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Fundamentals of China's Urbanization and Policy[*]

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Abstract

This paper analyses the fundamentals of China's urbanization in the last two decades, focusing on the administrative and economic structures and policy which form the basis of the configuration of China's urban system and urbanization policy. Two basic determinants of the Chinese spatial system are examined: the administrative hierarchy and the restriction of population mobility. This is followed by an empirical study of recent urbanization trends and the patterns of population growth of individual cities, based on data from the 1990 and 2000 censuses. The paper examines various features associated with China's "incomplete urbanization" at the national and individual city levels. The concluding section discusses implications for policy and research.

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Introduction

In many ways, the story of economic development in China in the last sixty years is the history of state-led industrialization and the state's creation of the conditions for rapid industrial development, and also of how the state has managed the "side-effects" generated in that process. Urbanization and the development of cities, or lack thereof, are an important part of that Chinese story. The country has been undergoing rapid rural-urban transition and transformation in the last two or three decades—although a precise measurement of the momentum is not straightforward, owing to China's complex system of urban boundaries and changing urban definitions. In any event, many expect China to continue on the path of high-speed urbanization for another one to two decades, a process which will entail massive population redistribution. Evidently, this is one of the major challenges China will have to face in the next two decades.

In examining this momentous transformation, it should be pointed out at the outset that while China is following the "world trend" and will soon become an urban country by the common demographic statistical yardstick (see below), and likely a middle-income country in the near future, the account of China's urbanization in the last half century is quite a special one. Some components of the Chinese path deviate substantially from the "standard" Western model. All agree that contemporary urbanization is induced by industrialization and technological change, and that it comes as labour shifts out of land-intensive agriculture into urban industrial production. Manufacturing, and later services, take advantage of economies of scale and some urban centres grow to large population sizes, often of several million or more. Urbanization requires developing countries to *uproot* most of their traditional rural population, to invest heavily in urban infrastructure and to create the institutions for cities to support and finance those investments, and to develop formal market institutions and a legal framework to replace the social mechanisms of traditional rural societies that are not workable in the anonymity of urban exchange.[1]

This paper is an examination of the fundamentals of China's urbanization in the last two decades, focusing on the administrative and economic structures and policy which are the basis of urban configuration and urbanization policy. The paper outlines the domestic institutional landscapes and major policies that are relevant to China's urban

development.[2] Given that China's urbanization is closely linked to the governmental system, economy, migration, and land, it is inevitably a complex and vast topic in the Chinese case. This paper does not go into the full details of the relevant topics unless they are really necessary;[3] instead, it treats the relevant issues succinctly to bring out the main points. I draw on some of my previous work, linking it to a select body of especially economics and political science literature on the state and cities, to lay out what I believe to be the key contours of Chinese urbanization, the configurations of the urban systems, and their underlying structure and policy. The empirical analysis of cities uses census data from 1990 and 2000. This paper interprets China's urbanization from a perspective quite different from other studies, which are often premised mostly on the assumption that China is a market economy, or at least in transition to the market or capitalism.[4] This paper adds to the growing body of research that emphasizes the local context and institutions in studying China's space-economy.[5] The concluding section discusses several issues which are important to the current Chinese policies of urbanization, migration, and development of cities and argues the need for further research.

Urbanization with "Chinese Characteristics"

The phrase "socialism with Chinese characteristics" has become almost a cliché used by many Chinese authors to suggest that China is different, though often without pinpointing exactly what the differences are. In the urban studies field in China, planners and academics also routinely throw in the term "urbanization with Chinese characteristics" to characterize China's path,[6] very much in line with official references to "Chinese socialism." Outside China, urbanists naturally have their own pick of what constitute distinctively Chinese features, reflecting their perspectives and reading of the Chinese urban experience.[7] Below, I would like to outline what I believe to be most crucial underlying structure and policy in setting apart China's post-1949 urbanization from the typical urbanization experience:

a) Despite the significant expansion of personal freedoms for many people in the last two decades, the substance of the pre-reform political economy has not been fundamentally altered: China remains a one-party Leninist state with the party-state continuing to hold sway

in many major aspects of not just the polity, but also of society and the economy. Even though China likes to claim that it is already a "market economy" (as in "socialist market economy"), the state, including governments at all levels and spatial scales, still runs key sectors of the economy directly and the rest indirectly. Not only is the state omnipotent in the major sectors of the economy,[8] it also manages society directly in many ways[9] and, inevitably, exercises a decisive role in the urbanization process and the development of the urban system.

b) Unlike many other developing countries, China has not sought to *uproot* most of its traditional rural population in the urbanization process since 1949. Instead, it has adopted an "incomplete urbanization" approach, arguably to economize on the costs of urbanization in the process of rapid industrialization. This is typical of many countries pursuing a Soviet-type economic growth strategy, the outcome of which is a phenomenon called "under-urbanization."[10] As will be examined later, in the current era in China, incomplete urbanization is achieved mainly by allowing "temporary" migration (of a "floating population") to cities but denying the migrants access to urban welfare and many other benefits.[11]

With regard to urbanization, two salient features drawn from the above are particularly relevant:

The administrative hierarchy: The pre-reform command economy functioned through a hierarchy of administrative-economic units with powers concentrated at the central level. The system of unitary hierarchical administrative units has continued, with some changes, into the present era. It is currently a multi-tier hierarchy made up of the central government, provincial-level units, prefecture-level units, county-level units, and towns and townships. This structure determines the basic configuration of China's urban system and the number of its cities and towns. Largely corresponding to the local governmental structure, there are basically six levels of urban administrative units: (1) provincial-level cities, (2) deputy-provincial cities, (3) provincial capitals (excluding those already in level 2 above), (4) prefecture-level cities (excluding those already in levels 2 and 3), (5) county-level cities, and (6) towns.[12]

In terms of administrative powers, there has been significant devolution of powers to lower-level governments in the last two decades, but the hierarchical nature of the top-down polity remains. Upper-level

governments still control the appointments of key personnel in their subordinate units. The power remains vertically organized and determined from top to bottom. The higher ranks not only reflect political/administrative power but are also important in the distribution of fiscal resources in the formal (budgetary) system and local economic development.[13] With industrialization (which is basically in cities) forming the core of China's development strategy since the 1950s, urban jurisdictions have enjoyed higher administrative ranks, enhancing China's urban bias that persists to this day.

Given the top-down configuration of power, local jurisdictions always have incentives to "climb" up the administrative ladder: to be upgraded to a higher administrative rank. Rapid economic growth in some locales in the reform era has allowed many units to seek urban designations and "upgrades," resulting in significant increases in the number of especially prefecture-level and county-level cities in the 1980s and 1990s.[14] In the last 15 years or so, the decrease in the number of county-level cities (Table 1 Column C) has been a product of county-level cities upgrading to prefecture-level cities and the annexation of county-level cities by prefecture-level cities.

Table 1. Number of Cities and County-level Units and Changes, 1990–2008

Year	Cities			County-level Units		
	Prefectural and above	County-level	Total	Districts (under B)	Others	Total
A	B	C	D	E	F	G
1990	188	279	467	651	1903	2554
1995	213	427	640	706	2143	2849
2000	263	400	663	787	2074	2861
2001	269	393	662	808	2053	2861
2002	279	381	660	830	2030	2860
2003	286	374	660	845	2016	2861
2004	287	374	661	852	2010	2862
2005	287	374	661	852	2010	2862
2008	287	368	655	856	2003	2859
1990–1995	25	148	173	55	240	295
1995–2000	50	-27	23	81	-69	12
2000–2005	24	-26	-2	65	-64	1
2005–2008	0	-6	-6	4	-7	-3

Source: Ministry of Civil Affairs, *Xingzhengqu jiance* (Summary book of administrative regions), various years.

The hierarchical system of urban administrative jurisdictions also means that local governments are evaluated and controlled by their supervisory units. Because the governments directly participate in the economy and because economic growth (fairly narrowly defined) is the priority objective of the central government, the evaluation criteria of local officials are necessarily heavily tilted toward this set of rather parochial economic indices, after the prime consideration of "political correctness" (degree of adherence to the party line, etc). In the pre-reform era, the targets were the output quantity of certain key physical products, such as steel, coal, and grain. With a gradual change to a monetarized economy in the last thirty years, the targets have been amended to the size of local GDP, GDP growth rate, FDI, per capita GDP, budgetary revenue and the like, and they remain overwhelmingly "economic."[15] As a result, individual governments naturally pursue practices and policies focusing on the fulfilment of those targets under evaluation, often at the expense of other aspects outside of the evaluation (such as the environment and labour protection) and other, non-measurable, broader regional and even national interests.[16] At the same time, because these evaluations are heavily reliant on local statistics and indices, it has become an increasingly popular practice for local governments to intervene in the statistical systems through which these indicators are compiled.[17]

The emphasis on each individual unit's economic performance easily leads local governments to pursue parochial interests within a small jurisdiction. In many instances, self-interest (and rivalry) also leads to local protectionism and costly duplications.[18] The media are rife with stories of individual jurisdictions putting up administrative barriers that impede the free flow of goods and factors. Critics have likened the thousands of local governments to feudalist fiefdoms.[19] Weak enforcement of environmental and labour protection by local governments in their fervent pursuit of local industrial growth has also become commonplace.[20] By its very nature, the architecture of the hierarchical administrative system is not congenial to horizontal cooperation. Answerable to upper-tier governments and not subordinate to neighbouring jurisdictions, local governments can often resolve inter-jurisdictional conflicts only through the intervention of upper-level governments. The administrative barriers are reinforced by institutions such as the household registration system, which have restricted inter-jurisdictional factor mobility.

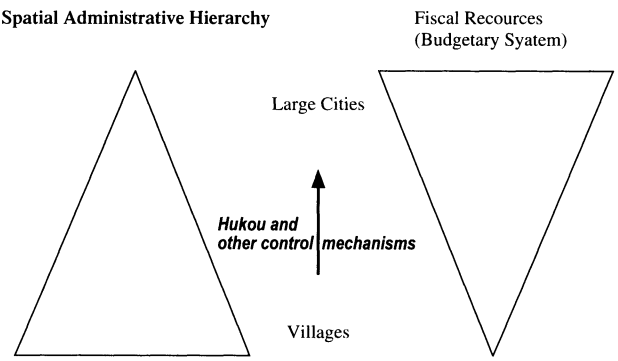
Impediments to labour mobility across locales and the hukou system: The household registration (*hukou*) system[21] and other institutions such as the work-unit system have also seriously impeded population mobility, especially that of rural-urban labour. The *hukou* system was used as a major instrument in China's strategy of "big push" industrialization. In essence, China's policy was to create a dual structure (*eryuan jiegou*) by segmenting the rural and urban economy and society, with a bias against the rural sector.[22] In the Mao era, population was to a large extent held in place by the *hukou* system, which acted like an internal passport system regulating mobility and granting people citizenship in the locality (village, town, or city) in which their mother was originally a citizen. Permanent changes in *hukou* status were few in number, except through government-initiated recruitment, job assignment or relocation programmes or within rural areas. Severe restrictions were placed on "upward" migration (from rural to urban, and up the urban [administrative] hierarchy). This immobility of population contributed to regional imbalances.

Decollectivization of agriculture, *hukou* reforms and relaxation of migration controls since the early 1980s, especially in the late 1990s, have resulted in large volumes of "temporary" migrants to cities, many of whom are also "rural migrant workers" (*mingong*).[23] This is a group of industrial and service workers with rural *hukou* working mainly in cities. These labourers, however, are not legally considered as urban workers, and are therefore not eligible for the regular urban welfare and rights that are available to any urban resident. Nor are they supposed to settle in their destination and make it their permanent residence. The amount of rural migrant labour[24] is now enormous, having grown from about 20–30 million in the early 1980s to about 140 million at the end of 2008 and about 150 million in mid-2009.[25] For university graduates, there are now rudimentary regional labour markets, if not yet a national one. Still, many impediments to the geographic mobility of labour remain. To a great extent, other factors of production are not "mobile" either. This is especially so with regard to land in the rural areas, where transactions are formally forbidden and conversion of farmland to non-agricultural uses by the farmers is stringently restricted. This spatial fixity of resources, "owned" and controlled to a great extent by local governments, has many implications for the organization of the spatial economic, political and social structures.[26] The above portrayal of

mobility is quite different from what is described in the section on China in the *World Development Report 2009*.[27]

These mobility impediments work hand in hand with the spatial administrative system described above to make Chinese provinces, cities, and even sometimes city districts, very much like independent "states" in the Westphalia system (but ironically, also under a centralized control). Figure 1 sketches schematically the essential structure of the administrative hierarchy, with reference to the formal system of fiscal resources (budget revenue allocation). The two triangles pointing in opposite directions show an arrangement in favour of the upper-level units, with clear imbalance and regressiveness. These underlie many problems in today's China, including the enormous "upward" pressures system-wide and the changes in the last two decades: lower-level units want to move up the administrative rank ladder, as do residents of lower-level units. This situation necessitates strong control mechanisms to stem upward pressures in order to keep the system in place.

Figure 1. Administrative Hierarchy and Fiscal Allocation System



Source: Kam Wing Chan, "The Chinese *hukou* system at 50," *Eurasian Geography and Economics*, Vol. 50, No. 2 (2009): 197–221.

Urbanization and Growth of Cities in the 1990s

One cannot accurately delineate the contours of China's urbanization without first understanding the definitions of "urban" in China. The system of urban definitions in China is extremely complex and can be easily misunderstood, with multiple sources of possible confusion.[28] At

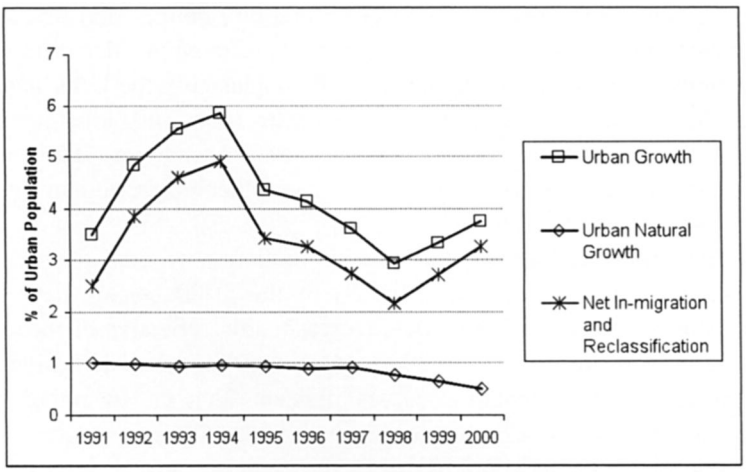
present, at the individual city level, on the one hand, many urban administrative areas (city districts, *shiqu*), which are the basis for counting urban population, include large stretches of farmland and sizeable rural populations, thus inflating the (urban) population figures. On the other hand, because of the Chinese *hukou* system, many migrants who have stayed in their destinations for years but who do not have local *hukou* are excluded in the regular (annual) official city counts, and this results in undercounting of the city population. To compound the difficulties, the rapidity of "urban development" in the last two decades has also engendered fairly frequent urban reclassifications and adjustments of urban designation criteria in response to the changes. This makes comparisons of true urban growth rates or other urban economic rates over time extremely difficult.

The urban definitions and urban population figures used by the National Bureau of Statistics (NBS) in the 2000 census have been accepted by specialists in this field as reasonably reflective of the urbanization level of the country in 2000.[29] Based on the same definitions, the 2005 1% national population survey indicates that in November 2005, urban population in China had reached 562 million, or 43% of the national total.[30] China continues to be the country with the largest urban population in the world.

According to a set of reconstructed urban population estimates prepared by Chan and Hu,[31] the reform era since 1978 has shown consistently high rates of urban growth, on average at 4–5% per year. The increase is attributed to net rural-urban migration and urban reclassification (expansion of the urban administrative areas). The average absolute urban population increase per year (15.7 million) in the 1990s is larger because of the more sizeable urban population base. The total net rural-urban migration (including reclassification) in the decade of the 1990s is 125.5 million, which is only slightly below the aggregate of the same net migration (134.4 million) for the preceding four decades (1950–1990). Figure 2 graphs the urban population trends in the 1990s. The annual urban growth rates were at a high level in the early 1990s, which was attributable to the fervent development momentum generated by Deng Xiaoping's famous tour of south China in 1992. Urban growth slowed down in 1995–1998, in synchronization with the economic downturn in the country. The SOE reforms and the increasing pressures of urban unemployment also led to more stringent measures against migration of rural workers to major cities. Since the late 1990s, however, the

economy was back to 2-digit annual growth rates until the global recession in 2008. This spurred another round of rapid urban growth. Based on the latest NBS figures, the average annual urban growth rate between 2000 and 2005 was about 4%, the same as the average in the 1990s.[32]

Figure 2. Annual Urban Growth Rates and Components, 1991–2000



Source: Kam Wing Chan and Ying Hu, "Urbanization in China in the 1990s: New definition, different series, and revised trends," *The China Review*, Vol. 3, No. 2 (2003): 49–71.

Any disaggregated analysis of Chinese urbanization, i.e. studying the changes of the Chinese urban system, requires de facto and comparable urban population data (e.g. population of the urbanized areas, such as that based on the Census 2000 urban definition) at the individual city level. This is still not possible, as no readily available and comparable time-series data of this nature exist for two years in the recent past (especially in the 1990s). The closest de facto data set one can find at this point is the population data of the individual cities based on the Chinese "urban administrative area" (UAA) concept from the two latest censuses in 1990 and 2000. The UAA essentially is the amalgamation of all shiqu (city districts) of a city.[33] The census data on city population have the great advantage of covering the population of each individual city in de facto terms, including those residents with local hukou and those without, but who meet an extended length of stay criterion.[34] This data set is certainly better than all other commonly used urban population indicators,

essentially de jure indicators such as the non-agricultural population, and the *hukou* population, found in the annual *China City Statistical Yearbooks* and reviewed by Zhou and Ma.[35] However, the UAA-based city population statistics also suffer one limitation: in many cities in China, annexations reflect more government administrative arrangements than genuine urbanization or urban expansion, thus creating "over-bounded" cities, though the population of the cities based on the UAA concept is commonly employed internationally (such as by the United Nations) to compute growth rates of cities. Furthermore, generally the UAA is neither static over time as the city grows (most of the cases in this rapidly urbanizing nation) and expands its boundary (by annexing the nearby areas) or splits into two or more cities. This of course complicates meaningful comparisons of "urban" areas and population over time.

Bearing in mind the above caveat, one can still observe that the Chinese urban system expanded quite significantly, by adding about 200 new cities and 8,228 towns in net terms, in the 1990s.[36] By 2000, China already had 663 cities and 20,312 towns.[37] The number of cities remained relatively stable in 2000–2005 and has slightly decreased in the last three to four years owing to mergers of several of them. The newly designated cities and towns were an important contributor to urbanization in the 1990s, along with the population growth that in that decade.

Table 2 is a summary of the average growth rates of the population of individual cities, based on a sample of 414 cities in 1990 and 2000.[38] Largely following the standard classification used in China, all the cities are grouped by size: super-large (2 million and above), and extra-large (1–2 million), large (0.5–1 million), medium (0.2–0.5 million) and small (below 0.2 million).[39] The smallest and the largest cities have the highest medians or mean growth rates, followed by the medium cities, extra-large cities, and large cities (in that order) (Table 2, Panels A and B). The growth pattern by size is clearly bipolar.

Table 2. Average Annual Growth Rates of Cities, 1990–2000 (%)
(based on de facto population of city districts)

	Number	Median	Unweighted Mean
All Cities	414	1.8	3.0
(A) **By City Size in 1990**			
Super-large	7	5.7	6.1
Extra-large	79	1.4	2.2
Large	135	1.1	1.7
Medium	149	2.2	3.5
Small	44	4.4	6.1
(B) **By City Size in 2000**			
Super-large	16	4.6	6.6
Extra-large	98	1.8	3.7
Large	163	1.5	2.3
Medium	114	1.8	2.4
Small	23	3.8	5.1
(C) **By Administrative Rank in 2000**			
1 Provincial	4	5.2	6.2
2 Deputy-provincial	15	3.9	5.7
3 Provincial capital	17	4.2	4.2
4 Prefecture	194	2.3	3.6
5 County	184	1.0	1.9

Source: Computed from Chinese census data from 1990 and 2000 (For explanations see text)

Recalling the discussion on China's administrative hierarchy, there is an almost perfect correlation between the administrative ranks and average growth rates. The higher the rank, the faster the population growth rate of cities (Panel C). The higher growth rates of the biggest cities reflect the extraordinary growth rates of many cities in the highest administrative ranks, and the export-processing centres on the coast during that decade. Table 3 shows the twenty cities with the highest growth rates within the "million city" group in 1990 (N = 93). These 20 cities consist of 3 provincial-level cities, 14 deputy-provincial cities and provincial capitals, and 3 prefecture-level cities. This shows the continuing dominance of the cities of the higher administrative ranks in the urban hierarchy and urban growth. The only two cities in Table 3 that are below provincial capital rank are major export-processing centres (Dongguan and Zhongshan, both in Guangdong; both cities have risen to become prefecture-level cities). If one adds other cities in the Pearl River Delta region such as Shenzhen (whose average annual

growth rate was 23%!), and Zhuhai (9.7%) it is clear that the export-processing centres in the Pearl River Delta constitute another major cluster of growth among big cities.

Table 3. "Million Cities" with the Highest Population Growth Rates in 1990–2000

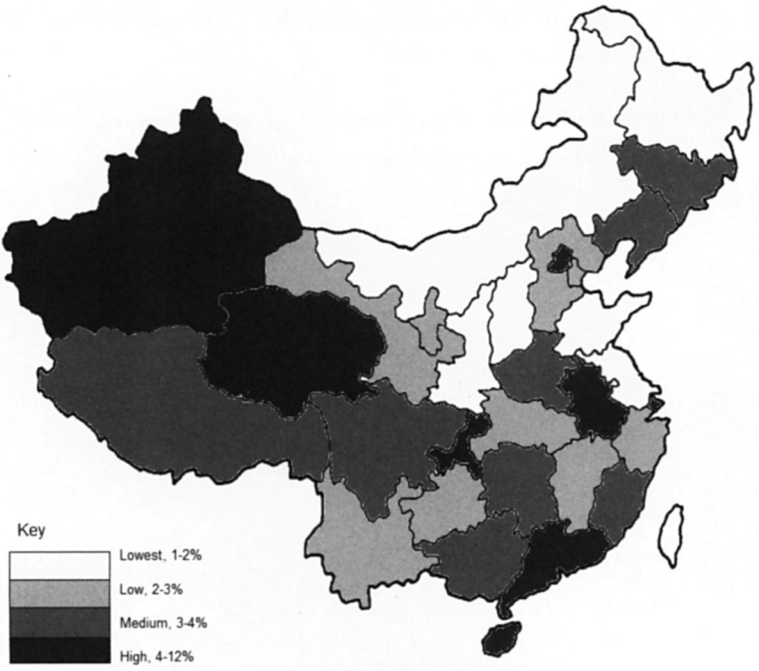
City	Adm. Rank in 2000	City Population Size (in 1000s)		Average Annual Growth Rate (%)
		1990	2000	
Dongguan	4	1,736.9	6,445.8	14.0
Chongqing	1	3,122.7	9,691.9	12.0
Guangzhou	2	3,918.0	8,524.8	8.1
Wuhan	2	3,832.5	8,312.7	8.1
Zhongshan	4	1,227.5	2,363.3	6.8
Kunming	3	1,612.0	3,035.4	6.5
Shanghai	1	8,205.6	14,348.5	5.7
Hangzhou	2	1,476.2	2,451.3	5.2
Changsha	3	1,329.0	2,122.9	4.8
Beijing	1	7,362.4	11,509.6	4.6
Xi'an	2	2,872.5	4,481.5	4.5
Nanning	3	1,159.1	1,766.7	4.3
Fuzhou	3	1,395.7	2,124.4	4.3
Urumqi	3	1,160.8	1,753.3	4.2
Hefei	3	1,099.5	1,659.1	4.2
Jilin	4	1,320.2	1,953.1	4.0
Zhengzhou	3	1,752.4	2,589.4	4.0
Changchun	2	2,192.3	3,225.6	3.9
Chengdu	2	2,954.9	4,333.5	3.9
Nanchang	3	1,262.0	1,844.3	3.9

Notes: "Million cities" are those with at least one million population in 1990. For administrative ranks: 1 = provincial-level cities, 2 = deputy-provincial, 3 = provincial capitals (excluding those already in level 2 above), 4 = prefecture-level (excluding those already in levels 2 and 3), and 5 = county-level.

Source: Census data from 1990 and 2000

Figure 3 shows the average annual growth rate of population of the 414 cities by provincial-level unit. The three "hot spot" provincial-level units, Guangdong, Beijing, and Shanghai, are (expectedly) in the high growth group; so are Chongqing, Xinjiang, Qinghai, Hainan, and Anhui. Interestingly, the lowest growth group is basically in the "north" and "northeast" quadrants, probably related to the retrenchment of manufacturing in the regions in the 1990s.

Figure 3. Average Annual Growth Rate of Cities by Provincial-level Unit, 1990–2000



Source: Computed from Chinese census data, 1990 and 2000, based on a sample of 414 cities. (For explanations of data see text)

The trend in the 1990s is that big cities, especially those in the highest administrative ranks (provincial capitals and above) grew quite fast. This is partly a function of the Chinese political-administrative system and policies that favour higher-ranked cities in terms of fiscal resources, FDI policy, and transportation facilities, and partly the growth of the tertiary sector (particularly finance and business services), which tends to locate in major cities and administrative centres.[40] It is almost certain that these high rates of urban population growth in big cities were generated by very high volumes of net in-migration (such as in Dongguan and Shenzhen) or extensive urban annexations of the surrounding counties (such as in Wuhan, Beijing, and Shanghai), or both.

Urban growth in the 1990s defined above was not simply concentrated in the large cities. There was significant growth of cities in the size

category under 200,000 ("small cities"). The growth of some of them, mostly in the coastal region, reflects the impact of export-processing generated by FDI, along with China's becoming the "world's factory" in this period (with its core in the Pearl River Delta). Other small cities expanded because of domestic imperatives (administration, tourism, and commerce). Many of them were close to major metropolises, and benefited from the spillover of industrial development in the bigger cities.

Incomplete Urbanization and Under-agglomeration of Cities

The process of urbanization is quite complex but it and the urban system are underlain by China's economic strategy and administrative-jurisdictional systems. Two features are especially salient as fundamental determinants of urbanization at the macro and local levels.

Industrialization Strategy and Incomplete Urbanization: China's overall urbanization strategy has been heavily shaped, if not determined, by its national industrialization and sectoral strategies, and it has clung to an "incomplete urbanization" approach. As pointed out before, this approach aims to promote industrialization while at the same time limiting its indirect costs i.e. costs of urbanization. In the pre-reform era, China's strategy favoured industry at the expense of agriculture, and gave priority to investment over consumption.[41] As part of this strategy, China adopted a differential treatment policy for the rural and urban sectors (and their populations): the urban population was given priority for supply and basic welfare while the rural population was left to fend for itself. To maintain such an imbalance, migration to urban areas had to be and was strictly controlled through a web of regulations concerning residence and employment. Urbanization, measured by the de facto population in urban centres, was maintained at a low level in the 1960s. As a consequence, while China had high industrial growth rates from 1950–1980, the rate of urban population growth was comparatively low, leading to a situation known as "under-urbanization."[42]

In the reform era, the "incomplete urbanization" approach still persists, but in a different form. There have been higher growth rates of the (de facto) urban population, especially through net rural-urban migration, but a significant source of the urban population growth is in the form of migration of those without the *hukou* status of the destination (the so-called "temporary" or "non-*hukou*" migrants). This population

segment, mostly from the countryside, is not eligible for the benefits that are normally available to urban residents. As pointed out above, the "temporary" population or rural migrant labour is not actually "temporary", and its size is huge (about 150 million in 2009). While the size of the de facto resident population (in the statistical sense) in urban areas has greatly increased, many of them are ineligible for urban welfare, and are not expected to become urban residents in the legal sense in either the short or the long run. In essence, China has adopted a strategy of letting migrants from the countryside come to the cities and export-processing zones to sell their labour at very low wages, but without giving them urban residence status, thereby making their wages effectively lower. Evidently, this has been a critical ingredient of China's export competitiveness in the world economy.

Table 4 uses three sets of statistics to illustrate the above process of incomplete urbanization, by highlighting the different ways this process is carried out in the pre-reform and reform eras. While the other two sets of statistics are self-explanatory, the "non-agricultural" *hukou* population (NHP) needs some explanation. NHP refers to those defined as such under the *hukou* system and who are eligible for welfare and social benefits provided by the state.[43] The Chinese economy, in output (GDP) terms, has been industrialized relatively quickly in the past sixty years: the share of the non-agricultural sectors rose from about 54% in 1955 to nearly 90% in 2008, but the population is not yet even half urbanized. By the end of 2008, the de facto urban population was only 45.7% of the total population.[44] Furthermore, the proportions of the urban population and NHP were about the same in the period 1955–1980, indicating the congruence of these two population groups in the pre-1980 period. In other words, the urban population and those who received state-provided welfare were basically the same group; other groups were kept out of the cities. However, beginning in the mid-1980s, these two numbers started to diverge, reaching a difference of 12% (of China's total population) in 2007 and 2008. This suggests that while more people are being allowed into the cities, an increasing proportion of them are not eligible for state-provided social welfare entitlement (hence, making an increasing segment of the industrial labour cheap). In absolute terms, the 12% (about 150 million) is roughly the same size as rural migrant labour in 2008, consistent with the observation that migrant workers are actually in the cities but are not receiving welfare.

Table 4. Non-agricultural *Hukou* Population, Urban Population and GDP, 1955–2008 (% of National Total)

Year	A	B	C	D	E
	Non-agricultural *Hukou* Population (NHP)[a]	Urban Population[b]	GDP of Non-agricultural Sectors[c]	=A-C	=A-B
1955	15.2	13.5	53.7	-38.5	1.7
1958	18.5	16.2	65.9	-47.4	2.3
1965	16.7	18.0	62.1	-45.4	-1.3
1970	15.3	17.4	64.8	-49.5	-2.1
1975	15.4	17.3	67.6	-52.2	-1.9
1978	15.8	17.9	71.8	-56.0	-2.1
1980	17.0	19.4	69.8	-52.8	-2.4
1985	20.1	23.7	71.6	-51.5	-3.6
1990	21.1	26.4	72.9	-51.8	-5.3
1995	23.8	31.7	80.0	-56.2	-7.9
2000	26.1	36.2	84.9	-58.8	-10.1
2005	32.0	43.0	87.8	-55.8	-11.0
2006	32.5	43.9	88.7	-56.2	-11.4
2007	32.9	44.9	88.9	-56.0	-12.0
2008	33.3	45.7	88.7	-55.4	-12.4

Notes:

[a] This is also called "*chengzhen*" ("urban") *hukou* population, referring to the population eligible for state-provided, urban-equivalent welfare and social benefits.

[b] based on de facto population in urban areas in cities and towns. For details, see indicator N in Table 2 in Chan (Note 17).

[c] refers to the combined GDP share of the secondary sector and tertiary sector.

Source: Compiled by the author from *Chinese Statistical Yearbook* and *China Population Statistical Yearbook*, various years.

Under-agglomeration in Cities: China's "incomplete urbanization" is also manifested at the individual city level. Migration restrictions in China limit the ability of labour to move permanently from low productivity locations to settle in high productivity ones; and, more generally, they limit the ability of the population to agglomerate at different points in space. Urban production is characterized by localized external economies of scale,[45] exploitation of which requires the population to move and agglomerate in high-density cities. An issue with China's cities is whether the restrictions on mobility have prevented population from agglomerating in cities in sufficient numbers to fully exploit scale externalities relevant to the local activity of the area.

Tackling this issue requires estimation of how urban productivity varies with city size and an examination of what are efficient sizes for Chinese cities. A few earlier attempts have been made to measure the Chinese city size efficiency or the like.[46] The most sophisticated studies thus far available are recent research by Au and Henderson, and Li et al., respectively.[47] Au and Henderson use employment and other data from the *China City Statistical Yearbooks* for 1996 and 1997 for 212 prefecture-level and above cities. They estimate city production functions and how productivity changes with city employment, controlling for variables such as industrial composition, investment, FDI, market potential of the city, and access to coastal markets.[48] Based on their models, they reason that 43% of the cities under study are below the 95% confidence interval on the optimum city employment size. In other words, those cities are significantly undersized, and there would be gains in productivity from moving from the 1996/97 size to the optimum size. Li et al. analyse data of a similar set of 202 prefecture-level cities in 1990 and 2000 through an optimization model and argue that while the pure technical efficiency of most Chinese cities is high, the scale (city size) efficiency is low.

Both of the above studies are carefully implemented, with consideration given to various possible tendencies of variables under study. But there are still questions about their numerical results, because the data they use have significant limitations for assessing efficient city sizes. A check of Au and Henderson's sources with the available 2000 census data reveals that the city employment data contained in the *China City Statistical Yearbooks* undercount the true city employment, most probably by excluding a significant number of workers engaged in informal employment, especially the employment engaged in by rural migrant labour.[49] Li et al.'s have used the census population data to produce the best set of statistics one could hope for at this point (as was used in the trend analysis in the previous section), but one has to remember that the census UAA-based city population data greatly over-count the true "city" population in many instances.[50] Undercounting or over-counting city population or employment significantly affects the per capita efficiency indicators used in those studies. Because of the limitations of the data they use, neither study has truly addressed the city size efficiency issue in the most desirable way.

However, the data problems do not refute the main thrust of the arguments in both studies: migration restrictions prevent many cities

from growing to their optimum sizes and reaping the benefits of agglomeration economies. There is a rather large body of literature showing that similar industrial structures and duplication of infrastructures are found in many neighbouring cities in China.[51] Those studies are consistent with the arguments of both Au and Henderson and Li et al. Indeed, the jurisdictional system described earlier also allows individual jurisdictions to erect barriers that distort interregional or intercity flows of labour and goods in contravention of comparative advantage and economies of agglomeration, resulting in low efficiency.

Furthermore, synthesizing the works of Henderson, Li and their associates,[52] one can argue that Chinese cities are undersized at all size levels (large, medium, and small) in the urban hierarchy. Urban concentration is relatively low, compared to most countries; and even the bigger Chinese cities are small by world standards, despite China's having the largest urban population in the world. Based on the UAA concept, which is already over-counting the true city population of individual cities, the population of China's biggest urban/metropolitan area,[53] Shanghai, was only slightly over 14 million (in 2000), and barely made it on to the list of the ten largest urban/metropolitan areas in the world at that time.[54] The spatial Gini coefficient, which is a standard measure of the aggregate degree of geographical concentration, shows similar results. For 1,657 metropolitan areas with populations of over 200,000 in 2000 for the world, the spatial Gini was 0.56.[55] For the same set of cities in the same size category (N=631), China's Gini was only 0.39 in 2000 (Table 5), way below the world's, in comparison with 0.52–0.65 for these large countries, namely, Brazil, Japan, Indonesia, UK, Mexico, Nigeria, France, India, Germany, USA, and Spain.[56] Only former Soviet bloc countries had similarly low Gini coefficients, (for example, Russia's was 0.45 and Ukraine's 0.40), reflecting perhaps a similar (previous) socialist development and urban settlement system and approach. This low urban concentration in China indicates low spatial urban agglomeration throughout the country.

Table 5. Spatial Concentration of Cities in China, 1990 and 2000

Year	No. of Cities	Definition of City and City Size	Gini Coefficient
1990	382	(based on UAA definition)	0.399
2000	631	200,000 and above	0.394
2000	455	(based on urban statistical areas definition) 200,000 and above	0.334
1990	425	(based on UAA definition)	0.398
2000	666	All designated cities	0.417

Source: Based on city population data from 1990 and 2000 censuses. The Gini coefficients are computed using software by P. Wessa (2009), Free Statistics Software, Office for Research, Development, and Education, version 1.1.23-r4, URL: www.wessa.net/

Using population figures based on "urban statistical area",[57] which reflects very closely the size of the population in urbanized areas, and hence reduces significantly the over-counting in the population data based on the UAA definition, one can see that the population of Shanghai was smaller (only 13.5 million) in 2000, and still small relative to the huge urban population China had. The spatial Gini coefficient for urban areas with populations over 200,000 in 2000 (N=455) is 0.334, even further below the world's average (=0.56), and again, way below the "norm" of many other large countries reported above.

In summary, from an economic perspective, the story of Chinese city size distribution is that there are too many cities, and many of them are too small to take advantage of agglomeration economies and to develop a higher level of functional specialization among cities. This is especially pronounced at the lower city size categories: based on the "urban statistical area" definition, China had 666 cities in 2000, and 515 of them were smaller than half a million in population size (based on Census 2000 data). Some studies have identified greater regional (provincial-level) sectoral specialization in the 1980s and 1990s,[58] but the Gini coefficients of cities of 200,000 and above (based on the comparable UAA definition) remained unchanged throughout the 1990s, despite the rapid growth of some large cities as shown in Table 2. Only when the complete set of cities is included did the Gini rise slightly from 0.398 in 1990 to 0.415 in 2000 (Table 5).

Large cities in China have been rapidly expanding the service sector, especially producer services, in the last ten years or so. Technological change in urban production, as is on-going in China at a high level,

increases efficient city sizes, as do improvements in organization of land markets and improved land use patterns.[59] As bigger cities become more business service-oriented, their efficient sizes should increase, since business services experience higher degrees of scale externalities than do manufacturing activities. It appears that there is ample room for Chinese big cities to benefit from the scale externalities in this respect. Moreover, China's bigger cities are still heavily engaged in manufacturing. As they become more specialized in higher-tech and high value-added sectors, they will also enjoy greater benefits from agglomeration.

For smaller urban centres, including many well developed towns, there is also insufficient agglomeration, partly because of the dispersed (rural) industrialization policy and the incentive system inherent in the jurisdictional system,[60] and partly because of the significant policy biases against them in infrastructural investment, fiscal resources, and access to capital, as implied in China's administrative hierarchy. Many of them cannot develop to their full capacity; nor can most of them agglomerate a large enough population to foster healthy growth of the service sector. The smaller urban centres are too many in number and too dispersed.

Concluding Discussion

Future urbanization and urban growth will continue to pose serious challenges to the Chinese policy-makers. Even assuming a modest urban growth rate of 3% per year (which is lower than the average 4% of the last ten years), the large Chinese urban population base will mean that in the next ten years, close to another 200 million people will be added to urban centres of various sizes in the country. This will generate an enormous demand for urban jobs and urban social infrastructural services. At present, China is able to get away with not paying the "full bill" for industrialization by means of its "incomplete urbanization" approach based on a dual society, i.e. institutionally excluding migrants from urban benefits and programmes. Evidently, as experience elsewhere has shown, this cannot be a long-term solution: unassimilated migrants (often under-educated, especially the youth) are often much more costly in social and political terms in the longer run.[61] China's current approach runs the risk of breeding a huge urban underclass.[62] Hundreds, if not thousands, of protests lodged by peasants and migrants over an array of different issues in the last several years also raise the alarm that the

rights awareness of the rural population and migrants is on the rise.[63] Those can no longer be easily ignored.

Crucial to the assimilation and acceptance of migrants as equals are the *hukou* reforms and the capacity to provide reasonable employment for them. On the employment side, given that a large proportion of urban population growth in the coming one to two decades will be from the countryside, China needs to continue focusing on a job-oriented development strategy in order to generate positions suited to the skill levels of migrant labourers and provide training for them so that they can match demand as the economy evolves. This point has been made more obvious by the vulnerability of migrant labour in the global recession in 2008 and 2009, when some 20 million migrant labourers lost their jobs without any unemployment compensation protection (some even without full payment of the wages they had earned).[64] In normal times, if migrants can find reasonable jobs and can compete equally in the urban labour market, they will also have the wherewithal to finance the expansion of some of the urban social services, hence reducing the political resistance of the existing urban local population to accepting more migrants in the cities.[65]

As migrant labour has been the main workhorse of the Chinese export-processing industry, and migrants are an indispensable part of the labour force in many large cities, the importance of maintaining a stable migrant labour force and converting the experienced and skilled "temporary" migrant workers into "permanent" citizens is clear. Many cities have made a small progress in easing restrictions on mobility for some of the more sought-after types of labour (mainly college-educated and professionals). Similar steps towards gradual reforms could be taken to help keep skilled migrant workers settled in cities. This would be a largely win-win situation for both parties.[66] At the more fundamental level, China needs to move step by step to abandon its "incomplete urbanization" or "industrialization on-the-cheap" approach and consider truly "uprooting" the rural population who are willing to resettle in urban centres, and giving them equal access to urban benefits, etc.

With greater geographical mobility of labour achieved by reforming the *hukou* system, China will also be better placed to tackle the lack of spatial agglomeration in its urban system. From an economic efficiency perspective, there are too many urban centres in China, and most of them are too small in population size to benefit from agglomeration. Under the

current administrative jurisdictional system and *hukou* system, the size of the permanent population of each city is relatively rigid, and any possible changes are limited. With freer migration and an economy where the main duties of governments are limited largely to providing social goods, more competitive cities will experience accelerated growth and less competitive ones will face depopulation. This will help to create a system of fewer cities but one which has greater variations in size, which will probably better fit China's increasingly diverse regional and local conditions and residents' preferences. Seen from this angle, the recent policy of merging smaller urban centres (county-level cities) with nearby metropolises is a right step; the policy itself, however, has aggravated other existing problems, especially those associated with illicit expropriation of farmland and insufficient compensation for the displaced farmers, and wasteful ways of using precious land.[67] The present trend is that manufacturing is moving out of the largest cities, while headquarters and business and finance and service activity concentrate there. To facilitate this process, China needs to create an integrated labour market and reform the system of administrative jurisdictions.

Fundamentally, then, reforms of the local government systems are essential. This will involve changing major elements of the legacy of the command economy: the state-run economy, the top-down systems of hierarchical administrative jurisdictions and evaluations, and the associated incentive system for local bureaucrats. The basis of evaluation of local governments and officials should move from the performance of the economy, to the provision of public goods (environment, social services for local population, etc.), and there must be input from local citizens in assessing local officials. This will help reduce several major distortions in the local urban economies identified in this paper and help China create a more desirable geographical configuration of the government and the economy.

My analysis above also clearly demonstrates a greater need for more research, as there are plenty of gaps and some confusion in the urbanization literature. One important aspect is that the current Chinese urban definition and application, while they are useful for studies at the national level, are quite problematic at the individual city level. This has prevented real progress in studying Chinese urban systems in any meaningful way.[68] More work is urgently needed to design a conceptually sound and operationally workable system of city population statistics, in

the special context of China. There is also a clear need to analyse more closely the interrelationship among urbanization/urban growth, the changes in the system of local governments and local development strategies. I believe that this is where one can write the most interesting story of Chinese urbanization in the current era.

Notes

1. Kam Wing Chan, Vernon Henderson, and Kai Yuen Tsui, "Spatial dimensions of Chinese economic development," in *China's Great Economic Transformation: Origins, Mechanisms, and Consequences of the Post-reform Economic Boom,* ed. by Thomas Rawski and Loren Brandt (New York: Cambridge University Press, 2008), 776–828; Clifton W. Pannell, "China's continuing urban transition," *Environment and Planning A*, Vol. 34, No. 9 (2002): 1571–1589.
2. Globalization is another fundamental aspect of urbanization, which has been addressed quite extensively in the literature and will not be tackled here.
3. Some of the pertinent issues have been well covered elsewhere. Examples of summary or review articles in urban geography and policy are: Si-ming Li, "China's changing urban geography: A review of major forces at work," *Issues & Studies*, Vol. 41, No. 4 (2005): 67–104, and Laurence Ma and Fulong Wu, "Restructuring the Chinese city: Diverse processes and reconstituted spaces," in *Restructuring the Chinese City: Changing Society, Economy and Space*, ed. by Laurence Ma and Fulong Wu (New York: Routledge, 2005), 1–20. A recent book addition in Chinese is Gu Chaolin, Yu Taofang, and Li Wangming, *Zhongguo chengshihua: Geju, guocheng, jili* (China's urbanization: Configuration, process, and mechanisms), (Beijing: Kexue chubanshe, 2008).
4. Richard Walker and Daniel Buck, "The Chinese road: Cities in the transition to capitalism," *New Left Review*, Vol. 46 (2007): 39–66; Shahid Yusuf and Tony Saich, *China Urbanizes: Consequences, Strategies and Policies* (Washington DC: The World Bank, 2008); Shenjing He and Fulong Wu, "China's emerging neoliberal urbanism: Perspectives from urban redevelopment," *Antipode*, Vol. 41, No. 2 (2009): 282–304.
5. Examples are Wing-Shing Tang and Him Chung, "Rural-urban transition in China: Illegal land use and construction," *Asia Pacific Viewpoint*, Vol. 43, No.1 (2002): 43–62; Kai Yuen Tsui and Youqiang Wang, "Between Separate Stoves and a Single Menu: Fiscal Decentralization in China," *The China Quarterly*, No. 177 (2004): 71–90; David Kelly, "Reincorporating the Mingong: Dilemmas of citizen status," in *Migration and Social*

Protection in China, ed. by Ingrid Nielsen and Russell Smyth (Singapore: World Scientific Publishing Co., 2008), 17–30.

6. For example, Zhou Yixing examined the special characteristics (*tese*) of China's urbanization in his lecture entitled "Foreign Urbanization Development Models and the Special Characteristics of China's Urbanization Road" delivered to China's supreme decision-making body, the Politburo, in 2005 (as noted in Zhou Yixing, "Guanyu Zhongguo chengshihua sudu de sikao" (Contemplating the speed of urbanization in China), *Chengshi guihua* (City Planning Review), No. 20, Supplement (2006): 32–40).
7. For instance, Thomas J. Campanella also discusses what he considers as the most distinguishing Chinese urban experience in the last chapter of his new book, *The Concrete Dragon: China's Urban Revolution and What it Means for the World* (New York: Princeton Architectural Press, 2008). I believe that neither Zhou nor Campanella has covered the two points I am examining below.
8. According to the annual survey of China's 500 largest enterprises, 70% were state-owned enterprises (SOEs) in 2007. These SOEs accounted for 85% of all the revenues of these 500 enterprises. None of the top 20 was a private company. See http://ccnews.people.com.cn/GB/87320/6202521.html. The same point can be made using 2008 data.
9. See Minxin Pei, *China's Trapped Transition*: *The Limits of Developmental Autocracy* (Cambridge, MA: Harvard University Press, 2006), Chapter 1.
10. This has been well researched. See Gur Ofer, "Economizing on urbanization in socialist countries: Historical necessity or socialist strategy?" in *Internal Migration: A Comparative Perspective*, ed. by Alan A. Brown and Egon Neuberger (New York: Academic Press, 1977), 277–303; Kam Wing Chan, *Cities with Invisible Walls: Reinterpreting Urbanization in Post-1949 China* (Hong Kong: Oxford University Press, 1994); Orjan Sjoberg, "Shortage, priority and urban growth: Towards a theory of urbanisation under central planning," *Urban Studies*, Vol. 36, No. 13 (1999): 2217–2236.
11. In relation to this, the existence of a large "floating population" has contributed greatly to the difficulties in measuring the numbers of "urban residents," and, hence, the scale and rate of urbanization and urban growth.
12. Since the early 1980s, several other special status cities have also been established. See Kam Wing Chan, "Urbanization and Urban Infrastructure Services in the PRC," in *Financing Local Government in the People's Republic of China*, ed. by Christine Wong (New York: Oxford University Press, 1997), 83–125.
13. Christine Wong (ed.), *Financing Local Government in the People's Republic of China* (New York: Oxford University Press, 1997); Li Tie, "Chengzhenhua huhuan xin tizhi" (Urbanization calls for a new institution)", *Zhongguo*

gaige (China Reforms), Vol. 12 (2001): 30–31; Roger C. K. Chan and X. B. Zhao, "The relationship between administrative hierarchy position and city size development in China," *Geojournal*, Vol. 56, No. 2 (2002): 97–112; Kam Wing Chan, Kai Yuen Tsui, and Qing Yu, "Understanding China's spatial administrative system and changes: An exploration," paper presented at the International Conference on Globalization, the State, and Urban Transformation in China, Hong Kong Baptist University, 15–17 December, 2003; Laurence J. C. Ma, "China's changing urban administrative system: Spatial restructuring and local economic development," *Political Geography*, Vol. 24 (2005): 477–497.

14. Jao Ho Chung and Tao-chiu Lam, "China's 'city system' in flux: Explaining post-Mao administrative changes," *The China Quarterly*, No. 180 (2003): 945–964.
15. Susan Whiting, *Power and Wealth in Rural China: The Political Economy of Institutional Change* (Cambridge: Cambridge University Press, 2001). Other non-economic priority national policies (such as the family planning policy) are also included in the assessment. In an interesting quantitative analysis of the top 200+ CCP members in the last two decades, Shih et al. demonstrate that their career advancement is linked positively to the performance of fiscal revenues in their respective local units. (Victor Shih, Christopher Adolph, and Mingxing Liu, "Getting ahead in the Communist Party: Explaining the advancement of Central Committee members in China," paper presented at CSSS Seminar, University of Washington, Seattle, USA, 7 October, 2009.) However, their work does not show that local GDP performance is an important determinant of career advancement. I suspect that this is partly due to the published local GDP statistics (the "public set") they used, which are not the internal accounting GDP statistics actually used in evaluating local officials.
16. See an examination of environment and labour aspects in Dongguan, one of the cities which have recorded the highest GDP growth rates in China in the last twenty years, in Godfrey Yeung, *Foreign Investment and Socio-economic Development in China: The Case of Dongguan* (London: Palgrave, 2001).
17. See Thomas Rawski, "What's happening to China's GDP statistics?" *China Economic Review*, Vol. 12, No. 4 (2001): 347–354; Carsten Holz, "Institutional constraints on the quality of statistics in China," *China Information*, Vol. 16, No. 1 (2002): 25–67; Kam Wing Chan, "Misconceptions and complexities in the study of China's cities: Definitions, statistics, and implications," *Eurasian Geography and Economics*, Vol. 48, No. 4 (2007): 383–412.
18. The rivalry among cities in the Pearl River Delta is a case in point, where channels of horizontal cooperation are weak and disputes often have to be resolved by the centre. The construction of three large international airports

(in Guangzhou, Shenzhen, and Zhuhai) in the Delta, along with two nearby but outside the Mainland (Hong Kong and Macao), is an oft-cited example of duplication due to inter-jurisdictional rivalry. See also Note 51 for academic references on this topic.

19. See, for example, Li Shangtong, Hou Yongzhi, Liu Yunzhong and Chen Bo, "Zhongguo guonei defang baohu de tiaocha baogao" (An investigation report of local protection in China), in Ma Hong, Wang Monghui (eds.), *Zhongguo fazhan yanjiu 2005* (China Development Studies 2005) (Beijing: Zhongguo fazhan chubanshe, 2005), 93–105. See also *Sing Tao Daily*, 28 July, 2000, A8 for a report of local protectionism and the "beer wars" in China. For an example in English, see *The Economist*, 23 July, 2005: 38–39 on the rivalry between Beijing and Tianjin.
20. See, for example, *Jinghua shibao* (Beijing Times), September 15, 2006: A21.
21. See Kam Wing Chan and Li Zhang, "The hukou system and rural-urban migration in China: Processes and changes." *The China Quarterly*, No. 160 (1999): 818–55; and Fei-ling Wang, *Organizing Through Division and Exclusion: China's Hukou System* (Stanford, CA: Stanford University Press, 2005).
22. See Kam Wing Chan, "The Chinese *hukou* system at 50," *Eurasian Geography and Economics*, Vol. 50, No. 2 (2009): 197–221.
23. Kam Wing Chan, "Recent migration in China: Patterns, trends, and policies," *Asian Perspectives*, Vol. 25, No. 4 (2001): 127–155; C. Cindy Fan, "Interprovincial migration, population redistribution, and regional development in China: 1990 and 2000 census comparisons," *The Professional Geographer*, Vol. 57, No. 2 (2005): 295–311.
24. The term is used in the narrow sense, excluding those employed in nearby township and village enterprises. Including this subgroup, "rural migrant labour" numbered about 225 million in 2008. National Bureau of Statistics (NBS), "2008 nianmo quanguo nongmingong zongliang wei 22,542 wan ren" (Total rural migrant labour reaches 225.42 million at the end of 2008), 25 March, 2009, see www.stats.gov.cn. Accessed on 29 March, 2009.
25. The 2008 figure is from NBS, see Note 24 above. The 2009 figure is also from NBS, see full details in Kam Wing Chan, "Global financial crisis and migrant workers in China," *International Journal of Urban and Regional Research*, (forthcoming.)
26. See a discussion of the land issue in Li (Note 3).
27. World Bank, *World Development Report 2009* (Washington D.C: The World Bank, 2009), 146.
28. See the voluminous literature on this, most recently, Chan (Note 17) above. Some earlier articles are: Kam Wing Chan and Xu Xueqiang, "Urban population growth and urbanization in China since 1949: Reconstructing a

baseline," *The China Quarterly*, No. 104 (1985): 583–613; Jianfa Shen, "Counting urban population in Chinese censuses 1953–2000: Changing definitions, problems and solutions," *Population, Space and Place*, Vol. 11, No. 5 (2005): 381–400.

29. Zhou Yixing and Laurence J. C. Ma, "China's urbanization level: Reconstructing a baseline from the Fifth Population Census," *The China Quarterly*, No. 173 (2003): 176–196; Kam Wing Chan and Ying Hu, "Urbanization in China in the 1990s: New definition, different series, and revised trends," *The China Review*, Vol. 3, No. 2 (2003): 49–71. The latest review is in Kam Wing Chan, "Measuring the urban millions," *China Economic Quarterly*, March (2009): 21–26.
30. National Bureau of Statistics, "2005 nian quanguo 1% renkou chouyang diaocha zhuyao shuju gongbao" (Report of Major Figures from 2005 1% Sample Population Survey), 16 March, 2006, www.stats.gov.cn/tjgb/rkpcgb/qgrkpcgb/t20060316_402310923.htm.
31. See Chan and Hu (Note 29).
32. Computed from NBS's 2005 1% Population Survey data. See Note 30.
33. The UAA refers to an urban administrative area legally distinguished from surrounding rural territory. For details, refer to United Nations, "Methods for projections of urban and rural population," *Population Studies No. 55* (New York: United Nations, 1974), Chapter 1. In China, the UAA refers to the "city districts" or *shiqu* for prefecture-level cities and above; and the entire administrative area for county-level cities.
34. One year's residence in the 1990 census and six months in the 2000 census.
35. Yixing Zhou and Laurence J. C. Ma, "China's urban population statistics: A critical evaluation," *Eurasian Geography and Economics*, Vol. 46, No. 4 (2005): 272–289. An example of an early study based on a set of *de jure* city population statistics is G. C. S. Lin, "Urbanization and the changing system of cities in socialist China," *Journal of Population Studies*, Vol. 24 (2002): 89–139. See a review of this issue in Chan (Note 17).
36. Chan and Hu (Note 29).
37. Ministry of Civil Affairs, *Zhongguo minzheng tongji nianjian* (Chinese civil affairs statistics) (Beijing: Zhongguo tongji chubanshe, 2003 and 2004).
38. There were 432 cities in both 1990 and 2000. The final sample used excludes 18 cities with an annual rate of decrease of more than 10% between 1990 and 2000 and one city with a highly unusual growth rate. A great majority of these cases had undergone extraordinarily far-reaching reclassification of the UAA.
39. To avoid confusion, the term "big city" is used in this section to refer to cities of more than one million population in size while restricting the word "large" to the specific categories of city size as defined in this section.
40. Chun-Chung Au and J. Vernon Henderson, "How migration restrictions

limit agglomeration and productivity in China," *Journal of Development Economics*, Vol. 80 (2006): 350–388; J. Vernon Henderson, "Growth of China's Medium-Size Cities," in *Brookings-Wharton Papers on Urban Affairs, 2005*, ed. by W. G. Gale and J. Rothenberg-Pack (Washington, DC: Brookings Institution, 2005), 263–303.

41. Justin Yifu Lin, Fang Cai and Zhou Li, *The China Miracle: Development Strategy and Economic Reform* (Hong Kong: The Chinese University Press, 1996).
42. Chan in Note 10.
43. For details on this classification, see Chan (Note 22). A more technical treatment is in Kam Wing Chan and Kai Yuen Tsui, *"Agricultural" and "Non-agricultural" Population Statistics of the People's Republic of China: Definitions, Findings and Comparisons* (Hong Kong: Department of Geography and Geology, The University of Hong Kong, 1992, Occasional Paper No.1).
44. National Bureau of Statistics of China data, see www.china.com.cn/txt/2009-04/15/content_17609148.htm. Accessed on 15 April, 2009.
45. J. Vernon Henderson, *Urban Development: Theory, Fact, and Illusion* (Oxford: Oxford University Press, 1988).
46. Some earlier studies include: Dwight H. Perkins, "The influence of economic reforms on China's urbanization," in *Chinese Urban Reform: What Model Now?* ed. by R. Yin-Wang Kwok et al. (New York: M. E. Sharpe, 1990); Sen-dou Chang and Won Bae Kim, "The economic performance and regional systems of China's cities," *Review of Urban and Regional Development Studies*, Vol. 6 (1994): 58–77. All of them suffer from data problems reviewed in Chan (Note 17).
47. Chun-Chung Au and J. Vernon Henderson, "How migration restrictions limit agglomeration and productivity in China," *Journal of Development Economics*, Vol. 80 (2006): 350–388; Li Xun, Xu Xiangxiang, and Chen Haofei, "20 shiji 90 niandai Zhongguo chengshi xiaolu de shikong bianhua: 1990–2000" (Spatial and temporal change of urban efficiency in China in the 1990s), *Dili xuebao* (Journal of Geographical Science), Vol. 60, No. 4 (2005): 615–625.
48. In their model, output is value-added per worker in the non-agricultural sector of the city proper. Determinants include the capital stock to labour ratio, share of accumulated FDI in capital stock, distance to the coast, education and scale measures.
49. Fang Cai and Kam Wing Chan, "Global recession and unemployment in China," *Eurasian Geography and Economics*, Vol. 50, No. 5 (2009): 513–531.
50. A case in point: under the UAA definition of city population, Wuhan had a city population of 8.3 million in 2000, as shown in Table 2. This definition

includes at least some 3 million population in basically rural areas outside of the labour shed of Wuhan core city (data drawn from Census 2000).

51. Notable scholarly works include Liu Junde, *Zhongguo xingzheng quhua de lilun he shijian* (Theory and practice of the planning of administrative regions in China) (Shanghai: Huadong shifan daxue chubanshe, 1996); Shu Qing and Zhou Keyu, *Cong fengbi zouxiang kaifang* (From closed doors to openness), (Shanghai: Huadong shifan daxue chubanshe, 2003); Chong-En Bai, Yingjuan Du, Zhigang Tao and Sarah Y. Tong, "Local protectionism and regional specialization: Evidence from China's industries," *Journal of International Economics*, Vol. 63, No. 2 (2004): 397–417.
52. In addition to those listed in Note 40, other works include: J. Vernon Henderson and Hyoung Gun Wang. "Urbanization and city growth: The role of institutions," *Regional Science and Urban Economics*, Vol. 37, No. 3 (2007): 283–313. Li Xun and Li Yun, "Nongcun jiti suoyouzhi yu fensanshi nongcun chengshihua kongjian" (Rural collective system and dispersed urbanized space in the countryside), *Chengshi guihua* (City Planning Review), Vol. 29, No. 7 (2005): 39–42.
53. Even in the early years of the twenty-first century, China is still at the beginning of the metropolitanization of cities. Most of its largest cities are still relatively compact and do not yet have large urbanized areas or daily commuting zones. However, less prudent observers have in the last two decades used the term "metropolitan area" erroneously to refer to the very extensive administrative areas governed by municipalities, which often encompass several counties. For a review of this issue, see Chan (Note 17).
54. For an examination of this subject, see Richard L. Forstall, Richard P. Greene and James B. Pick, "Which are the largest? Why lists of major urban areas vary so greatly", *Tijdschrift voor Economische en Sociale Geografie*, Vol. 100, No. 3 (2009): 277–297.
55. The Gini coefficients for other countries and the world are calculated from a world city data set prepared by Rupa Ranganathan, Hyoung Wang, and J. Vernon Henderson for 1960–2000. See Chan et al. in Note 1.
56. See Henderson and Wang (Note 52).
57. This refers to indicator N in Table 2 in Chan (Note 17).
58. Masahisa Fujita and Dapeng Hu, "Regional disparity in China 1985–1994: The effects of globalization and economic liberalization," *Annals of Regional Science*, Vol. 35, No. 1 (2001): 3–37; Bai et al. in Note 51.
59. Duncan Black and J. Vernon Henderson, "Urban evolution in the USA," *Journal of Economic Geography*, Vol. 3, No. 4 (2003): 343–372.
60. Li (Note 12), and Li and Li (Note 52).
61. The rioting of unassimilated French-African youths in France in 2006 is a telling example.
62. Dorothy Solinger, "The creation of a new underclass in China and its

implications," *Environment & Urbanization*, Vol. 18, No. 1 (2006): 177–93.

63. Albert Keidel, "China's social unrest: The story behind the stories," Policy Brief of Carnegie Endowment for International Peace (September 2006). There have been many major peasant protests against inadequate compensation in land expropriation cases. One notable case took place in Shanwei, Guangdong, in November 2005. The event turned violent and several deaths were reported.
64. Chan (Note 25).
65. Cai Fang and Kam Wing Chan, "The political economy of urban protectionist employment policies in China," (Working Paper Series No. 2, Institute of Population Studies, Chinese Academy of Social Sciences, 2000. See also a detailed discussion by Cai Fang, Du Yang and Wang Meiyan, *Zhongguo laodongli shichang zhuanxing yu fayu* (Transition and Development of China's Labor Markets), (Beijing: Shangwu chubanshe, 2005).
66. Kam Wing Chan, "Zhongguo huji zhidu gaige he chengxiang renkou qianyi" (Chinese hukou reforms and rural-urban migration), *Zhongguo laodong jingji* (China Labour Economics), No. 1 (2004): 108–124.
67. Su Hong and Kam Wing Chan, "Tudi zhengyong yu defang zhengfu de xingwei" (Land expropriation and local government behaviour) (Occasional Paper No. 58, The Centre for China Urban and Regional Studies, Hong Kong Baptist University, 2005); Lu Dadao, "Guanyu woguo daguimo chengshihua he quyu fazhan wenti de renshi he jianyi" (Knowledge of large-scale urbanization and regional development in China and suggestions), *Zhongguo kexueyuan yuanshi jianyi* (Suggestions by academicians of the Chinese Academy of Sciences), No. 1 (2006).
68. See Chan (Note 17). An updated review of the latest city population statistics is given in Chan (Note 29).