

ON THE SUBURBANIZATION OF BEIJING^①

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ABSTRACT: Suburbanization is a stage of urbanization process. The author discusses the situation of Beijing from the data of three population censuses(1964, 1982, 1990) and considers that the suburbanization in Beijing has been in process since 1982. During 1982–1990, population of all districts of the inner city lost 82 000 persons and in fact the permanent residents holding the household registration lost 144 000, which is about 6.12% of permanent residents in the inner city.

Like the West, suburbanization in China also happened against the macro backgrounds of improvements of transportation and living conditions, growth of urban population moving from rural areas. But in the case of the forces that make decentralization possible, China is different from the western countries. In China, the levels of economy and urbanization are rather low, the real middle class is not rich; only very few Chinese families own private cars, and the inner cities still have great attraction to Chinese people. The author considers three causes of decentralization: (1) reform of urban land use system brings about migration from the core area; (2) construction of a large number of city roads reinforces this process; (3) reforms of housing system and renovation of dilapidated houses encourage outward movement. However, the process wasn't of spontaneity of any individual but of the leadership of government and "Dan Wei"(Work Unit).

KEY WORDS:suburbanization, inner city, renovation of old city, outward movement of population

Suburbanization is a stage of urbanization process. It means that population, jobs and service trades decentralize from inner city to suburban area. Suburbanization has greatly changed the economic and urban development in the developed countries. Now, the focal point is whether suburbanization in China, as a developing country, has actually begun? When did it start and what is the mechanism in process. This paper is a preliminary case study of Beijing.

I. MODEL AND CONCEPT OF BEIJING METROPOLITAN AREA

Peter Hall's (1984) model of urban change offered a framework that can easily identify

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whether a metropolitan area is in the process of suburbanization. The first and second stages are primarily the influx of population to the inner city with a rapid population growth in the core. The city growth is in the state of centralization. The third stage is that of relative decentralization, in which urban core still grows but not as fast as suburban area. It is a warning sign of suburbanization. The fourth stage, the metropolis has begun to lose population from core, while suburban area is still increasing at a high rate, the absolute decentralization marks the beginning of typical suburbanization. In the fifth and final stage, suburbanization got into full swing and even into counterurbanization(Berry, 1976; Fielding, 1989; Hall,1984).

Generally, metropolitan area is a geographic area consisting of a large population nucleus together with adjacent communities that have a high degree of economic and social integration with the nucleus. In the West, the administration area of central city, as the core of metropolitan area, is always smaller than the built-up area of a city. However, it should be emphasized that there is no concept, definition, criteria of central city and metropolitan area in China. The administration area of city is always much larger than its built-up area. So, the study of suburbanization in China firstly must determine the range of central districts (inner city) that corresponds to central city in the West.

Beijing is the capital of the People's Republic of China, a municipality directly under the central government, covering 16.8 thousand square kilometers, with 10.5 million people in 1993. Beijing consists of 18 districts and counties, which can be further divided into three levels. The first level, the inner city (Cheng Qu in Chinese), includes East, West, Xuanwu and Chongwen districts. The second level, the inner suburban districts (Jin Jiao Qu in Chinese), lying around the inner city, includes Chaoyang, Fengtai, Haidian and Shijingshan districts. Outside the inner suburban districts are the outer suburban districts and counties (Yuan Jiao Qu Xian in Chinese), mainly, the two districts and eight counties.

The population density is greatly different among the three zones. Population density of inner city is nearly ten times higher than that of inner suburban districts. It is the same case in comparison between inner and outer suburbs(Hu *et al.*, 1994).

Based on preliminary studies of forming mechanism and delimitation of Beijing metropolitan area, it should consist of the inner city and the inner suburban districts and its attached six outer suburban districts and counties, Changping, Shunyi, Tongxian, Daxing, Fangshan and Mentougou(Sun, 1992).

Here, the inner city of Beijing (87 km², 2.4 million population in 1993) is specifically called the metropolitan core area which was the space enclosed by old city walls (62 km²) in the Ming and Qing dynasties and the adjacent neighborhoods lying outside the city gates (Guan Xi-ang in Chinese). The old city walls had been removed and replaced by the second beltway.

The inner suburban area of Beijing is the counterpart of urban fringe of the western cities. However it contains a part of rural area which has not been urbanized.

My analyses focus on the built-up area that is similar to the western urbanized area. There are totally 83 adjacent-each-other subdistricts (Jiedao Banshichu in Chinese) in Beijing's built-

up area distributed in the inner city and inner suburban districts. There lived 5 million people. All of them are urban population engaged in non-agricultural activities, representing the main part of Beijing urban area.

II. SUBURBANIZATION IN BEIJING HAS BEEN IN PROCESS SINCE 1982

The situation of Beijing can be discussed with the data from three population censuses (1964, 1982 and 1990) (Population Census Office of Beijing, 1991) (Table 1).

From Table 1, inferences can be made as follows:

(1) During 1964 – 1982, population of Beijing's inner city was growing at a low rate and so was the population density. In the suburban area, it kept growing faster than in the inner city (Fig. 1). According to Peter Hall's model, Beijing was in the stage of relative decentralization in which suburbanization didn't take place. In the twelve years of 1964 – 1976, politics and economy in China were developed disorderly because of the destructive Cultural Revolution. In the last six years (1976 – 1982) along with the starting of reform, urban development was in anomaly process.

Table 1 The changes of population and population density in Beijing from 1964 to 1982 and from 1982 to 1990

	1964 – 1982		1982 – 1990		Population density		
	PGR* (%)	AAPGR** (%)	PGR (%)	AAPGR (%)	1962	1982	1990
	(persons/km ²)						
Total	21.50	1.09	17.20	2.00	452	547	642
Inner city	3.00	0.16	-3.38	-0.43	26748	27551	26607
East	4.80	0.26	-6.96	-0.90	25169	26377	24543
West	3.70	0.20	-1.10	-0.14	24564	25473	25194
Chongwen	8.43	0.45	-5.14	-0.66	25539	27692	26267
Xuanwu	-3.80	-0.21	-0.94	-0.12	34250	32948	32592
Inner suburban	31.13	1.52	40.46	4.34	1680	2203	3101
Chaoyang	41.88	1.96	41.68	4.45	1530	2171	3077
Fengtai	27.15	1.34	34.89	3.81	1513	1923	2594
Shijingshan	32.75	1.58	31.39	3.47	2037	2704	3639
Haidian	23.48	1.18	44.62	4.72	1897	2342	3387
Outer suburban	27.64	1.36	13.12	1.55	202	257	291

* PGR: Population growth rate

** AAPGR: Average annual population growth rate

source: Fourth Census Data of Beijing(1991)

(2) During 1982 – 1990, it was shown that population of all districts of the inner city decreased. Totally, it lost 82 226 people which accounted for 3.28% of inner city population during the eight years. Population density dropped to 944 people per square kilometer. At the

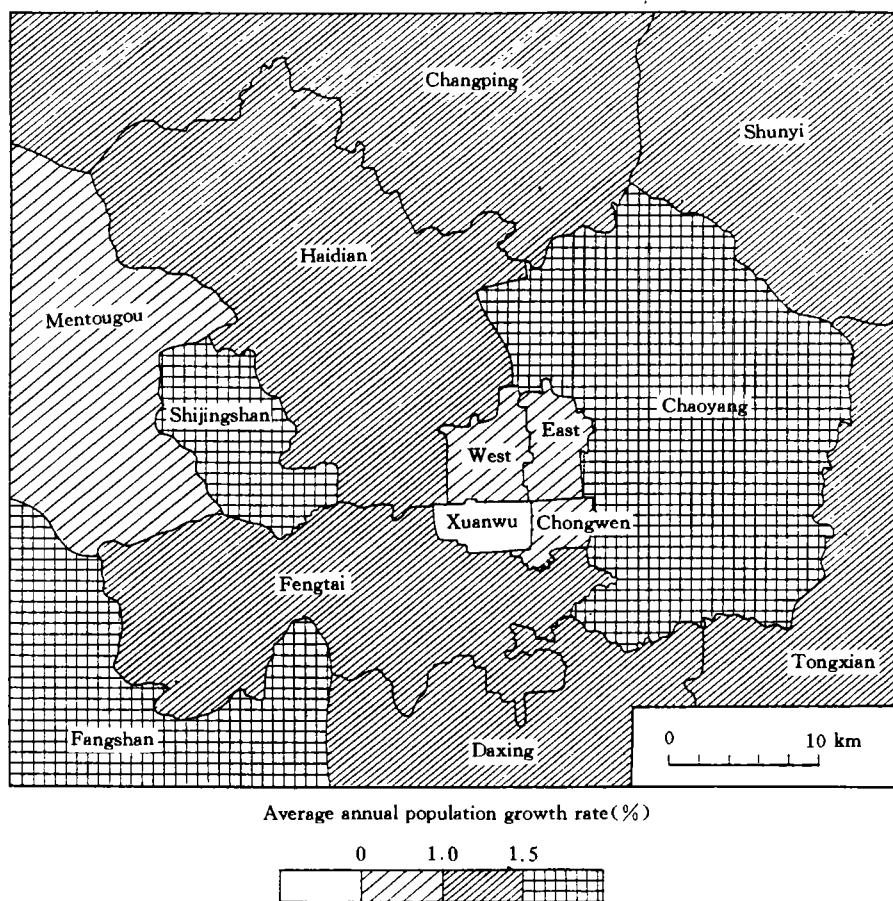


Fig. 1 The types of population change in Beijing by district/county(1964 - 1982)

same time, the average annual growth rate of inner suburban districts was more than 4%, greatly higher than that during the first period. The population growth rate of outer suburban districts and counties was lower than the average of whole Beijing. It marked that suburbanization had begun. Under the circumstance that the inner city had the annual natural growth rate of population at 4‰, the population decreasing of the inner city means emigration was mainly from core into inner suburb rather than outer suburb (Fig. 2).

If we pay more attention to smaller units, the subdistricts, the regional disparities of population changes will be shown more clearly (Fig. 3):

(3) Almost all of the subdistricts inside the former city wall has been losing population since 1982. Such subdistricts can be further briefed as two types: One is the rapid-decrease type: at a rate over -10%, mainly in central area around Tian'anmen Square (such as West Chang'an Street, Chunshu, Dazhalan, Qianmen, Chongwenmen Wai subdistricts) and the inner-side of the second beltway (such as Jianguomen, Chaoyangmen, Dongsu, Beixinqiao, Andingmen, Fusuijing, Fengsheng, Jiadaokou, Jingshan subdistricts). The other is the less rapid decrease type: less than -10%.

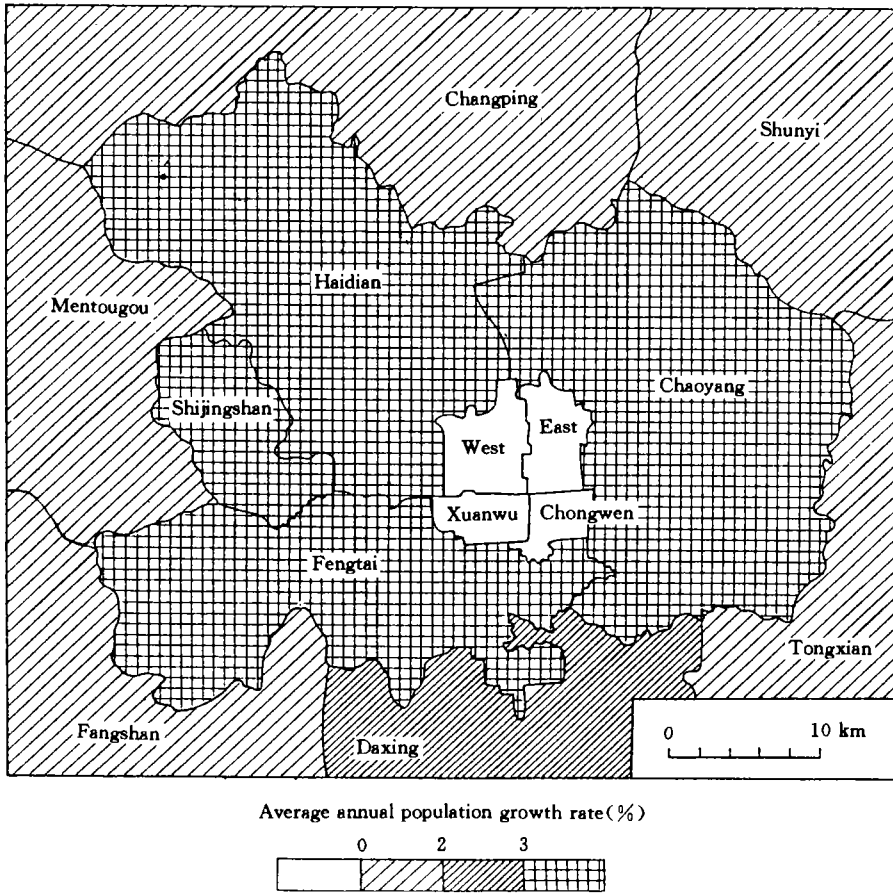


Fig.2 The types of population change in Beijing by district/county(1982 - 1990)

From Table 1, inferences can be made as follows:

(1) During 1964 - 1982, population of Beijing's inner city was growing at a low rate and so was the population density. In the suburban area, it kept growing faster than in the inner city(Fig. 1). According to Peter Hall's model, Beijing was in the stage of relative decentralization in which suburbanization didn't take place. In the twelve years of 1964 - 1976, politics and economy in China were developed disorderly because of the destructive Cultural Revolution. In the last six years (1976 - 1982) along with the starting of reform, urban development was in anomaly process.

(4) In the inner city, only Guan Xiang, and the south'west and the south east corners of the old city (Longtanhu and Baizhifang subdistricts) were at a lower growth.

(5) The 24 subdistricts where population grew most rapidly (more than 40%) were all in the inner suburban districts including 9 subdistricts formed during 1982 - 1990 on the newly extended urban land.

On the basis of the analysis above it can be summarized that Beijing is already in the process of suburbanization although population of core area decreased in a slight degree.

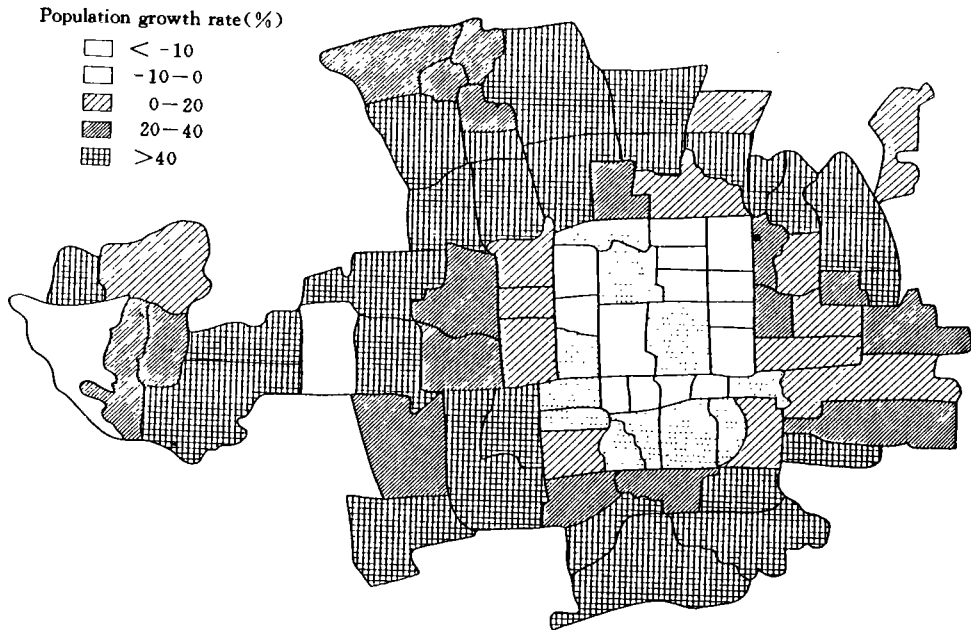


Fig. 3 The types of population change in Beijing by subdistrict(1982 - 1990)

III. THE REAL INTENSITY OF POPULATION EMIGRATION FROM THE INNER CITY

It must be pointed out that the outward 82 thousand people from the inner city during 1982 - 1990 didn't reflect the real degree of suburbanization because there were three parts of population counted in census: (1) Permanent residents holding the household registration. (2) Temporary residents without formal registration. They have left their registered residence for over one year. (3) People, who used to be in counties or cities, working or studying abroad now without registration. Obviously, suburbanization study should pay closer attention to the permanent residents holding the household registration.

Analyzing these three parts, actually, as many as 144 thousand permanent residents (about 6.12% of permanent residents in the inner city) moved centrifugally from the core during 1982 - 1990, while the temporary residents who moved to the core centripetal increased 50 thousand (Table 2). The proportion of emigrant from Beijing to abroad was so slight (about 0.0045% in 1990) as to be neglected, despite that amount of them increased very fast.

In those subdistricts of the inner city which had highest intensity of suburbanization, the ratio of permanent residents moved out was as high as more than 15% (Dazhulan 27%, Qianmen - 23.47%, Jianguomen - 20%, Fengsheng - 17.18%, West Chang'an Street - 16.83%, Chaoyangmen - 16.54%).

From above analysis, we can see very clearly that the decentralized migration has surpassed

the centralized migration toward the city core area.

Table 2 The resolution of population change in Beijing during 1982 – 1990

	Total population		Permanent residents		Temporary residents	
	Increased number (1000)	AAPGR (%)	Increased number (1000)	AAPGR (%)	Increased number (1000)	AAPGR (%)
Beijing	1588	2.00	1120	1.47	432	17.17
Inner city	-82	-0.43	-144	-0.77	50	8.19
East	-46	-0.90	-62	-1.23	13	7.62
West	-8	-0.14	-34	-0.59	20	9.17
Chongwen	-23	-0.66	-31	-0.93	7	7.42
Xuanwu	-5	-0.12	-17	-0.39	10	7.86
Inner suburban	1149	4.34	877	3.50	248	21.93
Chaoyang	426	4.45	342	3.74	78	22.12
Fengtai	204	3.81	143	2.82	60	26.56
Shijingshan	74	3.47	60	2.95	14	13.96
Haidian	445	4.72	332	3.75	96	21.40
Outer suburban	521	1.55	387	1.18	134	18.07

Source: Fourth Census Data of Beijing (1991)

IV. THE DIFFERENCE OF SUBURBANIZATION MECHANISM BETWEEN BEIJING AND WESTERN CITIES

T. A. Hortshorn (1992), when tried to sum up the reasons for suburbanization in the United States, claimed that: "The reasons for the weakening of central city territorial growth are complex, but include transportation improvement, growing affluence, the rapid rate of urban growth and growing dissatisfaction with the city itself. The automobile, coupled with a rapid road-building process, opened up a very large and formerly rural area adjacent to the city for urbanization after World War II. The housing boom of the late 1940's, in response to a pent-up demand for units following the war and liberal governmental incentives (e.g. FHA loans), reinforced the decentralization process, prospective homeowners felt they could get along without costly city services in their new suburban homes. The prospect lower tax rates in the urban fringe also encouraged outward movement, as did the possibility for whites to escape from an increasingly minority-dominated central city(Hartshorn, 1992)". This quoted passage contains all kinds of motivation of suburbanization in the West.

Similarly, in China, suburbanization also happened against the macro backgrounds of improvements of transportation and living conditions, growth of urban population especially population moving from rural areas. But in the case of the forces that make decentralization possible, China is different from the western countries.

(1) In China, the level of economic development and urbanization is rather lower than the

West when suburbanization took place there. It was well-to-do middle class that first moved to suburb in the West. But the real middle class in China, is now far from being formed.

In 1990, Chinese GDP per capita was 1546 yuan (RMB), equal to 323 U. S. Dollars, and the level of urbanization was 26.2%. The World Bank announced that China's GDP per capita in 1993 was 490 U. S. Dollars. Beijing was a relatively developed region with GDP of 4883 yuan 1990 (1021 U. S. Dollars), which the United States has achieved in the 1940's. In 1941, GDP and the urbanization level of the U. S. A. were 934 U. S. Dollars and 57% respectively.

(2) In the western cities, automobile opened rural areas for the middle class to move out to urban fringe. But only very few Chinese families own private cars. Bicycles and buses are still the main means of transportation. In 1993, there were only 50 thousand private cars as "luxuries" owned by some businessmen and stars in the whole country, although at least 5 million families could afford cars in China. It was investigated that 35% people in Beijing wanted to buy cars, 7.1% were in urgent need. However, in the transportation structure of Beijing in 1990, bicycle shares 57.8%, bus 31%, subway 4%. Public and private car shares 5.9%, which is expected to be 8.9% in 2000(Li, 1995).

(3) Another reason for suburbanization in the West is the desire for escaping from the common "city problems" and increasingly minority-dominated central cities. But inner cities still have great attraction for Chinese people by the ground of the perfect infrastructure.

Then, what is the reason in China? Investigating the causes of decentralization, I consider three points.

(1) Reform of urban land use system brings about migration from the core area. Since 1987, urban land use has been greatly modified as the introduction of market system. A lot of land for industry, ware houses and dwelling places located in the inner city has been replaced by more profitable service trades such as commerce, trade, finance, office buildings and hotels. Some enterprises and their staff moved to suburbs where land price was relatively low. For example, inside the second beltway, the average profits of industrial land use was only 1/50 per unit that of commercial landuse (Beijing Planning Commission, 1993).

(2) Construction of a large number of city roads reinforces the decentralization process. In the 1980's investment on infrastructure especially city roads increased rapidly. Road network got improved. City roads construction, on the one hand, is an important measures to revalue the price of city land; on the other hand, it brings about redevelopment along the roads. As a good example, Beijing has completed the second and third beltway with large grade separations in all intersections. Thus, in these several years, it made possible that residents moved from the heavily populated inside-second-beltway area to the suburbs near the third and fourth beltway.

(3) Reform of housing system and renovation of dilapidated houses encourage outward movement. Under the planning system, all housing investment was made by government with limited funds, so that the speed of housing construction fell behind that of dilapidation and pop-

ulation growth. In Beijing, about 200 thousand people were living in 6.1 million square meters dilapidated houses. 75% – 80% of them were located in the inner city(Zhou, 1991). After reform of housing system, funds were raised by government, collectives and individuals, which greatly speed up the process of housing renovation. Under the encouragement of government, about 20% residents in redevelopment urban area moved outward to the suburban residential areas(Lu, 1994).

The three points above are also three aspects of redevelopment of the old city. In a word, it was the large scale planned renovation of the old city that led to suburbanization of Beijing under the open-door policy and the socialist market system. This kind of decentralization wasn't spontaneity of any individual but under the leadership of government and "Dan Wei"(Work-units).

V. THINKING EDUCED BY THE SUBURBANIZATION

The special mechanisms of suburbanization of Beijing lead to some special results.

(1) It is well known that suburbanization in the West caused the decline of the central city. On the contrary, the inner city of Beijing is booming in the process of suburbanization. The suburbs are independent of the metropolis as political units in the Western countries. People pay taxes to the suburbs where they live, while the cores of cities provide jobs and services to them. After a certain period, they have been declined to dilapidation as a result of less revenue and the influx of people with low income. However, it is quite different in China where both the suburbs and the inner city are under the leading of a same city government. Especially recently, all three zones in Beijing including the inner city have been developing in the ascent. Government revenue and actually used foreign capital of Beijing in the inner city not only took a large proportion in Beijing region, but also in tremendous force which provided essential funds for development. In 1994, Beijing issued its new urban planning in which its characteristics are certained as the political and cultural center of China, famous ancient capital and modern metropolis in the world. The urban functions are mainly supported by the inner city, so the improvement of it has been given much attention. If you take a trip to Beijing, you will notice that the modernization of its landscape and infrastructure are changing with each passing day (Beijing Statistical Bureau, 1994).

(2) The suburbanization of Beijing has reduced the population density of city core areas, improved the human settlement environment of the inner city and brought the potential benefit of urban land into full display. These are the positive aspects. On the other hand, there are some new problems accompanying with the introduction of market system because the macro governing is relatively weak.

① Some real estate developers have increased the building capacity ratio in order to pursue a higher profit by neglecting the regulations of urban planning. The preservation of the unique landscape of ancient capital has been greatly challenged. Beijing East Plaza is a typical case

(Wang, 1995).

② Real estate developer prefer building first-class residences, which can't meet the needs of wage-earners but can give them high profit. Housing conditions of low income class are far from improving, while a lot of garden apartments and villas have been built up but few people can afford even care to ask about them. In addition to the inflation and unreasonable cost composition, the market prices of residences are overvalued. A two-room flat costs 250,000 yuan (5 000 yuan per sq. m) in suburbs equal to 27 times of average family yearly income.

(3) The suburbanization in the West is a spontaneous process while it is organized by government and Dan Wei in China. Therefore, some phenomena have shown up problems worthy of attention.

① A large proportion of the outward people are apart from their household registrations. Comparing the data from population census of Beijing with the regular population statistics, we can find the whole population and the number of permanent residents of the inner city at the end of 1991 were greater than those from the population census in 1990, while the case is contrary in the inner suburban districts. Has the direction of migration changed to the opposite in only half year(Beijing Statistical Bureau, 1991)? No. It was only because the regular population statistics divides people in accordance with where their household registration belong, while in population census, where they live. It indicates that many people retain their old household registration when they move to suburbs. It also tells us people are not inclined to leave the core areas and their household registration cling to their Dan Wei.

② It has led to unreasonable commuting flow. With the existing market system and the sharp gap between people income, rich people can afford buying houses and living in the inner city, and wage-earners have to rent housing and move to suburbs in the process of suburbanization. Gradually, people who can afford cars need to long time commuting while those who have no car have to run a long way between house and office. It is just contrary to that in the western countries. Such suburbanization increased the commuting distance of low-income class. It means more people go by bus, those who go work by bicycle tend to run on high speed and with bicycle-carriers. It can be anticipated that motorcycle will be the first choice of people living in suburbs and the transportation in near future need worrying.

(4) With the constraint of the low level of economy and transportation, suburbanization will definitely make the built-up areas expanding. If no special measures are taken, Beijing's urban land will continually sprawl.

It is commonly accepted that the average commuting time of bicycle and bus is, respectively, 20 and 40 minutes, the average commuting distance is 3 and 6 kilometers. If the main means of transportation are bicycle and bus, the largest increasing of population from migration must be happened in inner suburban districts, not the outer suburban districts. Suburbanization will make the built-up areas expand to the inner suburban district. Some of new organized sub-district offices are in the separating belt between the inner core and the fringe grouping. If the case continues, Beijing's "configuration of scattering groups" will be sent to its doom and the

city environment will be destroyed.

VI. CONCLUSION

Suburbanization is an unavoidable stage in the development of metropolises. Metropolis in China have stepped into this stage because of the open door policy and market economy, although it is a little advanced compared to the western countries when they were in the same level of economy. It requires a systematically study of the urban scientists as well as a fully preparation in thought and planning measures of the government.

Every development phenomenon in cities, including suburbanization, has its advantages and disadvantages. In China, suburbanization can alleviate the heavy population in core areas, distribute the unreasonable locations of industry, improve the city environment, take full advantages of the core location and get better profit of city land, realize a more effective city function. These are all the problems we had tried to but could not solve in the past. But, such diffusion has contributed to new problems in existing conditions. People who can move out are those with low income, they have neither the ability nor the willingness to move too far. Such migration will surely continue the sprawl of the built-up areas, at the same time, increase pressure upon transportation and lead to unexpected problems on society and environment. The core areas will not decline, however, there are problems behind the booming. The main problems are how to construct and manage in a orderly way and keep Beijing's balance between construction and protection.

Chinese metropolises are in the beginning of the suburbanization of population and industry, far from that of commerce and office, but we cannot rule out this possibility. With the improvement of living condition, especially when the rich rank are no longer satisfied with the high buildings in inner cities, they will escape from the noisy core areas and dwell on the outer suburbs, thus, it is similar to the suburbanization of west.

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