average urban wage, but not for amounts in excess of 300% of this wage. The total rate is decomposed as follows:

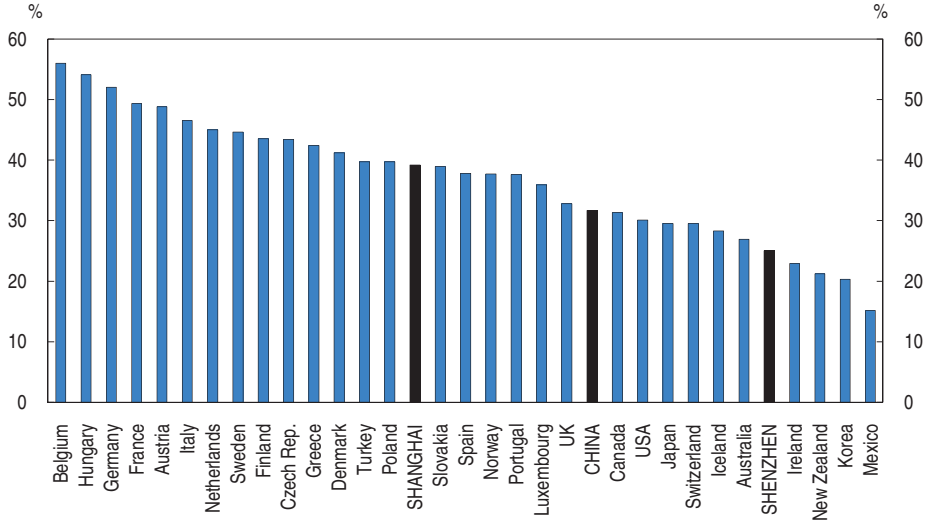
- Basic pensions: 20% for employers; 12% for the self-employed.
- Mandatory individual pension accounts: 8% for employees and the self-employed.
- Sickness and maternity: 6% for employers; 2% for employees.
- Work injuries: 1% for employers and the self-employed.
- Unemployment: 2% for employers; 1% for the employee.

In addition employers must pay contributions to a housing provident fund.

Following national recommendations, many localities use reduced contribution rates for rural migrants, and sometimes also for other groups such as the self-employed and SMEs. For example, the basic pension contribution may be suspended or substantially reduced, and migrants may be offered a cheaper sickness insurance covering only some basic treatments. Many localities do not allow migrants to participate in unemployment insurance.

Figure 6.9. **The estimated tax wedge in 2007**

Income tax plus employer and employee contributions as per cent of the labour cost, based on the local average wage



Source: OECD (2008) and OECD estimates for China and Chinese towns.

StatLink http://dx.doi.org/10.1787/778773011383

In China, the effective tax wedge varies substantially between regions. First, the use of a national income-tax scale with a standard tax-free allowance makes the effective taxation highly dependent on the local wage level. Local average wages are hardly taxed at all except in rich cities such as Shanghai and Shenzhen, where they can be expected to face a marginal income-tax rate of 15% and a total tax rate of about 5% of the wage. Second, social contribution rates are determined by provinces or cities, whose financing needs vary greatly, in particular with respect to their first-tier pension funds.

All told, the tax wedge can represent a substantial burden for business in the formal sector. However, the high taxation found in some of the economically most successful cities suggests that other advantages, such as a well-educated workforce, can compensate for the additional cost. This does not exclude that high taxation could have more negative effects on job creation in cities that do not share this comparative advantage.

Conclusions and recommendations

The labour market has proved exceptionally resilient in the face of three shocks: the policy-induced slowdown in early 2008, the new labour laws and, in late 2008, the fall in export demand. There was much initial concern about the fall in employment, especially for unofficial rural migrants in urban areas. However, the labour market appears to have cleared relatively quickly. By mid-2009, all but 4% of the migrants who returned home had come back to the cities according to official sources, and an extra 7 million migrants moved to cities in the first half of 2009. The unemployment rate amongst migrants was only 3% by June 2009, not least owing to a readiness to trade lower wage awards for employment. The government reacted swiftly to the crisis: the minimum wage rate was frozen in nearly all cities and training and vocational education programmes were introduced in the areas from which migrants originate. By Spring 2009, employment had started to increase anew, though not at the pace of earlier years.

The downturn has highlighted the problems faced by unofficial migrants, who are the first to lose their jobs. Sustaining rapid growth will required continued urbanisation, and

therefore further rural-to-urban migration. This in turn calls for greater integration of the rural and urban labour markets and for the removal of all barriers to the free flow of labour within the country. The government has already taken initiatives in this direction. There are now few restrictions on obtaining local non-agricultural status in many inland small towns, though there are still cases of people purchasing urban *hukous* in cities at the county level in order to attend senior secondary schools. In larger towns, migrants can now register as temporary residents but this does not give the same rights as a permanent residence permit. The government has also recognised that migrants are workers and not peasants and has insisted on the need to provide education for migrant children. But current educational regulations still require university admission examinations to be taken in the locality of the student's *hukou* and follow the local syllabus. This results in families being split with adverse consequences for the next generation. It adds to the discrimination caused by requiring a higher test score for rural applicants to university.

In this light, the government now needs to institute pilot programmes in major eastern cities making local registration available to all comers, education available to all without any restrictions (such as quotas) on the children of migrants and allowing migrant access to subsidised rental housing and local medical insurance (maternal death rate remain much higher for migrant mothers in urban areas). Extra grants from central or provincial governments may be needed to that effect, and such measures would have to be introduced in conjunction with other policy changes. Notably, land use rights in rural areas need to be made similar to those in urban areas, while ownership rights of rural land might need to be modified (Chapter 7).

The labour market in China is still in its infancy. Less than 20 years ago the human relations function in major enterprises still rested on rigid Communist Party-established rules, and returns to education and skills were low. This type of set-up is now only found in parts of government and public service units. But while the labour market has expanded, the habits of contract and law-based economic relations are not yet well established. Only half of all workers have written contracts and the new private entrepreneurs largely ignore labour market legislation, often not respecting minimum wage legislation, not paying wages on time or not contributing to the social security system.

The 2008 labour laws provide the basis for giving the employee more recourse to law in order to rectify some of the more egregious faults committed by the employer. Such a development is welcome. However, there remains some doubt about the laws' effectiveness. The power of labour inspectors is constrained by the legal framework for administrative penalties: the possible punishments are very limited and the fines involved so small that they do not represent a deterrent to illegal labour market activity. Moreover, there is a proliferation of official regulations and guidance notices, whose legal standing is often unclear. The powers of the labour inspectors need to be enhanced and a complete codification of all regulations ought to be available.

While the new labour contract law may seem very strict by the standards of the OECD indicator, this is somewhat misleading. The most severe conditions are for the termination of indefinite contracts, but only 20% of urban employees hold this type of contract and most of these work for the civil service or SOEs. The proportion of indefinite contracts does not appear to have risen since the enactment of the law. Fixed-term contracts come with relatively few restrictions in China, though only two such consecutive contracts are allowed. This restriction could usefully be eased without increasing the cumulated

allowable length of the total of such contracts. Furthermore, the new law's additional regulations for collective dismissals are mostly procedural. The indicator for a collective dismissal is slightly higher than in other countries but the new law imposes no additional delays on the employer in the event of a mass layoff.

Given existing labour practices in China, the new labour laws do not appear to be unduly onerous, given that they do not impose indefinite contracts and that most private sector employees currently have fixed-term contracts (if any). The new laws will certainly entail a heavier burden of record-keeping for human resource departments, which will need to have documented evidence to terminate employment contracts. They may also increase costs if they result in an increase in compliance with minimum wage, hours worked and social security legislation. The new laws do mean that individual employees will find it easier to try to obtain recognition of their rights, even if enforcing any resulting judgement may be difficult.

Bibliography

Au, C.-C. and J. Henderson (2006), "How Migration Restrictions Limit Agglomeration and Productivity in China", *Journal of Development Economics*, Vol. 80, No. 2.

Baker and McKenzie (2004), "New Rules on Minimum Wages in China", *Baker and McKenzie International*, Beijing, July.

Cai, F., Y. Du and C. Zhao (2007), "Regional Labour Market Integration since China's WTO Entry: Evidence from Household-level Data", *in* Garnaut, R. and L. Song, eds. (2007), *China: Linking Markets for Growth*, ANU Press, Asia Pacific Press and Social Sciences Academy Press.

Cai, F., D. Yang and W. Meiyan (2009), "Migration and Labor Mobility in China", *Human Development Research Paper* 2009/09, UNDP.

Central Translation Bureau (2008), "Report on the Work of the Government, Delivered at the First Session of the Eleventh National People's Congress", March, *www.cctb.net/english/centraldoc/200904230061.htm*.

Chan, K., T. Liu and Y. Yang (1999), "*Hukou* and Non-*Hukou* Migrations in China: Comparisons and Contrasts", *International Journal of Population Geography*, Vol. 5, No. 6.

Chan, K. and W. Buckingham (2008), "Is China Abolishing the Hukou System?", *The China Quarterly*, No. 195.

Chan, K. and L. Zhang (1999), "The *Hukou* System and Rural-Urban Migration in China: Processes and Changes", *The China Quarterly*, No. 160.

Chan, K. and Y. Hu (2003), "Urbanization in China in the 1990s: New Definition, Different Series, and Revised Trends", *The China Review*, Vol. 3, No. 2.

China Daily (2005), "Rural Dwellers to be Granted Urban Rights", 2 November.

China Law and Practice (2007), "Guangzhou Municipality, 2007 Enterprise Wage Guidelines", *China Law and Practice*, October.

Combes, P., G. Duranton, L. Gobillon, D. Puga, and S. Roux (2009), "The Productivity Advantages of Large Cities: Distinguishing Agglomeration from Firm Selection", *CEPR Discussion Papers*, No. 7191.

Cooney, S., S. Biddulph, L. Kungang and Y. Zhu (2008), "China's New Labour Contract Law: Responding to the Growing Complexity of Labour Relations in the PRC", *University of Melbourne*, Legal Studies Research Paper No. 317.

Craig L.A and T. Weiss (1998), *US Agricultural Workforce,1800-1900*, The Economic History Association.

CSC staff (2009), "China's Labor Income Growth Momentum Checked", *China Stakes*, Shanghai, 23 July, *www.chinastakes.com/2009/7/chinas-labor-income-growth-momentum-checked.html*.

Dagongzhe Migrant Worker Centre (2009), "New Ongoing Violations After the Implementation of Labour Contract Law in China", Shenzhen, 12 June.

Du, Y. and W. Pan (2009), "Minimum Wage Regulation in China and Its Applications to Migrant Workers in the Urban Labor Market", *China and World Economy*, Vol. 17, No. 2.

Fan, C. Cindy (2008), *China on the Move: Migration, the State, and the Household*, New York, *Routledge.*

Feng, N. (2009), Press conference of the Director-General of the Department of Population and Employment Statistics, National Bureau of Statistics, *Peoples' Daily*, 7 August.

Frijters, P., L. Lee and X. Meng (2009), "Jobs, Working Hours, and Remuneration Packages for Migrants and Urban Residents", in X. Meng, *et al. (*2009).

Gagnon, J., T. Xenogiani and C. Xing (2009), "Are *all* Migrants Really Worse Off in Urban Labour Markets? New Empirical Evidence from China", OECD Development Centre Working Paper No. 278.

Herd, R., V. Koen and A. Reutersward (2010), "China's Labour Market in Transition: Job Creation, Migration and Regulation", *OECD Economics Department Working Papers*, forthcoming.

IHLO (2004), "On Labour Shortages in China", *International Trade Union Movement Hong Kong Liaison Office*.

Kamal-Chaoui, L., E. Leeman and Z. Rufei (2009), "Urban Trends and Policy in China", *OECD Regional Development Working Papers*, No. 2009/1.

Lee, L. and X. Meng (2009), "Why Don't More Chinese Migrate from the Countryside? Institutional Constraints and the Migration Decision", in X. Meng *et al. (*2009).

Lewis, W. (1958), "Unlimited Labour: Further Notes,"*Manchester School of Economic and Social Studies*, Vol. XXVI, No. 1.

Liu, E. and J. Wu (1999), "Minimum Wage Systems", *Legislative Council Secretariat*, RP08/98-99 Research and Library Services Division, Hong Kong.

Meng, X., C. Manning, S. Li and T. Effendi (eds.) (2009), *The Great Migration: Rural-Urban Migration in China and Indonesia*, Edward Elgar Publishing Ltd.

Minami, R. (1968), "The Turning Point in the Japanese Economy", *Quarterly Journal of Economics*, Vol. 82, No. 3.

MOLSS (2004), "Brief Introduction of the MOLSS", *www.28issa-china.org.cn/gb/english/molss.htm*.

National Bureau of Statistics (2009), "Report on Migrant Workers using the Migrant Survey", March, *www.stats.gov.cn/tjfx/fxbg/t20090325_402547406.htm* (in Chinese).

National Bureau of Statistics (2009), *Rural Migrant Survey*, Supplement to the Rural Household Survey, National Bureau of Statistics.

OECD (2007), "Labour Markets in Brazil, China, India and Russia", *OECD Employment Outlook*, Paris.

OECD (2008), *Taxing Wages,* Paris.

People's Republic of China (2006), *Responses to the List of Questions Submitted by the United Nations Committee on the Elimination of Discrimination against Women with Regard to the Combined Fifth and Sixth Periodic Report of China*, United Nations CEDAW/C/CHN/Q/6, May.

Quheng, D. and B. Gustafsson (2006), "China's Lesser Known Migrants", IZA Discussion Paper No. 2152.

Rawski, T. (2002), "Will Investment Behavior Constrain China's Growth?", *China Economic Review*, Vol. 13, No. 4.

Research Office Project Team (2006), *Research Report on Rural Migrant Workers in China*, State Council, China Yanshi Press (in Chinese).

Reutersward, A. (2005), "Labour Protection in China: Challenges Facing Labour Offices and Social Insurance", *OECD Social Employment and Migration Working Papers*, No. 30.

Shen, J. (2006), "Estimating Urbanization Levels in Chinese Provinces in 1982-2000", *International Statistical Review*, Vol. 74, No. 1.

Venn D. (2009), "Legislation, Collective Bargaining and Enforcement: Updating the OECD Employment Protection Indicators", *OECD Social, Employment and Migration Working Papers*, No. 89.

Wang, Y. (2009), Press conference by Deputy Director of Job Promotion, Ministry of Human Resources and Social Security, 5 August, *Beijing Today*, 7 August and *Epoch Times*, 10 August.

Wu, X. and D. Treiman (2003), "The Household Registration System and Social Stratification in China: 1955-1996", California Center for Population Research, UCLA, Working Paper CCPR-006-03.

Yusuf, S. and K. Nabeshima (2006), *China's Development Priorities*, World Bank, Washington DC.

Chapter 7

Providing greater old-age security

China's population is set to age fast, owing to low fertility and rising life expectancy. With ongoing migration of the younger cohorts to urban areas the increase in the old-age dependency ratio will be more pronounced in rural than in urban areas. Very different pension arrangements exist across the country, with diverse and segmented systems in urban areas, belated retirement and low replacement ratios in rural areas, and special rules governing public sector pensions. Labour mobility is impeded by some of features of the current pension system, not least limited benefit portability. Urban pensions underwent parametric reform in 2005 and some geographical pooling was introduced more recently. Measures were also taken in 2005 to raise the coverage of the self-employed and those with flexible forms of employment. A new rural pension scheme was announced in mid-2009 and provisions to cover migrants were proposed. Some of the recent reforms added to the existing fragmentation, while others, notably those providing for greater geographical pooling, have only partly been implemented. Also, under current rules, effective replacement rates are fairly low and projected to decline further, both for rural and urban residents, which may be difficult to sustain with the elderly living less and less with their descendants. Furthermore, as the countryside ages, much of the additional burden will be shouldered by local governments with insufficient resources. These challenges can be addressed by gradually consolidating the various regimes, raising retirement ages and shifting more of the cost of rural pensions to the central government. Even if different schemes for different categories of workers were to persist, each should be unified over time, first provincially and then nationally, phasing out the urban-rural distinction.

China's population is set to age fast and urbanisation is likely to continue. In this context, improving income security for the elderly is key to strengthening the social safety net, alongside healthcare reform (Chapter 8). Very different pension arrangements currently exist in rural and in urban areas, and yet another set of rules governs public sector pensions. After spelling out the challenges implied by China's demographic trends, this chapter analyses the pension problems arising in rural areas and then those related to the urban old-age support system, including the arrangements for government employees. As in the labour market, mobility is impeded by some institutional features, not least limited benefit portability. Reforms have been launched in the rural and in the urban areas, which the chapter reviews and assesses.

The demographic and social context

Ageing in China: an overview

Many countries around the world see their populations age and China is no exception. This trend stems from different factors. Rapidly declining birth rates are a common one. Falls in infant and maternal mortality were initially important in advanced economies, and still are in lower-income countries. In more developed economies, growing life expectancy for people above 50 has been a main factor. In China, the fertility rate has dropped rapidly to below the OECD average. The number of children born per woman (total fertility rate – TFR – estimated as the sum of age-specific fertility rates) dropped markedly from as early as 1960. From 1971 onwards the fall was accentuated by the government policy inciting families to have "later, fewer and sparser" children and setting high age floors for a woman's first marriage, while some provinces also encouraged men to marry at an older age than allowed by law (Fang *et al.*, 2005). The one-child family policy was introduced in 1980 and brought the fertility rate down to 1.8 by 1990. Since then, the birth rate has reportedly edged lower, to under 1.5, *i.e.* below most high-income OECD countries. The reliability of the fertility data has been questioned, however. The 2002 Census' TFR of 1.2 was deemed implausible due to under-reporting of births by up to 20%. More likely, the TFR was then slightly below 1.5 (Retherford *et al.*, 2005). For China, though, the TFR is a misleading indicator of population sustainability due to the large imbalance between baby girls and boys. Sustainability depends on the total number of girls each woman gives birth to. Census data suggest that women were bearing only 0.66 girls over their lifetime in the late 1990s, well below the replacement figure of just over unity (Cai *et al.*, 2008).

Despite a fertility rate above unity, China's one-child policy seems to have been largely followed. In practice, only 35% of the population live in areas where families are limited to one child. More than half the population (54%) live in areas where two children are allowed if the first child is a girl or if there is a four-year interval between births. Elsewhere, there are no limits on family size. Calculations based on the family planning regulations applicable in different regions and for different ethnicities suggest that strict observance of the policy should generate a TFR of 1.47 (Gu *et al.*, 2007), similar to that found in recent

censuses and estimated by academic demographers. Somewhat surprisingly, the National Population and Family Planning Commission (2009) estimates that the TFR is 1.8 and this fertility rate is used in official population projections.

Life expectancy also increased rapidly over the past 50 years, particularly in the three decades to 1980, when infant mortality declined markedly. This phase was followed by a decrease in fertility, in line with international experience (Lee, 2003). China has not yet entered the third phase of ageing when the life expectancy of the elderly rises. Thus, while life expectancy at birth increased by five years between 1990 and 2006, it rose by only one year at age 70. This contrasts with the experience in advanced economies where life expectancy at birth has increased less than in China but that of the elderly has risen more.

These fertility and life expectancy changes have markedly altered the structure and growth rate of the Chinese population. In 1980, the structure was bottom-heavy, typical of a young and growing population. By 1990, the age structure was more mature, with a bulge in the working-age groups and a relatively small child population, foreshadowing population decline down the road.

Population projections hinge on uncertain estimates of fertility and mortality. The 2008 UN central population projections rest on a total fertility rate of 1.8, at the high end of existing estimates. These projections show the population reaching 1.4 billion in 2030 from the current 1.3 billion and declining only slightly by 2050. By contrast, projections based a normal distribution of fertility around the current level of 1.5 suggest that the population will be 1.25 billion in 2050, with the 95% probability range spanning 1.1 to 1.5 billion (Lutz *et al.*, 2007). In any event, China's low fertility is likely to result in a marked narrowing of the gap between the population of the United States and that of China: by 2080, China's population could be only 1.6 times as large as that of the United States, down from the current ratio of close to 4.5.

With low fertility and rising life expectancy, the old-age dependency ratio (defined as the ratio of the elderly to those aged 15 to 64) is projected to reach 0.24 in 2030, up from 0.11 in 2010.[1] By 2050, the dependency ratio may well exceed the 0.43 featuring in the low UN variant, even if the growth of the elderly population were to slacken. Over the 75-year horizon often used for pension planning, Lutz *et al.* (2007) put the probability that the dependency ratio would rise to 0.75 at 60%. Moreover, the proportion of the elderly over 80 will start to rise significantly after 2030.

Economic development in China has been accompanied by increased urbanisation. By 2007, 45% of the population lived in urban areas, which are now defined according to population density and contiguity with dense population areas, rather than administrative category of a locality. Urbanisation has not come about through natural expansion, which is limited by the strict application of the one-child policy in urban areas, but through migration, with a concentration on younger age-groups. While some migrants return home, they have tended to stay longer.

Migration of the young to urban areas is raising the proportion of the elderly in the rural population. The government has a target of achieving a 70% urbanisation rate by 2050 (National Population and Family Planning Commission, 2009). On this basis, the absolute increase in the number of elderly is set to be highest in urban areas, but with a very rapid growth in the working-age population, while the rural working-age population will fall. As a result, the rural old-age dependency ratio will reach 0.34 by 2030, as against 0.18 in the urban areas (Table 7.1). Zeng *et al.* (2008) suggest that, if urbanisation reaches 75%, the

Table 7.1. **Projections of elderly population and dependency ratios**

	Elderly population (65+)			Elderly dependency rate (as proportion of working population)			Elderly population as proportion of total population		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
	Millions			%			%		
2000	58	29	86	10.8	8.4	9.9	7.0	6.4	6.7
2030	122	113	235	34.1	18.0	23.9	20.2	13.0	15.7

Source: O'Neill and Scherbov (2006).

dependency ratio is likely to continue to rise rapidly in rural areas and may exceed 0.6 by 2050, *versus* just over 0.3 in urban areas. This rural dependency ratio would be similar to that expected on average in 2050 for OECD countries with low fertility rates (such as Germany, Italy and Japan), but without the institutional support system available in those countries. On the other hand, the dependency ratio in urban areas is likely to be similar to that in the United States.

Migrants' growing tendency to settle in cities has raised the number of children in rural areas relative to the population. The poor and costly provision of education for migrant children in cities is one reason why many are left behind in the countryside. They are looked after by grandparents or other relatives (47%) when the couple is in the city, or by the mother (25%) when the father is in the city. In 2005, 58 million children under 18 were left behind, up 28% from 2000 (All-China Women's Federation, 2007), putting a heavy burden on grandparents, who look after the bulk of left-behind children.

Living arrangements in urban and rural areas

These changes have implications for the future income and care of the elderly. In China it has been a tradition and moral obligation for younger adults (especially sons) to support their elderly parents. This tradition has generated extended family living arrangements common to the whole of East Asia. In China, it is reinforced by laws that state that the main form of support for the elderly should be that given by children and that the elderly have an enforceable right to that support. However, in recent years the traditional extended family arrangement has been undergoing a rapid transformation, in both urban and rural areas. The number of two-generation households has dropped sharply (Herd *et al.*, 2010). This change may be due to evolving social norms and values and rising incomes. Chinese, particularly the younger generation, increasingly care about their privacy and their personal life, finding it more convenient to live independently from their parents. Many have left their hometown to settle elsewhere. The development of a commercial housing market in the past decade has contributed to this trend.

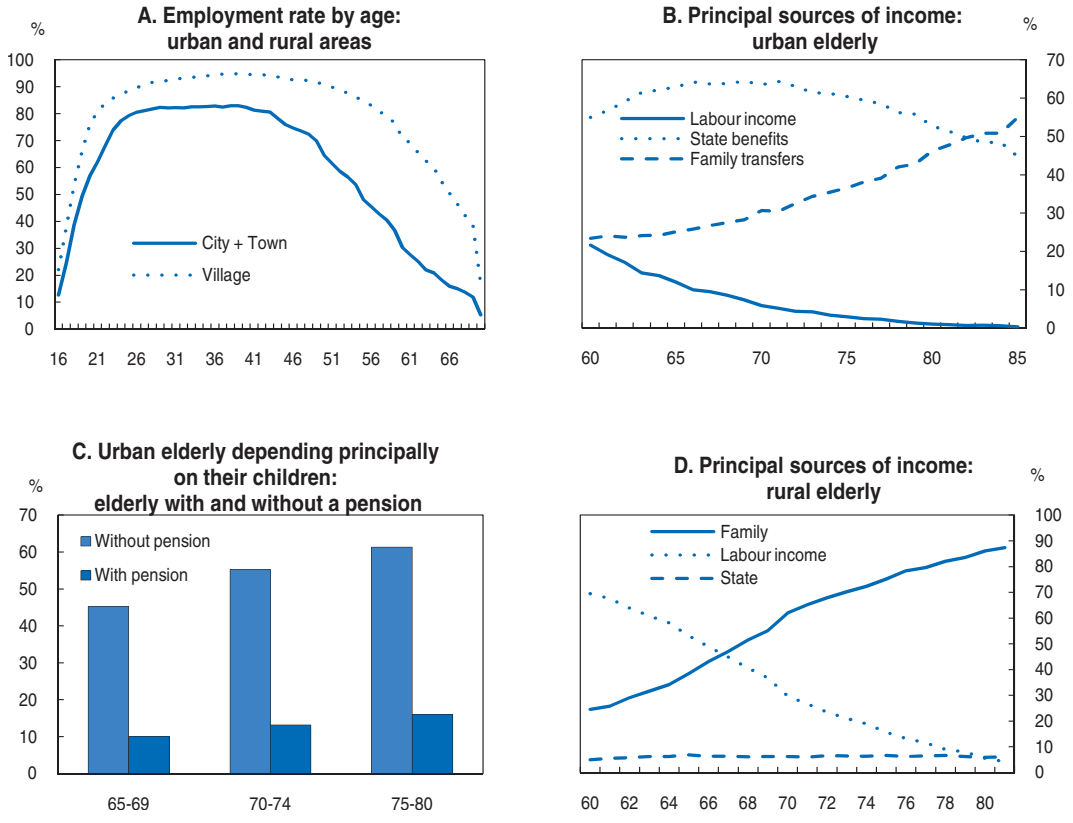
The living arrangements of the elderly have evolved accordingly. The number of single-generation elderly households has risen markedly across the country but the proportion living alone is about 10 percentage points higher in urban than in rural areas (Giles and Wang, 2007). The change started in the 1990s but has gained pace since (Herd *et al.*, 2010). However, as yet, there has not been a marked change in the proportion of elderly people living alone. Indeed, once elderly people, especially women, are left alone, they change domicile and usually live with their son. In 2000 in rural areas, over 80% of

women above 80 were living with their children and this proportion was only slightly lower in urban areas.

Sources of income support for the elderly

The support system for the elderly differs greatly between rural and urban areas. One stark difference is that in rural areas, the elderly continue to work much longer (Figure 7.1, panel A). The gap between the labour force participation rates (which are typically higher in rural than urban areas at working ages) widens even more beyond the age of 50. The fall in participation is led by that of women in urban areas. The average working life in rural areas is 10 years longer than in urban areas. Indeed, rural residents continue to work on their family smallholding until prevented by their health (Pang *et al.*, 2004; Benjamin *et al.*, 2003). In urban areas, however, the concept of a transition between work and retirement is well established. In the 60-64 age range, the employment rate has fallen to 25%, similar to that found in Hong Kong, China and Chinese Taipei but about half of that in a number of OECD countries (Table 7.2).

Figure 7.1. **Sources of income for the elderly by age**



Source: Panel A, B, D Tabulations of the 2005 Census. Panel C Tabulations of the 2006 China Health and Nutrition Survey.

StatLink http://dx.doi.org/10.1787/778808132546

The low urban employment rate appears to be linked to the prevalence of pensions in urban areas. Payments from the government are the main source of income for most Chinese urban elderly (Figure 7.1 panel B). The reliance on family support grows as the elderly age. Amongst the urban elderly with pensions, the proportion stating that their

Table 7.2. **Labour force participation rates by age**

	50 to 54	55 to 59	60 to 64	65+
China national	75.9	65.1	49.1	19.7
China rural	88.7	81.1	65.9	27.6
China urban	59.3	43.1	25.3	8.9
Hong Kong, China	65.2	47.8	28.1	6.9
Chinese Taipei	62.1	44.0	30.9	7.4
Average of following OECD countries	79.0	68.3	45.9	13.8
France	78.8	54.6	14.4	1.1
Japan	80.6	73.9	52.6	19.4
Korea	72.6	63.2	54.5	30.3
Sweden	84.3	79.5	59.6	10.1
United Kingdom	79.9	69.0	43.2	6.8
United States	77.9	69.8	51.0	14.9

Source: National Bureau of Statistics, 2005 Census data tabulations; Hong Kong, China Statistical Office; Statistical Office of Chinese Taipei; *OECD Employment Database*.

main source of income is their children is low and barely rises with age. However, for the fifth of the urban population without pensions, support by children is four times as pronounced and grows with age (Figure 7.1 panel C). Children's transfers to parents tend to be higher when parents have low incomes but not by enough to fully insure the elderly against the risk of low income in old age (Cai *et al*., 2006).

In rural areas, the nature of income support of the elderly is completely different. An elderly person's principal income source is either employment income or family support – the first declining with age and the second increasing (Figure 7.1, panel D). Support from a pension is practically non-existent – less than 4% of the rural elderly stated that a pension was their principal source of income in the 2005 Census. However, the prevalence of work after retirement is not any more immutable than the tradition of support by children. In rural Shanghai, pension provision has been relatively generous and as a result rural residents have become more aware of a possible divide between work and retirement, together with a changing view on the likelihood that children will support parents financially in their old age (Shi, 2008).

The income of the elderly

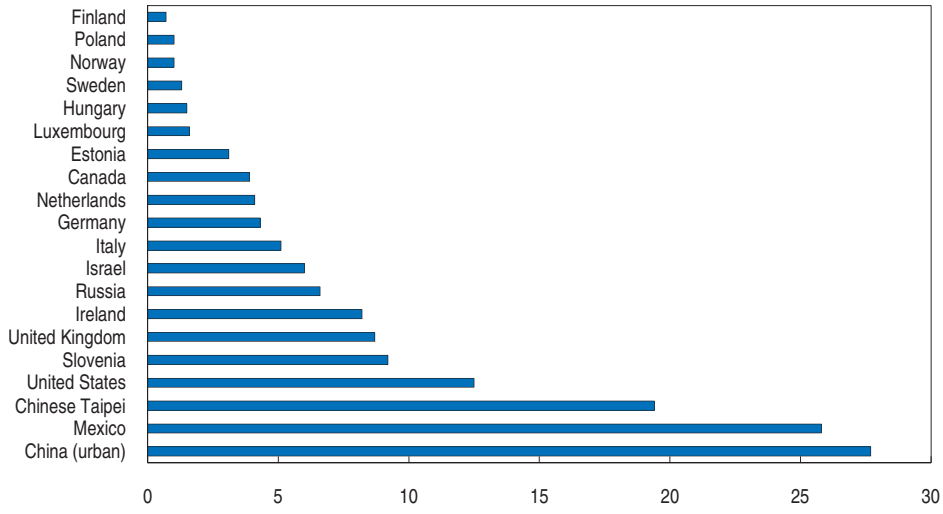
With many of the elderly still living in multi-generation households, a precise analysis of their income level is difficult. Household surveys only collect total household income, and few researchers have had access to the surveys' basic unit level data. The available data show the number of households in which there is an elderly person and the income of those households. On that basis, the absolute poverty rate (measured using the World Bank poverty line) of households including an elderly person is similar to that of the rural population overall, at around 13%, *versus* 5% or so in urban areas.

The picture of poverty in urban areas changes markedly if the incomes of the elderly living alone or as a couple are compared to the officially-determined minimum living standard or measured in relative rather than absolute terms. These minima vary across areas, not just as a function of local incomes but also according to the resources available for paying welfare benefits. On this basis, the poverty rate amongst the elderly rises to 13% and is almost 26% for single women living alone (Saunders, 2006). Using a relative measure of poverty (half of median income – a common benchmark in OECD countries), the

prevalence of low incomes rises to somewhat above those in Mexico and Chinese Taipei, with about one quarter of all couples below this income line (Figure 7.2). For single elderly people living alone, the proportion is even higher, with almost half of the relevant population having incomes below 50% of the median.

Figure 7.2. **Relative poverty amongst the elderly**

% of elderly with income below half of the median income



Source: Saunders (2007).

StatLink http://dx.doi.org/10.1787/778808442124

The elderly are starting to view poverty in relative rather than absolute terms. The 2005 China Health and Nutrition Survey shows that in rural areas, the proportion of the elderly considering that their income was inadequate was almost the same as the proportion of those in absolute poverty. However, in urban areas, where hardly anybody is below the absolute poverty line of $1.25 per day in 2005 PPP dollars, the proportion of the elderly feeling they are poor is four times greater than the share of the poor measured using the higher absolute poverty benchmark of $2.50 per day. Even so, the proportion still appears to be lower than the proportion of the urban elderly with less than half of the median income.

Econometric evidence confirms this picture of the factors associated with poverty amongst the elderly (Table 7.3). A logistic equation was run to explain why individuals considered themselves in one of two categories (rich and very rich, or poor and very poor). These two categories are separated by a fifth, "average" category. The individual feelings were explained by a broad range of socio-economic and demographic variables linked to the health and medical insurance of the elderly. Overall, the results showed that the following characteristics made for feeling rich rather than poor: having a pension (most significantly); being in good health; not having to pay one's own medical expenses; living with one's children; in urban areas, having a male eldest child; being married rather than a widow or widower; having migrant children; being older; and being of Han ethnicity (sometimes). These results confirm the importance of improving the social safety net across the country and not just in rural areas (World Bank, 2009).

Table 7.3. **Odds ratios for feeling rich or poor in 2005**
Estimated from a logistic equation

	National		Urban		Rural	
	Odds ratio	Significance	Odds ratio	Significance	Odds ratio	Significance
Feel rich or very rich						
Male	1.142	***	1.275	***	1.105	*
Han ethnicity	1.150	***	1.188	*	–	–
Good health	0.599	***	0.672	***	0.543	***
Has a pension	2.096	***	1.444	***	2.795	***
Still working	–	–	–	–	–	–
Married	–	–	–	–	–	–
Lives with children	1.509	***	–		1.852	***
Self payment of medical treatment	0.647	***	0.611	***	0.678	***
Eldest child male	1.114	**	–	–	1.119	**
Child lives outside county	1.471	***	1.377	***	1.471	***
Age	1.142	***	1.275	***	1.105	*
	National		Urban		Rural	
Feel poor or very poor						
Male	–	–	–	–	–	–
Han ethnicity	–	–	–	–	–	–
Good health	1.833	***	1.468	***	1.956	***
Has a pension	0.318	***	0.302	***	0.269	***
Still working	1.395	***	–	–	1.468	–
Married	0.901	**	–	–	0.893	**
Lives with children	0.563	***	0.757	**	0.527	***
Self payment of medical treatment	1.576	***	1.848	***	1.502	***
Eldest child male	–	–	–	–	–	–
Child lives outside county	–	–	–	–	–	–
Age	0.993	***	–	–	0.992	***

Source: OECD estimates using the National Health and Nutrition Survey (2005), which covered 15 000 individuals in 2000. *significant at the 10% level, **at the 5% level, and ***at the 1% level; –, insignificant or not applicable. Odds ratio (+/–) means that the independent variable increases/decreases the log odds of the dependent variable.

Emerging challenges

In sum, a number of inter-related factors are likely to affect the well-being of the elderly over the next 50 years. Above all there is the impact of a major demographic transition. Current fertility rates point to a likely significant population decline if current family planning policies are not changed. Ageing will accelerate. Rapid urbanisation will bring its own problems. It will be difficult to keep migrants' pensions on a different basis to those with urban residence permits when a majority of urban habitants are likely to be migrants. In addition, it will be difficult to maintain existing family-based support systems in rural areas when the elderly are likely to be concentrated there. The emerging national pension arrangements will have to deal with these challenges and the rest of the chapter looks at how this might be achieved.

The rural old-age support system

As noted, rural pensions are those most in need of improvement if the government is to achieve its goal of a universal social security system by 2020. There is no single best method for proceeding in this area. Experience in other countries varies: some systems cover the whole rural population while others apply only to farmers. Running through the discussion of pensions in China is the difference between rural and urban citizens in the

provision of social security. A fundamental tenet of recent Chinese history was that the Revolution had rewarded peasants by transferring land to them. Urban workers were expected to share in the benefits of the Revolution through the provision of pensions.

Past attempts at building a rural pension scheme

Efforts to provide pensions to rural residents have had little momentum. A major barrier has been the entrenched view that land and family will provide for the economic safety of rural residents. The reality is changing rapidly, however: youth are leaving the land with the result that older people cannot maintain farms. At the same time, there is a need to raise agricultural productivity through consolidation of land holdings, while with urbanisation land is converted to non-agricultural use. Moreover, for land to provide security, ownership must be certain, which is not the case in China (Box 7.1).

Box 7.1. **Property rights in rural areas**

There is no private ownership of land in China. Land is owned by the state, in urban areas, or collectively by a village committee, in rural areas. In rural communities, farmers were first granted 15-year use-rights and then, under the 2002 Rural Land Contracting Law (RLCL), rights to 30 years for arable land and to 50 and 70 years for grazing and forest land, respectively. The 2007 Property Law further strengthens these rights by making the use-right a usufruct property right completely independent of the bare-owner provided the land is not damaged. The value of a 30-year rent-free lease is approximately two-thirds of the full value of the agricultural land, if the foregone rent is capitalised at a risk-free real interest rate of 3% and assuming that the real value of agricultural land does not rise over time.

After extensive debate, the 2007 Property Law did not give the holder of the use-right the power to offer it as collateral. This would have implied that, in the event of default, the use-right would revert to a person outside the village. This would conflict with the RLCL, which specifies that change in ownership of the use-right is the privilege of the village committee through major land reallocations every 30 years. In practice the frequency of such reallocations varies considerably across provinces and confidence in the new rules is not uniform.

Rural land can only be expropriated in the name of public interest by the State. Moreover, collectives are not allowed to own non-agricultural land (except for land used by enterprises registered in the village for public services or housing for village residents). As a result, any change of use requires that the State requisition land held by the collective. When that has occurred, the eventual user of the land applies for conversion of the land to non-agricultural use. If granted, the county government issues a compulsory purchase order. Any acquisition exceeding 35 hectares has to be approved by the State Council; below that threshold the provincial government gives approval. There is now a procedure for holding hearings before the expropriation decision is taken, but the law specifies that farmers need only be notified five days before the decision or hearing. Such a short delay makes the notification effectively a quit notice.

The amounts of compensation to be paid by the State for expropriated land are determined by the 1998 Land Management Act (LMA). The most important compensation payments are not made directly to the farmers but to the collective. It is then a decision of the village committee as to how to split the compensation between the naked-owner (itself) and the usufructuary. There is no legal guidance as to the amounts involved. The State Council has issued a number of policy guidelines but unlike laws these are not opposable in courts.

Box 7.1. **Property rights in rural areas** *(cont.)*

There is no definition of the public interest either in law or by the courts. Any individual or company can apply to the State to conduct land acquisition on its behalf. As a result, the collective owners of land generally receive only a fraction of its true value. A survey found 60% of land expropriations in certain areas to be for commercial uses (Zhu *et al.*, 2007). This represented a substantial increase from the 34% used for housing and commercial purposes in 2001 (Joint Investigating Group of the MLR, 2003). In surveys covering four cities in the eastern part of China, the total amount of payments of compensation under the land and resettlement categories paid to the village collective was less than 20% of the amount that the county or city government received from the sale of the non-agricultural land rights (China Land Survey Institute, 2005). The rules governing expropriation are beginning to change, however. Regulations in Guangdong province require that when a collective sells land for commercial use, the sale should be publicised and the price determined by negotiation or auction. When acquisition is genuinely for public interest purposes the LMA applies.

There have been attempts to organise rural pension schemes but they have failed to achieve the expected results. Regulations were promulgated in 1992 that allowed county governments to establish rural pension schemes. Administratively, the policy was a success. By 1997, nearly all counties and half of the townships had put in place the required administrative units. The scheme took the form of a voluntary savings account, the balance of which was converted to an annuity at age 60 at a uniform rate. No withdrawals from the account were allowed. The account paid a rate of interest of 8.8% compared to an inflation rate of 6.4% in 1992. Individuals were allowed complete flexibility in making payments. The local government guaranteed the pensions. This type of account has subsequently been used in nearly all the other pension systems that have been introduced.

This scheme, however, was not popular with the public (only 83 million people contributed at its peak), for several reasons: administrative costs were high, at nearly 29% of contributions, against a legal limit of 3% (ADB, 2002); contributions were used to finance local economic development projects; and some local governments tried to make the system compulsory. In 1997, an investigation requested by the State Council uncovered instances of fraud and showed that there were risks that local governments could not pay the pensions. It also documented that some local government officials had exaggerated the level of benefits and that some told participants benefits were guaranteed by the central government while telling the central government that they were self-supporting. The State Council recommended that the modalities of the rural scheme be rectified and that in higher-income areas liabilities be transferred to commercial companies. However, there was no agreement amongst ministries as to how the system should be changed. By 2007, the scheme still encompassed 52 million members spread across 90% of China's counties.

Pilot rural schemes

A number of new trial schemes were introduced around the country from 2003 onwards (Herd *et al.*, 2010). By end-2008, some 12 million people were covered by these schemes in 464 counties. In the richer coastal provinces, some of the pilot schemes offer relatively high benefits (Quad, 2009). These schemes are primarily designed to cover the

general rural population, particularly those rural residents whose main income source is farming. However, with rapid industrialisation and urbanisation, two new rural groups have emerged, with implications for the Chinese pension system: farmers who lost their land due to urbanisation and people who work locally in enterprises.

Farmers losing their land

Government policy has favoured rapid urbanisation, which has accelerated over the past decade. There are no official statistics of the number of people or households whose land has been taken and converted to non-agricultural land. One estimate is that between 1998 and 2006, households with about 2 million members lost their land each year, suggesting that 40 million people have lost land since 1988.[2] However, in 2005, only 4 million farmers had received social benefits as compensation for lost land rights (Guo, 2006).

The total compensation offered by the Land Management Act (Box 7.1) represents reasonable compensation for agricultural land, on average. If, for example, it is assumed that costs are about one third of the gross output value, then a payment of 13 times the gross output value of the land would compensate a farmer for the loss of a 30-year usufruct, with a real discount rate of 3% (Zou and Oskam, 2007; Whiting, 2008). This compares to the maximum normal compensation that is payable of 17 years gross output value. However, compensation only accrues very partially to the farmer. The bulk of the payment goes to the collective as payment for the loss of its land. Such an approach is adopted because the law does not recognise the concept of compensation for the loss of a land-use right. The owner is compensated for the structure through the provision of alternative housing but it need not necessarily be in the same area. There have been very few reported cases of compensating the holders for loss of urban land-use rights (Loh, 2004 and Fangwu, 2004). In addition, the collective may be able to negotiate with the property developer to obtain the full value of the land in non-agricultural use.

One compensation method is to share development profits among villagers. The local village committee either gives shares in the company that develops the farm property or invests the proceeds of the sale and distributes a dividend to villagers. This procedure has been adopted in a number of Guangdong villages that have, in effect, become urban areas but remain rural administratively. The dividends can be quite large in certain cases (Smart and Smart, 2001). However, those living in the village, but not registered there, do not receive dividends.

Farmers can also be compensated through the payment of social security pensions. However, local authorities are reluctant to do this as the cost of providing a pension can be five to six times greater than the compensation amount required by law (Ding, 2007).

Township social insurance schemes

Various reforms have been initiated by local governments to cover employees in local enterprises. The national government has encouraged local governments to experiment according to conditions in their own area. These schemes have tended to be established in villages and townships that are on the fringes of major cities or developed areas. In some cases, the areas are only rural in name. In the Shanghai pilot, there were a number of problems in implementing the system, including rural inhabitants who were already in the urban system and whose employers switched to the less expensive township system,

thereby reducing their benefits, and villagers who preferred to keep the benefits from well-off village collectives (Davies *et al.*, 2008).

Recent policy changes

In June 2009, the government launched a new rural pension scheme. It is voluntary in nature and will be introduced gradually throughout the country. By end-2009, 10% of all counties are to offer the scheme, rising to 50% in 2012, 80% in 2017 and complete coverage in 2020. The objective of the plan is to provide participants a pension equivalent to 25% of average per capita rural household income through a flat-rate non-contributory pension, plus a pension amounting to 10% of average household income in the area of the contributor, financed by individual contributions. The scheme features immediate payment of a pension to the elderly if their children pay contributions (Herd *et al.*, 2010).

This scheme raises a number of questions. The use of an individual account carries a risk that the final pension will not average either 10% of income over the contribution period or 10% of income in the area at retirement. Indeed, over the past decade, the rate of return on bank deposits and government bonds has been less than the growth of rural household incomes. Furthermore, the replacement rate is overstated by comparing it to average per capita household income. It would be better to compare it to the average income of the working-age members of the household which is, on average, 40% higher than average household per capita income. Taking this and the previous factor into consideration, the two pensions together seem likely to represent a replacement rate for an average rural working person of only 15%. In the end, the individual account part of the benefit is likely to need a large government subsidy. In addition, in the central provinces, nearly half of the flat-rate pension will be paid by the local governments (Herd *et al.*, 2010). Overall, the individual will only pay between 13% and 18% of the cost for the first participants in the scheme, depending on the discount rate that is used. The cost to local governments will likely fall mainly on the county authorities which currently have poor revenue bases and will be suffering from a declining labour force as migration continues in the future.

The chosen level of benefits for the rural pension scheme is also low relative to a number of other emerging countries. Most of them have in fact found it impossible to run voluntary contributory pension schemes in rural areas (Yang *et al.*, 2009). Hence, many have introduced flat-rate schemes funded from general taxation. Relative to these countries, the flat-rate part of the Chinese pension is low, as is the amount of public funds devoted to it (Table 7.4). On the assumption that the basic pension will be paid to every rural elderly person, the fiscal cost of the basic pension will amount to 0.18% of GDP in 2009. Part of the cost of the individual account pension will also fall on the government, putting the Chinese system in the middle of the range. Many countries, however, have held down the cost of the rural pension system through means-testing, which is not foreseen in China.

Despite its modest cost relative to GDP, the pension scheme will cover the whole country only by 2020. Comparing China's economic situation to that of OECD countries when they first introduced pensions for the rural population, it would seem that China could afford to go faster. The share of employment in agriculture is similar to that in the OECD countries that adopted rural pensions early on (Table 7.5). Moreover, in China the share of the agricultural and fishing sector in GDP is similar to that in the late adopters and

Table 7.4. **A comparison of rural social pensions across emerging countries**
Various years between 1999 and 2005

Country	Type of pension	Eligibility age	Monthly benefit (USD)	Cost (% of GDP)	Per capita GDP in 2006
South Africa	Means tested	65 (m) / 60 (w)	109	1.40	8 940
Brazil	Means tested	60 (m) / 55 (w)	140	0.90	8 700
Chile	Means tested	65	75	0.38	11 360
Argentina	Means tested	70	88	0.23	11 670
China (2009)	**Universal**	**60**	**6**	**0.22**	**5 968**
Bangladesh	Means tested	62	2	0.03	1 230
Vietnam	Means tested	60	6	0.02	2 310
India	Means tested	65	4	0.01	2 470

Source: Helpage International (2006), OECD.

Table 7.5. **Economic structures when rural social insurance was introduced**

	Date of introduction	Agricultural workforce	Agricultural value added	GDP per capita in year of introduction, constant 2005 prices, international $
		% of whole economy total		
Early adopters				
Portugal	1919	52.7	n.a.	1 958
Denmark	1891	44.9	37.0	2 778
Spain	1947	48.8	41.0	3 711
Sweden	1913	46.2	23.0	4 230
Greece	1961	55.3	23.0	6 527
United Kingdom	1946	5.1	7.0	6 543
Italy	1957	29.0	17.0	7 331
Late adopters				
France	1952	27.0	13.0	9 450
Germany	1957	13.4	7.0	9 523
Netherlands	1957	10.7	11.0	11 379
Belgium	1967	5.5	5.0	12 914
Ireland	1988	15.4	10.3	15 314
United States	1950	12.2	6.8	16 946
Memorandum				
China	2009	40.8	11.3	5 919

Source: GDP per capita: 1980 to the present, *World Development Indicators*, World Bank; prior to 1980, Maddison (2006); introduction of rural pensions: ADB (2007). United States: employment and primary GDP: Bureau of Labor Statistics and Bureau of Economic Affairs.

is well below that in the early adopters. Finally, per capita income in China in 2009 well exceeds that in OECD countries when they first introduced rural pensions.

Assessment

The need for a system to provide support for the rural elderly has become increasingly evident over the past decade and will become even more so as migration to the cities continues. The existing inter-generational support system for families may be more difficult to sustain as migrants become more settled and eventually stay permanently in cities. So far, migration has been a positive factor for the elderly: those with migrant children are more likely to consider themselves well-off. Even so, the lack of a pension does make rural people feel poor (Table 7.3).

The new programme to provide pensions to the elderly in rural areas is a major step forward. It is better designed than the previous rural system in that it offers strong

incentives to people with elderly parents to contribute, through the payment of pensions to the parents of those who contribute. The Shanxi pilot based on this incentive has generated almost complete coverage of those above 45, even though the county is extremely poor and contributions are high. The design of the system comes at the price of considerable fiscal incentives. The overall cost would seem to be manageable, but its distribution between the different levels of government remains a major problem. In particular, the eventual cost of guaranteeing the payment from the individual accounts will fall on the local authorities, which is the level of government with the least fiscal resources.

Even if pooling at the provincial level were adopted, there are significant problems of equity with the new rural pension scheme due to the split of financing responsibilities between the different parties. A net present value analysis suggests that provincial and local governments in central regions of the country will bear more than half of the lifetime cost of the total scheme (including individual accounts) during the lifetime of the first generation of participants.

There is a paradox in introducing a scheme to help the less-well off in society when more than half of its cost will have to be borne by the least well-off governments and citizens. Moreover, even within provinces redistribution will be limited both because the most progressive tax (that on income) is allocated to the central government and the contributions to the rural pension scheme are flat rate. The situation will be even worse over the long term if provinces pass the burden to counties, which have the least financial resources. This situation contrasts markedly to that in the United States when social security was widened to include farmers. Then, the directors of social assistance in the poorer rural states testified of the growing burden of social welfare to the elderly (Finegold, 1988). The federal government became entirely responsible for the rural pension scheme, leading to significant transfers to the poorer states and counties. Against this backdrop, the financing of rural pensions in China should be progressively transferred to central government during the roll-out period.

A second argument for centralisation of finance is that the burden of ageing is going to fall excessively on rural areas. Urban areas will benefit from largely permanent migration. The cities will benefit from a young labour force, while rural areas will be left with a steadily increasing dependency ratio.

A further problem is the coexistence of different pension systems in rural areas: for all residents, for expropriated farmers and for employees of enterprises in administratively rural areas.[3] The method for compensating the expropriated farmers by granting of pensions is being reviewed. One proposal is that all compensation for land should be paid into the individual account. This is an excessively rigorous requirement. Compensation for the loss of land-use rights should reflect the discounted value of the right to use the land (*i.e.* the rent) as well as the loss of labour income. Farmers may prefer to use the compensation to move to a new location or to establish a business. Hence, land compensation should flow directly to the farmer, with the village collective only collecting the development value and the farmer being free to use the compensation as needed.

The urban old-age support system

China's national urban pension system was put in place in 1951. This enterprise-based system lasted until the mid-1990s, when the burden on companies became too large, given the competitive pressures they faced and the consequent need for downsizing. By 1997, in

Liaoning province for example, a centre of heavy industry, over one-quarter of SOEs were no longer paying pensions to their former employees (Hurst and O'Brien, 2002). The government therefore introduced a new pension system that shifted the responsibility for pensions from the employees' enterprise to the local government.

The new system did not change the very low retirement ages of the previous one and set the contribution rate at the high level of 28% of an individual's standard wage, of which 20 percentage points were paid by the employer and 8 by the employee. The retirement age for all men was 60, while it was 50 or 55 for women depending on whether they were workers or managers. For those working in dangerous and hazardous industries the retirement age could be up to five years earlier. Based on a sample of seven provinces and municipalities, the effective retirement age appears to be 53 for men and women taken together (Sin, 2005).

The new system featured a different method of calculating the level of social security pensions, with provisions for grandfathering previously-acquired pension rights. The major innovation was to split the pension into two components: a redistributive one, based on the average wage in the area where the employee worked, and an individualised one related to the employee's career-average earnings. The first component was meant to provide a pension of 20% of final earnings for the average worker after 35 years of work (corresponding to an accrual rate of 0.57% per year). The second component was known as an individual account. A record was kept of the contributions of each employee and of the employer. Over time, these contributions were to be revalued by the rate of interest on one-year bank deposits. On retirement, a monthly pension was paid equivalent to the revalued contributions divided by 120. Each pension payment was debited from the individual's account. When the balance was zero, the government continued to pay the pension. Provided that interest rates were equal to the growth of average earnings, this part of the system was designed to generate a replacement rate of 38.5% of earnings. Thus, together with the first 20% component, the overall target replacement rate for the average earner was set at 58.5% of average earnings on retirement.

Originally, the plan called for the contributions to the individual accounts to be invested in bank deposits or government securities. However, the contributions were used to pay current pensions, giving rise to the phenomenon of "empty accounts". In reality, though, the accounts were backed by an explicit promise of the government to pay the pensions. Various initiatives have been taken over the past decade to partially prefund the individual account pension liability, given that full funding had proved too costly to implement initially (see below).

Parametric reform in 2005

The method of calculating the pension was changed in 2005 but the overall contribution rate and the retirement age remained unchanged. The system now has three components. The *first* is a flat rate pension that is related to the average wage in the area where the employee works. The importance of this component was slightly reduced, making the system slightly less redistributive. The *second* newly introduced component relates an individual's pensions to his lifetime average earnings, revalued by the growth of average earnings in the area where the employee worked. The *third* component is also based on the lifetime average earnings of an individual, but in this component the earnings are revalued by the rate of interest on one-year bank deposits. This last component of the system is called an "individual account". In effect, it is very similar to the second

component of the pension, especially as the balance of the account is generally a book entry rather than representing an investment in financial assets. Overall, the first two components are designed to give a replacement rate of 35% for the average worker, while the government projects a replacement rate of 24.2% for the third component. This level of pension from the third component will only be achieved if the bank deposit rate equals the rate of growth of average earnings. Given the expected strong growth of wages in the next decade such a development seems unlikely.

The reform was introduced because of the realisation that the "individual account" part of the previous system would not deliver an adequate pension. The revaluation factor (the bank deposit rate) was systematically below the average growth of earnings, leading to a falling replacement rate from this component of the system. The reform reduced the weight of this component in the total pension, making for a slower decline in the replacement rate at retirement than under the 1998 system. After retirement, there is no legal formula determining the size of pension increases but pensions generally have been increased by between 40% and 60% of the growth in average earnings.

Geographic pooling of pension expenditure

While the rules described above may give the impression that there is a national social security pension policy, this is not the case. The Ministry of Human Resources and Social Security (MOHRSS) sets national guidelines that are implemented locally. Shifting the responsibility for pensions from enterprises to municipal authorities gave rise to thousands of separate pension systems, each with its own contribution rates. There has been some consolidation, but by end-2008 there were still around 1 000 separate regimes. At present arrangements for transferring contributions between regimes are limited to people who move from government employment to the urban enterprise system. Consequently, movement between schemes can strongly affect a person's pension entitlements.

In September 2007, the MOHRSS instructed provinces to implement a provincial system for sharing revenue and expenditure (known as provincial pooling). By end-2008, however, only 38% of the contributors were covered by provincial pooling. Even in those cases, administrative and financial arrangements vary within the province. With provincial pooling, a uniform contribution rate applies throughout the province. In many cases, benefit rules are then also uniform, with the balance between revenue and expenditure accruing to the provincial government and use of the province-wide average wage to determine the flat-rate pension. In some provinces, however, the wage rate in the locality of the individual continues to be used. Most of the provincial pooling takes place in the west of the country (*i.e.* in areas dependent on central government transfers) or in city provinces (with a limited geographic areas). The other method of provincial pooling is that local government remains responsible for collection and payment, but surpluses are remitted to the province. Deficits are shared between levels of government (Herd *et al.*, 2010).

While provincial pooling helps reduce disparities within provinces, pension systems vary considerably across provinces. The differences pertain to the average contribution rate, the replacement rate and the extent to which the governments and municipalities are accumulating surpluses in their pension accounts. Nationally, the average contribution rate was estimated at only 18.6% in 2003, against a theoretical level of 28%.[4]

The variation in contribution rates mainly reflects demographic differences across provinces. In 2003, the effective contribution rate (measured as the ratio of the average contribution to the average wage) varied by a factor of more than 2 to 1. The lowest rates were in coastal areas such as Guangdong and Zhejiang, where the workforce is mostly young and the dependency rate relatively low (Herd *et al.*, 2010). One town (Dongguan, where one-third of the world's toys are produced) has 300 contributors per retiree. At the other end of the spectrum, Shanghai had 1.8 workers per retiree. The provinces with relatively low dependency ratios have relatively high pension levels, even though the pension system parameters are set nationally. Hence, not only do local pensions systems present varying contribution rates, but they also appear to adapt pension levels to local conditions (Herd *et al.*, 2010). However, this relationship tends to be asymmetric: provinces with favourable demographics tend not to raise benefits but to increase savings, whereas those with unfavourable demographics lower benefits. As a result, just five provinces accounted for half of the national surplus. By contrast, almost two-thirds of the provinces had deficits which had to be made up by transfers from central government, rather than by cross-provincial transfers.

Pre-funding of pension benefits

The introduction of individual accounts in 1997 was meant to link pensions to the performance of the assets acquired with the contributions to the individual accounts. As noted, however, these contributions were generally treated as government receipts available for spending. Nonetheless, the lifetime contributions were revalued using the interest rate on bank deposits. The failure to invest money channelled to the individual accounts has sparked controversy about "empty" individual accounts and whether the government should set aside funds to purchase bank deposits and government securities for these accounts. At end-2008, 13 provinces, representing about 45% of the contribution base, had made some effort to create separate investment structures to hold assets for the individual accounts. The funding was split between the provincial and the central government, depending on the income level of the province. The amount of cash transferred to the separate investment accounts was scaled down over time. Overall, the current plans suggest that about 0.5% of the GDP of the 13 provinces has been set aside for these accounts.

Another attempt at pre-funding pensions was made in 2000. The government created the National Social Security Fund (NSSF) with the objective of accumulating assets to be used later to pay pensions (Table 7.6). The Fund has received a total transfer of CNY 285 billion from the government since its creation (an average of 0.2% of GDP per year). In addition, the profits of the national lottery and the amounts set aside by the central government and nine provincial governments to fund the individual accounts are also transferred to the NSSF. Finally, the Fund benefited from being able to purchase shares in the major three commercial banks before their sale on the stock market at a very substantial discount. The Fund does not make extensive disclosure of its performance. By end-2008, the NSSF assets were equivalent to 1.9% of GDP. In addition, the balances of local urban enterprise employee schemes amounted to 3.3% of GDP in 2008.

Since July 2009, the owners of all the SOEs listed on the stock market since 2006 have to surrender 10% of the equity of the listed companies to the NSSF. Problems have arisen with this measure since sometimes the government does not own 100% of these companies. In such cases, minority shareholders will need to be compensated. Overall, this

Table 7.6. **Income and assets of Social Security funds**

CNY and %

	2000	2001	2002	2003	2004	2005	2006	2007	2008
National Social Security Fund									
Total transfers from government	20.0	59.5	41.6	4.9	27.8	22.9	62.7	46.0	n.a
Budgetary transfer from central government	20.0	47.3	30.4	0.0	17.1	10.0	10.0	10.0	n.a.
Transfer from sale of state shares	0.0	12.2	8.8	0.4	4.7	8.3	40.7	12.5	n.a.
Lottery income	0.0	0.0	2.4	4.5	6.0	4.6	7.4	8.3	n.a.
Individual account	0.0	0.0	0.0	0.0	0.0	0.0	4.6	15.2	n.a.
Investment income including realised gains	0.0	1.0	2.1	3.4	10.8	17.8	8.3	110.9	n.a.
Total income	20.0	60.5	43.7	8.3	38.6	40.7	71.0	156.9	n.a.
Assets	20.0	80.5	124.2	132.5	171.1	211.8	282.8	439.7	562.3
Assets as % of GDP	0.2	0.7	1.0	1.0	1.1	1.2	1.3	1.7	1.9
Local pension funds	76.1	81.9	124.4	176.5	249.9	350.7	486.9	675.8	993.1
Assets as % of GDP	0.8	0.7	1.0	1.3	1.6	1.9	2.3	2.6	3.3

Source: Annual Report of the National Social Security Fund and MOHRSS.

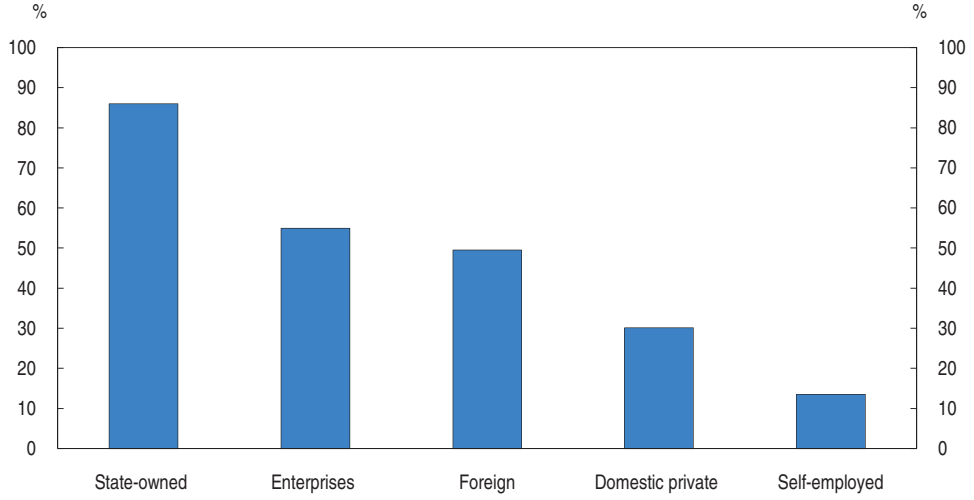
transfer will boost the assets of the NSSF by about CNY 64 billion, somewhat less than 10% of its current value. While this measure increases the assets of the NSSF, it does not improve the government's ability to deal with future pension payments as the shares were already state property. However, the income flow to the government may increase as it will receive the full amount of dividends paid by these companies, instead of only a portion (Chapter 3).

Problems with coverage

Even today, the origin of the urban pension system as a welfare system for SOEs is still clearly evident in the coverage of the system. Membership is very high amongst the employees of these enterprises, lower for other enterprises and almost non-existent for the self-employed (Figure 7.3).

Figure 7.3. **Coverage of the pension system in towns and cities**

% of employees with coverage by registration status



Source: 2005 Census tabulations.

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A further problem is that workers who have changed their place of residence from where they were born are largely excluded from social insurance, including pensions. Two factors are at work to reduce the social coverage of these "migrant" workers. First, migrants are concentrated amongst the self-employed and in flexible forms of employment with no labour contract (informal employment). Even local people in this type of employment have lower coverage (Table 7.7). For migrants, coverage in this category is almost non-existent. As the current pension contributions are above the rate that would be needed to pay a pension to the current generation of workers, the self-employed prefer to avoid this form of taxation if possible. Moreover, the fragmented system means that they lose benefits if they move between cities. Even amongst migrants in formal employment, coverage is lower, as migrants are under-represented in SOEs. Other employers often try to avoid paying contributions for their employees. This under-representation of migrants is found in most types of social insurance, except coverage for industrial injuries. Overall, in 2008, only 17% of migrant workers in urban areas were covered by the pension system, according to a MOHRSS survey.

Table 7.7. **Social coverage for migrant workers**
2003, Informal and formal sectors in five cities, in per cent

	Informal employment		Formal employment	
	Locals	Migrants	Locals	Migrants
Pension	54.8	2.1	82.1	29.0
Unemployment insurance	12.6	0.4	39.7	17.8
Accident insurance	6.0	1.2	29.1	31.7
Health insurance	32.6	1.3	71.4	29.7

Source: Cai *et al.* (2008).

The urban employee pension system had an estimated coverage rate of about 61% in 2007, up from 48% in 1998 (Herd *et al.*, 2010). Many employers take steps to avoid paying contributions because of their high level. In addition to failing to declare the correct number of employees, or the correct wage bill, local authorities often allow newly established firms to decide which staff to include in the social system, or allow them to declare employees as having self-employed status with a lower contribution rate. The degree of accounting and administrative control over the social insurance agencies themselves could also be improved: there have been cases of agencies being bribed to lower contributions, delaying payments to government accounts in order to gain interest for their own budget, making investments in assets that are not permitted or abetting local government in illegal use of the funds (Wang, 2009).

One reason for poor compliance has been the absence of a national social security law but this may be soon rectified. The legal base for social security rests on State Council decisions and MOHRSS administrative regulations. This makes it difficult to inflict sufficiently high penalties on non-compliant employers. The government has recently issued a new Social Security Law for consultation, which may overcome some of these problems. It will give the ability to impose penalties on enterprises that do not pay contributions and so should improve coverage of the system. However, while the law sets out the principle of a mix of individual accounts and other forms of pension, it does little to reduce uncertainty. In the tradition of Chinese lawmaking, it is very general. Nearly all the important elements for a pension system will be determined subsequently by

Ministerial decree. In addition, with respect to rural pensions it is exhortatory, setting unclear objectives. There is no mention of the structure of the system (the level of pooling or whether contribution rates and benefit adjustments can vary by province).

Initiatives to raise coverage

A number of initiatives have been introduced to try to improve participation among workers in the informal sector and portability. In 2005, the State Council issued a decision to improve the coverage of the self-employed and those with flexible forms of employment. A number of provinces implemented it, setting a flat contribution rate for this group of employees at 20% of the local average wage, with 8 percentage points being placed in an individual account. While this contribution rate is lower than for regular employees, those in flexible employment often earn less than the local average wage. As result, their effective contribution rate is higher. This may be one of the reasons why the coverage of self-employed remains low. Another reason is the lack of portability across pension systems. To address this problem, the government has suggested that when a person moves from one province to another, all pension-related records be transferred to the new province. The level of retirement benefits of movers would be calculated taking into account all of their contributory history, regardless of geographic location.

The MOHRSS has also proposed to create a separate pension system for migrant rural workers in urban areas (MOHRSS, 2009c). The key parameters would include a lower contribution rate for employees (4-8% of wages) and employers (12% of payroll). All contributions would be deposited in the migrant worker's individual account. When migrant workers moved between systems, pension records would be kept at their locality until their normal retirement age and all of the person's contributory history at different localities would be recognised when calculating the pension. However, if they retired in a rural area and joined the new rural pension system, pension accumulation would be transferred to the local rural insurance bureau and they would be entitled to the relevant benefits. If they retired in rural areas and did not join the new rural pension system, the funds in the individual accounts would be paid to the migrant workers as a lump sum.

Assessment of the reforms

The pension reform undertaken in 1997 lowered replacement rates and this fall is likely to continue under present rules. Indeed, prior to the reform, replacement rates were over 80% for enterprise employees. The stated objective of the reform was to lower replacement rates. This objective has more than been achieved with the ratio of the average pension to the average wage falling from 77% to 49% between 1990 and 2005. Two factors underpin this decline. First, the formula used to revalue pensions after retirement ensures that they increase much less rapidly than average wages. Secondly, the interest rate used to revalue the individual account has been less than wage growth. If the gap is five percentage points, then for men, it will halve the replacement rate at retirement, to 11.9% (Table 7.8). Overall, on this basis, the average replacement rate during retirement is likely to be only 31% for men, and even less for women. These calculations assume retirement at the official age, giving an average retirement age of 58 (after weighting men and women together). The fall in the replacement rate would be even larger if the average effective retirement age of 54 found in a sample of seven localities were used.[5]

The reforms have markedly lowered the pension wealth of individuals and probably raised the saving rate of urban households. According to one estimate, the 1997 reform cut

Table 7.8. **Replacement rate under various assumptions**
The impact of the wage-interest rate differential and less-than-full indexation, in %

	Pension from individual account			Basic pension	Basic pension plus individual account
	Interest rate = wage growth + 2	Interest rate = wage growth	Interest rate = wage growth – 5		Interest rate = wage growth – 5
	Replacement rate for a person earning the average wage				
Men					
On retirement	33.5	24.2	11.9	35.0	46.9
During retirement	23.9	17.3	8.5	25.0	33.5
Men and women					
On retirement	29.5	21.4	11.3	35.0	46.3
During retirement	21.0	15.2	8.1	25.0	33.1

Assumptions: A representative individual who survives to age 60 or 57 for men and women. During retirement real wage growth of 7% is assumed for 20 years and 3% thereafter. Inflation is assumed to be 2% and nominal pensions to grow at half the rate of nominal wages.
Source: OECD estimates.

the pension wealth of the youngest cohort in the labour force by 40% (Jin *et al.*, 2009). This estimate is likely to be on the low side in that it assumed that pensions would be indexed to wage growth and that the target replacement rate of nearly 60% would be achieved. Neither of these assumptions has proved realistic.

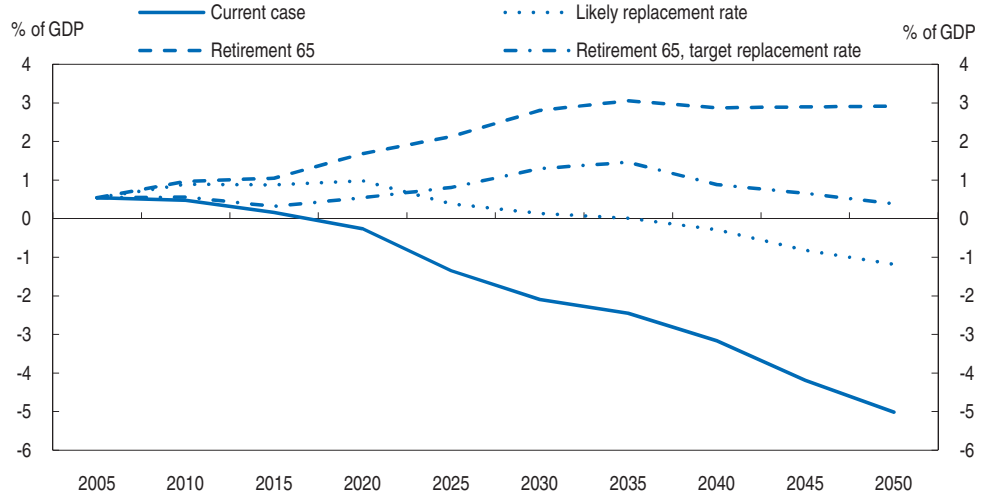
Projections of pension deficits

On the basis of the current urban enterprise employee pension system, a model of pension payments and contributions[6] suggests that the pensions of future retirees could only be paid with a significant transfer from the budget to the social security funds. This will be the case even if the urban population increases markedly. The official portrayal of the system maintains it will deliver a replacement rate of 60% at retirement. In fact, it might be only 45%, meaning that the average pension paid may be as low as 31% of the average wage by 2050. Even on this basis, the system may require transfers from the budget, although much smaller than if the target replacement rate were to be reached.

The system can be put on a sustainable basis by substantially raising the retirement age. The assessments presented below assume that the current average retirement age for men and women is 56, higher than the average of 53 at the end of the 1990s (which reflected widespread recourse to early retirement packages by state-owned companies). If the retirement age were raised to 65 – from the existing legal limits of 60 for men and 55 for women – the number of people of retirement age would fall by half over the next two decades and by another third further out into the future. As pension expenditure is likely to be of the order of 3% of GDP by 2050, such a change in entitlement would lower spending by between 1% and 1.5% of GDP, enough to ensure stability. Indeed, on this basis, it would be possible to raise the replacement ratio significantly (Figure 7.4).

The above projections do not separate out the individual accounts. Rather, the individual account and the pooling account are seen as one unit. This slightly understates expenditure since when the account holder dies the inheritors are entitled to the balance of an individual account. Apart from this, there is no impact on the projections from treating the individual account contributions as available to be used to pay pensions. If the individual accounts were to be ring-fenced, governmental financial assets would increase

Figure 7.4. **Simulation of pension deficits under different assumptions**



Source: OECD calculations using data and methods from Wang (2009) and Yi (2008).

StatLink http://dx.doi.org/10.1787/778875350206

but so would public debt – as the pensions would have to be financed by borrowed money instead of using the individual account contributions. If the fund balances were more actively managed and were able to obtain a real return of 5%, the pension system would become slightly more sustainable. By 2050, in the scenario with retirement at 65 and a replacement ratio of 60%, the end-period surplus would be almost stable and the ratio of assets to GDP would be stable.

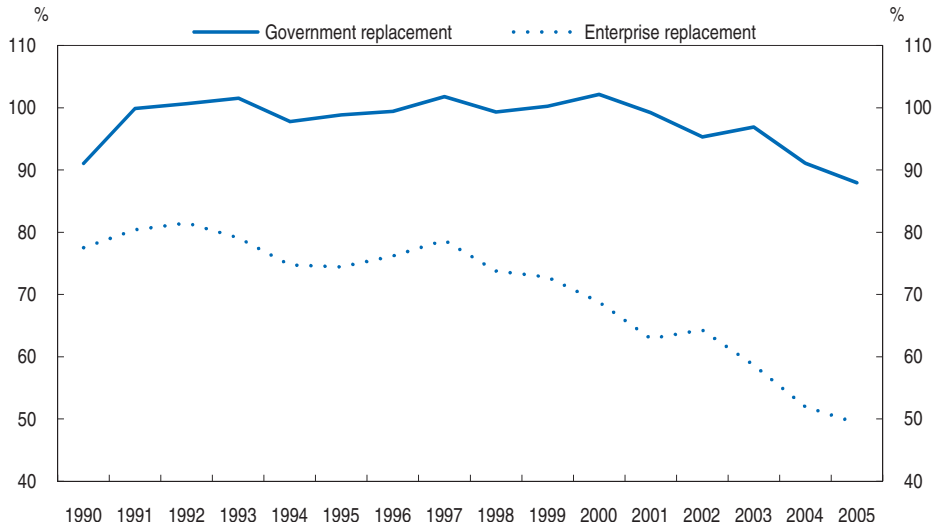
These projections need to be fine-tuned. More complete urban-rural population projections are required and the projections need to be tested for sensitivity to considerably lower fertility rates (as noted, the current UN projections assume a fertility rate well above that estimated by Chinese scholars). Even so, they do illustrate that with rapid urbanisation the current pay-as-you-go pensions system may be less stressed by ageing than many believe if the pension age is raised and institutional arrangements are put in place leading all of the growing number of urban residents to contribute to the pension system.

Government-employee pensions

When the enterprise-based pension system was transferred to local governments and benefit rates were reduced for newcomers, no similar action was taken for government employees. As a result, their replacement rate has not fallen in the same way as that of enterprise workers (Figure 7.5). Indeed, the schedule of the accrual rates is such as to incite early retirement with high replacement rates and no reduction for taking retirement before the age of 60, which is neither efficient nor equitable *vis-à-vis* other workers. Government employees fall into two groups: employees of state and party organs and employees of public service units. Most are in the latter category (27 million out of total government employment of 37 million) and are found mainly in the health, education and welfare sectors. The cost of the pensions of these groups has risen significantly and has reached 1% of GDP, almost half of the cost of the enterprise system despite covering less than one quarter of the number of employees. One major factor behind the high level of

Figure 7.5. **Pension replacement rates in the government and enterprise sector**

Average pensions as percentage of average wage



Source: Yearbook of Labour Statistics, various issues.

StatLink http://dx.doi.org/10.1787/780010350418

spending is the ability of employees of public service units to retire at 50 with high pensions due to high accumulation for early years of service (Hu and Herd, forthcoming).

The government had proposed to integrate the employees of the public service units into the enterprise employee system (Hu and Herd, forthcoming). Pilot projects had been considered in a number of provinces. However, while the government had promised that existing employees would not be adversely affected by this reform, details of the supplementary pension system required to achieve this objective were never divulged. Given adverse employee reactions, the government has decided not to introduce the scheme until a later, unspecified date.

Private-sector pensions

In 2004, the former "complementary pension insurance schemes" was renamed as "enterprise annuities" (EA), with a view to consolidate the Chinese EA market and strengthen regulation and supervision (Hu and Stewart, 2009). The EA schemes are run on a voluntary basis and have been so far mainly been set up by the large SOEs, with participation of few SMEs and private enterprises. According to the current rules, the employer contribution up to 5% of payroll is deductible before corporate tax, while the employee contribution (if any), investment income and pension payout are subject to taxation. This structure is not particularly tax-efficient for the average employee. The income tax exemption for employer contributions is worth little to the average employee as their marginal income tax is only 5%. In addition, the individual does not pay any tax on bank or bond interest nor on capital gains. Since 2005, the number of workers covered by EAs has risen by 1.2 million, a 12% increase, despite the number of plans rising from 23 000 to 33 000 (National Bureau of Statistics, 2008). The urban pension scheme has expanded more rapidly, with the result that the coverage of this type of supplementary pension has fallen from 7.0% to 6.9% of contributors to the urban pension schemes. Total funds under management have risen to CNY 191 billion (0.6% of GDP) at end-2008.

Until 2007, the funds of the SOEs were managed by the local social insurance bureaus and this gave rise to cases of misuse, notably in Shanghai. Since then, the assets have been progressively transferred to commercial fund managers (mainly insurance companies).

In addition to the above-mentioned EA schemes, another form of voluntary private pension arrangement exists in China, *i.e.* life insurance. Under this system, companies contribute to an investment account managed by an insurance company in the name of the employee. For the time being, there is no tax exemption for this tier from both employee and employer perspectives, except for some tax relief for approved life insurance products provided by insurance companies. Currently, subject to approval by the State Taxation Administration, over 500 life insurance products (individual and group), are entitled to be exempted from the business tax (approximately 5%), but not the corporate income tax (approximately 33%).

Overall conclusion: further reform directions

In the face of an ageing and increasingly urban population, a number of initiatives have been taken in recent years to reform pension arrangements in China. These are very segmented, with different regimes for the rural, urban and public sectors, as well as within each of them. In addition, a complementary private pension system is emerging, though it is still small. The segmentation of the basic pension system raises issues of efficiency, in that labour mobility is impeded, and fairness, to the extent work experience in one sector is not recognised for pension purposes after the individual moves to another sector. Some of the recent reforms have in fact added to the existing fragmentation, while other reforms, notably those providing for greater geographical pooling, have only partly been implemented. Another challenge is that under current rules, effective replacement rates are fairly low and are projected to decline further, both for rural and urban residents. This may be politically difficult to sustain in a rapidly ageing society, where the elderly live less and less with their descendants. A third challenge pertains to the distribution of the fiscal costs: with an ageing countryside, the present arrangements imply that much of the additional burden would be shouldered at sub-national levels by local governments with insufficient resources.

These challenges can be addressed by gradually consolidating the various regimes, increasing retirement ages and shifting more of the cost of rural pensions to the central government. Even if different schemes for different categories of workers (employees and self-employed notably) are to persist, each should be unified over time, first provincially and then nationally, phasing out the distinction between rural and urban residents. Retirement ages are currently very low and should be lifted, possibly in line with rising life expectancy, as is the case in some OECD countries.

Notes

1. The 2008 UN projections do not appear to incorporate the results of the latest sample population surveys. The 2007 survey put the dependency ratio at 0.128.
2. The underlying assumptions are: 1) all of the annual increase in built-up non-agricultural land came from arable farmland; 2) the households farming the land possessed the same holding rights as the national average rural household.
3. Many areas treated as rural administratively need not necessarily be rural in economic terms. For instance, Dongguan in Guangdong has a significant number of people whose mothers were born in a true rural area and who consequently are treated administratively as rural citizens even if

these villages are urban in all but administrative terms. These urban "rural villages" are able to pay relatively high pensions to their officially registered elderly people.

4. This estimate assumes that all contributions came from employees and employers. In practice, the self-employed paid some contributions, usually at a rate of 20%, implying that the estimated contribution rate is overstated.

5. The national average retirement age may be even lower, at 51.2 in 2000, according to one source, but no published statistics are available, see Yang (2004).

6. Based on a methodology from X. Wang (2009) and Yi (2008) and described in Herd *et al.* (2010).

Bibliography

ADB (2002), *Old-Age Pensions for the Rural Areas: From Land Reform to Globalization*, Asia Development Bank, Manila.

ADB (2007), *People's Republic of China – Old-Age Pensions for the Rural Areas: From Land Reform to Globalization*, Manila.

All-China Women's Federation (2007), *Report on the Number of Left-Behind Children* (in Chinese).

Benjamin, D., L. Brandt and J. Fan (2003), "Ceaseless Toil? Health and Labor Supply of the Elderly in Rural China", *William Davidson Institute Working Papers*, No. 579.

Bosworth, B., G. Burtless, Y. Kitamura and N. Takayama (2005), "Economic Resources of the Elderly: A Comparative Analysis", *ESRI Working Papers Series*, Tokyo.

Cai F., Y. Du and M. Wang (2008), "Labour Market Developments in China: Situations, Legal Framework and Implications", *Consultancy report to the OECD*, Institute of Population and Labour Economics, Chinese Academy of Social Sciences.

Cai, F., J. Giles and X. Meng (2006), "How Well Do Children Insure Parents Against Low Retirement Income? An Analysis Using Survey Data from Urban China", *Journal of Public Economics*, Vol. 90, No. 12.

Cai, Y. (2008), "An Assessment of China's Fertility Level Using the Variable-r Method", *Demography*, Vol. 45, No. 2.

China Land Surveying and Planning Institute (2005), "Research on Valuation Methods for Land Acquisition Compensation", *in* ADB, *Capacity Building for Resettlement Risk Management: People's Republic of China Country Report*, Asia Development Bank, Manila.

Davies, G., I. Nielsen and R. Smyth (2008), "Correct Ideas and Social Security Reform in China: The Case of Shanghai's Township Insurance", *in* Nielsen, I. and R. Smyth (eds.), *Migration and Social Protection In China*, World Scientific, Singapore.

Ding, C. (2007), "Policy and Praxis of Land Acquisition in China", *Land Use Policy*, Vol. 24, No. 1.

EU-China Social Security Reform Project (2009), *Report on Pooling Level for Pension Insurance in China*, *www.eucss.org.cn/index.php?id=134*.

Fang, C., C.-F. Lee, S. McKibben, D. Poston and C. Walther (2005), "Fertility, Family Planning and Population Policy in China", *Routledge Studies in Asia's Transformations*.

Fangwu (2004), *Compilation of Laws on Demolition, Construction and Resettlement for Houses*, China Rule of Law Publishing House (in Chinese).

Finegold, K. (1988), "Agriculture and the Politics of US Social Provisions: Social Insurance and Food Stamps", *in* Weir, M., A. Orloff and T. Skocpol (eds.), *The Politics of Social Policy in the United States*, Princeton University Press, Princeton.

Giles, J. and D. Wang (2007), "The Family and Social Support for the Elderly in China", Presentation to the CCER, Beijing.

Gu, B., F. Wang, Z. Guo and E. Zhang (2007), "China's Local and National Fertility Policies at the End of the Twentieth Century", *Population and Development Review*, Vol. 33, No. 1.

Guo, Z. (2006), "The Experiment and Progress of Rural Pension Insurance System in China", Presentation to a workshop on Extending Pension Coverage to Informal Sector Workers: The Asian Challenge, November.

Helpage International (2006), *Social Pensions in Low and Middle Income Countries*, London.

Herd, R., Y.W. Hu and V. Koen (forthcoming), "Providing Greater Old-Age Security in China", *OECD Economics Department Working Papers*.

Hu, Y.-W. and R. Herd (forthcoming), "Reforming Civil Service and Public Sector Unit Pensions in China", *OECD Economics Department Working Papers*.

Hu, Y.-W. and F. Stewart (2009), "Licensing Regulation and the Supervisory Structure of Private Pensions: International Experience and Implications for China", *OECD Working Papers on Insurance and Private Pensions*, No. 33.

Hurst, W. and K. O'Brien (2002), "China's Contentious Pensioners", *The China Quarterly*, No. 170.

Jin, F., L. He and H. Sato (2009), "Public Pension and Household Saving: Evidence from China", *BOFIT Discussion Papers*, 2-2009, Bank of Finland, Institute for Economies in Transition, Helsinki.

Joint Investigating Group of the Ministry of Land and Resources (2003), "Investigative Report of Purpose and Scope of Land Acquisition", *in* Lu, S. (ed.), *Examining Land Acquisition Problems – Reform Path Seeking,* Vol. II, China Land Press (in Chinese).

Lee, R. (2003), "The Demographic Transition: Three Centuries of Fundamental Change", *Journal of Economic Perspectives*, Vol. 17, No. 4.

Loh, S. (2004), "Revocation of Land Use Rights in China", *China Law and Practice*, December.

Lutz, W., S. Scherbov, G. Cao, Q. Ren and X. Zheng (2007), "China's Uncertain Demographic Present and Future", *Vienna Yearbook of Population Research*, Austrian Academy of Sciences Press, Wien.

Maddison, A. (2006), *The World Economy: Historical Statistics*, OECD, Paris.

MOHRSS (2009a), "Tentative Measures on Transfer and Portability of the Basic Pension Benefit of the Employees in Urban Areas", available on *www.mohrss.gov.cn/mohrss* (in Chinese).

MOHRSS (2009b), "Media Conference on the Two New Provisional Pension Rules", available on *www.mohrss.gov.cn/mohrss* (in Chinese).

MOHRSS (2009c), "Rules on Migrant Workers' Participation in Basic Pension Insurance".

National Population and Family Planning Commission (2009), Statement of Minister Li Bin at the 42nd Session of the UN Commission on Population and Development, 31 March.

O'Neill, B. and S. Scherbov (2006), "Interpreting UN Urbanization Projections Using a Multi-state Model", Interim Report IR-06-012.

Pang, L., A. de Brauw and S. Rozelle (2004), "Working Until You Drop: The Elderly of Rural China", *China Journal*, Vol. 52.

Quad, H. (2009), "China Economic Spotlight", HSBC Global Research, Hong Kong.

Retherford, R., M. Choe, J. Chen, X. Li and H. Cui (2005), "How Far Has Fertility in China Really Declined?", *Population and Development Review*, Vol. 31, No. 1.

Saunders, P. (2006), "Poverty and Hardship among the Aged in Urban China", *Social Policy and Administration*, Vol. 40, No. 2.

Saunders, P. (2007), "Comparing Poverty Among Older People in Urban China Internationally", *China Quarterly*, Vol. 190.

Shi, S.-J. (2008), "The Emergence of the Notion of Retirement in Rural China: The Case of Rural Districts of Shanghai", *Zeitschrift für Gerontologie und Geriatrie*, Vol. 41, No. 5.

Sin, Y. (2005), "Pension Liabilities and Reform Options for Old Age Insurance", Working Paper No. 2005-1, World Bank.

Smart, A. and J. Smart (2001), "Local Citizenship: Welfare Reform Urban/Rural Status, and Exclusion in China", *Environment and Planning*, Vol. 33, No. 10.

Wang, X. (2009), "Projecting Pension Deficits in China", Presentation to a Joint OECD-SIC Seminar, Beijing, July.

Wang, Z. (2009), "Prevention of Fraud and Abuse of the Pension System: Situation, Problem and Measures", National Social Security Institute, EU-China Social Security Reform Co-operation Project.

Whiting, S. (2008), "Public Finance and Land Disputes in Rural China", Presentation to a conference on Chinese reforms at the APARC Center at Stanford University, February.

World Bank (2009), *From Poor Areas to Poor People: China's Evolving Poverty Reduction Agenda,* Washington DC.

Yang, Y., J. Williamson and C. Shen (2009), "Social Security for China's Rural Aged: A Proposal Based on a Universal Non-Contributory Pension", *International Journal of Social Welfare*, forthcoming.

Yang, Y. (2004), Presentation to the 28th General Assembly of the International Social Security Association held in Beijing 2004 by the director of the Social Development Division of the National Development and Reform Commission *www.china.org.cn/english/government/190457.htm*.

Yi, Z. (2008), "Projecting the Demographic and Policy Impacts on Annual Pension Deficits – A Simple Method and Illustrative Application to China", Duke University and China Centre for Economic Research, School of Development, Peking University, mimeo.

Zeng, Y., Z. Wang, J. Leiwen and D. Gu (2008), "Projection of Family Households and Elderly Living Arrangement in the Context of Rapid Population Aging in China", GENUS.

Zhu, K., R. Prosterman, J. Ye, L. Ping, J. Riedinger and O. Yiwen (2007), "The Rural Land Question in China: Analysis and Recommendations Based on a Seventeen-Province Survey", *New York University Journal of International Law and Politics*, Vol. 38, No. 4.

Zou, X. and A. Oskam (2007), "A New Compensation Standard for Land Expropriation in China", *China and World Economy*, Vol. 15, No. 5.

Chapter 8

Improving the health care system

On a number of measures, health outcomes in China have improved tremendously over the past three decades, especially thanks to the reduction in some traditional infectious diseases. However, death rates from chronic diseases have been on the rise, not least owing to changes in life styles, including rising tobacco consumption and deteriorating environmental conditions. Supply of health care is overwhelmingly provided publicly and hospitals have been absorbing a growing share of the resources, at the expense of primary care. The number of doctors has increased fast but the level of qualification of incumbent doctors is often modest. Demand for care has risen rapidly, in line with incomes, and the relative price of care soared through the early 2000s. Hospital budgets and their doctors' pay are partly based on the pharmaceuticals they prescribe and sell, whose prices are regulated and involve considerable cross-subsidisation. Faced with these imbalances and incentive problems, the government has launched a number of reforms since 2003. New insurance schemes have been rolled out both in rural and urban areas. As a result, coverage and use of medical facilities has increased a lot, except for migrants. In practice, however, catastrophic but also chronic illnesses continue to push people into poverty, especially in the poorer regions, given that risk pooling at the national level remains limited. A new set of reforms has been announced in 2009, aiming at universal, safe, affordable and effective basic health care by 2020. They involve investment in medical infrastructure, generalising coverage, more focus on prevention, a new essential drugs system and far-reaching reorganisation, including hospital reform. It will be important to make sure that primary care plays a greater role and that hospitals are managed more efficiently with less of a hierarchical structure. Indeed a reform that just focuses on increasing insurance coverage and not on reforming the supply side may not be effective. Progress will also require changes in the relative prices of treatments and higher doctors' wages and tobacco prices.

During the initial phases of the opening-up of the Chinese economy, the overriding objective was to raise output and incomes. Economic restructuring undermined the health care system, which became increasingly privately financed, though remaining largely publicly-provided. While the population's health status was improving, a rising number of people were priced out of treatment or fell into poverty because of health care costs. The relative price of health care rose markedly until 2000, pushing up the share of overall health care expenditure in GDP (which in 2008 was around 4½ per cent). Hence, a marked change in the equity and efficiency of the health care system was needed. In recent years, several reforms have been initiated, including in 2009 the launch of two new health insurance schemes, whose design varies across the country, on top of the two existing systems. Overall, nearly all the population is now covered by medical insurance. This chapter first describes the evolution of the health status of the population and then turns to the supply and management of resources for health care and to the demand for care. It goes on to discuss financing and recent government initiatives. It closes with an assessment of the latest policy changes and suggestions for further progress.

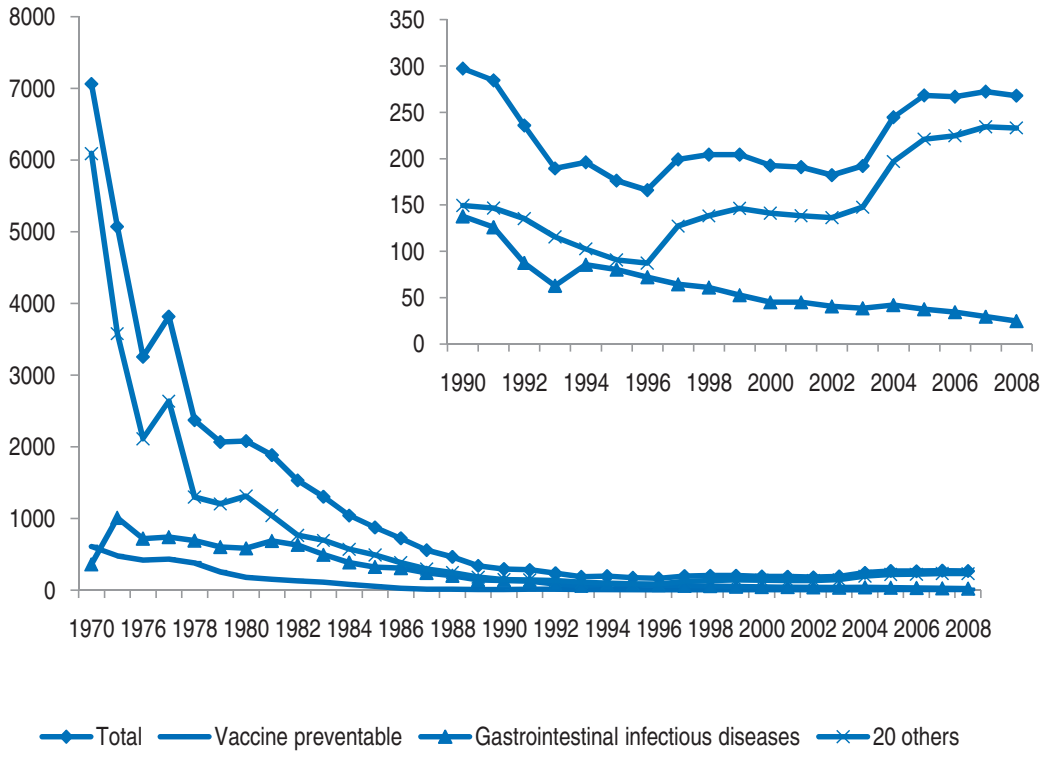
Health performance

China has very successfully reduced deaths from infectious diseases. By the early 1990s, infectious diseases had been almost eliminated (Figure 8.1). The associated death rate did not fall as much, since the few remaining cases tended to be more severe. Since the mid-1990s, though, the prevalence of infectious diseases has increased anew due to the growth of sexually-transmitted diseases and AIDS, which now accounts for almost half of all deaths from communicable diseases. The incidence of pulmonary tuberculosis has tripled over the past decade, although the cure rate is high. Of more concern is the spread of multi-resistant tuberculosis, with some provinces having the highest incidence of this disease in the world. Zoonoses are a growing problem, especially given the close contact between farmers and animals in areas close to major cities. Even so, the death rate from infectious diseases is low, comparable to that in many advanced economies. As a result, years of life lost from infectious disease compare well to lower-income OECD countries (Figure 8.2).

The fall in deaths from infectious disease has been mirrored by a fall in infant and maternal mortality. In urban areas, infant mortality has been halved in the past two decades and in rural areas it has been cut by a factor of three. As a result, in urban areas these two death rates are starting to approach those in the OECD area: the infant mortality rate is only one fifth higher than in the United States. The infant mortality rate in rural areas is still high compared to advanced countries but below the national averages for many major lower-income countries (Brazil, India, Indonesia, Mexico and South Africa) and substantially so in the case of India and South Africa. Nonetheless, progress has been slowing and three quarters of deaths are still caused by avoidable problems (UNICEF, 2006).

Figure 8.1. **Cases of infectious diseases**

Cases per 100 000 people

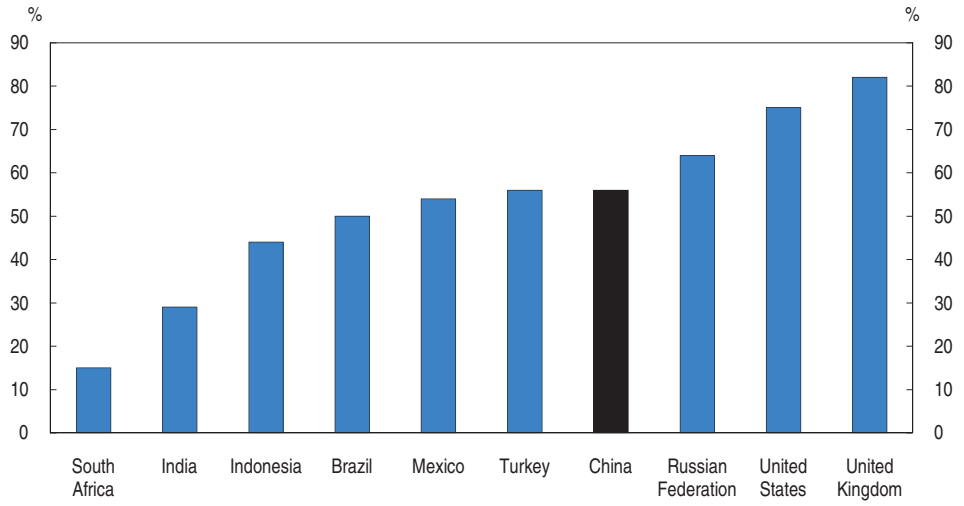


Source: *China Health Statistics Yearbook*.

StatLink http://dx.doi.org/10.1787/780021485858

Figure 8.2. **Years of life lost due to non-communicable diseases**

As a share of total years lost from disease, in 2004



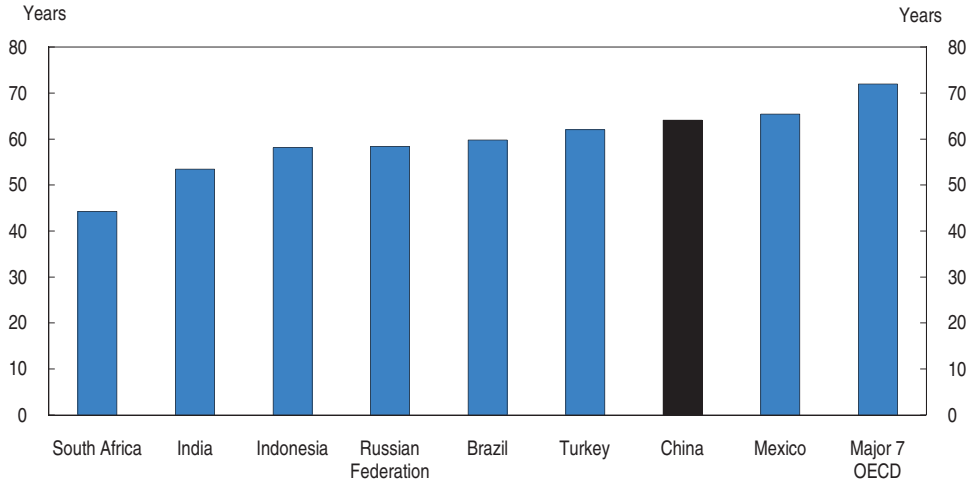
Source: World Health Organisation (2009).

StatLink http://dx.doi.org/10.1787/780067734171

In contrast to infectious diseases, the death rate from chronic diseases has been on the rise. Death rates from cancer and diseases of the heart and lung have increased substantially since 1990. In particular, deaths from lung cancer have risen sharply, becoming the leading form of death from cancer. There has also been a major increase in chronic obstructive pulmonary disease and pulmonary heart disease, both associated with smoking (Box 8.1). Other diseases, notably diabetes, hypertension and coronary diseases, may be easier to prevent. The last nationwide survey, in 2001, suggested that diabetes affected 5.6% of the population by 2001 (Chen and Wang, 2009). Its incidence has nevertheless been increasing rapidly and, by 2008, large random surveys in Tianjin and Fujian suggest that in these provinces it had risen to 9.5%, slightly below the 2007 US rate (Tian *et al.*, 2009; Lin *et al.*, 2009). Hypertension is also becoming more common. Indeed, high consumption of dietary sodium, used in food preservation, is a major problem. Nearly 18% of Chinese adults aged 15 years and older had hypertension (Cheng, 2009).

The probability of dying between the age of 15 and 60 has fallen markedly and is now only slightly above that in the United States, though well above that in the rest of the higher-income OECD members. In terms of the overall losses to disease, the decline in infectious and prenatal deaths, added to the fall in adult mortality, has resulted in a significant increase in life expectancy at birth. Indeed, when life expectancy is recalculated to remove years when the person is either unhealthy or disabled, the so-called healthy life expectancy is on a par with that in Turkey and Mexico and well above that in some other emerging market economies, especially India and South Africa (Figure 8.3).

Figure 8.3. **Expected healthy years of life at birth**



Source: World Health Organisation (2009).

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Health outcomes clearly improved in China and continued to do so in recent years. However, while in the late 1970s, the population enjoyed much better health than might be suggested by its income level, this is no longer the case. By 2006, life expectancy had moved back into line with its relative income level (Wagstaff *et al.*, 2009), improving much less than, say, in Indonesia or Malaysia.

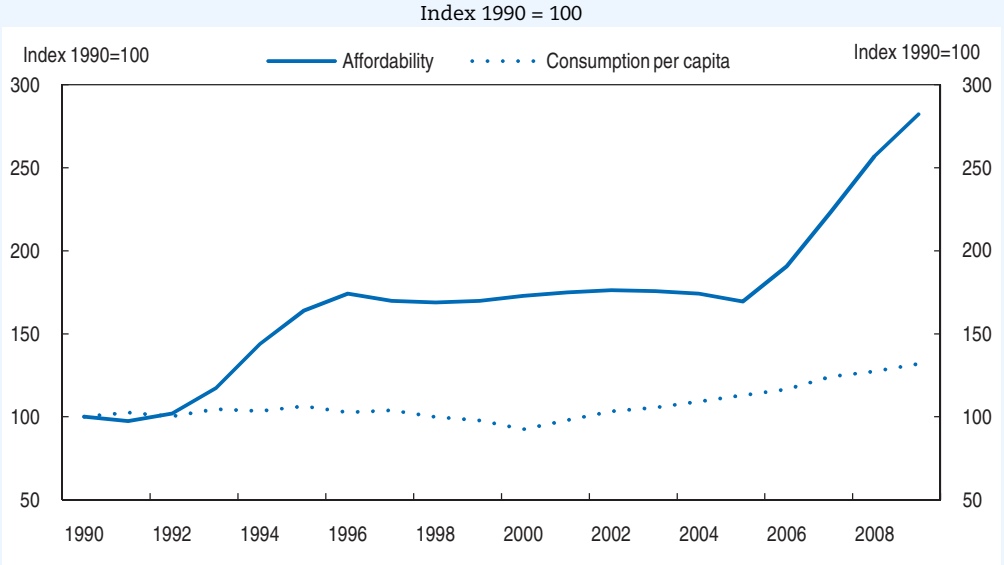
While overall performance has been good, serious problems endure. The poor health outcomes in lower-income areas were documented in Chapter 5. Within urban areas,

Box 8.1. **The smoking epidemic**

China accounts for 30% of the world's cigarette consumption against 20% of its population. This development is relatively new. The growth in smoking has followed that in the United States with a 40-year lag. US smoking has started to decline, but in China, after pausing during the 1990s, it has expanded sharply (Figure 8.4), with total consumption rising 44% in recent years. Individual consumption has reached 15 cigarettes per person per day amongst smokers. About one third of the population over 15 now smoke, but the rate for men is 57% (70% for those aged 30 to 60) and that for women only 3% (Yang *et al.*, 2005).

Public awareness of the dangers of smoking has improved since the mid-1990s. For example, by 2002 the proportion of adults who are not aware that smokers are at increased risk of heart disease had dropped from 96% to 78%, while for lung cancer it had dropped from 60% to 30% (Yang *et al.*, 2005). However, a 2007 survey of doctors in Beijing found that while 91% were aware of the link between lung cancer and smoking, only 63% realised it caused heart disease and only 55% that passive smoking could cause heart disease (Jiang, 2007). In fact, nationwide, 41% of male doctors are smokers, against just 8% in the United Kingdom and 3% in India (World Health Organisation, 2008).

Figure 8.4. **Cigarette consumption per capita and affordability**[1]



1. Affordability is defined as the ratio of household disposable income to the price of an average pack of cigarettes.

Source: Hu, Mao *et al.* (2008), updated from *China Statistical Yearbook* and China Research and Intelligence.

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Smoking-related deaths have risen markedly in the past three decades, but are set to increase much faster still unless action is taken quickly. Death from smoking takes 30 years to manifest itself and is most pronounced amongst those who started to smoke by age 20. Indeed, for this group, their probability of dying between the age of 35 and 59 is around 50%, like in the United States and United Kingdom (Peto, 2009). Moreover, young rural smokers now have the same habits as their urban counterparts. China can expect that within 30 to 40 years deaths from smoking will rise to three million, accounting for one third of annual deaths (Peto, 2009), up from one million in 2005 (China Cancer Foundation, 2006).

Box 8.1. **The smoking epidemic** *(cont.)*

Smoking also undermines human capital formation. A comparison of the spending of a sample of smokers and non-smokers in Guizhou showed that extra spending of CNY 100 on tobacco was associated with a CNY 45 reduction in outlays on health and education (Wang *et al.*, 2006). In urban households where the major earner is a smoker, cigarettes account for 8% of spending, rising to 11% in rural areas (Hu *et al.*, 2008). On one estimate, such a level of spending pushed as many as 50 million people below the poverty line (Liu, 2006).

The government completely controls the tobacco industry in China. The only cigarette producer is the fully-state-owned China National Tobacco Corporation (CNTC). It is one of the most profitable companies in the country, with costs accounting for only 32% of pre-tax sales. Imports are allowed and some of the main brands are foreign-owned but retailing is controlled by the state monopoly. The industry is regulated by State Tobacco Monopoly Administration (STMA), which fully overlaps with the CNTC and determines the development strategy for the industry.

Cigarette taxation in China is relatively low, accounting for only 21% of the average tobacco price. It has an anomalous structure in that the *ad valorem* excise duty (called a consumption tax in China) is progressive, with a lower rate for cheaper cigarettes. In addition, cheaper cigarettes are cross-subsidised by more expensive brands. Both policies were introduced in order to support the purchasing power of poorer families. In addition to the excise there is also a tobacco leaf tax paid to the local government where the tobacco is produced, which pushes the local government to try to expand the area under cultivation. The CNTC aims to boost production and as part of the stimulus package is set to increase investment in tobacco growing to provide jobs for a million migrant workers.

The government did raise the tax on cigarettes in 2009. However, the STMA indicated that the development plans of the industry might be hurt. Therefore, the regulator and the corporation decided to lower wholesale prices by the exact amount by which taxes had been increased. As a result, retail tobacco prices have risen by only 2% over the past decade, against a 111% rise in nominal per capita incomes, making cigarettes far more affordable.

severe problems remain amongst migrant families. A study of migrant children found that vaccination rates were some 10 percentage points lower for migrants than for the nation as a whole (Liang *et al.*, 2008). As a result, the prevalence of measles infection was eight times higher amongst the children of migrants than amongst the registered population in Beijing and Shanghai (Vail, 2009). Malaria, hepatitis, typhoid fever, and respiratory infection were found with a higher incidence among migrants in Zhejiang and Guangdong. From limited investigations and reports, the incidence of occupational disease among township enterprise employees was high, at 15.8% in 2002. Rural migrant workers accounted for the majority of workplace deaths in 2003 and about 80% of deaths in the most dangerous industries (mining, construction and dangerous chemicals) were migrant workers (Zheng and Liang, 2005). Finally, migrants' maternal mortality after child birth is 83% higher than for mothers who were registered inhabitants (Herd *et al.*, 2010; UNDP, 2008).

The health system

Supply of medical resources

The government has stepped up investment in medical facilities over the past decade. In urban areas, medical care is almost entirely provided through state or local government institutions. Private institutions play a limited role, providing only 5% of hospital beds. The number of general and special hospitals, which barely increased during the 1990s, grew by close to one quarter between 2000 and 2008. The number of beds rose almost as much, although it did not keep up with population growth in urban areas. At 2.9‰ (per thousand), the overall provision of beds is low relative to the unweighted average in the OECD area, but the latter conceals wide variations. The availability of beds in China is only 20% lower than in Australia, Canada, Denmark, Norway, Portugal, Spain, Switzerland, the United Kingdom or the United States. It is higher than in Mexico or Turkey.

At the same time, resources have been reallocated between types of facilities. The number of very large hospitals (with over 800 beds) rose almost six-fold, bringing their share of beds to 12%, from 4% in 2000. At the same time, the number of the two lowest, and local, levels of medical facilities (township health centres and various forms of clinics, outpatient facilities and nursing stations) declined by some 20%. Thus, in terms of infrastructure, there has been re-orientation away from primary towards hospital care, which absorbs two-thirds of health expenditure.

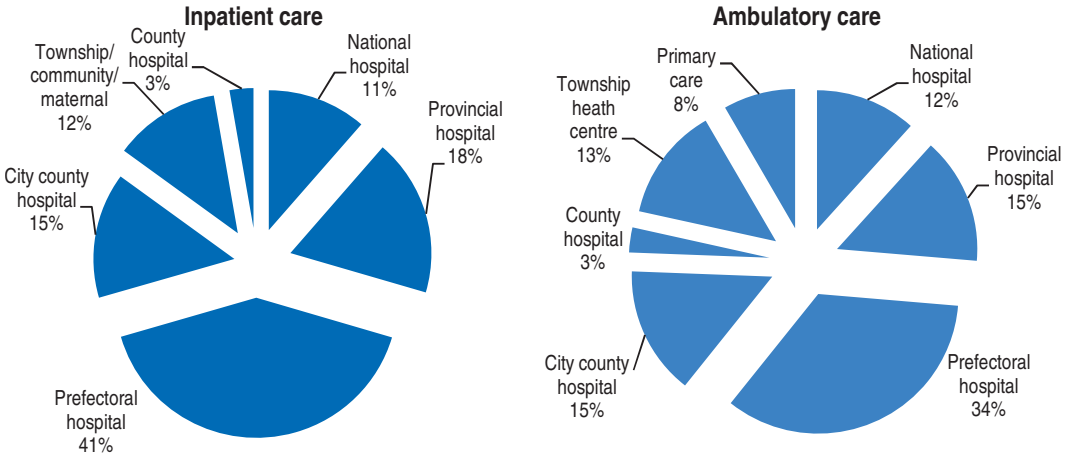
Hospitals are graded according to the administrative authority to which they are responsible (national, provincial or county governments). The higher the grade, the more skilled the staff and the better the equipment. Major hospitals with over 500 beds are found in bigger cities while intermediate-sized hospitals are found in county capitals and serve the surrounding rural population. In rural areas, there are also small hospitals in townships. The bulk of inpatient care is provided at prefectural-level hospitals (Figure 8.5, left panel), which typically serve a catchment area with a population of 600 000.

Hospitals are also the dominant suppliers of primary ambulatory care in urban areas (Figure 8.5, right panel). Overall, they produce nearly 80% of the value of all first-level medical consultations. The over-reliance on outpatient services is evidenced by the number of outpatient visits per hospital bed, which in 2008 stood at 1 048 per year, against 313 in English hospitals. Hospitals treat many illnesses for which they are over-equipped. One survey found that 20% of outpatient visits were for colds or gastroenteritis (Lim, 2002). Government policy has been reoriented to devolving primary care to lower-level institutions. The number of urban primary care facilities has expanded in recent years. However, the number of clinically-trained doctors working in these community centres is still small (just over 13 000 nationwide).

In rural areas, the situation for primary care is more difficult. For primary care, rural residents have the choice between village clinics or township medical centres, unless they are close to a county-level city. Nearly all villages have such clinics which are now generally privately run, even if the facilities are owned by the village collective. They are staffed by village medical staff. Since 2002, doctors in these facilities have had to be certified or assistant physicians. However, enforcement of these rules appears poor. Even in rural areas of Beijing, one-third of the professional staff had no qualification beyond junior high school, rising to 70% in poor rural counties (Eggleston *et al.*, 2008). Nonetheless, these doctors have the same prescribing rights as all other doctors. The density of doctors with

Figure 8.5. **Provision of care by level of institution**[1]

Inpatient care ambulatory care



1. Per cent of value of output, with the latter calculated by multiplying the average price per consultation and patient by the number of consultations and patients.

Source: *Health Statistical Yearbook* and OECD calculations.

StatLink http://dx.doi.org/10.1787/780086786810

at least a college education is only 0.1‰ of the population, compared with 0.9‰ in urban areas (Anand *et al.*, 2008).

Family doctor practices are not generally found in urban areas, though there are some family doctors in government-owned community health centres. Indeed, family doctor training was only introduced into medical schools in 1999 and even by 2007 only one-fifth of medical schools had family medicine courses. The result is that most community health centres are staffed by specialists rather than by staff trained in primary care. Community health centres are designed to serve a population of between 30 000 and 100 000, depending on the type of town (Table 8.1). Each centre is then responsible for a number of health stations. Generally health stations have a catchment area varying from 10 000 to 15 000 people. The size of the health stations is thus broadly the same as that of a group practice in England. They differ in two respects, though. First the level of training is much lower, with doctors at health stations having only 2.3 year post-secondary medical

Table 8.1. **Staff size and education level of community health centres and stations**

	Number of staff		Doctors		
	Community health centre	Community health station	Education level	Community health centre	Community health station
	People		Per cent of all doctors		
Doctor	24.0	3.5			
Nurse	17.0	2.3			
Pharmacist	5.8	0.8	> 5 years	25.4	19.4
Laboratory assistant	2.8	0.3	3 years	39.0	44.4
Technician	6.2	0.7	Middle school	29.2	30.6
Administration	9.4	0.6	None	6.4	5.6
Total staff	65	8			
Population served	65 000	15 000			

Source: Yang *et al.* (2008).

education, on average. More importantly, they are the bottom level in a very hierarchically-organised medical system and report to community centres which in turn report to hospitals. Hence, they are unlikely to attract ambitious staff. By contrast, a group practice in England is a privately-owned and managed unit funded by the government.

Maternal health care centres have become increasingly underfunded as government support declined. Therefore, many have had to start charging fees, despite the supposedly free nature of the service, leading to an emphasis on treatment rather than prevention. Moreover, in rural areas, many essential treatments are not fully implemented. As a result of this and poor training of doctors, one third of all maternal deaths in rural areas come from haemorrhages after delivery, a rate nearly 13 times higher than in urban areas. Strategies to reduce maternal deaths would also reduce infant deaths, nearly 80% of which occur in the first week after birth.

The number of doctors has risen over time, just ahead of population growth, and given China's income level, it may seem high relative to the population. In addition, there are a large number of less-qualified village doctors. Also, unlike most countries, China has more doctors than nurses (Anand *et al.*, 2008). However, average qualification levels are relatively modest. Indeed, the aim has long been to try to provide basic medical services to as many as possible at a price that society could afford. The emphasis on providing essential care was achieved through using medical staff with a very wide range of training but all of whom were called doctors (Table 8.2). Even so, the prevalence of doctors is half that in the OECD area, at 1.5 per thousand people. Moreover, if the comparison is made for doctors with five years of training including an internship, the density of doctors falls to 0.33‰ in China, against an unweighted OECD average of 3.1‰. This was very effective as long as the major healthcare problems were infectious diseases and prenatal care, but as income levels rose there was a need to raise qualifications. Starting in 1999, it became compulsory for all new doctors to take a licensing examination before becoming a practitioner. Nonetheless, as yet only one-quarter of doctors have a degree and one year of clinical internship and almost half have no education beyond secondary high school (Table 8.3).

Table 8.2. **Number of doctors by level of training**

In 2005, absolute number and density, ordered by length of training

	Number of doctors	Doctor density
	Thousands	Doctors per 100 000 people
Village doctors (medics)	864	66
Doctors	1 938	148
Doctors but not physicians	383	29
Licensed physicians and assistants	1 556	119
Survey measurement error	50	4
Assistant physicians	294	22
Physicians	1 312	100
Dentists	46	4
Medical physicians	1 266	97
Secondary school or lower	369	28
Degree but no clinical training	306	23
With degree and clinical training	490	37
Five years plus one clinical and one supervised	438	33
Six years plus two years clinical	42	3
Medical research	11	1

Source: Ministry of Health.

Table 8.3. **Training required to become a doctor**

	Becoming a licensed doctor			Becoming a licensed assistant doctor	
	Years of education after senior high school	Years of clinical internship	Years of work experience after graduation	Years of work experience after becoming assistant doctor	Years of work experience to become assistant doctor
Research degree	8	2	0		
Masters degree	7	2	0		
University degree	5	1	1		
College associate degree	3	0	not possible	2	1
Secondary technical school	0	0	not possible	5	1
High school or lower	0	0	not possible	Phased out after 1998	

Source: Ministry of Health (1998).

Nearly all doctors are employed by various forms of government agencies on a salaried basis, either in hospitals or in health care centres. The pay and qualifications of the staff generally decline with the prestige of the unit. The best-qualified doctors are found in major hospitals in provincial capitals. At the other end, in township health centres most doctors have just three years of training. In rural villages, first-line medical care is provided by "village medics", who have a low level of training and are not generally counted as doctors. They are the only medical personnel paid on a fee-for-service basis.

Over the past decade, the expansion in the number of doctors has not kept up with that of beds, nor with the increase in demand for outpatient consultations. While this called for training more medical students, the surge in their number in recent years, in line with the general massive expansion in tertiary education, exceeds the sector's absorption capacity. By 2009, the number of students graduating with bachelor and associate degrees equipping them to be doctors likely reached 0.4 million, as against a stock of such doctors in 2005 of only 0.8 million. A similar mismatch occurs for associate doctors with less advanced training. There are about 40 000 graduates from the master's degree programme – compared to a total stock of doctors with such qualification of just 42 000 in 2005. In such a situation of over-supply, hospitals tend to only recruit graduates with the highest level of qualification. Even the graduates of the most prestigious universities have problems finding work as doctors. For example, of the graduates of Peking University's five-year clinical medicine programme during the period 2004 to 2006, only 28% were working as doctors in 2007 (Anand *et al.*, 2008).

There has been a considerable expansion in the number of nurses and efforts to enhance the quality of their training. The government aimed to increase the number of trained nurses by 60% (Ministry of Health Study Group, 2003). Nearly all the extra training was to take place at college and university level, with the number of graduates from these institutions expected to rise six-fold. The number of nurses trained at secondary vocational schools (representing 85% of the stock of nurses) was to be held constant. As with doctors, this expansion of training has run ahead of recruitment by hospitals and community health centres. Hence, barely one third of the graduates of these programmes seem likely to use their training. A better strategy might have been to markedly reduce the numbers trained in secondary schools.

Price regulation

The price of most basic health care services is regulated by the government. A Yellow Book, issued by the NDRC's Price Bureau, lists the prices for thousands of medical procedures, services and diagnostic tests. These prices have consistently been set below cost. In the late 1990s, the level of recovery was 25% for hospital bed and board, 30% for basic surgical operations and 40% for general examinations and treatments (Liu *et al.*, 2000). On the other hand, the prices for a CT scan, X-ray exams and pathology tests were 70%, 50% and 28% above cost, respectively. Government policy in this area has remained unchanged since, with several provincial government price bureaus reducing the cost of basic medical treatments despite increasing labour costs (Wang *et al.*, 2007).

Hospitals deal with the problem of low regulated prices by unbundling services or over-using facilities with high profit margins, thereby overcoming the problem of unrealistically low regulated prices. The first practice is illegal but if inspectors detect it the fine is small. In the second case, the hospitals often form pools of investors – sometimes drawn from staff – to provide the equity for bank-financed purchases of equipment. The result has been in line with the NDRC objective of favouring high-tech equipment. The profit from the use of high-tech equipment covers about 5% of operating costs. Hospitals are also allowed a 15% mark-up over wholesale pharmaceutical prices and a 30% mark-up if they purchase directly from the manufacturer. Often these mark-ups are exceeded considerably, rising to as much as a ratio of 10. Even if they are respected, there is no policy aimed at the use of generic drugs. Overall, the mark-up on drugs covers 5% of medical costs (Health Statistics Yearbook, 2008). Hospital management often incentivizes doctors by creating sales targets for pharmaceuticals and high-tech examinations. Departments that beat targets receive bonuses, to which doctors have been shown to respond (Liu and Mills, 2003). Other hospitals link doctors' pay directly to drug prescribing and CAT scanner use. There is also evidence that doctors are rewarded for prescribing the products of certain companies. These practices gives rise to over-prescribing, which can be dangerous.[1]

Hospital management

Nearly all Chinese hospitals are public service units with the facilities owned by the government. They are, however, often managed under a "director responsibility" system under which the local authority negotiates a contract in which there is a fixed annual payment and then the hospital has to manage its own activity during the year. However, key components of the budget may be out of the control of the manager – hiring decisions may be taken by the local health bureau and salaries are determined centrally. While the above examples show that hospitals do react to economic signals, there is still concern that hospitals operate under a soft budget constraint that undermines efficiency. In Guangdong, for instance, hospitals whose deficits increase tend to receive greater subsidies the following year (Eggelston *et al.*, 2009).

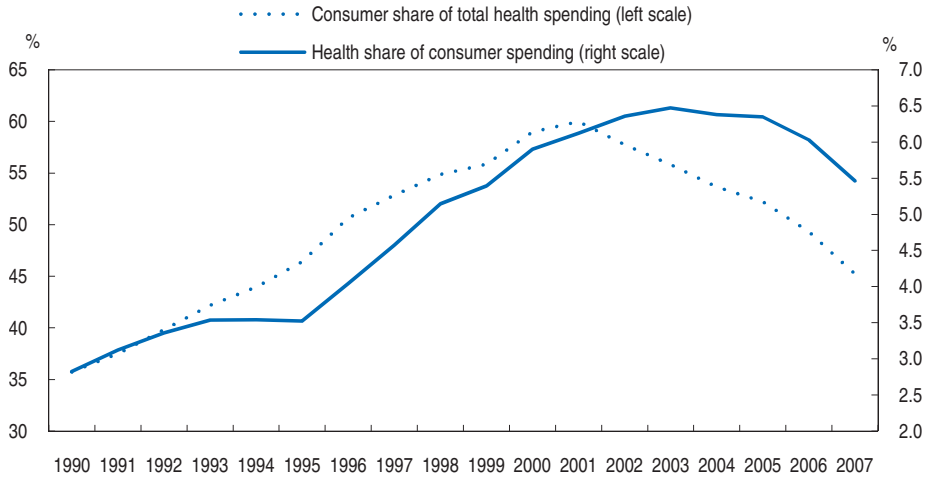
There is scope for changing the payment system in hospitals. At present, hospitals generate enough information to allow for the allocation of patient stays by diagnostic related groups. These data can also be related to billing (Gong *et al.*, 2004). Thus, fixed costs per patient could be negotiated with third-party payers, though such systems have their own built-in incentive problems: hospitals may refuse treatment for patients expected to be costly or may skimp on service provision. While information on patient records and billing may be sufficient, hospital accounting may not yet be developed enough to

introduce such a system. At present, hospital accounting is cash-based and the relevant Ministry of Health regulation does not call for a balance sheet (Clarke, 2008).

Financing of health care

By the second half of the 1990s, the public financing of health care was in crisis. In rural areas, the financing system based on the income of village collectives had collapsed due to the falling income of the collective. Well over half of village clinics had become private enterprises, relying on fee income. In urban areas, the system of enterprise-provided health care was coming to an end and being replaced by medical insurance. With many of the new private sector companies not paying the theoretically compulsory contributions, the extent of health insurance coverage in urban areas fell. As a result, the share of total health care spending financed directly by consumers soared, to over 60% by 2001 (Figure 8.6). Moreover, those with insurance coverage came from the higher-income groups with stable employment. In 2000, the World Health Organisation rated China's health financing system as one of the world's most inequitable, ranking China 188th out of 191 countries. The Chinese government recognised that this situation could not continue and described the health system as shameful (Ministry of Health, 2005).

Figure 8.6. **Health care spending by consumers relative to total health care and total consumer spending**



Source: Health Statistical Yearbook.

StatLink http://dx.doi.org/10.1787/780102054515

Public sector financing

The bulk of public financing of health care comes through insurance systems rather than the budget. At the beginning of the decade, insurance essentially concerned the urban population, as less than 7% of the rural population had insurance. In urban areas, the basic medical insurance scheme for urban workers (BMIUW) is employment-based. Initially, it did not include government workers, who were covered by a separate scheme but gradually nearly all of these have been integrated into the basic system (Caijing, 2009). The scheme (started in 1998 and completed in 2003) features two components: social pooling (mainly for inpatient expenses) and individual accounts (mainly for outpatient expenses). It is currently financed by employer and employee contributions. On average the payment is 8%

of payroll and 2% of the individual wage, respectively. Coverage, however, is far from universal. In 2005, only slightly more than half of employees registered urban residents and only 15% and 36% of unofficial rural and urban employees had cover – a total coverage rate of just over 40% of the urban working population (excluding those engaged in agriculture). This scheme, together with the rural system, covered just a quarter of health care expenses in 2001.

Benefits vary according to the city but there is a general pattern. Outpatient costs are met through the individual's medical saving account. This account is fed by the individual's 2% contribution to the basic insurance system and two percentage points of the employer contribution. For the average employee this is sufficient to cover three consultations per year for the contributor. Children and dependents of the employee are not covered by the employee insurance system. Hospital costs are subject to a deductible equivalent to 10% of the local average annual wage. If expenses are less than four times the annual local wage, 85% of the cost above the deductible is paid by the insurance. This ceiling was raised to six times the local salary in 2009. Employees are encouraged to contribute to a supplementary system but there is still an upper limit on payments. Once the cost of treatment exceeds that threshold, the patient pays 100% of the excess. This scheme does not seem to have reduced catastrophic medical expenditure and may have increased the financial risk from a hospital stay, as hospitals tend to subject insured patients to more procedures (Wagstaff and Lindelow, 2008).

Public health care expenditure is generally undertaken locally. In 2007, central government directly financed only 0.3% of total health spending but made earmarked transfers for health spending amounting to a further 5.6% of total spending. The bulk of budgetary expenditure on health is made by county governments. Hence, poor counties can only offer a low level of care to the local population. The provincial government provides supply-side subsidies to hospitals. City hospitals receive 50% of the outlays and township hospitals just 10% (National Health Accounts, 2004).

Individual payments: a barrier to treatment

The sharp increase in the cost of health services for individuals was a major barrier for patients, particularly in rural areas. Many people reduced their access to medical services mainly for financial reasons. Overall, in 2007, 38% of the sick were not treated, 70% refused hospitalisation despite a referral, citing financial problems, while over 54% of patients discharging themselves against medical advice cited cost as the reason for their action (Ministry of Health, 2009). There are both income and geographical inequalities. In urban areas, the gap between the hospitalisation rate for the patients in the lower and upper income quintile has been estimated to have widened from 15 to 24 percentage points between 1993 and 2003 (WHO and DRC, 2005). As to differences across space, total health care spending per capita in urban areas was four times as high as in the country at large.

In addition, illness has a major impact on income. In China, deterioration in an individual's assessment of his own health from average to poor, or any other two-step drop, is associated with a 12% fall in income (Lindelow and Wagstaff, 2005). Moreover, it can take two decades to recover from an adverse shock (Yan, 2009). Medical expenses have become the second perceived cause of an individual being below the poverty line. People pushed below the poverty line due to medical expenses raised the poverty rate from 7% to 10% according to one study (Liu *et al*., 2003). As noted in Chapter 5, elderly people who paid

their own medical expenses were more likely to feel poor than those for whom a third party paid.

Government initiatives

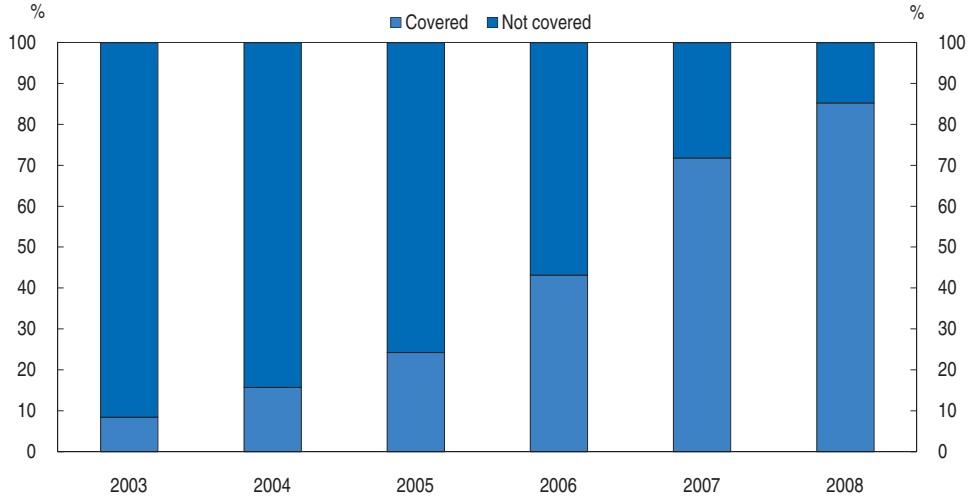
A marked change in government policy started in 2003. The conspicuous shortcomings of the financing arrangements led the government to progressively introduce three new financing systems: the new rural cooperative medical scheme (NRCMS), the basic medical insurance system for urban residents (BMIUR) and the medical assistance programme. The first is to provide coverage to the rural population – the major group without any medical insurance. The second aims to cover urban residents without insurance (children, elderly people without pensions and the long-term unemployed) but not migrants. The first two schemes share many features. Membership is voluntary and the central government is to provide a payment for each participant, which the local government is encouraged to match. At the start of the rural scheme in 2003, the central government contributed CNY 10 per person per year. By 2008, this contribution had risen to CNY 40, with the participant paying a further CNY 20. With the matching contribution from local government, the total contribution was CNY 100 per year but the central government subsidy does not depend on income levels by county, which is inequitable (World Bank, 2009). For the urban system, the government pays at least CNY 40 per year (but less in western areas). The final scheme – the medical assistance programme – provides medical benefits to those who receive the minimum living allowance.

Health care coverage

Accordingly, health care coverage improved fast (Figure 8.7), especially in rural areas. The number of NRCMS participants has risen ten-fold since 2003, to 815 million, representing a participation rate of 91%.[2] The take-up of the basic medical insurance for urban residents has also been rapid, reaching 117 million in 300 cities after less than two years. The government has required all cities and towns to adopt it by end-2009. With the

Figure 8.7. **Health care insurance: the extent of coverage**

Proportion of population with insurance



Source: Health Statistics Yearbook.

StatLink http://dx.doi.org/10.1787/780187811683

increase in coverage, the extent to which consumers have to pay for their own medical care has fallen from the 2001 peak of 60% to 45% in 2007. This did not at first reduce the share of consumer spending on health, as health outlays rose faster than consumer spending but a decline started in 2006-07, as the relative price of health care stabilised. By 2007, consumers were devoting 4% of their outlays to out-of-pocket health spending, on average. However, in rural areas only 3% to 4% of the population actually incur inpatient medical expenses in a given year. For those individuals, out-of-pocket expenses average 78% of average annual income in rural areas, even with the new insurance system.

Not only has coverage improved but actual use of the health facilities has increased markedly, especially at the lowest-but-one level of care (Herd *et al.*, 2010). For most of the decade to 2003, the number of visits to township medical centres (hospitals) had been falling, while in urban areas a similar institution did not exist. The two new insurance-based schemes were accompanied by a strategy to orient people to existing township centres and to create new urban community health centres at the level of the neighbourhood committee. As a result, the number of visits to township health centres in rural areas rose and urban community health centres spread into more areas. The increase in the utilisation of urban health care centres has been even more spectacular, with a five-fold rise between 2002 and 2008. This increase has come in recent years, as one study using a 2006 national survey found that the new system had not had any impact on utilisation (Lin and Lei, 2009). This same study also found that out-of-pocket expenses rose for insured patients, despite the increase in insurance payments. It is not clear whether this effect has persisted over time or whether it is due to insured people choosing better and more expensive care.

The impact of the new systems

Rural areas

The roll-out of the new system has been rapid and the ability of county authorities to choose the benefit package has resulted in considerable diversity across the country. Three types of scheme dominate. In the first one, both outpatients and inpatients are reimbursed subject to deductibles that increase with the level of the hospital. The second one restricts outpatient reimbursements to selected chronic diseases. The third one involves medical savings accounts fed by the 2% individual contribution, which can be used to pay for outpatient visits. Unfortunately, the savings accounts cannot be pooled within a household, meaning that the household cannot share risks between its members. The choice of scheme varies across the country (Table 8.4). In the first counties that adopted the schemes, deductibles are quite high (about one month of average rural per capita income). While the co-payment above the deductible appears quite reasonable, in reality the average reimbursement rate for a visit is less than a quarter and the combination of the co-payment and the deductible represents six months of per capita income in rural areas. The type of pool design does appear to exert a significant impact on whether or not the programme meets its goals. In particular, counties that have adopted overall risk pooling appears to perform better in terms of access to health care than those relying on pooled risk sharing for inpatient care and individual risk sharing over time through medical savings accounts for outpatient care (World Bank, 2009).

The difference between the high promised reimbursement rates and the low actual rate stems from the system's inadequate funding. A 2007 nationally-representative survey has shown a marked tendency for the reimbursement rate to decline as the cost of

Table 8.4. **Reimbursement rules and benefits in different rural medical insurance systems**

2005

	Announced benefits under different rural medical systems for inpatient care					Typical actual benefits received for inpatient care		Incidence of payments per year	Typical costs
	Median deductible amount per consultation		Median ceiling on insurance benefits		Median insurance payment	Proportion of expense actually covered by insurance	Actual co-payment	Number of people receiving benefits per year	Actual average per capita inpatient spending
	CNY	Months income	CNY	Months income	%	%	Months income	% of participants	CNY
Nation	305	0.9	10 000	29	70	23.4	9.4	3.3	3 344
East	500	1.1	20 000	44	75	22.4	10.0	3.0	4 539
Central	300	0.9	10 000	31	70	24.3	6.5	3.7	2 147
West	200	0.8	5 000	20	70	28.7	6.3	3.6	1 729

Source: NCMS Pilots Evaluation Team (2006).

treatment increases (Herd *et al.*, 2010). Indeed, local administrators could not apply the published reimbursement schedules. Their choices were stark. For example, if the programme just reimbursed those with catastrophic illness (above one year's income) half of the promised benefit, then the whole fund for the county would be exhausted and those with catastrophic illnesses would still face out-of-pocket expenses of 80%. In order to reverse this situation, the fund would need to have an income of CNY 200 per person. To achieve complete payment of, say, 60% of expenditure between the deductible and the limit for catastrophic insurance would require a further payment of CNY 200 per person. This, moreover, is without allowing for the price elasticity of demand which, while lower than unity, is still sufficient to increase total outlays significantly when out-of-pocket expenses fall (Brown and Theoharides, 2009).

The new rural health system may be having positive effects on health status but has not improved financial security. With the system still not fully rolled out, it is too early to look for effects on macro-level health outcomes. However, at the micro level, there has been considerable variation in the roll-out and in the persistence of the older health insurance scheme, which allows to draw some conclusions. Participation in insurance schemes does appear to improve self-reported health status according to one study (Gao and Meng, 2009), but other studies do not present such clear-cut results.

The evidence as to whether the financial consequences of catastrophic illness have been mitigated is rather negative. Reimbursement rates for catastrophic illness are low. National studies are still lacking, but in Shandong province the scheme seems to have a limited impact on catastrophic expenditure (Sun *et al.*, 2009b). Defining catastrophic health expenditure as 40% of annual income less subsistence expenditure (a WHO definition), 9% of families in the studied county incurred catastrophic expenditure before the payment of the NRCMS benefit, and after payment 8% still did. In order to reduce the incidence of catastrophic expenditure significantly, the reimbursement rate would have to increase to 70 or 80% from the county average of 18%. Given that the average reimbursement rate in this county is similar to that found in a nationally-representative survey, similar results would probably obtain nationwide in rural areas. In urban areas, medical insurance

actually appears to increase the incidence of catastrophic health care payments (Wagstaff and Lindelow, 2008).

Supplier response

The increase in catastrophic spending could reflect people being drawn into hospital care initially and then facing expensive solutions that they would have been unaware of without insurance. It is also possible that hospitals hike the price for insured relative to uninsured patients – as seems to occur in Guangdong province, where insured patients were charged 60% more than uninsured patients and incurred pharmaceutical costs that were 290% higher (Pan *et al.*, 2009). While insured patients might have had worse symptoms or uninsured patients might have refused expensive medicines, the difference persists for uncomplicated appendicectomy, suggesting that charging really differs.

This example illustrates the need for enlightened purchasing of health care. This can be achieved by improving the use of primary healthcare facilities and using them to control referral to higher levels of care. In China, one experiment has suggested that moving from fee-for-service to salaried staff at the village level, coupled with centralised purchasing of pharmaceuticals, can improve health system performance compared to the standard government insurance system (Yip and Hsiao, 2009). For example, for patients with a common cold, the salaried system markedly reduced drug costs.[3] An experimental system of integrated primary care such as in Finland, Sweden and Québec has been found to work well in a Chinese context (Battacharyya *et al.*, 2003). In the tests, the centres acted as purchasers as well as keeping records and contacts with local patients. The major priority for generalising this system appeared to be human resources. New training programmes would be needed to generalise the system.

Over- and mis-prescribing appear to be common amongst village doctors. Given that they rely on sales of medicines for part of their income, there is an incentive to over-prescribe. In one group of 30 village doctors in Shandong Province, only 2‰ of the patients left the visit without some form of pharmaceutical (Sun *et al.*, 2009a), and most with many more (Herd *et al.*, 2010). For nearly three quarters of the patients the medicine was an antibiotic, and one-fifth received two or more. Risks were further increased by most of the medicines being given by injections, and most of the latter were intravenous. The average cost per visit was CNY 18.7 for the insured and CNY 11.3 for the uninsured. Given that the scheme paid an average reimbursement of 20%, the out-of pocket expenses of insured patients were greater than those of uninsured patients.

The new urban system

The basic guidelines for the new urban system give cities considerable leeway to adapt the scheme to their available fiscal resources, provided they cover some categories. In a sample of nine cities, there was almost universal acceptance of the need to cover children, but that did not seem to extend to senior secondary school pupils (Table 8.5). Only cities in the East of the country tended to give universal coverage for residents over 18. Elsewhere, coverage was given to sub-categories – typically the unemployed and elderly. No city had extended coverage to migrant workers living there, who were supposed to register for cover in their place of origin in the countryside or another city. In practice, this meant that they were excluded from medical insurance since most local schemes designate local health care suppliers and have difficult, if any, provision for reimbursement of out-of-area expenses. The new urban system is voluntary and relies on individual contributions rather

Table 8.5. **The new urban health insurance system: coverage by city**

City	Baotou	Urumqui	Chengdu	Jilin	Changde	Xiamen	Shaoxing	Zibo
Region	West	West	West	Central	Central	East	East	East
Under 18 neither working nor at school	yes		yes	yes	yes	yes	yes	yes
Kindergarten	no	yes	yes	no	no	yes	no	yes
Primary	yes	yes	yes	yes	yes	yes	yes	yes
Junior	yes	yes	yes	yes	yes	yes	yes	yes
Secondary	no	no	no	no	no	yes	no	no
Residents over 18 not covered	no	no	no	yes	no	yes	yes	no
Unemployed	no	yes	yes	yes	yes	yes	yes	yes
Elderly	yes	no	yes	yes	yes	yes	yes	yes
Severely disabled 16-60	yes	no	no	yes	no	yes	yes	no
Migrants	no	no	no	no	no	no	no	no
Children of migrants	no	yes	no	no	no	no	no	no

Source: Lin and Lei (2009).

than government finance. As a result, there is adverse selection into the system and, amongst those who are initially healthy, lower-income families are less likely to join (Lin *et al.*, 2009). Only those with pre-existing fair or good health are satisfied with the reimbursement levels, consistent with the findings on catastrophic insurance.

Very few cities have introduced basic medical insurance to which migrants can contribute. Shenzhen, a city with 8.3 million inhabitants, of which 6.5 million were unofficial migrants without local urban registration, created such a scheme in 2006. Contributions are low (CNY 12 per month) and shared with the employer. By end-2006, the coverage rate was 50% amongst migrant workers. Guangzhou, with a smaller migrant population of 2 million against a total population of 7.6 million is reportedly introducing such a system as well. Shanghai has a similar system but it is more expensive than private insurance and has a low take-up rate (Hu, He *et al.*, 2008). Two motivations appear to drive the development of migrant health insurance in the Pearl River delta area: first, the finding that the health of migrant workers is poor (prevalence of illness in the previous two weeks was 10 percentage points above the national average); second, employers are able to switch migrants who are in the urban employees scheme into the new schemes which have a lower cost. Typically, employers pay 8% of wages for the urban employees' scheme but only 1-1.5% for the two migrant schemes (Zhu *et al.*, 2008).

The 2009 health care reform plan

In April 2009, after extensive consultation, the government launched a new reform plan for the health system, in accordance with a decision of the State Council. It aims at providing safe, affordable, effective basic care to all citizens by 2020. It comprises both demand and supply measures and covers five major areas (Chen, 2009):

- It aims to raise health insurance coverage to 90% by 2011 from 80% at end-2008. As from 2010, the government payment to the rural system will rise to CNY 120 per person from CNY 80.
- A national essential drugs system will be established, with regulated prices and a high reimbursement rate.
- Local medical care will be improved to reduce workloads in over-crowded city hospitals, with family doctors and nurses acting as gate-keepers.

- Basic public health services will be improved for screening and prevention.
- Pilot reforms of public hospitals will be launched aimed at improving their management and correcting the tendency for commercialisation.

This programme involves extra outlays of CNY 850 billion over 2009-11 – equivalent to 0.8% of projected GDP over that period. Local authorities are expected to fund 60% thereof. The cost of the transfer to the rural health insurance and urban schemes plus the cost of public health provision will amount to about CNY 160 billion annually (0.5% of GDP and 60% of total outlays). The remaining money will be spent on training and infrastructure. New infrastructure will include 2 000 new county-level hospitals so that every county would have a hospital compliant with national standards. As well, 29 000 township hospitals will be built and 5 000 upgraded. In towns, 3 700 additional community health centres will be set up. Doctors from villages and community care centres will be retrained, with city-level hospitals having to launch training programmes for the county hospitals for which they are responsible (Ye, 2009).

In the area of public health, where outlays will be modest (0.06% of GDP), three major sets of tasks have been established (Ministry of Health, 2009). The first set pertains to the establishment of a unified, standardized health record for all individuals, and the provision of health education and counselling. The second one focuses on infants and young children up to three, with the creation of individual health records, the establishment of childcare manuals and the management of doctor visits (at least five prenatal and two post-delivery visits). The third set involves: *i)* hepatitis B vaccination for school-age children, BCG, polio vaccines and other national immunisation programmes; *ii)* timely detection, registration and reporting of infectious diseases, on-site treatment of infectious diseases and advocacy and advisory services; *iii)* guidance to patients with diagnosed hypertension, diabetes and other chronic diseases, and registration, management and regular follow-up of these cases; *iv)* re-registration of patients living at home with mental illness to give guidance, re-treatment, rehabilitation and follow-up.

The new essential drugs programme aims to cut the cost of drugs supplied to patients. At present, pharmaceuticals account for 45% of health care costs (1.6% of GDP). This is far above other countries, where pharmaceuticals typically account for one-quarter of total spending. The government has created a list of medicines (205 chemical or biological and 102 traditional or herbal), covering drugs that treat 60 to 80% of common diseases. The objective is to purchase these drugs through competitive tendering and then supply them to primary care institutions and some hospitals, with the restriction that they must be sold by the practitioner at the purchase price. The government aims to cover 30% of institutions by 2011 and all of them by 2020. In October 2009, the NDRC decided to cut the prices of nearly half of the essential drugs by 12% on average (whilst raising the prices of some 6% of the medicines in shortage).

Assessment and conclusions

The past few decades have seen a significant improvement in the health status of China's population. The prevalence of infectious diseases has plummeted and life expectancy has risen – albeit rather slowly compared to other countries. Overall, health outcomes are not so different from lower-income OECD countries such as Mexico and Turkey, despite lower incomes in China. The country now faces new challenges. Chronic diseases are causing more deaths, and infant mortality is unduly high in a number of rural

areas. Three sets of diseases are growing rapidly – lung-related illnesses (notably lung cancer), heart-related diseases and diabetes. These diseases are preventable: the first two are related to high tobacco and salt consumption, and the last one to a growing incidence of obesity.

The Chinese health system, however, is not oriented toward preventing chronic diseases and even treatment is not uniformly good. The trend in medical care worldwide has been to increase care at the primary level and reduce it at the level of hospitals. China's new reform programme makes a start in this direction with the expansion of urban community health centres. If there were enough of these, they could act as a network for primary care and serve as a cheaper method of treating chronic diseases than hospitals.

Currently, however, community health centres and their counterparts in the countryside lack credibility with the population. Patients prefer to go to hospitals, as the doctors offering primary care have low levels of qualification. Many doctors are reluctant to move to primary care because the salaries are low and there is no long-term career path. The new reform programme aims to retrain a large number of the less-qualified doctors. Working in health centres needs to be more attractive and the government needs to take advantage of the ample supply of new graduates, after appropriate family medicine training. The human resources are available but need to be hired at salaries that reflect training. Furthermore, the new community health services need to integrate the previous maternal health service.

The reform programme aims to cut the cost of pharmaceuticals by instituting a bulk buying programme for a limited range of essential products that will be sold to centres under the condition that they are resold at cost. However, doctors have proved adept at circumventing previous attempts to regulate prescribing practices. So there has to be some doubt about how effective the programme will be in reducing cost, as opposed to reducing the prices of a limited number of products. The challenge is to change prescribing patterns and the pay systems within hospitals that link pay to prescribing activity.

The reform programme makes no mention of reducing tobacco consumption. More action is called for in this regard. The tax and subsidy policies for tobacco need to be overhauled. Taxes at the moment are progressive with higher-priced brands paying a higher *ad valorem* tax. The *ad valorem* taxation of cigarettes needs to be replaced by a specific tax, with the overall tax on tobacco raised very substantially from its current level. At the same time, much stricter legislation on smoking in public places ought to be introduced.

The management and operating practices of hospitals also need to change. The new reform programme stresses this and suggests that hospitals need to become less commercial. In some respects, hospitals resemble state-owned enterprises (SOEs) before reform. They effectively have a dual-track pricing system, with parts of their output sold at regulated prices that are below cost, while other parts are priced above cost in order to cross-subsidise other activities. Hospitals work on a contractual basis with local governments, receiving an annual subsidy and balancing their budget through fees. Like the SOEs of old, they operate under a soft budget constraint: high deficits result in greater subsidies while profitable hospitals receive no funds. As hospitals are public service units, recruitment is often determined by local government bureaus and salaries do not reflect market differentials, nor do the hospitals operate an accounting system that would accurately determine the cost of different activities. Movement to a more enterprise-

oriented management and accounting structure is needed. The problems with hospitals acting commercially have not arisen just because they seek to make profits but through their rational reaction to regulated prices. Regulated prices should be gradually abolished and replaced by negotiation between third-party payers and hospitals. The current system in which the hospital is paid on a fee-for-service basis needs to be replaced by one that is based on a fee per procedure, independently of the number of diagnoses that are made. Such a reform would require that an efficient accounting system be put in place.

The government has successfully rolled out two massive health insurance programmes in recent years. They increased the share of the population with some form of medical insurance from 10% to 90%. In rural areas, the increase in coverage in what is a voluntary programme has exceeded expectations. In urban areas, though, there are still some problems. The extension of medical insurance to children and those elderly who are not former employees is welcome. Many cities, especially in western and central regions have wanted to keep costs down and so have not extended coverage to employees without cover, presumably on the ground that the employer should have joined the compulsory, but poorly-enforced, social security medical insurance system. However, many of these workers are the poorest in the community. Migrants, be they from rural or urban background, generally cannot benefit from health insurance. This clearly hampers labour mobility and is not an equitable outcome.

While coverage is broadening, there are still four main health insurance programmes with many different reimbursement rules and they are mostly restricted to limited areas. Once near universal coverage is achieved, including of migrants in their place of residence rather than their place of origin, the government ought to merge the different systems and ensure that a greater portion of their funding be shouldered by the central government. As to the financial management of the health schemes, attention needs to be paid to the high cost of collecting individual contributions and to why the schemes consistently run surpluses of the order of 30% of income which are kept in separate bank accounts that cannot be used by the local authority.

The new rural health insurance scheme has been a success: the number of consultations at countryside health centres has increased markedly. The improvement to health status will take more time to become evident. In future, though, more consideration ought to be given to the benefit plan that produces the best health results. Relying on medical savings accounts to fund all outpatient illnesses may not be optimal. At the least, outpatient treatment for chronic diseases should be covered by the new insurance system as well as a number of preventive medical checkups and treatments.

Poverty caused by catastrophic illness remains a major concern. Indeed, patients are paid less than half of the theoretical benefits, the benefits decline with the seriousness of the disease (insofar as serious cases are sent to higher-level hospitals with lower reimbursement rates) and truly catastrophic illness (costing above two years of average per capita income) is not covered at all. Much higher average reimbursement rates are needed. At present, in rural areas, the contributions per participant would probably need to be tripled, to CNY 300, in order to stand a reasonable chance of markedly lowering poverty due to catastrophic illness. In addition, an excessive proportion of the cost of the scheme falls on the local population. At present, individuals and taxpayers people in a county are responsible for paying 60% of the cost in the central areas and 100% in the eastern areas. Even in the more affluent eastern regions this can pose problems for some rural counties.

In the poorer parts of the country, the problems are severe and a tripling of contributions might not be possible. Therefore, a much greater degree of central government involvement in financing will be necessary.

Notes

1. The resulting incentive problems are also observed in the Japanese health system (OECD, 2009).
2. Participation exceeds the size of the rural population due to the presence of significant rural population in urban areas.
3. However, it did not reduce the extent of mis-prescribing, suggesting that the village doctor system still suffers from inadequate training.

Bibliography

Anand, S., V. Fan, J. Zhang, L. Zhang, Y. Ke, Z. Dong and L. Chen (2008), "China's Human Resources for Health: Quantity, Quality and Distribution", *The Lancet,* Vol. 372, No. 9651.

Battacharyya, O., L. Farand and F. Champagne (2003), "Evaluation of a Community Health Centre Model for China", Groupe de recherche interdisciplinaire en santé, Université de Montréal, R03-06.

Brown, P. and C. Theoharides (2009), "Health-Seeking Behavior and Hospital Choice in China's New Cooperative Medical System", *Health Economics*, Vol. 18, No. S2.

Caijing (2009), "Health Care Coverage of Government Workers", *www.caijing.com.cn/2009-04-15/110145226.html*.

Chen, X. and Y. Wang (2009), "The Epidemic of Diabetes and its Impact on Cardiovascular Health in Contemporary China", *CVD Prevention and Control*, Vol. 4, No. 1.

Chen, Z. (2009), "Launch of the Health-Care Reform Plan in China", *The Lancet*, Vol. 373, No. 9672.

Cheng, T. (2009), "Prevention of Cardiovascular Disease in Modern China: Utile or Futile?", *CVD Prevention and Control,* Vol. 4, No. 1.

China Cancer Foundation (2006), *China Smoking and Health Report: Tobacco Control and Lung Cancer Prevention and Treatment*, Beijing: China Cancer Foundation (in Chinese).

Clarke, G. (2008), "DRG Implications for Accounting Systems", EUCSS-China Project, Beijing.

Eggleston, K., L. Li, M. Qingyue, M. Lindelow and A. Wagstaff (2008), "Health Service Delivery in China: A Literature Review", *Health Economics*, Vol. 17, No. 2.

Eggleston, K., Y. Shen, M. Lu, C. Li, J. Wang, Z. Yang and J. Zhang (2009), "Soft Budget Constraints in China: Evidence from the Guangdong Hospital Industry", *International Journal of Health Care Finance and Economics*, Vol. 9, No. 2.

Gao, S. and X. Meng (2009), "Health and Rural Cooperative Medical Insurance in China: An Empirical Analysis", Paper presented to the Conference on Asian Social Protection in Comparative Perspective, University of Maryland and the Lee Kwan Yu School of Public Policy, Singapore, 7-9 January.

Gong, Z., Q. Zhao, W. Su, Z. Mao, J. Jiang and M. Haung (2004), "Study on Feasibility of Setting Up DRG Payment in China, Final Report", *East Asian Development Network* , Working Paper No. 27, Thailand Development Research Institute, Bangkok.

Herd, R., Y.-W. Hu and V. Koen (2010), "Improving China's Health Care System", *OECD Economics Department Working Papers*, forthcoming.

Hu, S., W. He and T. Wen (2008), "Public Health and Health Insurance for the Floating Population: A Case Study of Shanghai", *Yale-China Health Journal*.

Hu, T., Z. Mao, J. Shi and W. Chen (2008), *Tobacco Taxation and Its Potential Impact in China*, Bloomberg Philanthropies and the Bill and Melinda Gates Foundation, International Union Against Tuberculosis and Lung Disease, Paris.

Jiang, Y., M. Ong, E. Tong, Y. Yang, Y. Nan, Q. Gan and T. Hu (2007), "Chinese Physicians and their Smoking Knowledge, Attitudes, and Practices", *American Journal of Preventive Medicine*, Vol. 33, No. 1.

Liang, Z., L. Guo and C. Duan (2008), "Migration and the Well-Being of Children in China", *The Yale-China Health Journal*, Vol. 5.

Lim, M., H. Yang, T. Zhang, Z. Zhou, W. Feng and Y. Chen (2002), "The Role and Scope of Private Medical Practice in China", Final Report to the World Health Organization and the United Nations Development Programme, UNDP, WHO, and MOH China.

Lin, L., G. Chen, X. Zou, J. Zhao, F. Zhu, M. Tu, S. Xu, W. Lin, S. Yang, Y. Zhang, M. Lin, N. Chen, H. Huang, J. Liang, L. Li and J. Yao (2009), "Diabetes, Pre-Diabetes and Associated Risks on Minnesota Code-Indicated Major Electrocardiogram Abnormality among Chinese: A Cross-Sectional Diabetic Study in Fujian Province, Southeast China", *Obesity Reviews*, Vol. 10, No. 4.

Lin, W. and X. Lei (2009), "The New Cooperative Medical Scheme in Rural China: Does More Coverage Mean More Service and Better Health?", Paper presented to the Conference of the International Health Economics Association, Beijing, July.

Lindelow, M. and A. Wagstaff (2005), "Health Shocks in China: Are the Poor and Uninsured Less Protected?", *World Bank Research Papers*, No. 3740.

Liu, X., Y. Liu and N. Chen (2000), "The Chinese Experience of Hospital Price Regulation", *Health Policy and Planning*, Vol. 15, No. 2.

Liu, Y., K. Rao, T. Hu, Q. Sun and Z. Mao (2006), "Cigarette Smoking and Poverty in China", *Social Science and Medicine*, Vol. 63, No. 11.

Liu, Y., K. Rao and W. Hsiao (2003), "Medical Expenditure and Rural Impoverishment in China", *Journal Health and Population Nutrition*, Vol. 21, No. 3.

Ministry of Health (1998), *www.gov.cn/banshi/2005-08/01/content_18970.htm*.

Ministry of Health (2004), *National Health Accounts*, Beijing.

Ministry of Health (2005), *Report on China's Healthcare System and Reform*, Beijing.

Ministry of Health (2009), *The Fourth National Health Service Survey*, Beijing.

Ministry of Health Study Group for Nursing Demand (2003), "Study of Chinese Nursing Human Resource Status and Suggestions on Strengthening Training Programs for Nursing Professionals", Ministry of Health.

National Health Accounts (2007), *China National Health Accounts 2004 Report*, Beijing: China National Health Economics Institute.

NCMS Pilots Evaluation Team (2006), *Evaluation Reports on China's New Cooperative Medical Scheme*, Beijing: People's Medical Publishing House (in Chinese).

OECD (2009), *OECD Economic Survey of Japan*, Paris.

Pan, X., H. Dib, M. Zhu, Y. Zhang and Y. Fan (2009), "Absence of Appropriate Hospitalization Cost Control for Patients with Medical Insurance: A Comparative Analysis Study", *Health Economics*, Vol. 18, No. 10.

Peto, R., Z. Chen and J. Boreham (2009), "Tobacco: The Growing Epidemic in China", *Cardio Vascular Disease Prevention and Control*, Vol. 4, No. 1.

Sun, X., S. Jackson, G. Carmichael and A. Sleigh (2009a), "Prescribing Behaviour of Village Doctors Under China's New Cooperative Medical Scheme", *Social Science and Medicine*, Vol. 68, No. 10.

Sun, X., S. Jackson, G. Carmichael and A. Sleigh (2009b), "Catastrophic Medical Payment and Financial Protection in Rural China: Evidence from the New Cooperative Medical Scheme in Shandong Province", *Health Economics*, Vol. 18, No. 1.

Tian, H., G. Song, H. Xie, H. Zhang, J. Tuomilehto and G. Hu (2009), "Prevalence of Diabetes and Impaired Fasting Glucose Among 769 792 Rural Chinese Adults", *Diabetes Research and Clinical Practice*, Vol. 84, No. 3.

UNICEF (2006), *Joint Review of Maternal and Child Care Survival Strategy in China*, UNICEF, Beijing.

UNDP (2008), *Access for All: Basic Public Services for 1.3 Billion People*, China Human Development Report 2007/2008.

Vail, J. (2009), "Managing Infectious Diseases among China's Migrant Populations", *in* C. Freeman 3rd and X. Lu (eds), *China's Capacity to Manage Infectious Diseases: Global Implications*, Center for Strategic and International Studies, Washington DC.

Wagstaff, A. and M. Lindelow (2008), "Can Insurance Increase Financial Risk? The Curious Case of Health Insurance in China", *Journal of Health Economics*, Vol. 27, No. 4.

Wagstaff, A., W. Yip, M. Lindelow and W. Hsiao (2009), "China's Health System and its Reform: A Review", *Health Economics*, Vol. 18, No. S2.

Wang, H., Y. Ge and S. Gong (2007), *Regulating Medical Services in China*, Department of Social Development, Development Research Center, The State Council of P.R. China and the Milbank Memorial Fund, New York.

Wang, H., J. Sindelar and S. Busch (2006), "The Impact of Tobacco Expenditure on Household Consumption Patterns in Rural China", *Social Science and Medicine,* Vol. 62, No. 6.

WHO Office in China and Social Development Department of China DRC (2005), *China: Health, Poverty and Economic Development*, available at *www.who.int/macrohealth/action/CMH_China.pdf*.

World Bank (2009), *Reforming China's Rural Health System*, Washington, DC.

World Health Organisation (2008), *Report on the Global Tobacco Epidemic*, Geneva.

Yan, P. (2009), "Does Major Illness Lead to Persistent Poverty? Evidence from Rural China", Paper presented to the 2009 International Health Economics Association, Beijing, July.

Yang, G., L. Kong, W. Zhao, X. Wan, Y. Zhai, L. Chen and J. Koplan (2008), "Emergence of Chronic Non-Communicable Diseases in China", *The Lancet*, Vol. 372, No. 9650.

Yang, G., J. Ma, N. Liu and L. Zhou (2005), "Smoking and Passive Smoking in China: Findings of the 2002 National Survey", *Chinese Journal of Epidemiology*, Vol. 26, No. 2 (in Chinese).

Ye, Y. (2009), "Backgrounder: Chronology of China's Health–Care Reform", *Xinhua, http://news.xinhuanet.com/english/2009-04/06/content_11139417.htm*.

Yip, W. and W. Hsiao (2009), "Non-Evidence-Based Policy: How Effective is China's New Cooperative Medical Scheme in Reducing Medical Impoverishment?", *Social Science and Medicine*, Vol. 68, No. 2.

Zheng, Z. and P. Lian (2005), "Health Vulnerability among Temporary Migrants in Urban China", Paper presented to the Conference of the International Union for the Scientific Study of Population, Paris.

Zhu, M., H. Dib, X. Zhang, S. Tang and L. Liu (2008), "The Influence of Health Insurance Towards Accessing Essential Medicines: The Experience from Shenzhen Labor Health Insurance", *Health Policy*, Vol. 88, No. 2.

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