

Urbanization and Impact of Rural-Urban Migration on Chinese Cities

Chang Yang

College of Humanities and Social Science, Xi'an Jiaotong University, Xi'an, 710049, Shaanxi, China

E-mail: xn.changy@yahoo.com.cn

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Abstract-This paper analyzes and interprets statistical data documenting changes in China's urbanization process in term of three elements: population, economy and society. The results show that the comprehensive level of urbanization in China reflects the interplay between the continuously increasing internal migration pattern, from rural to urban, and the accelerated economic and social urbanization. The ensuing challenges flowing from the mismatch between residential policy and practices, imbalance between social and economic development, and population pressures, are discussed in terms of their longitudinal impact.

Keywords: Urbanization; Migration; Population; Economy; society;

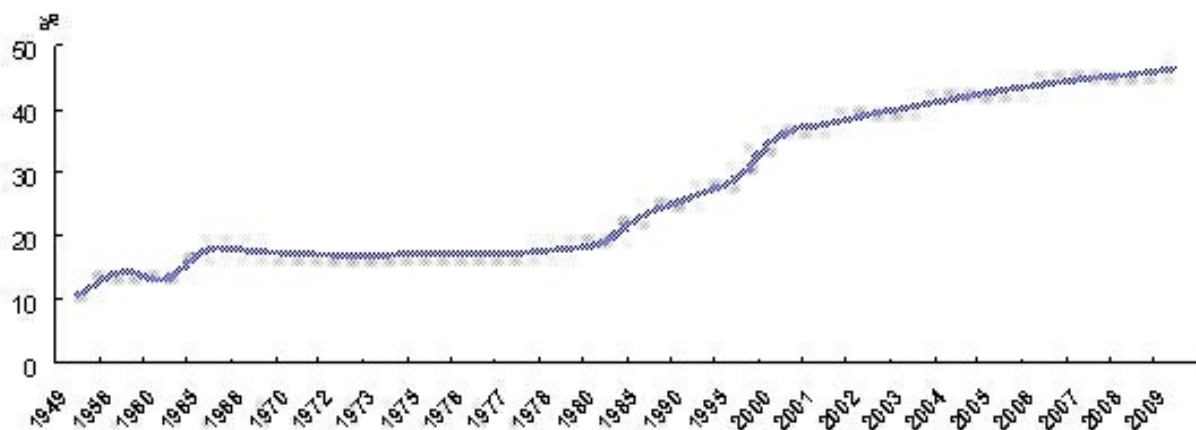
1 Introduction

1.1 Trend of urbanization in China

Since 1978, Deng Xiaoping initiated a series of far-reaching market reforms, China launched upon a multiple and accelerated urbanization journey. Urbanization, in its

simplest, most familiar form, refers to a shift in the proportion of total population that demographers have classified as rural as opposed to urban. Focusing on the more than 60 years history from Mao Zedong era (in 1949), most studies argue that the China's urbanization development could be divided into three stages: the free development period (1949-1958), the counter-urbanization period (1958-1978), the rapid development period (1978-) (see Figure 1). During the planned economy stage, from

Figure 1 Urbanization level in China. 1949-2009



a) Data before 1982 were taken from the statistics of household registration. Data in 1982-1989 were adjusted on the basis of the 1990 National Population Census. Data in 1990-2000 were adjusted on the basis of the 2000 National Population Census. Data in 2001-2004, 2006-2009 have been estimated on the basis of the annual national sample surveys on population changes. Data in 2005 are estimated on the National 1% Population Sample Survey.

b) Total population and population by sex include the military personnel of the Chinese People's Liberation Army, the

military personnel are classified as urban population in the item of population by residence. From 1966 to 1976, it was the ten years cultural revolution and during the stage, there almost had no social development in China.

1949 to 1978, the urbanization level in China rose from 10.64% to 17.38%, only up around 6.74 per cent in 30 years; By contrast, from reform and opening up in 1978 to the end of 2009, the urbanization level in China had achieved 45.68%, up 28.3 per cent, a rise from approximately 172 million to 622 million in about 30 years, compared with 33.8 million of

¹The hukou system has created a two-class society consisting of those who are entitled to certain privileges of urban life and those who are not. (Solinger, 1999,278)

Canada's total population. With the reform period, China's urbanization fell into two phases: the steady development period (1978-1995), and high-speed development period (1996-). Some demographic projections and public institutions suggest that this upward trend is likely to continue for the next twenty years and beyond, by which time, in 2030, more than 65%-70% of an even larger total population will be classified as urban—that is, as officially residing in cities as defined by the census (for example, <China's Urban Competitiveness in 2008 Blue Book: the report of China's Urban Competitiveness > forecast that, in 2030 the urbanization level in China will reach 65%; and vice-director Xiao Jincheng of the Institute of Territorial Development and the Regional Economy of NDRC also write an article to forecast that in 2030 the urbanization level in China will reach 70%), which affected by "Northam Curve" about urbanization process. Methodologically, "Northam Curve" (that was used to describe the stages of urbanization.) was a conclusion on the analogy of the process of urbanization level in Europe and North America. But this doesn't mean this course will repeat in China. China's urbanization

experiences an unique and complex road. China, as the most populous country, can offer an interesting case for migration studies. This kind of studies may help derive policy implications under various circumstances.

Analyzing the level of urbanization, a term like urbanization that is usually understood only in terms of the demographic growth of predefined "urban" places relative to total population. If more complex understanding is called for, this paper I propose three dimensions of the multidimensional construct of the urban.

1. *Population urbanization*: Population urbanization mainly reflects the rural people concentrated from rural areas to cities or the towns, called rural-urban migration, changing the proportion of rural-urban population, urban population size.

In China, cities and towns belong to urban, which are defined administratively. For instance, a village (in rural areas) would turn into a town, or a town into a city, that are varied and may change over time. Urban residents in China are usually identified as by *hukou*, or resident permit followed along with some welfare. For example, urban residents can be ensured of housing benefits. Their children have entitlement to local public school for Nine-year compulsory free education. While the migration's children should pay more if they want to local public school or have to access to migrants children school, which generally exist pay of insecurity of persons qualified to teach, teacher standard of persons qualified to teach of not tall, whole is wronger wait for a problem.

2. *Economy urbanization*: Urbanization brings changes mainly reflecting the economic structure transition, including per capita GDP, the rate of industrialization, the relative proportions of primary industry (agricultural, extractive), secondary industry (manufacturing industry, construction) and tertiary (trades and services). Finally, economic urbanization is often accompanied by an expanding radius of transactions, extending from local to regional, to national and global.

3. *Social urbanization*: Large number of rural-urban migration may give rise of new forms of social tension, which mainly reflects the transformed in lifestyle. There are new forms of individual and household consumption, health care and uses of leisure. The technologies of computer and cell phone—the information revolution—are among the visible instruments shaping the unbounded city.

These three aspects are interrelated but differentiated to reflect the urbanization fully and accurately.

1.2 Background Knowledge and Research Data Source

The definition of urbanization, trivial as they seem to be at first glance, are especially important issues in evaluating China's urbanization trends and in studying aspects of the Chinese economy in relation to the size of the urban population (Chan and Xu, 1985; Luo and Pannell, 1991; Kim, 1991). Given the complexity of China's urbanization level definitions, the variance investigation statistic will arrive at different analytical data. According to the researchers, there were two existing urbanization level series in use. Some of researchers chose to use "nonagricultural population of cities and towns"(Ma and Cui. 1987) as a representation of the urbanization level. Others adopted the "total population of cities and towns" as their urbanization level base (Banister, 1986; World Bank, 1992). The different models to calculate the urbanization level was analyzed in detail. (See. Kam Wing Chan, 1994) In fact, in recent years, the latter is a reasonable approximation of reality in evaluating China's urbanization trends, because of China having been experiencing the largest flow of migration from rural to urban in world history.

The research data sources for analyzing the level of China' urbanization are all from the China Statistical Yearbook 1982-2011 by National Statistics Press, Summary of National Statistics 2005, National Statistics Press, 2005, Basic Statistics on National Population Census in 1953, 1964, 1982, 1990 and 2000, and the 1987, 2005 One Percent Sample Survey of the Population of China undertaken by the China State Statistical Bureau (1988b, 2006b), if there were no special explanation.

The paper aims to analyze the process and impact of China's urbanization over time, this paper is organized in four sections. First, I present the statistical data on population growth and compare it with internal migration patterns. Second, the effects of migration and population growth on China's economic development are discussed, with reference to data on GDP and industrial structures. These effects are then linked to societal urbanization, to fill in the emerging story. Finally, I discuss the ensuing challenges in terms of the mismatch between policy and practices, regional imbalances and population pressures.

2 Mobile Population and Impact of Urbanization

2.1 The Spatial Distribution of Rural-urban Migration

The urbanization level is usually measured by the share of urban population in total population. In China, the rise of urbanization level is mainly caused by migration flowing from rural to urban areas, from West areas to East areas, from inland areas to coastal areas. The results are presented in Table 1.

Table 1 Migrant rate at the end of 2005 by provinces: shares in nation

Regions	In-migration			Out-migration
	Total	Interprovince	intraprovince	
	%	%	%	%
nation	100	100	100	100
Beijing	2.94	0.12	6.78	0.83
Shanghai	5.17	2.16	9.26	1.16
Jiangsu	8.15	7.93	8.46	5.52
Zhejiang	8.31	5.31	12.39	4.93
Guangdong	20.65	11.83	32.64	7.88
Shandong	5.05	6.9	2.53	4.39
Fujian	5.68	5.7	5.66	4.22
Liaoning	3.86	5.08	2.21	2.31
Sichuan	3.88	6	1	11.27
Hunan	3.03	4.79	0.64	4.77
Hubei	2.75	4.11	0.91	5.72
Anhui	2.52	3.86	0.69	7.73
Hebei	2.48	3.03	1.74	2.42
Yunnan	2.48	3.12	1.61	1.95
Henan	2	3.06	0.55	6.23
Inner Mongolia	2.16	2.72	1.4	1.98
Jilin	1.63	2.39	0.6	0.73
Tianjing	1.04	0.07	2.36	0.52
Jiangxi	2	3.1	0.5	4.86
Shanxi	1.45	1.91	0.82	1.19
Heilongjiang	2.27	3.36	0.79	1.32
Guangxi	1.99	2.92	0.73	5.28
Xinjiang	1.76	1.55	2.05	0.61
Guizhou	1.72	2.42	0.76	3.44
Shaanxi	1.49	2.03	0.75	2.78
Chongqing	1.3	1.74	0.7	3.56
Hainan	0.69	0.77	0.58	0.47
Gansu	0.74	1.05	0.32	1.33
Qinghai	0.38	0.48	0.25	0.21
Ningxia	0.33	0.41	0.23	0.32
Tibet	0.08	0.07	0.08	0.07

a) All numbers are percentage in nation, which is percentage in the reporting province. The 32 administrative units in China consist of 23 provinces (Hebei, Liaoning, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Heilongjiang, Hainan, Guangxi, Jilin, Shanxi, Anhui, Jiangxi, Henan, Hubei, Hunan, Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, and Qinghai), 5 autonomous regions (Guangxi, Ningxia, Inner Mongolia, Xinjiang, Tibet), and 4 municipalities (Beijing, Shanghai, Tianjing, and Chongqing). Both autonomous regions and municipalities enjoy the same status as province. The coastal areas include three municipalities (*zhixiashi*) (Beijing, Shanghai, Tianjing) and eight provinces as follows: Hebei, Liaoning, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong and Hainan. The remaining provinces are considered as inland areas.

b) Source: Data in 2005 are estimated on the National 1% Population Sample Survey, State 1% population sample survey of the National Leading Group Office, 2008, 2009.

14.735 million migrants were throughout almost all the province (cities, towns) of the country in geographic distributed, while the bulk of the population concentrated in

the coastal cityward. For instance, the migrants in Guangdong province shared 20.65% in total migration population, following by Zhejiang province and Jiangsu province, shared 8.31% and 8.15%. In Shanghai, Beijing, Guangdong province, Zhejiang province and Fujian province, at least one out of every five persons, even every 3 persons is a migrant. In contrast, out-migration were dispersed. Sichuan Province contributed 11.27% emigration, ranking first in the country, then Guangdong province (7.88% in total), Anhui province (7.73% in total), Henan province (6.23% in total), Hubei province (5.72% in total). Where did the migrants go? Figures in Table 1 offer an answer. Almost 64 % of total migrants went to coastal areas.

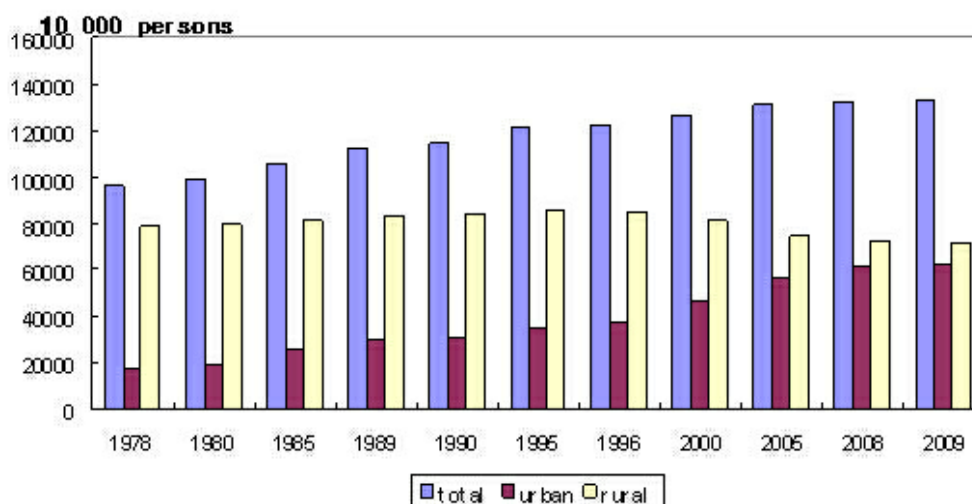
2.2 The Growth Rate of Urban, Rural and Total Population

Figure.2 gives the curves of the size of urban population, rural population and total population from 1978 to 2009. From 1996 to 2009, the growth of urbanization level is nearly 10% (see Figure 2), a rise of urban population from 373 million to 621.9 million, which indicates that the urban population is going up all the time. In China, from 1979-2009, average

annual growth rate of total population is 1.1, while average annual growth rate of urban population is 4.2, average annual growth rate of rural population is -0.3; From 1991-2009, average annual growth rate of total population is 0.8, while average annual growth rate of urban population is 3.9, average annual growth rate of rural population is -0.9; Then from 2001-2009, average annual growth rate of total population is 0.6, while average annual growth rate of urban

population is 3.4, average annual growth rate of rural population is -1.4 (Data based on Basic Statistics on National Population Census in 1953, 1964, 1982, 1990 and 2000). Urban population grew much fast than total population. While China's urban population continued to grow strongly, the slowdown in total population growth and negative population growth in rural areas. All index shows

Figure 2. The Compares of China's Urban, Rural, and the Total Population in Different Years



a) Total population include the military personnel of the Chinese People's Liberation Army, the military personnel are classified as urban population in the item of population by residence.

b) Source: Data before 1982 were taken from the statistics of household registration. Data in 1982-1989 were adjusted on the basis of the 1990 National Population Census. Data in 1990-2000 were adjusted on the basis of the 2000 National Population Census. Data in 2001-2004, 2006-2009 have been estimated on the basis of the annual national sample surveys on population changes. Data in 2005 are estimated on the National 1% Population Sample Survey.

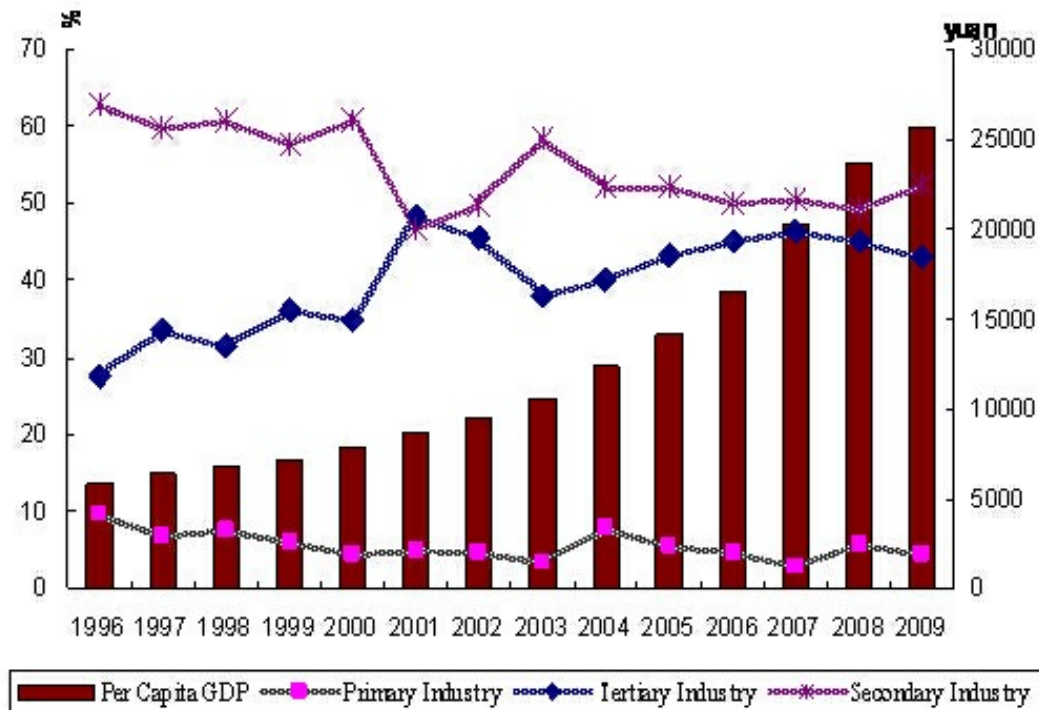
when China is at rapid urbanization stage, at the same time, economy urbanization and social urbanization should to be improved. Since 1996, majority of migration population moved to the cities with more than 20 ten thousands populations. The proportion of the migration population moving to the cities with 100 ten thousands populations was 56.1%. The proportion of the migration population moving to the cities with 500 ten thousands populations was 22.4%. The data also demonstrate that more and more migration population packed into the larger cities. These cities should

provide more and more land to contain the population and appropriate infrastructural facilities.

3 Economy Urbanization and Situation of Migration

3.1 The contribution of migration to economy urbanization Migration will influence economic development of urbanization. The human history has shown us this. Great population flow will change the center of population and economy and urbanized areas' structure. Since 80s of 20th century, the migration begin crowd, till now China has entered migration era. The size, direction and life style of migration will influence Chinese urbanization, industrialization and modernization.

Along with the increase of migration population, the proportion of urbanization is also increased , rising from 30.5% in 1996 to 46.59% in 2009 and the economic structure transition is accelerating. The migration population from rural areas to urbanized areas increased the contribution rate of tertiary industry (see Figure 3), rising from 27.5% in 1996 to 42.9% in 2009. In contrast, and the contribution rate of the primary decreased from 9.6% in 1996 to 4.5% because of majority of labor workers

Figure 3. Changes of China's urbanization and economy urbanization

a) Data in this table are calculated at current prices. Although the grouping varies to some extent from country to country, in China economic activities are categorized into three strata of industry: primary industry refers to agriculture, forestry, animal husbandry and fishery and services in support of these industries; Secondary industry refers to mining and quarrying, manufacturing, production and supply of electricity, water and gas, and construction; Tertiary industry refers to all other economic activities not included in the primary or secondary industries.

b) Share (%) of the contributions of the Three Strata industry to the increase of the GDP refers to the proportion of the increment of the value-added of each industry to the increment of GDP, when index of Gross Domestic Product = 100.

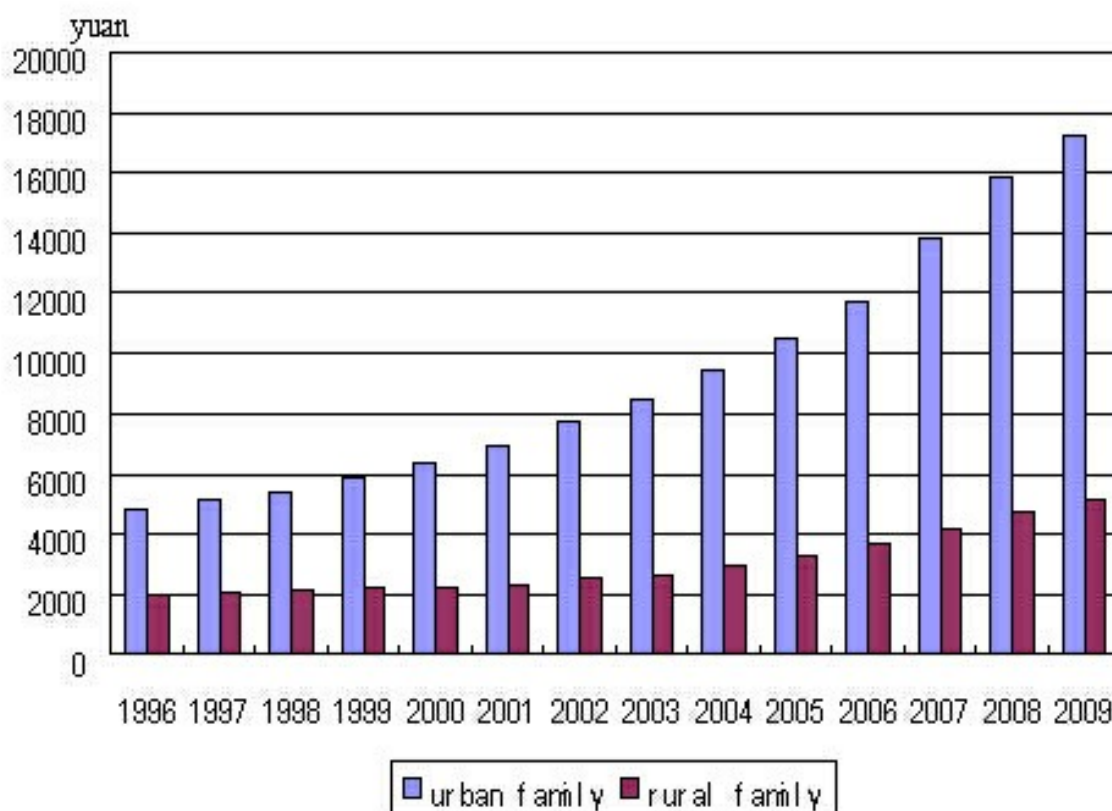
moved from rural areas to urbanized areas. At the same time per capita GDP is also rising, from 5846 yuan (CA\$ 860.5) in

1996 to 25575yuan (CA\$ 3764.4) in 2009. This data shows that population urbanization accelerates economy urbanization.

3.2 Driving Forces of Migration to Urban

For the question of why the migration moved from rural areas to urbanized area, one answer is, there was a theory explained the dual economy model (Lewis, 1955; Fei and Ranis, 1964 and Kelly, A.C., William, J.G., & Cheetham, R. J. (1972)) existing in a developing economy: zero marginal labor productivity in rural sectors and high productivity in modern urban industrial sectors, in which surplus labor is withdrawn from the rural areas to provide needed manpower for urban industrial growth, at the same time the income gap between the rural and the urban offer another answer. Figure 4 shows the gap between per capita income of urban and rural households

Figure 4 Comparison of Per Capita Income of Urban and Rural Households



(SSB, 2011). The income gap in 1996 is 2912.8 yuan (CA\$ 429.3), rising to 12021.48 yuan (CA\$ 1771.6). The huge income gap between the rural and the urban attracts rural labors moving into cities continually. These suggest a positive impact of economic development (usually measured by the growth rate of urban family real income) on the magnitude of cityward migration, and also affected by the rural-urban

income gap. Besides economic factors, there are non-economic factors drive large flows of population from rural to urban places. The result numbers of migration moved on cause of economic and non-economic factors for the period 1987 to 2005 are presented in Table 2. Driving forces of migration by economic factors became more and more, especially by business, 55.05% in 2000 and 50.2% in 2005.

Table 2. Cause of Migration Flows in Nation from 1987-2005 (%)

	1987	1990	2000	2005
Economic factors	33.04	57.44	59.37	53.6
Non-economic factors	66.96	42.56	40.63	46.4
Total	100	100	100	100

a) Economic factors includes business, job transfer and recruitment from graduate students etc, and non-economic factors refers to marriages, relocation after demolition, study, moved with family, etc.

b) **Sources:** Basic Statistics on National Population Census in 1990 and 2000 and the National Population Sample Survey in 1987 and 2005.

4 Social Urbanization and Impact of Migration

China’s social urbanization was greatly different from others. In 1990, telephone population rate (including mobile telephone) was 1.11 sets (Figure 5, SSB, 2011), and had a

distinct turning point. However, from 1978 to 1990, the index of doctors till 2009, increased to 79.89 sets. TV coverage rate of the population was 79.4% in 1990, increased to 97.2% in 2009, which reflects the progress in population quality, for every ten thousand people is 10.8 persons to 15.6 persons (figure 6, SSB, 2011), till to 2009 is 17.5 persons, and the index of hospital beds for every ten thousand population from 1978 to 1990 is from 19.3 beds to 23.2 beds, till 2009 is 30.6 beds, compared with the growth of urbanization level it could be negligible. Not surprisingly, much of the newly leisure time was spent watching television and using computer. In 1990, the numbers of color television per 100 urban households was 59% (Figure 7, SSB 2011), while the number in the rural households was only 4.7%.

Figure 5 Index 1 of Social Urbanization

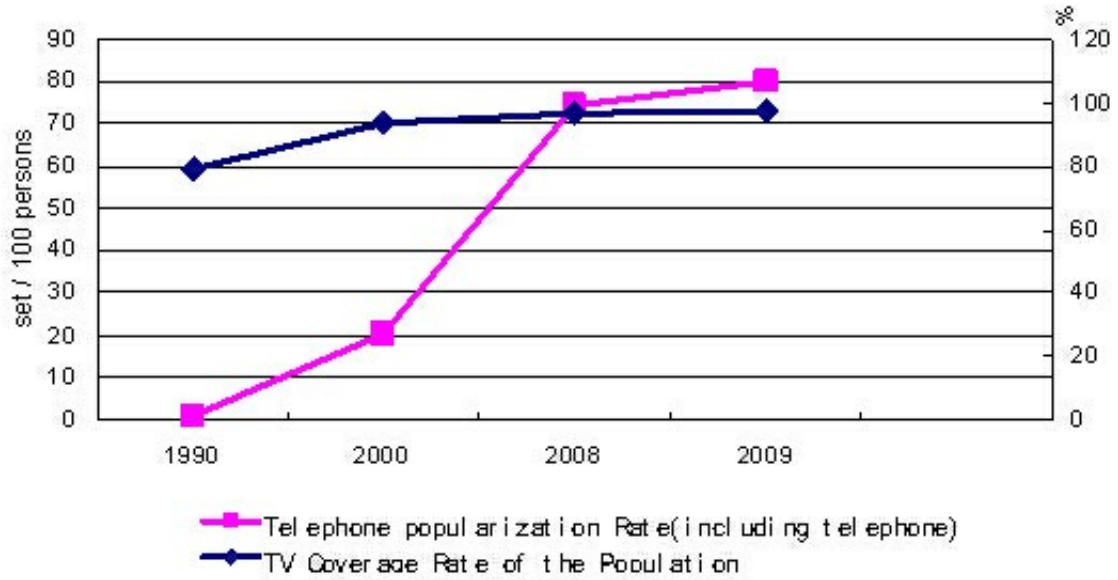


Figure 6 Index 2 of Social Urbanization

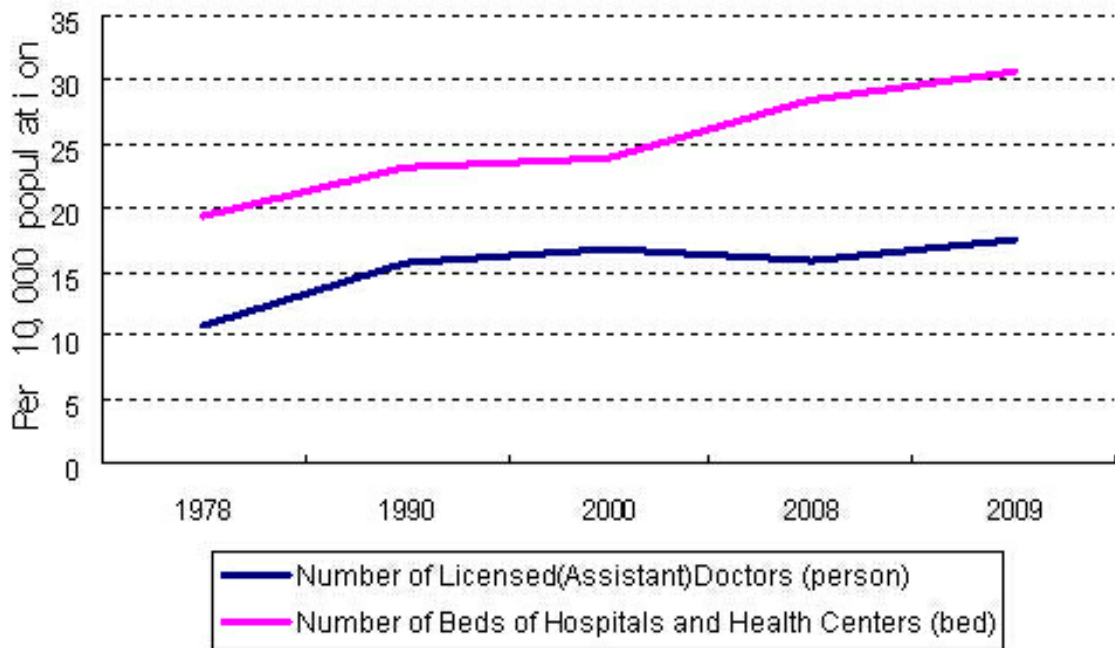


Figure 7 Numbers of Color TV

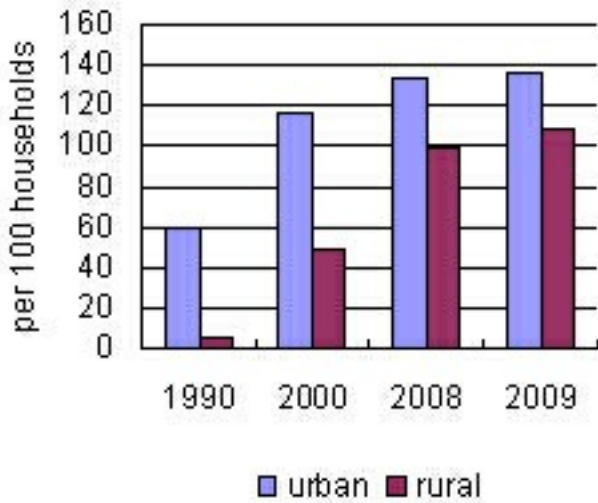
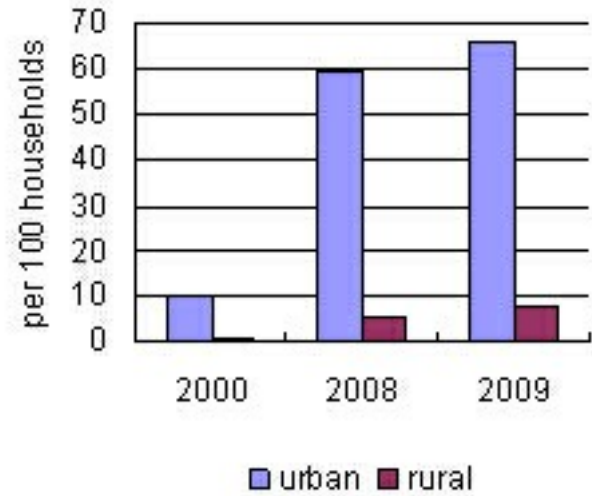


Figure 8 Numbers of Computer



Till 2009, urban households owned at least one color television set and the gap between urban and rural became small. However, computer as a new technology, related to certain computer skills, the number between urban households and rural households had apparent difference. The number of computer per 100 urban households was 9.7 in 2000 (figure 8, SSB2011), then up to 65.7% in 2009. While the number of computer per 100 rural households was 0.5% in 2000 and it was still 7.5% in 2009.

That shows the process of social urbanization is extremely unbalanced: the medical conditions that are closely related to people’s life are severely undeveloped and unable to adapt to

people’s growing needs. The population flows from rural areas to cities is favorable to shorten the urban and rural disparities, and eradicate the dual models in urban and rural areas, advancing the construction of a harmonious society. However, there have many deployment hurdles to leap. For example, the major impediment of population urbanization is China’s special policy of Registered Permanent Residence (*hukou*). This policy not only implicates an anti-migrant attitude, but also will be easy lead to inequality on status, identity and treatment. migration population’s marital status influences the level of China’s urbanization including population urbanization and cities’ education facilities. Table 3 shows that the majority of migration populations

Table 3 Marital Status of Migration Population by Sex

Table 3 Marital Status of migration population by sex			
Marital Status	Male	Female	Add up
Unmarried	30.49	27.66	29.08
First Marriage	66.11	66.52	66.31
Remarriage	1.6	2.59	2.1
Divorce	0.71	0.76	0.73
Widow	1.08	2.47	1.78
Add up	100	100	100

Sources: The 1% National Population Sample Survey in 1987 and 2005. are married. Among them the first married is 66.31%, remarried is only 2.01%,

Table 4 Migration Population’s Educational Level by Sex in 2005 (%)

Educational Attainments	Male	Female	Add up
Illiteracy	2.44	7.19	4.81
Primary education	21.34	25.34	23.33
Junior high school education	48.12	46.69	47.41
Senior High School education	19.61	14.8	17.21
College education	5.59	4.22	4.91
University education	2.75	1.68	2.21
Postgraduate education and Above	0.16	0.08	0.12
Add up	100	100	100
average length of education	9.32 years	8.46 years	8.89years

a) Average years of education is to be converted into each level of education the average number of years of education obtained: Illiterate=0 year, Primary education =6 years, Junior high school education = 9 years, Senior high school education =12 years, college education and above =16 years. Illiterate population in this table refers to the population aged 15 and over who are unable or have difficulty in reading.

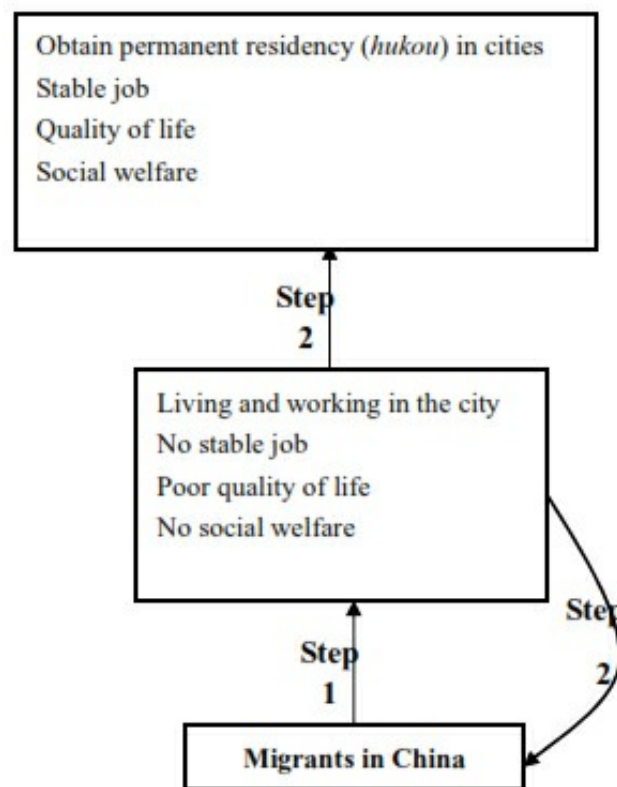
b) **Sources:** Basic Statistics on National Population Census in 1990 and 2000 and the National Population Sample Survey in 1987 and 2005.

unmarried is 29.08%. That demonstrate the cities should provide more education facilities for the children of the married. And the migration population's educational level can also effect on urbanization. All in all, the migration population's average educational level is low. Those with primary school education are 23.33%, junior secondary

school education, 47.41%, less than half the all, college education, less than 8%. The average length of education is 8.89 years (see Table 4). The education level directly effects on their employment then effects on the process of population urbanization. If the rural migrants want to obtain permanent residency in cities,

go through two steps (see Figure 5). During the period of 'step 1' migrants can only live in cities but they couldn't get the same treatment as cities resident, such as no stable job, poor accommodation, no social welfare, poor quality life, etc. During the period of 'step 2', part of migrants could obtain permanent residency (*hukou*) in cities while rest of migrants would keep the status of step 1 or return their hometowns. That means they have stable jobs, middle--incomes, social welfare, their own apartments in the cities, etc. Only in the period of 'step 2', the problem of population urbanization would really be accomplished.

Figure 5 Transition Model of Rural-urban Migrants in China



5 The Challenges in China's Urbanization Process

According to official statistical data China has a fairly high level of population urbanization, and the size of cities are bigger and bigger. The central government of China has taken urbanization as a strategic key for the country's development. As a result, a number of local governments have proposed to speed up the urbanization process to promote economic growth. Consequently, both the scholarly literature on China's demographics as well as the pronouncements of Chinese policy makers had hailed the country's growing urbanization levels as a sign of progress. Friedmann pointed out that "China

is urbanizing at breakneck speed, compressing into one century what will have taken the world three centuries to accomplish (Friedmann, 2006)." At the same time, Chinese scholars have been made a long-term and deep study systematically on China's urbanization. However lots of specific questions still have not been resolved effectively. China's urbanization progress is very complicate because of the unique road, not only by the urbanization important parts, such as the migrant population, but also related departments. The media and publicity are attended with too much ballyhoo, and local governments tend to compare urbanization level with each other. Some areas are eager to concentrate on urban

construction in spite of economic level and other social conditions.

A large number of migrants flocked to the cities and towns from rural areas while they cannot enjoy the same treatment as the city's residents ((Lu et al., 2007; Lu, 2007; Yao et al., 2007). "Driving urbanization" increases risk of land preservation and social stability. The urbanization level should be one of the most important indicators of a national or regional socio-economic development, but China's rapid urbanization process has still faced many difficulties.

One of the difficulties in China's urbanization is the contradiction of long term accumulation: before 1949 urban development was lag behind because of war. After 1949 urban development stagnated even regressed because of Cultural Revolution for 10 years (from 1966-1976) and counter-urbanization policy and dual--models of the residence registration policy between rural areas and urban areas. From 1996 China's urbanization experiences a high-speed development period. There were a large floating population, especially crowds of peasants had poured into cities from countryside. At the same time economy urbanization couldn't do match with population urbanization.

The second difficulty in China's urbanization is unbalanced economic and social development between different regions. Compared with cities in eastern China, infrastructures in many cities in western China are backward. There are big gaps between consumption and income of residents in urban and rural areas. In accordance with the index, in the middle of 1980s, the gap was 2.2-2.3 times. But at this point, in the late 1980s and early 1990s, the gap increased to 2.8-3.0 times. In the middle of 1990s, the gap increased to more than 3.5 times. The level of urban household consumption was higher than rural household consumption. That was the basic reason which drove the peasants drifting to the cities. And before 1970s, the government forbade rural population moving to cities. After 1978, the policy was cancelled then the rural population flocked to cities just like a volcano in eruption.

The third difficulty in China's urbanization is great population pressures. According to the fifth national census, the total population (year-end) is more than 1370 millions. Urban population is 49.68 %. If we want up to the standard of 60%, which means more 130 millions rural populations would need move to cities. The cities will face huge population pressure. How to manage all these problems, maintaining an appearance of regional balance and orderliness while building livable cities, continues to be a formidable challenge for China.

6 Conclusions and Discussion

The quantitative analysis showed that the comprehensive level of China's urbanization have a positive correlation with population urbanization level. The main characteristics are the rapid evolution of economic growth, followed by population urbanization, and the medical care level in social urbanization remains to rise. Among them, population, economy, society have different evolution characteristics in different stages.

The paper has obtained some useful conclusions and policy inspirations by quantitatively analyzing China's rapid urbanization process and the effects of migration on China's urbanization. As the world's largest developing country, the sustained and rapid development of China's future socio-economy need not only an incessantly expanding fund and technology source, but also policy reform so as to inland migrants. In the future, the research on urbanization should remain the balance development between the rural areas and urbanize areas, the west regions and the east regions, the inland and coastal sectors. And the other is the reform of Registered Permanent Residence (*hukou*) policy.

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