

Research of Forming Mechanism and alienation of poverty zones in urbanizing process of China

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Abstract: There are particular economic, social and political system reasons in formation of slums or city's poverty zones. It is "urban-rural system" and "limit living system" in urbanization of China, which forming a series of relatively perfect relevant systems, that leads the formation of the city's slums or poverty zones to appear alienating. Based on the statistical data of the rural population scale entering into city and low-income people of urban, the research approves that the two basic conditions of forming slum has been formed—the urban poor and cheap commodity(or rent) house. And a certain number of stable urban poverty zones should form after a long time of interactive affection between the urban poor and low-grade residential zones in the case of market mechanism.

Keywords: Urbanization; Poverty zones; Conditional alienation; Evolutionary tendency

1. The introduction

The problem of slums came into being in 1720s, the early industrialization era of western developed countries. After the Second World War, with the industrialization and urbanization of Asian and African countries, the slums become a world phenomenon. Due to the appropriate intervention in the western developed countries, many slums' environment has been improved. The formation of slums (or poverty zone) has its specific economic, social and political reasons, and it has not yet been able to solve completely.[1]

There are specific economic, social and political reasons. The formation mechanism can be described in four links, "the source of poor population", "migrating and residential system", "settlement carrier or region" and "behavior result". The slum is corresponding to the "rich zones". The United Nations Expert Group Meeting (EGM, 2002) defined that slum referred to the zones with integrated the following five characteristics: inadequate safe drinking water, inadequate sanitation and infrastructure, abominable housing conditions, overcrowding of the poor, and unprotected land using rights.[2]The "poverty zone" is the living zones of the poor in the bottom of the community with dilapidated house, confused management and messy street, while it is usually called "slum". The "rich zones" refers to the zones where the rich live together, whose housing conditions and residential environment are better than the "Slums".

Combining the views of many scholars, the reasons and conditions for the formation of slums are as follows.

(1) Economic reasons: the income of the majority of the slums is lower than the social average, even extreme poverty. Because of the individual, family, job and industry, ethnic group, race, public policy, and other reasons, there will inevitably be a number of low-income groups in the city. If the group is stable and can gather together, the "slums" may be formed. As stipulated by the government of Brazil, the low-income group with more than 50 households can be identified as a "slum".[3]

(2)Social reasons: low income groups can also form a slum because of their geographical, kinship, ethnic group or race, work or occupation, specific groups, disaster resettlement, political asylum and other reasons. For example, the slums of new Brasilia in Brazil were mainly formed by the land-lost peasants moving into the villages. [4]

(3)Political reasons: some political parties in a democratic state (mainly leftists) condoned the poor in order to obtain the poor's votes, which also contributed to the formation of the slum. Such as India West Bengal's slum has expanded four folds under the CPI (MA) ruling in 30 years.[5]

(4)The constitutional system: the constitution of many countries endows every citizen with the right to move and reside freely, and strictly limiting the expansion of public rights, which lays a fundamental foundation for the formation of the slum. [6] For example, India stipulates that if individual has occupied a public land for 30 years, the land should belong to the individual.[7]

Under the condition of market economy, a certain number of stable urban "poverty zones" will be formed after long-term interaction between urban poor and low-grade urban residential zones. Especially in developing countries, many low-income peasants enter cities, which also can be regarded as one of the performance characteristics of the completion of urbanization[8], and become one of the main sources of urban poor. While relatively strict migrating and residential system in a few countries such as China and North Korea, it will lead to variation in the formation process of slums.

Along with China's industrialization is about to be completed and the process of urbanization is being accelerating, many places have been formed a certain slums or poverty zones to some extent. Because of the special conditions of China, these "slums" have appeared to different alienation.[9] Considering the trend of domestic economic development and the direction of some institutional reforms, the poverty zones in cities will become more explicit. It can be said that when the "poverty zones" become the main body of the city, the process of urbanization in China can basically be seen as entering the stable stage. This paper tries to investigate the formation process of the urban slums or poverty zones in the process of urbanization of China, which is also a reference for other developing countries in the world.

2. Alienation on the forming conditions of urban slums in China

Since 1958, China has basically abolished the rights to free living and free migration of urban and rural residents, the implementing the "urban and rural division system" and "restricted residence system", [10] but gradually loosening after 1985. As the migration and residence rights of Chinese residents have been restricted, it is difficult to form a typical "slum" in our cities and towns, and there is a large degree of variation in the formation of "slum". However, with the gradual liberalization of these systems, under the influence of the market mechanism, the formation of urban poverty zones is an inevitable trend, especially in urban where the government does not act, "slums" may even appear.

2.1 Diversion of peasants from cities by the government

China's urbanization speed is far lower than the speed of industrialization. In addition to recruitment, college education, urban expansion and marriage, the basic condition for transferring rural residence certificate to urban residence certificate is to buy houses in cities and towns. Such property and income constraints make it impossible for a large number of urban peasants to settle down in cities and towns. One of the objective effects of this system is to avoid social problems such as large numbers of low-income peasants living in urban zones and forming "slums" as soon as possible. However, on the other hand, this kind of diversion policy is actually a diversion of household registration rather than residence. A large number of peasants are still staying in cities, forming a "migratory bird" migration law year after year, which will still form a "slum" with "fixed zones but not fixed residents" in the long run.

2.2 Decentralized resettlement of urban low-income people by the government

Before the reform of the commercial housing system, urban low-income people were mainly resettled by units, streets and communities; Later, the city government established a unified regional social security system to ensure the life and residence of low-income people in the city. In terms of

housing security, the government provides affordable housing, low rent housing or public rental housing and other options according to the conditions of low-income people. Moreover, the government scattered these low price housing and low rent housing in different zones and mixed them in various high, middle and low-grade residential communities, thus effectively avoiding large-scale settlement of urban poor people. However, as time goes by, in the market economy, these low-grade residential zones will inevitably become "low-grade", the maintenance level of the community will be reduced, and the surrounding land price will fall.

2.3 The government renovates low-grade urban communities

Chinese urban governments have the obligation to maintain or rebuild old houses and residential facilities in urban. Moreover, urban demolition has greatly improved urban living conditions. Therefore, before the process of urbanization in China is completed, the overall living conditions of urban residents are constantly improving.

2.4 Urban management system restricts the gathering of poor people

In terms of community maintenance of urban residents and living choices of peasants entering cities, China's urban management system has restricted the formation of "shantytowns" in urban, which has objectively constrained the formation of "slums" carriers. However, in the "villages in cities" and suburban villages beyond the jurisdiction of the urban management system, there will inevitably be some bad residential zones, which makes the "villages in cities" (or "sub-urbanization"). Moreover, the urban management system has accelerated this process.

3. A forming conditions analysis of the urban poverty zones in China

3.1 Estimation of the degree of freedom of migration and residence in China

In order to analyze the specific national conditions of the urban and rural division system and grasp the basic meaning of the urban poverty zones, this paper uses the degree of residents separating from domicile to measure the "the degree of freedom of migration and residence". Usually, the urban poverty zones is changing in the same direction with the degree of freedom. Strictly speaking, in order to measure the degree of openness of a country or a city in free migration and free living, a complex index system should be designed to measure and define. Accordingly, the assumption of the assignment of k is as follows:

$$k = \frac{C C}{C C + C R} \quad (\text{Formula 1})$$

CC represents the population of urban residents with urban registration, and CR represents the population of urban residents with rural household registration (which can be replaced by "the number of floating population of rural household"), and the sum of the two represents the total population of urban residents.

Of course, even if the urban and rural household registration system has been abolished completely, there may be other restrictions on the free movement of residents, such as the urban management system.[11],[12] therefore, the statistical degree of freedom represented in the index is higher than the one in theory.

According to formula 1, we can calculate the degree of freedom of urban residents in China. The basis of calculation and the value of the index are specific to table 1, population structure of urban residents in China since 2000.[13]

From table 1, it can be founded that the highest degree of freedom in China was in 2003, and it was in the shape of "Inverted S" in the whole. After 2012, it began to rise weakly but slightly wandering. The reason is very complicated, but the rebound in 2012 was related to the central government's policy of accelerating urbanization.

Table 1. population structure of urban residents in China since 2000

Unit: 100 million

Year	PRS	CR	CC	k
2000	1.44	1.21	4.5906	0.7914
2001	1.53	1.26	4.8064	0.7926
2002	1.62	1.31	5.0212	0.7933
2003	1.72	1.36	5.2376	0.7939
2004	1.83	1.41	5.4283	0.7934
2005	1.94	1.47	5.6212	0.7927
2006	2.06	1.59	5.8288	0.7852
2007	2.18	1.73	6.0633	0.7780
2008	2.32	1.88	6.2403	0.7687
2009	2.46	2.04	6.4512	0.7600
2010	2.61	2.21	6.6978	0.7519
2011	2.71	2.30	6.9079	0.7502
2012	2.79	2.36	7.1182	0.7510
2013	2.89	2.45	7.3111	0.7490
2014	2.98	2.53	7.4916	0.7475
2015	2.94	2.47	7.7116	0.7574
2016	2.92	2.45	7.9298	0.7640
2017	2.91	2.44	8.1347	0.7693
2018	3.32	2.48	8.6433	0.7773
2019	3.79	2.51	8.8426	0.7787
2020	4.32	2.55	9.0220	0.7796
2021	4.93	2.59	9.1425	0.7793

Notice: The data of "CR" in 2000, 2005 and 2010-2017 is the data from the China Statistical Bureau; the data of "PRS" in 2000-2017 is the data from the China Statistical Bureau ;the data in 2021 is from the seventh national population census of China(2021), while the other data are estimated.

PRS is referring to "Population of residents separating from domicile"

Urban population = CR+ CC

Source: "China Statistical Yearbook 2015", "Statistical bulletin of China's national economic and social development" (2015-2017), "the seventh national population census of China(2021)".

3.2 Estimation of cheap (low rent) house in China

Usually, the urban poverty zones should be changing with the proportion of cheap (low rent) house in opposite direction, but low income of the urban in the same direction.

In 1998, China government accelerated the reform of urban housing system, and basically formed a multilevel urban housing supply system based on commodity housing. For urban low-grade houses, there are mainly affordable houses, low rent houses, public rental houses and some villages in the city. China government began to brew commodity housing reform in 1995. Before the sale of commercial housing started in 1998, there were a large number of non-commodity houses in Chinese cities. These stock houses were mainly allocated by units or government to workers or urban residents, which increased the supply area of low-grade house.

There are different levels on "cheap (low rent) houses", early in the "economical affordable houses" and "low rent houses", after 2010 to emphasize "the public rental houses". In order to analyze it in simple, the data of cheap (low rent) houses is replaced by the one of economical affordable houses here. Since 1998, the commercial houses in China have grown rapidly, and the sold areas of commercial houses have been rising rapidly. From 1998-2007, the cumulative sold areas of economical affordable houses was accounting for 5.67% of the accumulated sold areas of

commercial houses. At the same time, the middle and low-grade residential houses area accounting for 90.45% of the accumulated sold areas of commercial houses. In additional, the Ministry of housing and Urban-rural Construction started the construction of public rental houses in 2009, and incorporated it into the "urban affordable housing project" in 2011. These houses will alleviate the pressure of urban poverty zones in China.

The formation of the urban poverty zones is also lying in the relatively low purchasing power of the urban poor, so the urban poor cannot buy or rent a sufficient area of the house.[14] Referring to the table 2, the situations of average income, house price and economical affordable houses in cities and towns of China since 2000, it can be calculated that the annual income of the urban poor can probably get 1-2 square meters of economical affordable house. If it is calculated according to 2 labors per household, it will take about 6-7 years of total household income to buy 30 square meters of economical affordable house. In fact, this estimate is impossible in reality, because the income of the urban poor can only be used to maintain the basic state of existence, and there is little money to buy commercial house. Under the urban government cannot fully guaranteeing the living area of the urban poor and provide the relevant public policies, the pressure of the formation of the poverty zones in the cities of China will be increased.

Table 2. the situations of average income, house price and economical affordable houses in cities and towns of China since 2000

Unit: Yuan, Yuan/ square meters, ten thousand square meters

Year	Average Wage of Urban residents	Disposable Income of Urban residents	Poor Income of Urban residents	Average Price of Commodity House	Average Price of Economic Affordable House	Accumulative Areas of Economic Affordable House	Accumulative Proportion of Economic Affordable House to Commercial House
2000	9333	6256	1256	1948	1202	3760.07	18.33
2001	10834	6824	1371.9	2017	1240	4021.47	20.12
2002	12373	7652	1540.6	2092	1283	4003.61	20.14
2003	13969	8406	1694.4	2197	1380	4018.87	19.22
2004	15920	9335	1884.3	2608	1482	3261.8	17.72
2005	18200	10382	2098.6	2937	1655	3205.01	15.87
2006	20856	11620	2351.9	3119	1729	3336.97	13.51
2007	24721	13603	2757.2	3645	1754	3507.52	11.86
2008	28898	15549	3156.2	3576	1929	3627.25	10.37
2009	32244	16901	3434.9	4459	2134	3058.85	9.71
2010	36539	18779	3821.9	4725	2495	2748.87	8.58
2011	41799	21427	4362	4993	2716	4561.93	7.64
2012	46769	24127	4912.9	5430	3014	4398.74	7.21
2013	51483	26467	5293.4	5850	3353	5046.25	6.86
2014	56360	28844	5768.8	5933	3736	4216.73	6.53
2015	62029	31195	6239	6473	4108	4609.49	6.25
2016	67569	33616	6723.2	7203	4832	5959.09	6.03
2017	74318	36396	7279.2	7614	5364	6159.24	5.84
2018	82413	39251	7850.2	8553	5336	6222.60	5.67
2019	90501	42359	8471.8	9287	5074	6278.19	5.53
2020	97379	43834	8766.8	9980	4787	6529.62	5.41

Notice: From 1998 onwards, the corresponding cumulative areas and cumulative proportion will be obtained accordingly.

Assumed the total income of the poor should account for 10% of the total social income, so: the income of the poor = the average disposable income $\times 2 \times 0.1$.

Source: "China Statistical Yearbook (2015-2021)", "Statistical bulletin of China's national economic and social development" (2015-2021).

3.3 Calculation of Gini coefficient

It has always been a sensitive issue of the Gini coefficient in China. Many scholars have given different estimates of the Gini coefficient on China's city and rural areas, while the official statistics are often doubted.[15],[16] It's not required more accuracy on the selection of the Gini coefficient in this paper, mainly to examine the pressure on the formation of urban poverty zones through the change of Gini coefficient. Usually, more Gini coefficient, more forming pressure in the urban poverty zones. The valuation of Gini coefficient in China will be shown at the table 3, the Gini Coefficient in China since 2000.

Observing table 3, it can be found that since 2002 the Gini coefficient in China's rural areas showed a trend of fluctuation, while the urban Gini coefficient showed an approximate upward first and then descending. While the overall urban Gini coefficient is at a high level, it means that there is a great pressure on the formation of urban slums. The Gini coefficient in rural areas has always been higher than that in urban areas, which means that the urbanization process will bring additional pressure to the formation of urban slums.

Table 3. the Gini Coefficient in China since 2000

Year	Rural Gini Coefficient	City's Gini Coefficient
2000	-	0.24535
2001	-	0.25645
2002	0.34265	0.30598
2003	0.35141	0.31569
2004	0.34106	0.32298
2005	0.34704	0.3283
2006	0.34526	0.32497
2007	0.3454	0.32106
2008	0.34922	0.32865
2009	0.35633	0.32316
2010	0.35002	0.31684
2011	0.35871	0.31694
2012	0.35756	0.3035
2013	0.33907	0.27803
2014	0.33975	0.26924
2015	0.35764	0.29331
2016	0.38267	0.31025
2017	0.38679	0.31241
2018	0.36614	0.3172
2016	0.35115	0.31742
2020	0.35058	0.32284

Source: "China Statistical Yearbook 2015", "Statistical bulletin of China's national economic and social development" (2015-2017).

4. The evolutionary trend of the poverty zones in China's cities

The urban poverty zones depends on the three factors of the freedom of residence, Gini coefficient and the proportion of the living areas for the poor. Among them, the first two factors have institutional inertia, and their changes are stable and predictable, while the third factors are controlled by government, no rules to follow. According to some scholars' research (such as Yi Xianrong, 2008)[17], in order to maintain the vitality of the real estate market, the urban affordable housing zones supplied by the government should not generally exceed 10% of the urban residential zones. Because the residents have been limited in the rights of migration and residence in China, it is difficult to form slums with typical characteristics in cities and towns, and there also is a large

degree of variation on the formation of "the poverty zone". However, with the gradual release of these systems, the formation of the urban poverty zones is an inevitable trend under the role of the market mechanism, especially in the urban zones where the government does not act.

4.1 The urban poor in China will be stable

With the improvement of people's income and the development of economy, the progress of society to some extent shows that people's right to choose to move and live is increasing. Taking into account the historical factors and national development planning of China, it is possible to form a relatively lower restrictive migrating and residential system before 2035. According to the Population and Development Research Center of China, the peak population of China should be 1.68 billion in 2035. With the acceleration of China's urbanizing process, the urbanization rate will reach 70% or more in 2035, and the urban and rural household registration system should be canceled, and the urban poverty population calculated according to the 10% income ratio is 320 million. Cities like Shanghai, Beijing and Shenzhen, which have over 20 million people, will also have about 6 million urban poor.

4.2 The urban poverty zones will be stable in China

At present, the average living space of the western developed countries is generally 35-40 square meters, which can be regarded as the future goal of urban development in China when the living standard of urban residents is in a state of prosperity. With the increase of income, people will continue to upgrade their housing and residential zones along the path of simple house-apartment-large house-villa. When China has entered a developed state (2035-2050), the construction or expansion of urban zones is basically stable, and many of the existing apartment buildings will become low-grade, and the newly built villas will have a marked "rich zones" feature. The income of the urban poor is still relatively low, unable to support the average living standard. At this time, the "poor zone" and "rich zone" boundaries are obvious, which will become one of the main zones of the city respectively.

4.3 The determinants of China's urban poverty zones will undergo significant changes

On the premise of free migrating and residential system, the market mechanism plays a leading role in the urban residents' residential selection, and the groups of various income levels choose the appropriate residential communities through the money right to vote. These different types of communities will have a distinct feature of flaky distribution. As a result, the stable accumulation of urban poor will become a reality. Moreover, after the urbanizing process is basically over (around 2030), the urban and rural income distributional system will play a leading role in the formation of the urban poverty zones, which will be further expanded and deteriorated. Moreover, with the beginning of the process of counter urbanization in China, the urban poverty zones will be concentrated towards the urban zones and the urban centers.

5. Countermeasures

The formation of urban poverty zones is inevitable under market system. Excessive restriction and intervention will cause greater social costs. In conformity with this process, the responsibilities of the government departments should be "changing plugs into sparse", gradually improve the living conditions and life security of the urban poor, and guarantee the basic rights to live and develop of all the urban residents. Specifically, the relevant government departments must do the following:

First, speed up the construction of free migrating and housing system. Including, the abolition of the dual urban and rural household registration system, the implementation of residence system; the unified urban and rural employment system, the implementation of equal pay for equal work; the improvement of the property law, the implementation of the strict property rights system of private

housing; relaxation of the restrictions on the free housing of residents, housing land for urban residents; and so on.

Second, improve the unified urban and rural social security system. Including, unified urban and rural relief and support system; the equal treatment of urban and rural residents; establishing a unified personal social security account, reducing the middle link of social assistance; establishing a system to separate the payment and supervision of the security funds, improving the social benefits of social assistance; coordinating the assistance relationship between the individual and the family, the unit and the community, establishing a multi-level security system; and so on.

Third, increase the support for low-income urban residents. Including, setting up special funds to stabilize the source of rescue funds; binding prices and GDP, maintaining the level of assistance and support; taking into account the assistance and employment guidance, enhancing the survival ability of the urban poor; improving fiscal and financial support, encouraging the urban poor to get rich; and so on.

Fourth, increase investment in urban low-grade housing and residential transformation. Including, defining the government's public policy scope, clearing the relevant responsibilities of the government; rationally using the maintenance funds of the community, improving the efficiency of the use of funds; coordinating the municipal construction, the financial expenditure inclined to the poverty zones; and so on.

References

- [1] Marx, Benjamin, Thomas Stoker, Tavneet Suri. "The Economics of Slums in the Developing World" [J], *Journal of Economic Perspectives*, 2013, Vol., Fall, PP187-210.
- [2] UN Habitat Compiled, 2006: "Slums challenge - Global Human Settlements report 2003", China Construction Industry Press, pages 14.
- [3] .Cohen, Barney. "Urban Growth in Developing Countries: A Review of Current Trends and a Caution Regarding Existing Forecasts" [J], *World Development*, 2004, Vol. 32, Jan., PP23-51.
- [4] Ravallion, Martin. "On the urbanization of poverty" [J], *Journal of Development Economics*, 2002, Vol. 68, Aug., PP435-442.
- [5] Han Jun, Cui Chuen Yi, Zhao Yang. Enlightenment from Brazil slums to urbanization in China [J]. *Lookout for New Weekly*, 2005, (28): 44-46.
- [6] Patel, Amit. "Slumulation: An Agent-Based Modeling Approach to Slum Formations" [J], *Journal of Artificial Societies and Social Simulation*, 2012, Vol. 15, Fall, PP2.
- [7] Vernon Henderson, J.. "Urbanization and Economic Development" [J], *Annals of Economics and Finance*, 2003, Vol. 4, Nov., PP275-341.
- [8] Ravallion, Martin, Shaohua Chen, Prem Sangraula. "New evidence on the urbanization of global poverty" [EB/OL], Policy Research, Working Paper Series 4199, The World Bank, 2007.
- [9] Wu, Xiao Zhang. "Research on Impact Mechanism and Power System of Urbanization in West China [J]", *Asian Agricultural Research*, 2011, Vol. 3, Dec.
- [10] Zhang, Kevin Honglin, Shunfeng Song. "Rural-urban migration and urbanization in China: Evidence from time-series and cross-section analyses" [J], *China Economic Review*, 2003, Vol. 14(4), PP 386-400.
- [11] Li Pei. Temporal and spatial characteristics of migration of urban and rural population and its influencing factors in China [J]. *Economist*, 2009, (1): 51-58
- [12] Sun Wenkai et al. The influence of household registration system reform on the rural labor mobility in China [J]. *Economic Research*, 2011, (1): 30-43.
- [13] The missing data of "Population of residents separating from domicile (PRS)" and "CR" are estimated by exponential growth method. In the estimated data, the data of "PRS" were used with 2000 and 2010, and the data of "CR" were used with the data between 2000 and 2005, the data between 2005 and 2010.
- [14] Li Ruilin. Summary of research on urban poverty in China. [J]. *Academic Exploration*, 2005, (6): 49-55.
- [15] Hong build. A new Gini coefficient subgroup decomposition formula [J]. *Economics (Quarterly)*, 2009, (1): 311-328.

- [16] Hu Zhijun, Gong Zhimin. Statistical inference of Gini coefficient of income [J]. Statistics Research, 2010, (9): 50-53.
- [17] Yi Xianrong. My view on the development of China's real estate market [J]. Twenty first Century (Chinese University of Hong Kong, Chinese Culture Research Institute), 2008, (2): 112-116.