Can Urban Renewal Drive the Rise of Marginal Cities?

Ming Zhou

School of Economics, Anhui University of Finance and Economics, Bengbu, Anhui, China

Abstract

Driving the rise of marginal cities through urban renewal is a good strategy. In order to clarify the impact of urban renewal on the rise of marginal cities, urban renewal is regarded as a quasi-natural experiment, based on the panel data of 283 cities in China from 2005 to 2020, and a double difference method is used to empirically test. The results show that: first, the implementation of urban renewal policies has obviously led to the rise of marginal cities and passed the placebo test; Second, the parallel trend test shows that there are obvious differences in the economic rise capacity of pilot cities and non-pilot cities. Third, the sample after PSM matching still supports urban renewal policies, which significantly drives the rise of marginal cities. Based on the above research results, suggestions are provided for local governments to improve urban renewal measures and promote local economic development.

Keywords

Urban Renewal; The Rise of Marginal Cities; Double Differential.

1. Introduction

In 2021, the urbanization rate of China's permanent population has exceeded 60%, and due to the inevitable sacrifice of land, resources and environment in the early years of rapid urban development, cities are generally facing traffic congestion, environmental pollution, Insufficient public services, infrastructure shortcomings and urban spatial structure do not meet the needs of industrial transformation and upgrading, which seriously hinder and restrict the further development of cities[1, 2]. During the "14th Five-Year Plan" period, facing "great changes unprecedented in a century", China's economic development moved towards a higher quality stage, smoothing the domestic circulation The construction of innovative cities and the optimization of urban spatial layout will become important contents of China's economic development during the 14th Five-Year Plan period. In 2021, the Chinese government included "urban renewal" in its work report for the first time, clarifying the "14th Five-Year Plan." "During the period, it is necessary to further promote the people-centered new urbanization strategy, implement urban renewal actions, improve the housing market system and housing security system, and improve the quality of urbanization development." In 2022, the Ministry of Housing and Urban-Rural Development will take the "implementation of urban renewal actions" as a major strategic measure to promote high-quality urban development. As a national strategy, the government will promote the optimization of urban structure, functional improvement and quality improvement through urban renewal, focusing on improving the quality of urban environment, people's quality of life and urban competitiveness , constantly meet the needs of the people for livable life in the city.

Under the background of "dual circulation", China attaches more importance to the development of "urban circles", and the regional integration process such as Beijing-Tianjin-Hebei, Yangtze River Delta, Guangdong-Hong Kong-Macao Greater Bay Area and Chengdu-Chongqing urban agglomeration will continue to accelerate. With the background of "dual circulation", the relationship between core cities and marginal cities is becoming closer and closer, and whether the core cities exert a siphon effect or a radiation effect on the peripheral

cities, the effect force will be amplified. If the peripheral cities are affected by the radiation effect of the core cities, enjoy the convenience of the administrative factors of the core cities and the advantages of market scale, the peripheral cities and the core cities have coordinated development to achieve balanced regional development. But in fact, marginal cities are more affected by the siphon effect of core cities. Under the siphon effect of core cities, peripheral cities face the loss of a large number of talents, funds and innovation elements to core cities, resulting in the decline of urban development vitality such as industrial contraction and lagging industrial upgrading in marginal cities, which is not conducive to achieving coordinated regional development. From the perspective of people's livelihood, marginal cities shoulder the heavy responsibility of living and working in peace and contentment for nearly one billion people in China, and if marginalized cities face the trend of marginalization in development, it will inevitably bring about problems such as slow development of urban infrastructure, inadequate urban social and public services, and hollowing out urban development. The rise of the development of marginal cities can not only balance the coordinated development of regions, but also provide guarantee for the residents of marginal cities to live and work in peace and contentment, so it is of great theoretical and practical significance to study the rise of marginal cities.

2. Literature Review

The concept of urban renewal first originated in the West, the first study meeting of urban renewal held in The Hague, the Netherlands, pointed out that urban renewal is the implementation of renovation and construction in aging urban areas to improve the lack of sanitation facilities and traffic congestion faced by the city at that time Issues such as inadequate services and infrastructure [3]. Ding Fan and Wu Jiang propose that urban renewal expresses a response to decline, an aspect of existing built environment management and planning, rather than the planning and development of new urbanization [4]. Although there is no unified concept, urban renewal is generally considered to solve the problems that affect or even hinder urban development in cities, stimulate urban vitality, and promote sustainable urban economic development. In view of the impact of urban renewal on the economy, foreign scholar JacobsJ proposed that the socio-economic vitality of cities lies in the mixing of multiple functions of the city through the means of renewal, and providing sufficient space for various functions [5]. AlbaneseG et al. evaluated urban renewal projects carried out in Italy and found that urban renewal has a positive effect on housing prices around the renewal area [6]. Relevant domestic research points out that urban renewal forms agglomeration areas such as new industry, new commercial and residential and new ecology by revitalizing existing land resources Combined with intervention policies, release excess capacity and promote the high-quality development of the local economy [7]. Zhang Nan and Liu Hui took the new development pattern of dual circulation as the perspective, and believed that the construction of the dual circulation development pattern needs to promote urban renewal, expand urban domestic demand, and improve urban consumption capacity. At present, there are few empirical studies on the impact of China's urban renewal on the rise of marginal cities, and further improvement is needed.

3. Theoretical Explanation

As Chinese cities enter the era of ending increment and utilizing stock, urban renewal, as a self-regulating mechanism for urban development, is inevitable for urban construction to enter the era of stock. Urban renewal can promote the upgrading of the industrial structure of large cities, relieve non-core functions, and improve radiation capacity. Urban renewal carries out planned integration and transformation of land and space with low land use efficiency, tilts limited land

resources to knowledge-intensive enterprises, high-value-added modern service industries and high-tech industries and other high-value-added industries, attracts high-end industries to land, and strengthens high-end productive service functions. Cities will get bigger and bigger, but not bigger is better, because in the early years of rapid urban development inevitably at the expense of land, resources and the environment, cities generally face traffic congestion, environmental pollution, heat island effect, high cost of living, insufficient public services, infrastructure shortcomings and urban spatial structure does not meet the needs of industrial transformation and upgrading, which seriously hinders and restricts the further development of cities. Urban renewal can ease non-core functions, eliminate low-end industries, promote the transfer of general manufacturing and parts production to surrounding small and medium-sized cities, highly realize the intensive utilization of space, promote urban smart growth, and improve the radiation capacity of large cities; Urban renewal can effectively give full play to the industrial foundation and resource advantages of small and medium-sized cities and improve their ability to undertake. The implementation of urban renewal actions in small and medium-sized cities can effectively give play to the original industrial foundation, market environment and resource advantages, attract high-quality high-end enterprises and industries from large cities to land, realize the replacement and reconstruction of industrial functions, and realize the replacement and reconstruction of industrial functions, which is conducive to better tapping location functions and improving the ability to undertake industrial functions. Promote the coordinated economic development of large, medium, and small cities; Urban renewal can improve the welfare effect of human settlements and interpret the new connotation of the coordinated development of large, medium, and small cities with "people-centered". Urban renewal by promoting the transformation of old residential areas, old neighborhoods, urban villages, etc., optimizing the living environment and improving the surrounding supporting facilities, its new result is an environmental improvement, is to solve the urban living environment is not high, make up for the shortcomings of infrastructure and public service facilities, promote the adjustment and optimization of urban spatial structure, realize the optimization and improvement of urban space quality, enhance the people's sense of gain, happiness, sense of security, interpret the "people-centered" large, medium-sized and small cities coordinated development of the new connotation.

In summary, this paper puts forward the proposition that H: urban renewal can significantly promote the rise of marginal cities when the relationship between urban renewal and the flow of factors between cities is unknown.

4. Research Design

4.1. Data Sources

Based on the availability of data, this study takes the renovation of old communities as the research object to analyze the impact of urban renewal on high-quality economic development. In 2017, the Ministry of Housing and Urban-Rural Development held a symposium on the pilot work of the renovation of old residential areas in Xiamen, and identified 15 pilot cities for the renovation of old residential areas, with the aim of exploring a new model for the renovation of old urban communities, to promote the transformation of old communities across the country to provide replicable and replicable experience. The pilot policy is in Guangzhou, Changsha, Shenyang, Ningbo, Xiamen, Zibo, and Liuzhou, Qinhuangdao, Hohhot, Anshan, Yichang, Xuchang Shaoguan, Zhangjiakou and Panzhihua, etc 1to 5 cities. This paper will establish 1 according to the city's economy, culture and education, development, industry and other aspects Five pilot cities of old residential areas will be divided into cities, including Guangzhou in the first-level city, Changsha and Shenyang in the second-level cities, and Ningbo and Xiamen in the third-level cities , the fourth-level cities are Zibo, Liuzhou, Qinhuangdao, Hohhot, Anshan, Yichang,

Xuchang, the fifth-tier cities have Shaoguan and Zhangjiakou, and the sixth-tier cities have Panzhihua, and these areas are distributed in the eastern, central and western parts of China.

4.2. Model Setting

DID can solve the endogenous problem of samples, mostly used in policy effect assessment, and this policy effect assessment method has been widely used to analyze the impact of policy on regional economic development. DID regression was performed on the experimental and control groups, and the specific model settings were as follows:

$$y_{i;t} = \beta_0 + \beta_1 \cdot treat_i \times period_t + \boldsymbol{\beta_x x_{i;t}} + fe_i + fe_t + \varepsilon_{i;t}$$

Among them, the explanatory variables of the model represent the rise capacity of city $y_{i;t}$ and year. $treat_i \times period_t$.It is a multiplication of the virtual variable of the policy group and the virtual variable of time, which represents the policy effect of urban renewal. $\boldsymbol{x_{i;t}}$ is a set of control variables used fe_i, fe_t to control time and individual fixed effects, respectively, as $\varepsilon_{i;t}$ error terms.

4.3. Variable Definition

4.3.1. The Variable Being Explained

The per capita GDP ratio (cspergdp) measures the distance between the edge city and the nearest core city, forms the edge-core city correspondence, and calculates the ratio of the per capita GDP of the edge city to the core city. This paper uses this variable as a proxy variable for the rise of marginal cities, the larger the ratio, the smaller the economic gap between the marginal city and the core city, the easier it is for the marginal city to rise, and the smaller the ratio, the larger the economic gap, indicating that the marginal city has a tendency to be marginalized, the data is from the China Cities Statistical Yearbook.

4.3.2. Core Explanatory Variables

The core explanatory variable is the policy effect of urban renewal, which is expressed $treat_i \times period_t$ as a multiplication of the policy group dummy variable and the time dummy variable. The treat variable is a group variable used to distinguish the experimental group from the control group, and treat=1 indicates that the city was included in the pilot list of old residential renovation in 2017 (experimental group), treat=0 indicates that the city was not included in the pilot list of old residential renovation (control group) in 2017. The period variable is a time dummy variable to distinguish the sequence of policy occurrence time, and the value of the period in 2017 and later is 1. The year before 2017 has a value of 0.

4.3.3. Control Variables

The average annual wage in marginal cities (averwage) refers to the average wage of employees in the municipal districts of marginal cities, and the data comes from the China Cities Statistical Yearbook. The higher the wages in peripheral cities, the more they can retain labor factors, making the city's labor reservoir larger, which has an impact on the per capita GDP ratio of peripheral-core cities.

Infrastructure (trans) is represented by the per capita paved area of marginal cities, and the data is derived from the China Cities Statistical Yearbook. The more convenient the transportation of peripheral cities, the easier it is for industries to agglomerate and develop, and it will help to increase the per capita GDP ratio of peripheral to core cities.

Industrial output to GDP ratio (GDP2) refers to the proportion of industrial output to GDP, urban fixed asset investment, data from the China Cities Statistical Yearbook. The development base of industry will have an impact on the direction of industrial agglomeration, and also affect the per capita GDP ratio of peripheral-core cities.

Urban fixed asset investment (fixedinv) data comes from the China Urban Statistical Yearbook. Statistics show that the higher the fixed asset investment in peripheral cities, the higher the degree of industrial agglomeration, and also have an impact on the per capita GDP ratio of marginal-core cities.

PM2.5 (pm) refers to particulate matter in the atmosphere with a diameter of less than or equal to 2.5 microns, and the data comes from the world PM2.5 density map released by Columbia University in the United States. The higher the level of smog in the city, the greater the risk of attracting polluting industries to settle in, creating a vicious circle for the economy. The higher the urban smog index, it means that it violates the development concept of "green water and green mountains are gold and silver mountains", which is not conducive to the rise of the city.

5. Empirical Results

5.1. Benchmark Regression

In this paper, benchmark regression is preliminarily carried out, and Table 3 reports the test results of urban renewal on the rise of marginal cities. For comparative purposes, this paper adopts a stepwise regression method that gradually adds control variables to ensure the significance of the effect of urban renewal policies, and the results are shown in Table 1. According to the results, although the actual participation samples were different, the policy effect coefficient of urban renewal was always significantly positive, indicating that urban renewal will Significantly promote the rise of marginal cities.

Table 1. DID estimates

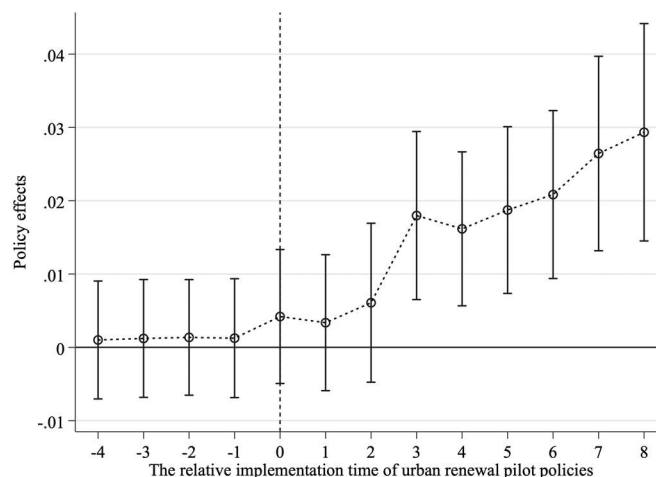| variable	(1)	(2)	(3)
$Treat_i \times Period_t$	0.018***	0.016***	0.012***
Averwage	-0.035**	-0.039*	-0.043**
Trans		0.685**	0.468***
Gdp2		0.010*	0.002*
Fixedinv			-0.085**
Pm			0.065**
Individualeffect	YES	YES	YES
Timeeffect	YES	YES	YES
N	4528	4528	4528
R²	0.786	0.790	0.834

5.2. Parallel Trend Testing

Figure 1. Parallel trend test

In order to verify the applicability of the DID model selected in this paper, the dynamic effect can be evaluated to test whether the pilot cities and non-pilot cities of urban renewal meet the parallel trend hypothesis. Taking the policy implementation year as a benchmark for regression, the dynamic impact of urban renewal pilots on the rise of marginal cities is assessed, as shown in Figure 1. It is found that the rising ability of the experimental group cities and the control group cities before becoming pilot cities maintains roughly the same trend, and there is no inequality trend, which meets the requirements of parallel trend testing. After urban renewal, the rise ability of the experimental group and the control group changed significantly, which indicates that the above benchmark regression results are robust.

5.3. Placebo Test

In order to further ensure the accuracy of the economic impact of urban renewal actions, it is necessary to add robustness tests. Drawing on relevant research, this paper randomly selects 15 cities 15 as the "pseudo-treatment group" among all sample cities to see whether the coefficient of pseudo-policy dummy variables is significant, so as to increase urban renewal can promote the rise of marginal cities." credibility. Assuming that these 15 cities are pilot cities for urban renewal, and other cities are control groups, the whole process repeats 500 regression analyses to obtain 500 "pseudo-policies" The distribution of the coefficients of estimation of dummy variables and the corresponding P values, the results of the robustness test are shown in Figure 2. It is found that the data density is concentrated around 0, which is consistent with the sparse and intermediate dense distribution on both sides of the gray origin estimation coefficient, indicating that the experimental results are not affected by other policy or random factors.
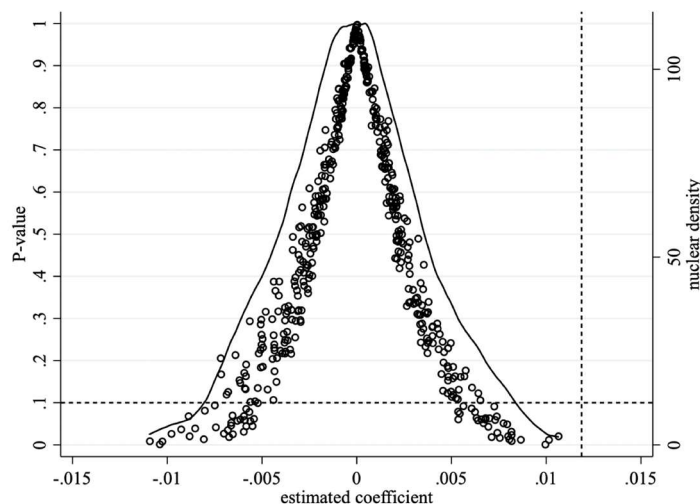

Figure 2. Placebo test

6. Conclusion

Based on the panel data of 283 cities in China from 2005 to 2020, this paper empirically analyzes the policy effect of urban renewal on the rise of marginal cities by using the DID method The results show that the national implementation of urban renewal policy has a significant role in promoting the rise of marginal cities, and the results are still true after the parallel trend test and the robustness test. Based on the above conclusions, this paper makes the following recommendations:

First, the implementation of urban renewal should be adapted to local conditions. Urban renewal is a comprehensive, policy-oriented and strategic social system project, which requires

a long-term, arduous and complex practical process, and needs to guard the bottom line of urban development Starting from the law of urban development, through scientific and rational planning, coordinate urban renewal work, integrate urban renewal into the city's society, economy and culture and comprehensively coordinate it.

Second, urban renewal should be closely integrated with industrial renewal. Industry is the source of power for urban development, whether it is industrial upgrading or format upgrading, we should pay attention to the development of existing properties and create new spaces. First, we should develop and expand the modern service industry, use urban renewal to realize the flow and agglomeration of resource elements to advantageous industries, realize the rationalization and upgrading of industrial structure, and revitalize the stock of properties with industrial transformation and upgrading Drive urban renewal and development. The second is to eliminate low-end industries through "cage for bird", optimize traditional industries, introduce high-end industries, and accelerate the leap of industries to high-end value chains.

Acknowledgments

References

[1] DONG Xiao,LIU Jiaping. The "stubborn diseases" and countermeasures faced by urban renewal[J] Urban Planning,2021,45(5):56-60.

[2] ZHANG Wenzhong,HE Ju,CHEN Li. Discussion on the method system of physical examination in Chinese cities for high-quality development [J] Scientia Geographica,2021,41(1):1-12.

[3] DING Fan,WU Jiang. The evolution of urban renewal related concepts and their practical significance today[J] Journal of Urban Planning, 2017(6): 87-95.

[4] SONG Zhenyuan,YAO Xiaona,LI Zhiyong Urban renewal leverages 10 trillion domestic demand space[N].Economic Information Daily,2020-08-27(001).

[5] ZHANG Nan,LIU Hui. Research on high-quality development of inland cities in China based on the new development pattern of dual circulation[J].Theoretical Discussion,2022(1):152-158.

[6] NI Jianwei,ZHANG Yuxiang. Research on the effect evaluation and optimization strategy of urban organic renewal policy:A case study of "three reforms and one demolition" in Hangzhou[J]. Economic System Reform,2020(4):78-85.

[7] LIU Caixia,CHEN Anping. The premium effect of urban renewal: a quasi-natural experiment from urban village transformation[J].China Economic Issues,2021(4):78-90.