

Exploring the Transformation Dilemma of Old Industrial Cities from Simcity

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Abstract

The existing old industrial bases in China have made significant historical contributions to China's reform, opening up and modernization, but with the development of the times, these old industrial cities have experienced different degrees of decline and accumulated transformation and adjustment. Although the transformation of many old industrial cities has been very effective, most of them are still facing various difficulties and obstacles. This paper summarizes some prominent problems encountered in the transformation process and corresponds to the difficulties that may be encountered in the transformation of old industrial cities in reality. After that, we try to put forward some targeted suggestions.

Keywords

Old Industrial City; Transformation; Simcity; Dilemma.

1. Purpose of the Study

The existing old industrial bases in China were mainly built by the central government after the founding of New China with a unified layout, and they have made significant historical contributions to the formation of an independent and complete industrial system and national economic system in China, as well as to the reform and opening up and modernization construction. However, in the context of globalization and informationization, these old industrial cities have produced different degrees of decline due to a series of unfavorable factors such as their relatively single industrial structure, increasing depletion of resources and industrial decline.

Under the new historical conditions, do a good job in the restructuring of old industrial bases, to accelerate the transformation of economic development, promote a new type of industrialization and new urbanization, accelerate the formation of new growth poles, build a harmonious socialist society, has great significance.

Since the release and implementation of the National Plan for the Adjustment and Transformation of Old Industrial Bases (2013~2022), important progress has been made in the adjustment and transformation of old industrial bases nationwide. However, the transformation of old industrial cities is not smooth, but subject to various objective conditions, historical legacy of the constraints. The transformation of some old industrial cities has been very effective, and some cities are still languishing, and even slipping into the trough. 2021In 2009, the National Development and Reform Commission and other departments issued the "14th Five-Year Plan" to support the implementation of high-quality development of industrial transformation and upgrading demonstration zones in old industrial cities and resource-based cities, which is a major initiative to promote the revitalization and development of old industrial cities and resource-based cities, and is of great significance to support the industrial transformation and upgrading of old industrial cities and resource-based cities in the new era. It is of great significance to support the industrial transformation and upgrading of old industrial cities and resource-based cities in the new era. In such a new situation, it is more

necessary to seriously explore the dilemma in the transformation of old industrial cities and find effective measures to break the obstacles.

Based on such thinking, I try to carry out the transformation of old industrial cities in the SimCity game, simulate the main initiatives carried out in the transformation of old industrial cities in reality, and summarize the obstacles and confusions encountered in the game, correspond them to the difficulties encountered in old industrial cities in reality, and finally come up with solutions.

2. Review of Relevant Literature

In summary, the industrial structure of China's old industrial cities has the following characteristics: first, a single industrial structure, heavy industry, resource-based industries and other traditional industries; second, the development of services lags behind, and the traditional service sector accounts for a high proportion; third, the pillar industry is dominated by state-owned enterprises.

The transformation and development of old industrial cities in China are roughly divided into the following three paths: first, from the traditional industrial model to a new industrial model; second, from industry-oriented to industry and service industry; third, from industry-oriented to service-oriented transformation.

Regarding the transformation process of old industrial cities, relevant domestic studies mostly focus on the experience of transformation of some cities and the challenges of the problems they face. Comprehensive relevant policies, the initiatives for the transformation of old industrial cities are mainly optimizing industrial structure, improving ecological environment, implementing talent strategy, accelerating technological innovation and improving guarantee system. Regarding the dilemmas in the transformation of old industrial cities, Yao Li (2014) [1] pointed out that the restructuring of China's old industrial bases is characterized by prominent institutional barriers, lagging urbanization, and unreasonable industrial structure, while bringing about a series of problems such as slow urban development, deteriorating ecological environment, prominent social conflicts, and over-generalization of national policies. Li Xuqa et al. (2016), [2] through a review of domestic and international literature, suggest that the "double lag" of institutional change and industrial restructuring is the most important factor limiting the transformation and development of the old industrial bases in Northeast China, which is also affected by low openness, weak innovation and talent loss. According [3] to Wang Chenwei (2017), in the revitalization of old industrial bases in central and western regions, there are institutional barriers such as the deep-rooted influence of planned economy, the heavy economic weight of large state-owned enterprises, which affects the improvement of market system, the low degree of opening to the outside world, and the intertwining of institutional and structural problems. Yang Chaowen (2018) [4] took Jilin province as the research object and found that the problem of low efficiency and competitiveness of manufacturing industry caused by high production cost, uncoordinated production structure and misalignment of supply and demand. Sun Jiuwen and Chen Chaojun (2021), on the [5] other hand, argue that the development of the old industrial bases in Northeast China is constrained by structural contradictions, factor loss, institutional mechanisms, and low inter-provincial industrial linkages.

Summing up the relevant research results, it can be found that the academic community has basically formed the following consensus on the factors that restrict the transformation of China's old industrial bases: first, ignoring the actual situation, resulting in industrial structure disorders; second, the stubborn problems of institutional mechanisms brought about by historical reasons; third, the loss of production factors and the loss of talents; fourth, urban

environmental problems, including infrastructure, imperfect protection systems and serious ecological pollution.

The problems raised by most studies are rather macroscopic and do not give a realistic sense of the troubles encountered by old industrial cities when implementing various measures for transformation. Thus, by conducting simulations in the game, I have aggregated some of the actual troubles, either serious or subtle, encountered when transforming old industrial cities in SimCity, which may overlap with reality, hoping to bring a little help to the actual study.

3. Simulation Results and Dilemmas in the Game

3.1. Basic Information about the City

3.1.1. Overall Overview



Fig 1. City overview1



Fig 2. City overview2

The city I built is called Qufu City, and the terrain of Qufu City is mainly plain, with an east-west river running through it. The population fluctuates around 10,000. The city's industrial and residential areas are basically separated by the river, with the north mainly developing industry and the south mainly responsible for the livelihood of the residents.

The industrial area in the north is high and medium pollution industries. The southern part is mainly residential, with low and medium density residential areas (the city's population is mainly low-income people). Low-density commercial areas are interspersed with the residential areas to meet the basic needs of the residents. In addition, a small high-tech industrial area is built in the south.

3.1.2. Initial Development

At the beginning of the city's construction, I built a coal-fired power plant and highly polluting industries in the north, and low-density housing in the south to house workers. In order to save money, the southern part was also powered by a coal-fired power plant. Water resources are mainly groundwater, and to prevent water pollution, the pumping station in the northern industrial area is built in a less polluted area at the edge (otherwise, the pumping station will be suspended by good people, which also warns us to pay attention to the residents' drinking water and water safety in real life). (As shown in Fig 3)

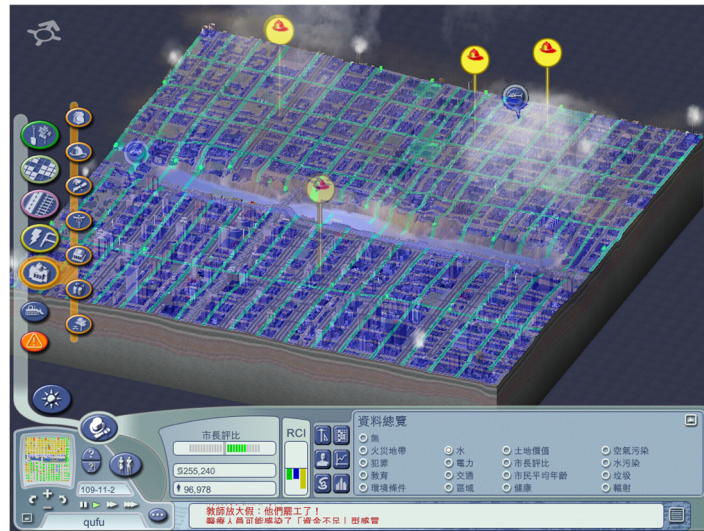


Fig 3. Water supply system

At the beginning of the city's development, only industrial and residential areas were built, and because of the small number of people, no attention was paid to the construction of services and the corresponding support facilities.

In terms of roads, due to the low number of commuters in the early days and the financial pressure, the industrial area was mainly paved with ordinary roads, while the residential area was interspersed with ordinary roads and avenues, and the industrial area was connected to the residential area by two bridges from the east to the west. On the whole, because the development of the city was focused on the development of industry to boost the economy and attract more residents, there was no proper planning of roads, which led to the confusion of road laying, and as the population grew and new residential areas were built, no place was reserved for the subsequent road laying, which laid a hidden danger for the transformation and upgrading of the city afterwards.

3.1.3. Mid-term Development

With the rapid development of the city's industry, the finances gradually became abundant and the population slowly rose, the financial revenue and expenditure were relatively stable, the city's population was around 10,000 people, and there were no more large fluctuations.

During this period, the coal-fired power plants that had been built in the past had deteriorated, and in order to gradually improve the urban environment, the old power plants were dismantled and gas-fired power plants were built at the edge of the city, and a small number of wind power plants were built in the residential part of the city.

As the number of residents rises, the demand for city support facilities begins to rise. According to the specific situation of the city, I improved the fire station, police station, hospital clinic and other corresponding facilities, so I will not repeat them here. In terms of education, primary and secondary schools were built in the center of the southern residential area to provide basic

compulsory education for the residents, and museums and libraries were built in the east and west of the city to meet the needs of the residents for additional knowledge.

3.2. Urban Transformation Simulation

3.2.1. Urban Issues

When the city enters the stabilization phase, the various situations are more in line with the real-life old industrial base.

One, the industrial structure, the city's pillar industry for the secondary industry, long-term reliance on heavy industry, resulting in the late city development stagnation, it is difficult to keep up with the progress of the times, in the game performance of all demand is negative (Fig 4), corresponding to the reality of the old industrial city decline, lack of competitiveness.



Fig 4. RIC table

Secondly, the development of urbanization lags behind. Due to the inherent lack of urban planning, infrastructure and public service facilities are lacking, and the internal functions of the city are not perfect. In particular, the traffic system in residential areas is chaotic and often congested, and residents have long commuting time and inconvenience in their daily life (as shown in Fig 5 and Fig 6); the education level is backward (Fig 7); the development of service industry is backward, and there is no service industry in the city except for some low-density commercial areas which are scattered. In real life, old industrial cities are built according to the concept of "production first, then life", and although the degree of industrialization is high, the level of urbanization is low, and the development of industry is obsessed, ignoring the needs of residents; the development of service industry is relatively lagging behind, and the proportion of traditional service industry in the internal structure of service industry is high.



Fig 5. Specific issues



Fig 6. Traffic conditions



Fig 7. Educational level

Third, social problems are prominent.

First, poverty is a prominent problem. Most of the urban residents are workers of heavy industrial enterprises and their children, and their income levels are low (Fig 8). Second, the protection mechanism is inadequate. Insufficient financial investment to protect the interests of medical and educational practitioners has led to frequent strikes by hospital medical staff and teachers (Fig 9). In reality, old industrial cities also have prominent unemployment problems. The reduction in the scale of enterprises or the weakening of production capacity has led to the unemployment of some employees, and most of these employees are manual laborers with single skills and low education level generating the problem of difficult Re-employment.



Fig 8. Income structure of residents



Fig 9. Teachers' Strike

Fourth, the urban environment is poor. As the development of urban industrial areas is heavy industry, resulting in serious air pollution and water pollution in the northern part of the city. Corresponding to the reality, the environmental carrying capacity of China's old industrial cities is poor, the ecological environment is gradually deteriorating, and the contradiction between urban population, resource reserves and ecological environment is becoming more and more prominent due to the predatory exploitation of resources, and urban development is not optimistic.

3.2.2. Transformation Measures and Difficulties Encountered in Transformation

The qufu city is considered to be transformed and upgraded after problems arise. Combined with real-life initiatives for the transformation of old industrial cities, I adopted the following program and summarized the corresponding dilemmas in the process of implementation.

(1) Optimization of industrial structure

In this regard, I have carried out the design of two programs, one is to transform traditional industries, and the other is to develop new industries.

First of all, focusing on the specific situation of the qufu city, it can be seen in Fig 10 that the northern part of the city is currently heavily polluted and unsuitable for the development of high-tech industries, and if new industries are to be developed, it can only be done in the southern part of the city. So specific plans were determined, firstly, to develop high-tech industries in the planned area in the southern part of the city (which is now the residential area); secondly, to try to improve the environment of the old industrial area in the northern part of the city and to promote the transformation of the original heavy industries.

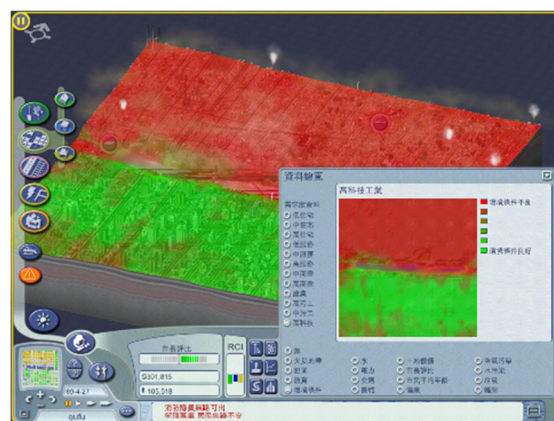


Fig 10. Pollution status

In this step I encountered the following problems.

First, the environmental improvement of the old industrial area is a long way to go. I first took the most primitive approach, that is, planting a large number of trees, but after planting a large number of trees intensively, the environmental situation did not improve significantly. In addition to planting trees, I also built a landfill, a sewage treatment plant and other pollution control facilities, but the environment on the map still showed high pollution. The city's RIC demand table did not show any change either. This situation is not surprising, the model of pollution first and then treatment does not solve the problem at the root, and the improvement that can be brought by planting trees is a drop in the bucket for the heavily polluted areas. On top of that, fighting environmental pollution is not a small cost project, and the city is having some financial difficulties, as my city's savings are much lower and cannot support building more green areas and pollution treatment systems.

The reality of the old industrial cities also encountered such problems. Many resource-based cities in China in the early days took the development path of "pollution before treatment", which affected the resource-based cities to bear huge ecological and environmental pressure, resulting in late treatment of environmental pollution and poor results.

Planting trees corresponds in practice to strengthening ecological restoration, expanding urban green areas and optimizing the ecological environment. Such measures are relatively easy, and many cities have actively carried out greening, but as the game shows, this does not solve the fundamental problem, and pollution is still being produced in a steady stream.

The construction of sewage treatment plants, etc. can correspond to the reality of more advanced means of pollution treatment. Theoretically, if the technology is advanced enough, there will be no waste and pollutants in the world, and all substances will be resources. In this day and age, there is no longer any obstacle to recycling all aspects of heavy chemicals, including pollutants, but the real problem is how to absorb the cost of adopting such advanced technology. Many city governments require companies to drastically reduce their pollutant emissions in order to meet environmental targets. Companies do not have the appropriate technology, but the cost is too high, so that the profits of enterprises greatly reduced, or even a loss of money, which inhibits the development. If the government is required to pay for this, which in turn causes great pressure on the government's finances. As a result, many cities have misreported emissions.



Fig 11. Taxes

Second, high-tech industries are difficult to develop. The original plan was to develop high-tech industries in the southern part of the qufu where the environmental conditions were better, so

I demolished the residential area on the southern edge and vacated the land to prepare for the development of new industries. Notice that the city's RIC table shows a negative demand for high-tech industries, indicating the need to create better conditions for their development. Following past experience, I planned to start with taxation, exempting high-tech industries from taxation and providing them with policy benefits to promote development (Fig 11). But even with such favorable policy conditions, the city is still not suitable for the development of high-tech industries. Tracing the root cause, I think the city lacks high-quality talent, which is what the game shows, qufu city basically only low-income people, no one to build high-tech industry, the policy is no longer preferential, so the next goal is to attract talent.

(2) Implementation of talent strategy

First, the quality of the original residents of the qufu city should be improved. For the old residents in the city, it may not be possible to improve their quality significantly, but it is also important to pay attention to their training and help them learn new skills to adapt to the new situation and prevent a large number of unemployed layoffs in the process of upgrading the city. So I built more libraries in residential areas as well as a newly constructed municipal university. Unfortunately, this measure had little effect.

In reality, many old industrial cities also emphasize the need to improve the knowledge quality of ordinary workers, transform their traditional production concepts, improve labor skills, and provide human capital support for high-quality urban transformation and development. But for workers with poor learning ability, how easy is it to learn new knowledge when they reach the age of 40 or 50? For enterprises, they also prefer to hire young people with new skills, which not only saves money on training, but also improves the productivity of enterprises. In such a situation, many ordinary workers eventually escape the fate of unemployment and layoffs.

The second is to introduce high-level talents. Before implementing specific measures, I reviewed a large amount of relevant literature and summarized several methods to attract high quality talents.

Labor migration decisions depend heavily on monetized economic gains and non-monetized levels of urban public services. Specifically, this means attracting talent with high wages and other benefits and improving the level of public services in the city. I have grouped these measures into three broad categories: "economic attraction," "educational attraction," and "environmental attraction.

"Economic attraction" is the most direct means to attract young talents. The "economy" is not only limited to raising the wage level, but also optimizing the industrial structure to create more employment opportunities and increasing the investment in fixed assets to create a brighter development prospect are effective "economic" means. This aspect cannot be presented in the game, so it will not be reported here.



Fig 12. School Distribution



Fig 13. Education Grants

Considering the importance of children's education in family decisions, it can be argued that parents' educational choices and future expectations for their children determine to a certain extent the costs and benefits of migration, which in turn affects migration decisions. Therefore, education security for children is essential to attract talents. The education of minor children and institutional arrangements are particularly important for talent migration. Therefore, I have increased the number of primary and secondary schools in qufu city and increased the allocation for education. (Fig 12, Fig 13).

It is gratifying to see that this initiative has finally yielded more significant results. Citizen satisfaction has increased (Fig 14) and the RIC demand table reports that there is demand for construction of low, middle and high income housing (Fig 15), indicating the success of our education attraction policy.



Fig 14. Citizen satisfaction

What can be confirmed is that the transformation process of old industrial cities with better allocation of basic education resources can indeed attract more talents. However, the reality is much more complicated than in the game, and the quality of teaching and barriers to schooling also need to be taken into account. The quality of schooling in old industrial cities (including basic school facilities, teachers' level, etc.) is hardly comparable to that in developed cities, and the school gap needs to be further narrowed to increase the willingness of children of mobile talents to attend school locally. In addition, the household registration and teaching continuity

of migrant children are also issues that need to be focused on. Cities have given many preferential policies for the settlement of highly qualified people in the war for talent, but for those who are not willing to settle, or whose procedures have not been completed, the schooling of their children is still to be solved.



Fig 15. RIC table

The "environment to attract people" is also to improve the city's living and working environment to attract talent. For the city of Qufu, the problem of traffic congestion needs to be solved. As I mentioned earlier, since qufu city only pays attention to industrial development in the early stage, the road laying is very random and chaotic, and the citizens are very dissatisfied with the traffic system at present. The measures I intend to take here are to lay new thoroughfares on roads with a high flow of people and to develop the city's underground transportation.

When laying the underground lines, no obstacles were encountered, except for the relatively high cost. But laying the above-ground roads was much more difficult. Because the preliminary planning is very confusing, the southern part of the city is very dense residential areas, plus schools, hospitals and other buildings scattered all over the city, and there is no open space directly paved avenue or highway, to add roads can only be demolished first. So I had to demolish several dense buildings for the paving of the avenue, in addition to the paving of the highway near the bridge connecting the residential area and the industrial area to facilitate the residents' commute.



Fig 16. Commuting times



Fig 17. Demand for high-density housing

Happily, the city's traffic conditions did improve somewhat after the development of the underground MRT and the addition of some thoroughfares, with a significant decrease in commuting times for residents (Fig 16). Subsequently, the RIC demand table shows that the demand for high-density housing has increased (Fig 17), indicating that the improved transportation situation has indeed had an effect on attracting talent.

While it is gratifying, it is annoying that it cost a lot of money just to add a few avenues and highways, and it is even more laborious to demolish and relocate them. The city's roads as a whole are still very confusing, and public transportation is not perfect. Later, if we want to continue to improve the traffic situation, we may need to completely demolish and then re-plan the entire city's routes in order to make them reach the ideal state of convenience and beauty. Is this really feasible?

The reality is that old industrial cities also encounter similar problems. Perhaps the transportation routes are not as chaotic as those shown in qufu cities, but from the distribution of resource-based cities, most of them are located in the central and western as well as northeastern regions of China, in remote mountainous areas, where not only the internal transportation of the cities is underdeveloped, but also the transportation systems that link them with other cities such as railroad transportation and air transportation are relatively backward. All these need a large financial allocation to improve.

(3) Improvement of ecological environment

Ecological and environmental problems are a major problem to be solved for old industrial cities to achieve high-quality transformational development, which seriously hinders the development of cities as well as social stability. The urban ecological environment problem is solved, which will lead to the full concentration of talents, technology, information and other advanced elements, which is also a strong guarantee to promote the development of high-quality transformation of resource-based cities.

In addition to the pollution control in the industrial areas north of the qufu, as mentioned above, I have also begun to further improve the environment in residential areas. Specific measures include the construction of community parks and road openings in residential areas, the planting of a large number of trees, and the construction of landfills at the edges of residential areas. After these measures, the environmental conditions in the residential areas have improved somewhat, but according to the RIC demand table, the effect on attracting talents is not significant, probably because the environmental conditions in the southern part of qufu city are not too bad in the first place.

This dilemma is described in (1) and will not be repeated.

(4) Improve the protection system

The prominent social problems are also the obstacle factors that restrict the high-quality transformation of old industrial cities, and these problems are related to whether the urban transformation can be carried out smoothly, and more importantly, to the stable development of society. Therefore, in the process of urban transformation, the social security mechanism should be continuously improved and the level of social security should be enhanced so that the fruits of resource development and economic development can benefit the general public.

For qufu city, the problems that need to be solved are mainly transportation, education, medical care, services and protection for the needy groups. (Due to the reasonable construction of the police station in the previous period, the city of qufu has good security, and in reality, it may still need to address the security issues)

Transportation and education have already been described in detail in the previous article, medical care, qufu city hospital has been able to cover and meet the needs of the entire city, the problem is the medical staff Ran often complained about the lack of funds, so I set the medical spending to the highest value in the government spending plan, since then the city's health has really improved.

Corresponding to the real life, there is a very significant gap between the medical conditions in old industrial cities and developed cities. Many backward areas have their own hospitals, but the conditions are poor, and people often choose to go to other cities for medical treatment. This requires further investment in medical funding, improving hospital infrastructure, and increasing the salaries and benefits of medical staff to attract highly qualified doctors to come and work.

The service industry in the qufu city has a relatively serious problem. There are no cultural consumption and recreational facilities other than a few low-density commercial areas scattered throughout the city. I tried to plan a centralized commercial area in the middle of the residential area in the south of the city, but unfortunately, the service industry could not be developed due to the lack of relevant demand in the city. The reason for this is probably because the city is still dominated by low-income people and there is less demand for this area.

The reality is that many old industrial cities are the same, because the city's economy is backward, lack of vitality, most businesses simply do not want to move in. Finance, logistics and other productive services are even more difficult to develop.

The problem of protection for the needy groups may not be clearly shown in the game. But what can be guessed is: one, in the process of the gradual decline of the old industry in qufu city, along with the transformation of the city, there is bound to be a large number of workers facing the plight of unemployment. Second, in qufu city paving new roads as well as the construction of new residential areas, will inevitably produce a number of demolition households, the placement of these people and the subsequent protection will be a problem.

Returning to reality, the protection of the large number of unemployed employees and residents relocated from shantytown transformation in old industrial cities in the process of transformation needs to be paid attention to.

Finally, after a long period of time, there is finally a positive, albeit low, demand for high technology in the city's RIC demand (Fig 18), which is a positive. What is certain, however, is that the success of the qufu city's transformation remains elusive. The game is still like this, and there are many other factors interfering in real life, which shows that the transformation of China's old industrial cities is indeed difficult and still requires unremitting efforts from the central and local levels together.

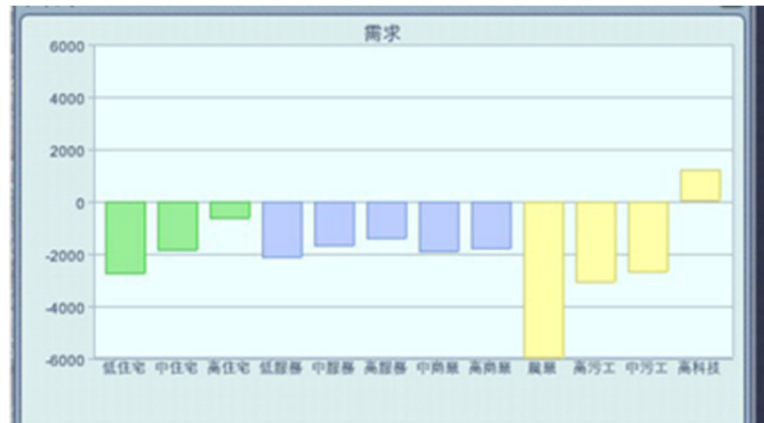


Fig 18. Final Results

4. Countermeasures

I have tried to make some suggestions for the above problems I found when simulating the transformation of old industrial cities in the game.

4.1. For Environmental Pollution Management Problems

Old industrial cities in the process of high-quality transformation, should take advantage of the national policy support for the transformation and development of resource-based cities, and vigorously improve the ecological environment.

From the point of view, the high-quality transformation of resource-based cities should adhere to the principle of "ecological priority, environmental priority and protection and utilization", gradually strengthen ecological protection and solve environmental improvement problems, and give priority attention to some areas with complex geological structure, serious hazards and difficult treatment. Resource-based cities should promote resource conservation, improve the comprehensive utilization rate of resources, and promote the green development, low-carbon development and circular development of resource-based cities by improving resource extraction and processing technology and joint layout of resource-based industrial parks.

On the surface, resource-based cities should systematically transform the entire urban ecological environment, focus on building resource-based ecological cities, effectively guard the four ecological bottom lines of green mountains, blue skies, clear water and clean land, encourage residents to consume green, promote green travel, advocate green and low-carbon living concepts and lifestyles, and actively create a social environment conducive to the green development of ecological cities and high-quality urban transformation.

4.2. To Address the Issue of Educational Resources

Strengthen the construction of basic education and improve the education management system.

On the one hand, we allocate urban primary education resources rationally, improve teaching quality, narrow the gap between schools, build additional basic education facilities with reference to the actual level of basic education resources demanded in the city, pay attention to the construction of software and hardware facilities in additional schools, and implement renovation and restoration projects for schools with poor teaching facilities; rationally allocate excellent teacher resources, provide special preferential treatment for teachers teaching in schools with poor facilities and at a distance, improve the mechanism for cultivating basic education talents in the city, implement a talent reserve program, and achieve the goal of having a large number of local schools with excellent quality. The city's basic education talent cultivation mechanism, the implementation of a talent reserve program, the improvement of the overall quality of the teaching force, the achievement of the goal of a large number of urban

schools with excellent quality, the increase in the willingness of children of mobile talents to receive education locally, and the increase in the probability of children of mobile talents receiving education locally.

On the other hand, breaking the barriers to schooling and humanizing the education of children. Therefore, for high-end top talents in shortage areas, their children's education should not be affected by school districts and school nature, and they should be free to choose schools within the city; for general talents, the bundle of housing, household registration and education resources should be gradually abolished, and the fair allocation of education resources should be realized as much as possible. The implementation of basic urban public services, including education, to cover the unsettled resident population, for young mobile talents who are willing to settle down but have not completed the procedures, a period can be set to advance their status as a household population, to ensure that the children's access to education coherence is not affected by changes in household registration.

4.3. To Improve Traffic Problems

Reasonable planning and layout of urban functional areas, avoiding excessive concentration of the same functional areas, realizing interval distribution of living areas, educational areas, commercial areas and industrial areas, alleviating the problem of population concentration during peak hours, building a polycentric city and dispersing population pressure; optimizing the layout of major productive forces, improving the scale structure and jurisdiction of municipal districts, and solving the problem of serious shortage of development space.

Improve the planning of urban transportation routes, strengthen the construction of public transportation facilities, reasonably plan public transportation routes, expand the coverage of public transportation, increase the intersection of routes, reduce the overlap of routes, and realize the network development of public transportation routes; reasonably set the interval time of public transportation, avoid "one size fits all", and set the interval time of different routes and different times of the same route according to the actual situation. The interval time of public transportation for different lines and different periods of the same line should be set according to the actual situation.

Cities can promote rail transportation according to their own situation to ease the pressure of ground transportation and avoid urban congestion; focus on rail transportation to improve basic transportation facilities, orderly planning and construction of intercity railroads and municipal railroads, and promote the reasonable extension of rail transportation in central cities to surrounding towns.

4.4. To Address Social Security Challenges

4.4.1. Rational and Optimal Allocation of Urban Infrastructure

The government should play a role in optimizing urban infrastructure, planning layout, and policy guidance by doing top-level design and strengthening deployment and coordination to make infrastructure construction more orderly. Implement appropriate policies for mixed land use, or functional compounding in smaller urban spaces.

4.4.2. Protection, Incentives for Re-employment

Play the role of government investment and project construction to drive employment. Through certain policy guarantees, encourage and support the development of labor-intensive industries and small and micro enterprises, and attract innovative talents to promote urban development through self-employment.

Multi-channel development of public welfare jobs, focus on solving the problem of Re-employment of unemployed people, people with disabilities due to work, shantytown renovation residents and other difficult groups, and constantly improve urban functions,

stimulate new vitality of urban transformation and development, and provide strong protection for the transformation of old industrial cities.

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