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Rapid urbanisation and implications for growth

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Since the mid 1980s, China has experienced unprecedented urbanisation, generating rapid growth in the urban labour force. The reallocation of resources prompted by this labour migration has become an important source of growth and rising incomes. At the same time, however, ‘history’s largest flow of rural–urban migration’ also brings about enormous economic, social, environmental, as well as political challenges that China will have to confront to avoid major disruptions to growth.

This chapter discusses why urbanisation poses a particular challenge for China, highlighting the size, scope and speed of urbanisation, as well as the institutional constraints on rural-to-urban migration. Urbanisation, particularly the impact of low-cost migrant workers entering urban labour markets and the increased demand for urban infrastructure, has been a key generator of economic growth in China in recent years.

The chapter then identifies a number of driving forces behind urbanisation by applying the disequilibrium-analysis method. Using this analysis, it then compares the relative strength of both the ‘pull’ and ‘push’ factors determining urbanisation, finding that the ‘push’ forces are stronger than the ‘pull’ forces over the period of reform. This insight raises the question of whether the anticipated rate of urbanisation in China is likely to be ‘excessive’.

We conclude that China needs to maintain reasonably high growth to alleviate the unemployment problems associated with urbanisation and ongoing enterprise restructuring. This can be achieved by further encouraging and promoting private sector development. The services sector needs to be expanded further to absorb increased employment associated with urbanisation. Urban reforms such as equal opportunities and social protection of migrant workers need to be accelerated.

Finally, a balanced strategy, one that focuses on investment in physical and human capital to promote development of the agricultural sector and rural communities, is needed to mitigate the strong 'push' forces driving people from rural areas.

The classical migration model and its application to China: a review

In the 1950s, development economists saw the demand for labour created by a 'growing modern industrial complex' as the main pull factor in migration (Williamson 1988). Statistical data on unemployment and underemployment collected from developing countries, however, contradicted this paradigm. Todaro (1969) and Harris and Todaro (1970) observed chronic unemployment problems in urban areas and instead suggested the expected wage gap between rural and urban areas was the 'pull' factor. Migration, they argued, is stimulated by rational economic considerations of relative benefits and costs—the decision to migrate depends on 'expected' rather than 'actual' urban–rural real wage differentials, and the probability of obtaining an urban job is inversely related to the urban unemployment rate.

Rural–urban migration in developing countries, especially those with large rural populations, such as China, is driven by both 'push' and 'pull' factors—urban–rural income gaps, urban development, employment opportunities in both rural and urban areas, and rural labour surpluses, among other things. Studying the relative strengths of the two forces can reveal how migration has been driven by their interaction.

For example, in the process of industrialisation, the possibility of over-urbanisation, or migration rates in excess of urban job-opportunity growth rates, will not only be possible but indeed rational. This is exactly what happened in many developing countries in the 1960s and 1970s, when rising levels of open urban unemployment prompted developing-country policymakers to shift from trying to transfer surplus labour from agriculture to industry to trying to reduce 'excessive' rates of urbanisation in these countries (Todaro 1985).

Basu (1995), focusing on the 'push' factors in urbanisation, analysed the relationship between rural labour surpluses and unemployment. As he argued, the marginal productivity of rural labour in many developing countries, for a variety of reasons, was zero over certain ranges, implying that the withdrawal of part of the labour force would have no effect on rural output. Thus, given the constant 'pull' from urban areas due to the income gap between rural and urban areas, the existence of surplus labour will accelerate urbanisation.

A number of studies have focused on urbanisation issues in China since the 1980s. A critical argument that prevails in the literature is that approaches to shaping this transformation should be based on analysis of people's motivations

for migrating and the conditions they encounter when they do so. Liang, Chen and Gu (2002) focused on the 'push factors' for migration, exploring the possibility that migration was possibly curtailed by the level of rural industrialisation. Chen and Coulson (2002), in contrast, focused on the 'pull factors' of destinations for migrant workers. They found that migrants were attracted not so much by high wages but by high gross incomes and entrepreneurial activity.

Some studies focused more specifically on rural–urban income gaps, urban employment and growth, and rural output and productivity. For example, Zhu (2002) modelled the impact of income gaps on migration in China and found that they were the most important positive factor from both the 'push' and 'pull' perspectives. Cai (1996) studied the ratio of local rural income to the average national rural income, finding that higher ratios are associated with lower migration. Using household level data, Hare (1999) found rural per capita production assets had no significant effect on the expenditure of migrant workers. These findings are generally consistent with the predictions of the Harris–Todaro two-sector model.

Zhang (2002) analysed urban development and employment by examining the cross-provincial pattern of urban growth after 1978. He found that economic growth fostered rural–urban migration and urban growth, rather than vice versa. Foreign direct investment was an especially strong causal factor, explaining much of the difference between coastal and inland provinces in urban growth rates. Song and Zhang (2002) showed that, despite China's recent extraordinary urban development, the distribution of city size was within expectations from research on urban development in other nations—somewhat more even than the average nation, precisely as expected for a large country, but not too different from the commonly observed Pareto distribution.

Liang, Chen and Gu (2002) looked at how changes in rural output and productivity affected migration by examining the relationship between the level of rural industrialisation and migration from rural to urban areas. As they argued, although the rural industrialisation could slow rural–urban migration by providing potential migrants with opportunities to remain at home, it could also promote migration since 'investments in machines, new crops, improved seeds...all reduce the number of workers needed to produce a unit of agricultural output' (Massey 1988:391). This result is also consistent with Fei and Ranis' (1969) analysis of small-town development strategies in China, as well as some empirical studies, such as Yang (1996) and Liang (2001).

Building on previous studies, this chapter aims to make use of the disequilibrium-analysis method to explore the determination of urbanisation in China from both 'push' and 'pull' perspectives. Three issues—the urban–rural income gap, urban

development, and employment and changes in rural output and productivity—will be reconsidered as ‘push’ and ‘pull’ factors from the demand and supply sides respectively.

Size, speed, contributions and challenges of urbanisation

In the course of economic development, virtually all countries follow a broadly similar trajectory: as development gets under way, the share of agriculture in national employment falls and there is a rapid increase in the share of manufacturing (Rowthorn and Coutts 2004). China has basically followed this path, but rapid urbanisation in China in the past two decades is also an outcome of profound economic transformation that has introduced market forces into the economic system and forced changes in economic, social and political institutions. One consequence of this in China is the massive movement of migrant workers from rural to urban areas since the beginning of economic reform in the late 1970s.

China’s urbanisation experience has passed through two distinct periods since 1960, demonstrating very different trends from what would have arisen in a free-market economy (Liang, Chen and Gu 2002). The first was the period of central planning, lasting from 1960 to 1978, when urbanisation was often suppressed and, for military reasons, channelled away from the eastern coastal cities. During that time, the total number of cities increased only by 26 and the urban population stabilised at 90–110 million, implying a national urbanisation level of about 11–12 per cent.

The second period was the reform era from 1979 to the present, when the first period’s bias was dramatically reversed, the eastern coastal cities tapped an expansion in China’s international trade, and urbanisation accelerated significantly. The total number of cities increased from 193 in 1978 to 667 in 2003, or 245 per cent. China’s non-agricultural population in urban areas increased from 172 million in 1978 to 524 million in 2003, a 204 per cent increase—much greater than the national population growth rate of 30 per cent over the same period. As a result, China’s urbanisation rate (the share of urban population in total population) increased from 18 per cent in 1978 to 40.5 per cent in 2003 (Figure 7.1).¹

It should be noted, however, that the real size of China’s urban population is not clear from the official statistics because of some fundamental data problems. For example, cities do not generally count migrant workers in their population figures as people are ‘counted’ as living in their places of registration, not their actual residence. Nonetheless, we know that China already has, in absolute terms, the world’s largest urban population.

Figure 7.1 Urbanisation rate, 1960–2003 (per cent)

Source: Calculated using the figures from Appendix table A7.1

The rate of urbanisation differs greatly across various parts of the country. Appendix table A7.3 shows that major cities such as Beijing (77 per cent), Shanghai (88 per cent) and Tianjin (72 per cent), had much higher than average rates of urban growth (36 per cent) in 2000. In contrast, a large number of medium and small size cities still have relatively low rates of growth. The most rapid growth of urbanisation occurred between 1990 and 2000, with particular force in China's most dynamic areas, including Shanghai, Jiangsu, Fujian and Guangdong.

It can be expected that China's urban population will increase by another 100 million, probably surpassing the world average urbanisation level of 47 per cent around 2010. China's quantity of arable land per capita is less than half the world average and there is still a large supply of rural surplus labour (estimated at 200–250 million people). As a consequence, continuing urbanisation is important for increasing agricultural productivity and rural incomes and moving towards a more prosperous society for China.

Rapid urbanisation in China is the major factor in urban labour force growth and in optimising resource reallocation between the rural and urban areas, thereby enhancing economic growth. For example, the influx of rural migrants into urban

areas has raised productivity because they have typically accepted relatively low wages, and this in turn has helped Chinese industries maintain competitiveness. Rural–urban migration also provides significant income supplements to the inland provinces through remittance flows.

Migrant workers' contribution to growth can be seen from rural migrant workers' rising employment share in China's dynamic non-state sector (Table 7.1). The role of SOEs and collectives in absorbing migrant workers fell rapidly between 1995 and 2002. By contrast, the share of rural migrants in non-state sector employment has been consistently increasing, from 14 per cent in 1995 to 53 per cent in 2002. In fact the non-state sector's share is probably even higher as private participation in SOEs' activities is now commonplace but not well captured by the statisticians (Garnaut et al. 2005).

The rapid pace of urbanisation has also resulted in a very high demand for basic urban infrastructure. As Davis and Henderson (2003:98) observed, '[u]rbanisation and economic development go hand-in-hand as a country moves from a rural-agricultural base to an urban-industrial base'. As a result, infrastructure development has become a fundamental driving force in China's recent growth (Table 7.2).²

However, the large scale of rural–urban migration also poses enormous challenges for the government. Many small cities and towns are now emerging, sprawling over previously arable land and reducing the amount of this scarce resource available (at 0.095 hectares per capita, China's level of arable land is already less than half the world average). The absolute decline in the quantity of arable land,

Table 7.1 Employment of rural migrant workers in urban areas by ownership, 1995–2002 (10,000 person and per cent)

	Total	Employment			Proportion (Total=100)		
		SOEs	Collectives	Others ¹	SOEs	Collectives	Others
1995	1431	762	465	203	53	33	14
1996	1265	682	392	191	54	31	15
1997	1153	595	349	209	52	30	18
1998	913	400	240	274	44	26	30
1999	929	390	226	313	42	24	34
2000	897	341	201	355	38	22	40
2001	904	327	178	399	36	20	44
2002	1002	299	169	535	30	17	53

Note: ¹ Others include all non-state (collective) enterprises including domestic private and foreign firms.

Source: Assembled and calculated using the data from the *Statistical Yearbook of China*.

coupled with lower growth rates among township and village enterprises (TVEs) since the 1990s, has put further pressure on rural employment and thereby strengthened the 'push' forces for urbanisation. The growing number of jobless and landless peasants presents a major concern for social stability, demanding firm measures to protect peasants' rights effectively in economic transition.

Those who do migrate into urban areas are often poorly paid and cannot enjoy the privileges that urban residents enjoy, such as state-subsidised unemployment and retirement benefits, schooling and medical care. This is largely because urban governments often view migrant workers as 'belonging' to their place of origin.

This attitude and the lack of institutional support pose various social and political problems for migrant workers in urban areas, such as general discrimination, constraints on jobs, legal vulnerabilities (lack of social protection), lack of access to services, and vulnerability to crimes.

Table 7.2 Infrastructure development in urban areas, 1990–2003

	1990	1995	2000	2003
City area				
Developed area(sq.m)	12856	19264	22439	28308
Floor space of buildings (100 mn sq.m)	40	57	77	141
Floor space of residence (100 mn sq.m)	20	31	44	89
Water supply, gas supply and heating				
Annual supply of tap water (100 mn tonnes)	382	482	469	475
Coal gas supply (100 mn cubic m)	175	127	152	202
Natural gas supply (100 mn cubic m)	64	67	82	142
Liquefied petroleum gas ('000 tonnes)	219	489	1054	1126
Length of gas pipeline (10,000 km)	2	4	9	13
Municipal infrastructure				
Length of road (10,000 km)	10	13	16	21
Area of road (100 mn sq. m)	9	14	19	32
Length of sewer pipeline (10,000 km)	6	11	14	20
Public transport				
Number of public vehicles for business transportation (10,000 units)	6	14	23	26
Taxis (10,000 units)	11	50	83	90
Afforestation				
Public green area (10,000 hectares)	48	68	87	121
Area of park and zoo (10,000 hectares)	4	7	8	11

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

Given the significance of the issues involved, any policy response promoting development and industrialisation must identify what specifically is driving Chinese urbanisation.

Disequilibrium analysis and data

The method of disequilibrium analysis was originally developed by Dixit (1969), and is currently widely used for discussing transitional economies. The core of the method is to specify the determinants of equilibrium from both supply and demand perspectives separately and then combine them to identify their relative roles in affecting the equilibrium. Following Young and Deng (1998), we apply this method to analyse the factors determining urbanisation in China. The counterpart forces are specified as the ‘push’ force in rural areas and the ‘pull’ force exerted by urban areas.

The large wage or income differential between rural and urban areas is thought to be a fundamental cause of migration. In the Chinese case, one can decompose this fundamental cause into three factors: the urban–rural income gap, urban development and employment, and changes in rural output and productivity. The channels through which these factors affect urbanisation can be assumed as being the demand (‘pull’) and supply (‘push’) forces respectively.

First, from the supply perspective, urbanisation in China is affected by the release of rural surplus labour. There are three factors which influence the emigration of rural labour—agricultural sector output, rural employment, and the rural–urban income gap. Thus, the relationship can be written as follows

$$\ln US_t = \alpha_0 + \alpha_1 \ln RO_t + \alpha_2 \ln RE_t + \alpha_3 \ln GAP_t + \alpha_4 DM78 + \alpha_5 DM89 + \varepsilon_t \quad (7.1)$$

where US_t represents the urbanisation determined from the supply side at time t , RO_t stands for agricultural output at time t , RE_t represents rural employment at time t , and GAP_t stands for the rural–urban income gap. Equation 7.1 shows that the labour supply resulting from urbanisation in China can be generally defined as the function of rural output, rural employment and the urban–rural income gap. From the demand perspective, urbanisation in China is affected by the absorption of labour in urban areas. Three factors determine the immigration of urban labour—urban employment, the natural growth rate of urban population and the rural–urban income gap. Thus, the relationship can be written as

$$\ln UD_t = \beta_0 + \beta_1 \ln UE_t + \beta_2 \ln NR_t + \beta_3 \ln GAP_t + \beta_4 DM78 + \beta_5 DM89 + \varepsilon_t \quad (7.2)$$

where UD_t represents the urbanisation determined from the demand side at time t , UE_t represents urban employment at time t , NR_t represents the natural growth rate of the population in urban areas at time t , and GAP_t represents the rural–urban income gap. Equation 7.2 shows that the labour demand of urbanisation in China can be generally defined as the function of urban employment, the urban population natural growth rate, and the urban–rural income gap.

Meanwhile, in both the supply and demand equations, dummy variables for the specific years of 1978 and 1989 are used to test the impact of government policies and political changes on urbanisation.

Combining Equations 7.1 and 7.2, the equilibrium urbanisation level is jointly determined by both the demand and supply of rural labour.³ Since there is always some difference between the demand and supply forces of rural–urban migration at each time, the minimum of both forces represents the condition on which actual (equilibrium) urbanisation occurs.

$$UB_t = \min (US_t, UD_t) \quad (7.3)$$

where UB_t represents the urbanisation equilibrium shown in practice, US_t stands for urbanisation as determined by the supply forces at time t as shown in Equation 7.1, and UD_t represents urbanisation as it is determined by the demand forces at time t as shown in Equation 7.2.

Equations 7.1–7.3 constitute the disequilibrium method for analysing the determination of urbanisation. On the one hand, one can assume that the urbanisation rate is mainly determined by supply forces, estimated using Equation 7.1. On the other hand, one can assume that the urbanisation rate is mainly determined by demand forces, estimated using Equation 7.2. Comparing these two independently estimated results, the relative strength of both the ‘push’ and ‘pull’ forces in determining urbanisation in China at different periods of time can be discerned. The results can also be used to predict future changes in the urbanisation process.

Data used for the disequilibrium analysis are from three sources—*The Statistical Yearbook of China*, *The Urban Statistical Yearbook of China* and *The Labour Statistical Yearbook of China*. The sample is specified as the annual data series, taken in log form to reduce the time trend effects. The urbanisation index is defined in two forms: one follows Young and Deng (1998), measuring the ratio between urban population and total population, while the other is the ratio between the rural–urban migration over the total urban population. The agricultural output index at time t is defined as the ratio between the value of rural output and total GDP. Rural employment at time t is defined as the number of people employed in rural

areas. Urban employment at time t is defined as the total number of people employed in urban areas. The natural growth rate of population in urban areas at time t is defined as the newly-born rate minus the death rate in urban areas. The rural–urban income gap is defined as the ratio of the real wage per capita in urban areas over the real income per capita in rural areas.

The determinants of urbanisation: estimation results

Table 7.3 shows the results of the analysis. The dependent variable in the disequilibrium regressions is defined as the urban–total population ratio and the migration–urban population respectively. The independent variables are defined as rural output, rural employment, and the urban–rural income gap for the supply side; and urban employment, the natural population growth rate in urban areas, and the urban–rural income gap for the demand side.

On the supply side, urbanisation is positively correlated with rural–urban income gaps, with the coefficients equaling 0.69 and 2.68 at the 10 per cent significance level respectively for the two model estimations. This finding supports the hypothesis that rural–urban income gaps are the most important motivation for people to migrate from rural to urban areas. Figure 7.2 shows the widening income gap between rural and urban households in terms of per capita disposable incomes over the period 1978–2003.

The coefficients of agricultural output are 0.03 and 0.16, and both are statistically significant at the 10 per cent level. This implies that the growth of agricultural output contributes positively to urbanisation. This is consistent with a number of studies on urbanisation. Perkins (1969) found that the need to obtain an agricultural surplus to supply urban residents' basic needs placed constraints on the size and location of urban centres. Chan (1994) showed that net rural–urban migration rates were positively related to urban grain supplies over the 1956–82 period and there were significant positive relationships between urbanisation and rural grain output per person.

The coefficients of the rural employment indices are -0.05 and -0.15 —statistically significant at 10 per cent level for the regression with the urban–total population ratio, but insignificant for the regression with the migration–urban population ratio. This suggests that the current level of rural employment is insignificant in affecting urbanisation. A possible explanation is that there might be potential over-employment in the rural areas, reflecting rural surplus labour in the agricultural sector.

The overall regression of urbanisation in China with respect to the supply factors is statistically significant (F -test is 12.37 and 7.09 respectively), providing some evidence that supply factors do play an important role in determining urbanisation.

Table 7.3 Determining the pace of urbanisation from supply and demand perspectives, 1960–2003

	Supply equation			Demand equation	
	Urban– population ratio	Migration– urban population ratio		Urban– population ratio	Migration– urban population ratio
Constant	–0.10 [–0.70]	–0.74 [–0.94]	Constant	0.42 [1.53]	1.05 [0.73]
RO	0.03 [1.67]	0.16 [1.62]	UE	0.05 [3.22]	0.27 [3.56]
RE	–0.05 [–1.59]	–0.15 [–0.95]	NR	–0.30 [–2.45]	–1.05 [–1.66]
GAP	0.69 [1.78]	2.68 [1.91]	GAP	0.47 [1.82]	0.21 [2.10]
DM78	0.82 [3.52]	4.08 [4.85]	DM78	0.82 [4.37]	3.09 [3.16]
DM89	–0.74 [–3.29]	–2.46 [–2.12]	DM89	–0.65 [–3.43]	–2.32 [–2.34]
Adjusted R-square	0.62	0.42	Adjusted R-square	0.67	0.54
D-W tests	0.60	0.51	D-W tests	0.54	0.48
F-statistics	12.37	7.09	F-statistics	18.34	10.8

Source: Authors' own calculations.

Figure 7.2 Rising per capita income gap between urban and rural areas in China: 1978–2003 (yuan)

Source: Authors' own calculations using the data from the National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

From the demand perspective, urbanisation is positively correlated with the rural–urban income gap and negatively correlated with the natural growth rate of population, and urban employment has a statistically significant effect on urbanisation. The coefficients of the rural–urban income gap and the natural growth rate of population are 0.47, 0.21 and -0.30 , -1.05 respectively for both model estimations. Both are statistically significant. The coefficients for urban employment are 0.05 and 0.27, which are statistically significant at 5 per cent level.

These findings imply first that the rural–urban income gap is a critical factor in urbanisation in the reform era, supporting Anderson and Ge's (2004) conclusion that urban demand for rural labour is mainly motivated by economic incentives. Second, because rural immigrants compete with the urban population for jobs, the urban population growth rate is negatively correlated with urban–rural migration, suggesting there might be a constraint on urbanisation when both rural–urban migration and urban population increase at the same time. Third, and most significantly, employment opportunities in urban areas are the most important factor attracting new migrant workers to urban areas.

The dummy variables are statistically significant at the 5 per cent level in both the supply and demand equations, confirming that political factors could deter migrant workers from entering urban areas, while market-oriented reform could enhance the process of urbanisation.

The process of urbanisation in China has been determined by both supply (push) and demand (pull) forces (Figure 7.3). A clear pattern can be seen, however, in which each force has played a dominant role in determining the process of urbanisation. Rural–urban migration before 1978 was mainly dominated by demand factors. The urban labour demand force was much stronger than the calculated supply forces for most of the years in this period, suggesting that urbanisation before 1978 was driven largely by the 'pull' forces.

But this trend reversed after the initiation of reforms in 1978. The calculated 'push' forces of rural labour supply were consistently stronger than the 'pull' forces of labour demand, implying that the process of urbanisation over the period of reform was driven predominantly by the 'push' forces from the rural areas. An explanation on this phenomenon is that economic reform and its related policy changes have not only accelerated urban growth, but have also relaxed the various constraints on rural–urban migration. These constraints, the legacy of central planning, suppressed the 'push' forces in the period prior to economic reform, so their removal released pent-up pressures for migration and generated an unprecedented rush to the cities.

Figure 7.3 The disequilibrium analysis on urbanisation in China, 1960–2003

Source: Authors' calculations.

Second, precisely because of this unprecedented scale of migration, there is a danger of over-urbanisation. The dominance of supply-determined rather than demand-determined urbanisation since 1978 suggests that a major factor is the sheer scale of surplus labour in rural areas, built up by long-term policy discrimination against agriculture and associated restrictions on labour mobility. This surplus labour needs to be released and absorbed by the urban sectors in the process of economic transformation.

Dilemmas in managing the process of urbanisation

China is facing a dilemma in managing urbanisation. On the one hand, although great progress has been made, China's rate of urbanisation is still relatively low, not only compared with the world average, but also with the current level of industrialisation in China. The agricultural sector provides roughly half of all employment in China but contributes only about 14 per cent of the nation's GDP (Figures 7.4 and 7.5). According to Chinese statistics, the total rural labour force was about 490 million people at the end of 2002, of which 320 million worked in the agricultural sector. The actual demand for labour in agriculture, however, is

estimated to be only about 170 million, which means that about 150 million people are therefore redundant. Some even estimate that, given the amount of arable land now available, the agricultural sector would need only about 60 million people to sustain current levels of grain production, which suggests that the real size of the rural labour surplus may be much higher (Chen 2004). Continuing to shift rural surplus labour out of the agricultural sector is the key to raising agricultural productivity and rural incomes, boosting domestic demand, especially in rural areas, and accelerating the pace of industrialisation in China.

China thus needs to accelerate the pace of urbanisation. An effective way of doing so is to reduce further the remaining institutional barriers raised by the *hukou* system (household registration system), which still restricts the mobility of labour, especially migrant workers. After more than twenty years' reform, the *hukou* system is no longer a prohibitive policy, but continues to act as an important institutional barrier to the free flow of workers and to cause segregation in the labour market. A consequence of the *hukou* system is that the 'pull' force from the urban areas tends to be weakened, thereby slowing urbanisation. Meanwhile, there are social, economic, political and environmental concerns associated with rural–urban migration that also tend to affect the process of urbanisation in China.

At the same time, the strong 'push' forces raise the risk of over-urbanisation, especially in the short to medium terms. This possibility raises a number of issues for the Chinese government. First, there are concerns over employment. As predicted by the Harris–Todaro model, an increase in the number of manufacturing jobs will lead to rural–urban migration so large that urban unemployment actually rises. China's urban areas already face increasing pressure to resolve employment problems for those who have just graduated and entered the labour market and those who have been laid off in enterprise restructuring. The different scenarios for urban labour force forecasts reported in Table 7.4 highlight the challenges of meeting China's employment targets in the next 10–15 years.

According to other developed countries' experiences, once a certain per-capita GDP is reached, the share of manufacturing product in total GDP increases, but following industrial structural adjustment and growing productivity, manufacturing employment falls. The estimated turning point, according to Rowthorn and Coutts (2004), is around US\$9,500 (1995 PPP) per capita, which most OECD countries had reached by 1970, despite having a per-capita income of only US\$1,000. However, China has already seen its industrial labour force share peak and stabilise since the mid 1990s (Figure 7.5). This indicates that China will have to rely more heavily on the development of service sectors to increase employment opportunities.

Figure 7.4 Industrial structure of the economy, 1978–2003 (per cent)

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

Figure 7.6 shows the growth of urbanisation in China from 1960 to 2003. The growth rate of urbanisation in China has been decreasing over time, especially since 1996, suggesting that urbanisation has tended to slow in more recent years. A possible explanation is that the growth of the urban services sector has been insufficient to compensate for the slow growth of manufacturing-sector employment, and hence there are simply not enough jobs available. Further development of the services sector and encouragement of private sector development will strengthen the ‘pull’ force from the urban areas, facilitating a faster pace of urbanisation.

Second, smooth and stable urbanisation will also depend on whether the agricultural sector can remain sustainable. Uneven development between a relatively modern and high-wage industrial sector and a poor traditional agricultural sector within a single economy is usually described as ‘economic dualism’ (Todaro 1985). Economic dualism tends to diminish as a country’s level of urbanisation increases. This phenomenon, however, has not taken place in China. Figure 7.2 shows that income gaps between urban and rural areas in China have been widening,

Table 7.4 Three scenarios for urban labour force forecasts, 1995–2020
(number of net urban migration: million people in five years)

Urbanisation	With an increase rate of 1 per cent per year	With an increase rate of 2.5 per cent per year between 2001–10 and 2 per cent between 2011–20	With an increase rate of 4 per cent per year between 2001–10 and 3 per cent between 2011–20
	Conservative	Moderate	Radical
1996–2000	45.9	45.9	45.9
2001–05	47.3	49.5	51.7
2006–10	49.7	56.3	62.9
2011–15	52.2	63.3	74.3
2016–20	54.9	70.5	86.1

Source: Taken from Table 7.1 and Xu, Y., 2000. *Forecasting Labour Supply in Urban China: integrating demographic dynamics and socioeconomic transition*, Interim Report, International Institute for Applied Systems Analysis, Laxenburg.

particularly in recent years. The urban–rural income ratio increased from 2.93 in 1978 to 3.23 in 2003, which implies that the urban–rural income gap has not fallen through urbanisation.

The growth rate of agricultural output has also been falling in recent years (Figure 7.7), which will reduce rural employment opportunities and thereby strengthen the ‘push’ forces in urbanisation. To weaken the ‘push’ forces in order to achieve a more balanced process of urbanisation, the government needs to deepen rural reform by providing more incentives for engaging in agricultural production, encouraging technological change, and increasing agricultural inputs.

Another measure aimed at adjusting ‘push’ forces is to revive rural industries. Taiwan’s experience shows that an increase in rural industrialisation tends to promote urbanisation (Parish 1994). This can be achieved by further transforming the ownership of the TVEs, developing appropriate means of rural finance, investing in both physical and human capital in rural areas, and building rural infrastructure.

Conclusion

Urbanisation in China has been regarded as the most solid indication that China’s economic growth will continue for many years to come. Expanding the labour force in the modern urban sector by shifting labour out of agriculture enhances productivity and thereby contributes to growth. The disequilibrium analysis used here shows that urbanisation in China since 1978 has been driven mainly by ‘push’ factors. An important implication is that there might be a possibility of over-

Figure 7.5 Employment structure of the economy, 1978-2003 (per cent)

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

Figure 7.6 Growth rate of urbanisation in China 1960–2003

Source: Authors' calculations using the data from National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

Figure 7.7 Growth rates of agricultural outputs, 1961–2003 (per cent)

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*. China Statistics Press, Beijing.

urbanisation, especially in the short to medium term, given the increasing income differential between rural and urban areas, the rapid loss of arable land, and the growing rural labour surplus. At the same time, rural–urban migration is central to the problem of growing urban unemployment. There are, therefore, huge demands for employment, urban infrastructure development, institution building and policy adjustment to cope with the massive movement of migrant workers.

China needs to maintain a reasonably high growth rate in order to solve its unemployment problem. This can be achieved by encouraging and promoting further private sector development. The services sector in particular needs to be expanded to provide more employment opportunities. Urban reforms such as equal opportunity and social protection of migrant workers will have to accelerate. Finally, a balanced strategy that develops agriculture through investment in both physical and human capital and increased public expenditure to build rural communities is needed to mitigate strong pressure resulting from the ‘push’ forces in migration.

Notes

¹ The rate of urbanisation rose to 42 per cent in 2004 and the urban contribution to GDP increased to 70 per cent (*The People's Daily*, Overseas Edition, 12 May 2005).

² Although Zhang and Song's (2003) finding shows that the causal link runs from economic growth to migration.

- ³ In each time period, either demand (pull) or supply (push) forces could play a more important role in determining the process of urbanisation.

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Appendix Table A7.1 Urban and rural population and their proportions in total population (urbanisation) in China, 1960–2003
(millions and per cent)

	Population		Proportion (per cent)	
	Urban	Rural	Urban	Rural
1960	130.7	531.3	19.8	80.2
1961	127.1	531.5	19.3	80.7
1962	116.6	556.4	17.3	82.7
1963	116.5	575.3	16.8	83.2
1964	129.5	575.5	18.4	81.6
1965	130.5	594.9	18.0	82.0
1966	133.1	612.3	17.9	82.1
1967	135.5	628.2	17.7	82.3
1968	138.4	647.0	17.6	82.4
1969	141.2	665.5	17.5	82.5
1970	144.2	685.7	17.4	82.6
1971	147.1	705.2	17.3	82.7
1972	149.4	722.4	17.1	82.9
1973	153.5	738.7	17.2	82.8
1974	156.0	752.6	17.2	82.8
1975	160.3	763.9	17.3	82.7
1976	163.4	773.8	17.4	82.6
1977	166.7	783.1	17.6	82.4
1978	172.5	790.1	17.9	82.1
1979	185.0	790.5	19.0	81.0
1980	191.4	795.7	19.4	80.6
1981	201.7	799.0	20.2	79.8
1982	214.8	801.7	21.1	78.9
1983	222.7	807.3	21.6	78.4
1984	240.2	803.4	23.0	77.0
1985	250.9	807.6	23.7	76.3
1986	263.6	811.4	24.5	75.5
1987	276.7	816.3	25.3	74.7
1988	286.6	823.7	25.8	74.2
1989	295.4	831.6	26.2	73.8
1990	302.0	841.4	26.4	73.6
1991	312.0	846.2	26.9	73.1
1992	321.8	850.0	27.5	72.5
1993	331.7	853.4	28.0	72.0
1994	341.7	856.8	28.5	71.5
1995	351.7	859.5	29.0	71.0
1996	373.0	850.9	30.5	69.5
1997	394.5	841.8	31.9	68.1
1998	416.1	831.5	33.4	66.6
1999	437.5	820.4	34.8	65.2
2000	459.1	808.4	36.2	63.8
2001	480.6	795.6	37.7	62.3
2002	502.1	782.4	39.1	60.9
2003	523.7	768.5	40.5	59.5

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*, China Statistics Press, Beijing.

Appendix Table A7.2 Urban and rural employment and their proportions in total employment, 1952–2003
(millions and per cent)

	Employment		Proportion (per cent)	
	Urban	Rural	Urban	Rural
1952	24.9	182.4	12.0	88.0
1957	32.1	205.7	13.5	86.5
1962	45.4	213.7	17.5	82.5
1965	51.4	235.3	17.9	82.1
1970	63.1	281.2	18.3	81.7
1971	68.7	287.5	19.3	80.7
1972	72.0	286.5	20.1	79.9
1973	73.9	292.6	20.2	79.8
1974	76.9	296.8	20.6	79.4
1975	82.2	299.5	21.5	78.5
1976	86.9	301.4	22.4	77.6
1977	91.3	302.5	23.2	76.8
1978	95.1	306.4	23.7	76.3
1979	100.0	310.3	24.4	75.6
1980	105.3	318.4	24.8	75.2
1981	110.5	326.7	25.3	74.7
1982	114.3	338.7	25.2	74.8
1983	117.5	346.9	25.3	74.7
1984	122.3	359.7	25.4	74.6
1985	128.1	370.7	25.7	74.3
1986	132.9	379.9	25.9	74.1
1987	137.8	390.0	26.1	73.9
1988	142.7	400.7	26.3	73.7
1989	143.9	409.4	26.0	74.0
1990	166.2	472.9	26.0	74.0
1991	169.8	478.2	26.2	73.8
1992	172.4	483.1	26.3	73.7
1993	175.9	487.8	26.5	73.5
1994	184.1	487.9	27.4	72.6
1995	190.9	488.5	28.1	71.9
1996	198.2	490.4	28.8	71.2
1997	202.1	493.9	29.0	71.0
1998	206.8	492.8	29.6	70.4
1999	224.1	489.8	31.4	68.6
2000	231.5	489.3	32.1	67.9
2001	239.4	490.9	32.8	67.2
2002	247.8	489.6	33.6	66.4
2003	256.4	487.9	34.4	65.6

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*, China Statistics Press, Beijing.

Appendix Table A7.3

Comparison of urbanisation by region, 1990–2000
 (millions and per cent)

	Urban population		Urban population in total		Growth rate (per cent)
	1990	2000	1990	2000	1990–2000
National	296.5	455.9	26.2	36.1	9.9
Beijing	7.9	10.7	73.1	77.5	4.5
Tianjin	6.0	7.2	68.7	72.0	3.3
Hebei	11.7	17.6	19.1	26.1	7.0
Shanxi	8.3	11.5	28.7	34.9	6.2
Inner Mongolia	7.8	10.1	36.1	42.7	6.6
Liaoning	20.1	22.3	50.9	54.2	3.4
Jilin	10.5	13.6	42.7	49.7	7.0
Heilongjiang	16.6	19.0	47.2	51.5	4.4
Shanghai	8.8	14.8	66.2	88.3	22.1
Jiangsu	14.2	30.9	21.2	41.5	20.3
Zhejiang	13.6	22.8	32.8	48.7	15.9
Anhui	10.1	16.7	17.9	27.8	9.9
Fujian	6.4	14.4	21.4	41.6	20.2
Jiangxi	7.7	11.5	20.4	27.7	7.3
Shandong	23.1	34.5	27.3	38.0	10.7
Henan	13.3	21.5	15.5	23.2	7.7
Hubei	15.6	24.2	28.9	40.2	11.3
Hunan	11.1	19.2	18.2	29.8	11.5
Guangdong	23.1	47.5	36.8	55.0	18.2
Guangxi	6.4	12.6	15.1	28.2	13.1
Hainan	1.6	3.2	24.1	40.1	16.1
Chongqing	5.0	10.2	17.4	33.1	15.7
Sichuan	16.7	22.2	21.3	26.7	5.4
Guizhou	6.1	8.4	18.9	23.9	4.9
Yunnan	5.4	10.0	14.7	23.4	8.6
Tibet	0.3	0.5	12.6	18.9	6.3
Shaanxi	7.1	11.6	21.5	32.3	10.8
Gansu	4.9	6.2	22.0	24.0	2.0
Qinghai	1.2	1.8	27.4	34.8	7.4
Ningxia	1.2	1.8	25.7	32.4	6.7
Xinjiang	4.8	6.5	31.9	33.8	1.9

Source: National Bureau of Statistics, 2004. *China Statistical Yearbook*, China Statistics Press, Beijing.