

Huaihua International Inland Port Development and Its Impact on Local Residents' Housing Demand

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Studies have shown that constructing international inland ports can create an impetus for the local community's comprehensive economic and social development. It can also promote population concentration and accelerate urbanization in inland areas. Population inflow affects residents' housing demand. An in-depth study should be conducted on the impact of the construction of Huaihua International Inland Port on the housing demand of the residents in the southwestern Hunan area. From the perspective of the development trajectory of Huaihua International Inland Port, it analyzes how the port affects the local economy, employment, government revenue, and urbanization progress. Combined with the analysis of residents' housing status in Huaihua City of Hunan Province, China, it predicts their future housing demand in Huaihua City. The results show that residents' housing demand will change in stages.

Keywords: International Inland Port, housing demand, urbanization, Southwestern Hunan area

INTRODUCTION

In today's society, housing demand is a hot topic of great concern. With the rapid development of the economy and urbanization, housing has become a significant factor affecting people's quality of life and economic and social stability. The southwestern Hunan area, covering Huaihua City and the neighboring Shaoyang City and Yongzhou City, is located in the southwestern part of Hunan Province. It boasts a vital location advantage in southwest China's economic and social development. The region has been a significant transportation artery in Hunan Province since ancient times, with abundant natural resources and unique minority cultures. With the construction of the Huaihua International Inland Port in recent years, the region has seen favorable economic and social development opportunities. Besides, the region has

gradually become an essential bridge for the trade interconnection between the inland of southwest Hunan and the coastal areas. With the gradual improvement and development of Huaihua International Inland Port, the economic and social development of the southwestern Hunan area will undergo profound changes, with the effect of population inflow. The continuous influx of population significantly affects residents' housing demand.

This paper examines the housing situation in Huaihua City and the new trend of residents' demand through a literature review, questionnaire survey and statistical analysis. It also predicts and analyzes residents' future housing demand trends and characteristics. The housing market in Huaihua City is developing healthily, and housing prices are low and stabilizing. Residents have strong affordability and high accessibility to housing. With the international inland port project's continuous progress, the incoming population will increase significantly and gradually cover the outgoing population. Residents' housing demand also changes in phases. Shortly, there will be fewer inflows to cover the outflows. The incoming people mainly rent apartments to fulfill their demands. A large population inflow will cover its outflow in the medium to long term. The local housing stock can hardly satisfy the growing market driven by the population increase, and affordable and commercial housing will dominate the residential mode in this phase. In the long run, the population inflow will continue and stabilize and be overwhelmed by the influx of high-quality talents. It will shift from the primary housing demand to the demand for improved, high-quality and characteristic housing properties.

This paper analyzes the impact of the Huaihua International Inland Port on residents' housing demand in the southwestern Hunan area. It investigates the trends of residents' housing demand in the area. Moreover, it explores the new trends of residents' housing demand in the southwestern Hunan area and provides suggestions for relevant government departments and enterprises to formulate reasonable decisions and plans. Thus, it can promote the balance of local housing supply and demand, improve the residents' living conditions and quality of life, and provide a forward-looking planning layout for addressing residents' housing demand. At the same time, it also provides a valuable reference for other similar regions in the planning and designing of future residential housing. Firstly, it analyzes and reviews the existing literature on international inland ports. It sorts out the different effects of international inland port projects on local economic and social development. It learns about the current situation of international inland port research, captures the significance of relevant theories on urbanization and population agglomeration, and constructs relevant theoretical frameworks. Secondly, it examines the spillover effect of the development of Huaihua International Inland Port on the urbanization of Southwest Hunan. Analyzing the history of Huaihua International Inland Port predicts the urbanization trend of the city. Thirdly, it indicates how residents' housing demand will change in southwestern Hunan cities and summarizes the current housing market status and residents' affordability for housing consumption in Huaihua City. As the international inland port develops, it analyzes residents' housing demand and offers policy suggestions in stages. Finally, it summarizes the study and identifies the deficiencies and the areas for future research.

LITERATURE REVIEW

Accelerating the development of international inland ports is integral to China's "Belt and Road" strategy to accelerate trade facilitation. In recent years, China has made specific achievements in constructing and developing inland international ports. International inland ports have played a significant role in facilitating international trade and transportation and further promoting the inland economic development of central and western China. They bring great impetus to local economic and social development, drive the spatial aggregation of population, and contribute to inland urbanization. The massive population inflow will affect residents' demand for housing. However, due to the low urbanization and high property stock in the inland areas, the increased housing demand from population inflow cannot exceed the supply in the short term (Liang, 2023; Liu et al., 2023). No systematic analysis and research have been conducted on the phased impact of the construction of Huaihua International Inland Port on

residents' housing demand in the southwestern Hunan area. Thus, it is a theoretical and practical issue for in-depth investigation.

The international inland port, also known as a dry port, was interpreted by the United Nations in 1982 as an inland transportation hub that issues bills of lading for imported and exported goods. In 1991, international inland ports provided customs services as inland customs clearance stations. In 2014, the China Ports & Harbors Association defined an inland port as an international commercial port with customs clearance, logistics, container dispatching, warehousing and other functions established in an inland city under international transportation laws and practices. International inland ports are logistics operation platforms built in inland hubs. They are also cargo distribution centers with complete functions of freight forwarding, container distribution and coastal ports, broadening the hinterland of deep-sea ports. At the same time, they represent the extension of inland functions to boost the export-oriented economy in the inland areas, making them a necessary path for developing the port industry (Wang, 2009; Witte et al., 2016; Rodriguez, 2010).

The Belt and Road Initiative is essential for China to integrate the international and regional economies. In promoting the Belt and Road Initiative, international inland ports have become increasingly prominent in the global economy and trade as a pivotal node to enable the countries' connectivity (Lv, 2020). At present, to accelerate the smooth implementation of the Belt and Road Initiative, China has ushered in a favorable strategic opportunity for developing international inland ports. More than 70 international inland port projects have been constructed and are pending to be built. They grew rapidly and gradually shaped the economic circle of inland ports.

Moreover, it is highly valued in China and abroad (Li, 2020). Inland port construction is a complex and dynamic systematic project. A perfect inland port system has a far-reaching impact on local economic and social development. On the one hand, inland ports rely on the Internet of Things, big data platforms and other high technologies for real-time transmission of logistics information. Through multimodal transportation, the effectiveness of the supply chain is enhanced in many ways. The trade volume of cities will significantly increase, and the regional advantages of inland port cities will manifest.

On the other hand, inland port projects will stimulate the rapid development of the city's economy. The logistics and service industries will empower the city's economy, generating direct income and boosting employment and consumer demand (Zhong, 2021). Establishing international inland ports has provided a broader platform for developing an open economy. Inland port cities will give full play to their regional and functional advantages, accelerate the progress of urbanization, and gain more dividends in the wave of population mobility.

Population mobility has historically been closely related to the level of urbanization. Generally speaking, areas with higher population mobility are more urbanized. The progress of urbanization drives the spatial aggregation of the population (Henderson, 2009; Liu et al., 2022; Liu et al., 2021). In places where the population leaves, some of the labor force cannot find suitable jobs in the local job market, so they must move to the big cities. The outflow of these people vacates jobs for other local working populations and contributes to the saving of social resources.

Also, it advances the rational and effective allocation of social resources and ultimately maximizes the economic efficiency of the region. The proportion of floating population is significantly related to the total factor productivity of the areas with population inflow. Studies have shown that population mobility can effectively enhance regional economic efficiency and promote the transformation and upgrading of the economic growth model (Feng et al., 2023; Chen et al., 2015). At the same time, related studies also show that the floating population has positive and lagging effects on industrial structure (Uilbert, 1982; Moomaw, 1996). When the floating population transfers to the secondary and tertiary industries, the proportion of the local output value of the secondary and tertiary industries will increase (Mou, 2016; Chen, 2016). The increase in the labor force population also drives the consumption in the housing market. The inflow of high-level talents improves local employment and human capital structures and optimizes and upgrades the industrial system (Udall, 1980). The optimization and upgrading of industrial systems can affect the housing market in two ways. On the one hand, the optimized and upgraded industrial structure generates more jobs and more lucrative returns, further attracting the inflow of high-quality talents from

the surrounding areas. On the other hand, from the perspective of long-term development, these high-quality talents are more willing to stay in big cities, thereby affecting the housing prices in areas with net population inflows (Tian et al., 2021; Wu et al., 2023).

It is found that the industries in the region of net population inflow usually experience structural optimization and upgrading due to the mechanical growth of the population. It means that areas of net population inflows have shifted from low-end industries to medium- and high-end industries. In this process, incoming individuals are less uncertain about their future income, and their expected income and consumption ability are primarily guaranteed. It thus facilitates residents' housing demand to be released efficiently (Lang et al., 2022). The housing market factors are analyzed from population structure and size perspectives. It can be easily observed that population mobility increases the number of people in the areas of population inflows, and the enlarged population base directly leads to higher demand for housing (Teng, 2021; Gong et al., 2021; Garriga, 2023). At the same time, population mobility also changes the age structure, employment structure and education structure of the population in the areas of inflows. Changes in population structure inevitably lead to changes in housing demand. First, population immigration optimizes the age structure of the places with the influx, reduces the old-age dependency ratio, and increases the local housing demand. Thus, it drives up the housing prices (Jager et al., 2017; Thenuwara W, 2019; Wang et al., 2022). Second, population immigration improves the industrial structure of workers in the areas with inflows. That is, the proportion of the employed population in the secondary and tertiary industries to the total employed population grows, and population immigration also raises the per capita education level in the areas of inflows. These two factors contribute to higher per capita income levels. Ultimately, population mobility contributes to higher housing consumption and prices by affecting employment and education structures (Zhou et al., 2020).

Chinese scholars generally believe that elevated levels of urbanization boost housing demand (Li et al., 2021; Liu et al., 2021). The impact of urbanization on housing demand is mainly reflected in three aspects. First, along with the expansion of the city scale, it is necessary to accelerate the city's construction and various types of infrastructure. Therefore, it places greater demand on all types of properties. Second, many rural people have moved into the cities for work and life, with a strong potential market for housing, which becomes a demand for rented accommodation in the short term. However, with the rising wage levels and increased savings, the demand for rented housing will gradually be transformed into a request for purchased accommodation. Third, the old urban areas need renovation and significant projects due to the advancement of urban construction. Hence, the expropriation, demolition and compensation of old urban areas may lead to considerable housing demand among the original inhabitants (Ma, 2019; Yao, 2021).

However, some Chinese scholars argue that the influx of rural residents to cities due to urbanization does not significantly increase housing demand and is subject to regional differences. The main reason is that high housing prices in urban areas discourage incoming residents from settling in the cities. Furthermore, rural residents have not become the primary source of housing demand (Liu et al., 2022; Hong et al., 2021). Currently, the inelastic demand dominates, supplemented by the need for upgraded housing. In addition, the demand for upgraded housing is gradually increasing. With the increasing scale of urban population and inland use, expanding the spatial boundaries of cities at all levels and in all categories is restricted. The space available for development and utilization in cities is reduced, and urbanization will contribute less to housing demand. People's housing needs and solutions are becoming more and more diversified and differentiated. Residential product supply types, modes and quality will be transformed and upgraded (Chen, 2011; Ran, 2022).

Huaihua International Inland Port is located in Huaihua City, an ethnic area in the southwestern part of Hunan Province, China. It is often known as the southwestern Hunan area, at the intersection of China's strategies for Western development and the rise of Central China. Huaihua City is a crucial area in the national poverty alleviation strategy, with insufficient urban agglomeration capacity and a narrow radius. Without industries of a solid driving force, it is economically backward, with poor urbanization and low housing demand. Huaihua was once a representative city of population outflow (Zhang, 2021). However, in recent years, Huaihua City has been developing, relying on the strategy of "Three High inlands and Four New Missions¹" for the province. Establishing a new international inland port is attractive to the floating

population in central and western China. The threshold of urban household registration is low, and the housing units are highly available. The population inflow from urbanization significantly affects housing demand in cities. This paper investigates the impact of the introduction of international inland port projects on local urbanization in a fourth-tier city in southern Hunan (Sidi, X., & Guang, T., 2023) and the changes in housing demand from population mobility. It is undoubtedly significant to the local economy and people's livelihood. The construction and development of Huaihua International Inland Port is expected to serve as a model for building international inland port projects in inland areas. It is also helpful in developing the real estate industry in the urbanization of small and medium-sized cities in China.

THE SPILLOVER EFFECT OF HUAIHUA INTERNATIONAL INLAND PORT ON THE URBANIZATION OF SOUTHWEST HUNAN

The international inland port enables a convenient international logistics corridor for inland areas and is vital to implementing China's Western development strategies and Central China's rise. Given its unique location, transportation, foreign trade and economic advantages, Huaihua has developed an international inland port project. It has greatly benefited the areas radiated by the project, boosting their economic growth, urbanization, and population inflow. However, the project is still in its initial stage, and its effect is not evident. It is reasonable to believe that with the continuous progress of the project, its impact will be more and more noticeable.

Construction and Development Status of Huaihua International Inland Port

An international inland port is a logistics node with the same convenient transportation channels as coastal ports, border ports or airports. It has all the functions of ports and harbors, such as logistics, customs clearance, inspection, and value-added services. It is an inland extension of coastal or border ports' functions. In August 2019, China's National Development and Reform Commission unveiled a Master Plan for the New Western Inland-Sea Corridor. Huaihua is an essential node city on the main corridor extending from Chongqing, Huaihua, Liuzhou to Beibu Gulf. Huaihua International Inland Port is a node project for building a new western inland-sea corridor and connecting with the Belt and Road. It is an essential window for Hunan to construct a unique pattern of opening up to the outside world in all aspects. Also, it serves as a bridge to facilitate the flow of goods and people between Changsha, the new western inland-sea corridor, and the ASEAN region. It is a crucial engine to promote the coordinated development of the west of Hunan region. It creates a great historical opportunity for high-level opening up and high-quality growth of the local area. The construction of Huaihua International Inland Port relies on the government's significant concerns and support. It is also closely related to Huaihua's advantages in location, transportation, economy and trade, and foreign cooperation (Lian, 2023).

As the border city of Hunan, Hubei, Chongqing, Guizhou and Guangxi, Huaihua City has distinct advantages in location. The Chinese government defines Huaihua as a node city linking the Silk Road Economic Belt and the Maritime Silk Road under the Belt and Road Initiative. The core area connects the Guangdong-Hong Kong-Macao Bay Area, Hanzhong City Cluster, Qianzhong City Cluster, Chengdu-Chongqing Twin City Circle, Yangtze River Delta Economic Zone and Beibu Gulf Economic Zone. Huaihua is also an important node on the eastern route of China's "New Western Inland-Sea Corridor" and is the only city in central China incorporated into the Corridor. It is also a node city of the transportation channel of the "South Wing" of the Yangtze River Economic Belt and a city of ecological innovation.

Huaihua boasts a modern three-dimensional transportation system. Huaihua is China's only high-speed railway hub, not a provincial capital city. It is an essential node of the main framework in the National Comprehensive Three-dimensional Transportation Network Planning Outline. Huaihua Municipal People's Government and Guangxi Beibu Bay International Port Group Co, Ltd. signed a cooperation agreement on "Building a New Western Inland-Sea Corridor." The corridor connects Hunan and central China inland, Southeast Asia, and South Asia by sea. They work together to build the sea-rail intermodal logistics corridor linking Huaihua, Beibu Gulf and the ASEAN countries. Currently, Huaihua is located on the eastern route of the new western inland-sea corridor, undertaking 70% of the rail-sea intermodal transportation logistics

shipments. The import and export volume of Huaihua International Inland Port reached 8 billion, and the throughput will be 10 million tons in the future. In H1 of 2023, Huaihua launched 163 trains with 8,142 TEUs to and from the ASEAN countries, with about 250,000 tons of cargo, up 842% YoY. It ran 13 inbound freight trains loaded with cassava starch with a cargo weight of 5,337 tons, exceeding the annual import volume in 2022. Huaihua has become the only international freight assembly center among the five major global cargo centers in Hunan Province.

Huaihua has mature platforms for foreign cooperation. During China-ASEAN cooperation, Hunan Chambers of Commerce in seven ASEAN countries (including Thailand, Laos and the Philippines) have set up offices and trading companies in Huaihua. New industrial cooperation platforms have been established. They include the ASEAN-Hunan Industry Alliance, China (Huaihua)-ASEAN Green Agricultural Products Matchmaking Conference, China (Huaihua)-RCEP Traditional Medicine Industry Matchmaking Conference, Hunan (Huaihua) RCEP Economic and Trade Expo, and Huaihua Business Conference. These new modes of foreign cooperation can provide relevant mechanisms and experiences for regional cooperation under the Belt and Road Initiative.

Huaihua has sustained the integration of its economic and trade interests and has established partnerships with ASEAN countries in Chinese medicine, manufacturing, processing, and agriculture. Over the past decade, Huaihua's import and export volume has risen 7.9 times from RMB 556 million in 2013 to RMB 4.4 billion in 2022. The number of enterprises performing foreign trade has increased by 2.5 times from below 40 in 2013 to 100 in 2022. From January to September 2023, Huaihua's imports and exports to RCEP countries amounted to RMB 1.4 billion, up 170.8%. Exports were RMB 1.13 billion, up 299.4%, and imports were RMB 270 million, up 15.1%. Imports and exports to ASEAN countries amounted to RMB 860 million, up 443.4%. Exports were RMB 840 million, up 484.8%, and imports were RMB 20.605 million, up 39.5%.

In short, Huaihua International Inland Port serves China's neighborhood diplomacy policy on the one hand. It builds a center for humanistic exchanges with ASEAN countries, the Silk Road Economic Belt, and a modern integrated service center. Also, it helps to develop Hunan as a link and bridge for mutual promotion and organic connection between China and other countries along the Belt and Road. On the other hand, Huaihua has become an international corridor and three-dimensional transportation hub connecting ASEAN countries and Southwest China. It builds a more advanced economic and industrial cooperation platform and creates a distribution center for technology, capital, talents and other resources. Thus, it will contribute significantly to the economic and social development of the southwestern Hunan area (Hunan Provincial People's Government, 2022).

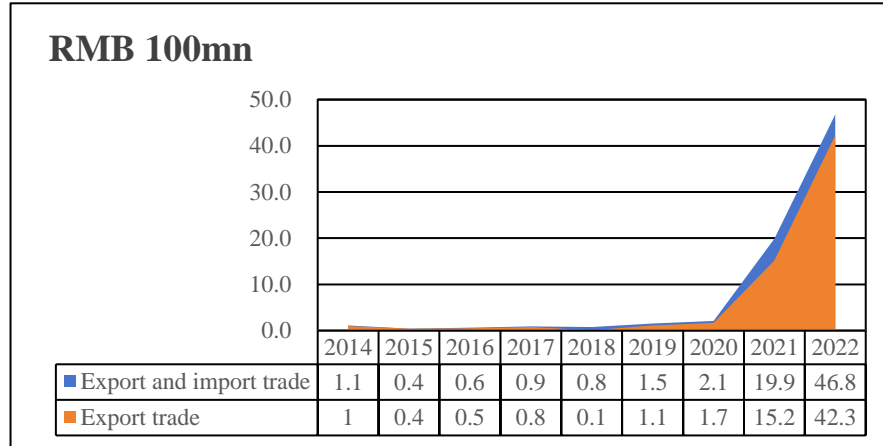
Expected Facilitating Effect of Huaihua International Inland Port on Southwest Hunan's Urbanization

In 2022, the Hunan Provincial People's Government released the "Implementation Plan on Deeply Integrating into the Belt and Road and Supporting the Development of Huaihua International Inland Port" on its portal. It aims to build Huaihua into an essential base for opening up inland areas, a first-class international inland port in Central and Western China, and a first-ranking station in China for trains to and from ASEAN countries. Thus, the port industry of Huaihua International Inland Port can be propelled to achieve an output value of RMB 100 billion. Huaihua International Inland Port naturally gathers the flow of cargo, capital, information, and passengers as the gateway for cargo transportation. It boosts industries and trade and promotes the rapid economic development of Huaihua city, kicking off the era of inland ports.

In 2022, Huaihua City realized an annual GDP of RMB 187.764 billion, up 3.8% from the previous year. The added value was RMB 28.230 billion or up 3.6% in the primary industry, RMB 56.687 billion or up 5.2% in the secondary industry, and RMB 102.848 billion or up 3.1% in the tertiary industry. It demonstrates a sustained improvement in the economy. Regarding foreign trade, the international inland port realized total imports and exports of RMB 1.44 billion in 2022, with a year-on-year growth of 312.6%. It drives Huaihua's total imports and exports to grow by 135.6%, as shown in Figure 1. Backed by the open platform of Huaihua International Inland Port, Huaihua has been selected as one of China's national

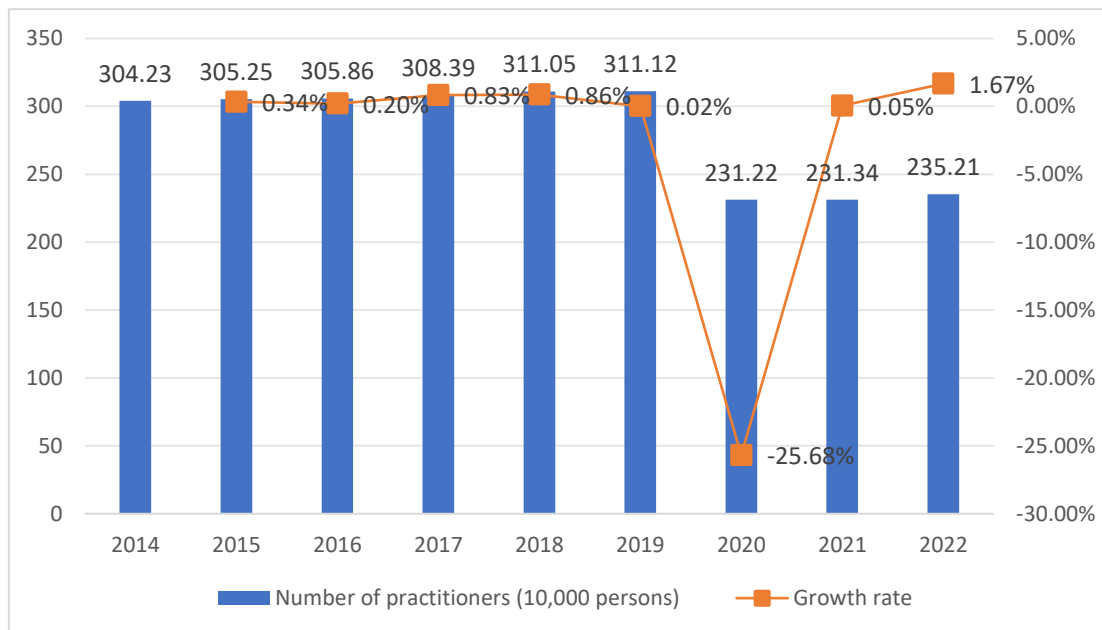
logistics hubs for trade and commerce services. It enabled Huaihua to realize a total social logistics volume of RMB 530 billion, a year-on-year growth of 5.5%.

**FIGURE 1
HUIHUA’S IMPORTS AND EXPORTS, 2014 – 2022**



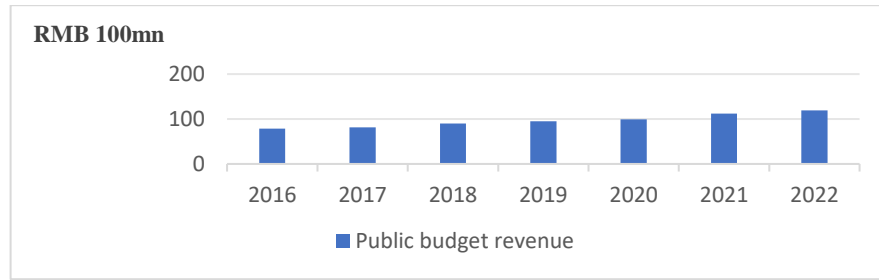
In terms of employment, since the construction of the international inland port, the employed population has risen continuously in Huaihua City. However, due to the impact of the COVID-19 pandemic in 2020, it fell sharply, but it has been growing in the past two years, as shown in Figure 2.

**FIGURE 2
EMPLOYED POPULATION IN HUIHUA CITY, 2014 – 2022**



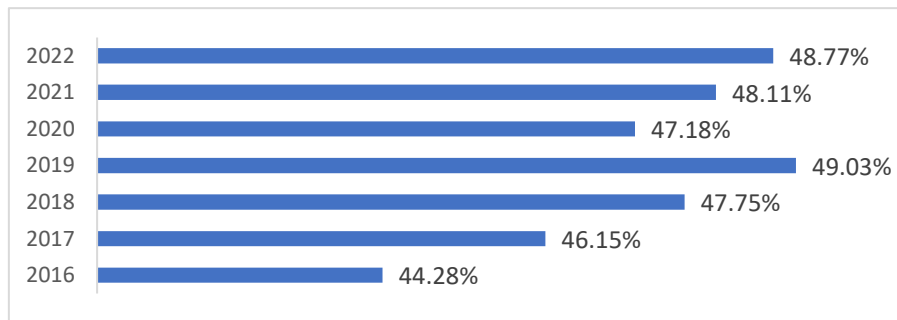
In terms of government revenue, the government public budget revenue went up from RMB 7.891 billion in 2016 to RMB 11.956 billion in 2022, showing a steady upward trend. The revenue growth rate from 2020 onwards increased significantly, as shown in Figure 3.

FIGURE 3
GOVERNMENT PUBLIC BUDGET REVENUE IN HUAIHUA CITY, 2016-2022



Regarding urbanization progress, the western Hunan region is economically underdeveloped in Central and Western China, with a low level of urbanization. Affected by the pandemic, the urbanization rate fell in 2020, as shown in Figure 4. However, the recovery from the pandemic and the construction of the international inland port project created positive policy signals and economic confidence in the southwestern Hunan area. In 2022, the urbanization rate of Huaihua City was 48.77%, significantly higher than other areas in southwestern Hunan.

FIGURE 4
URBANIZATION RATE OF HUAIHUA CITY, 2016-2022



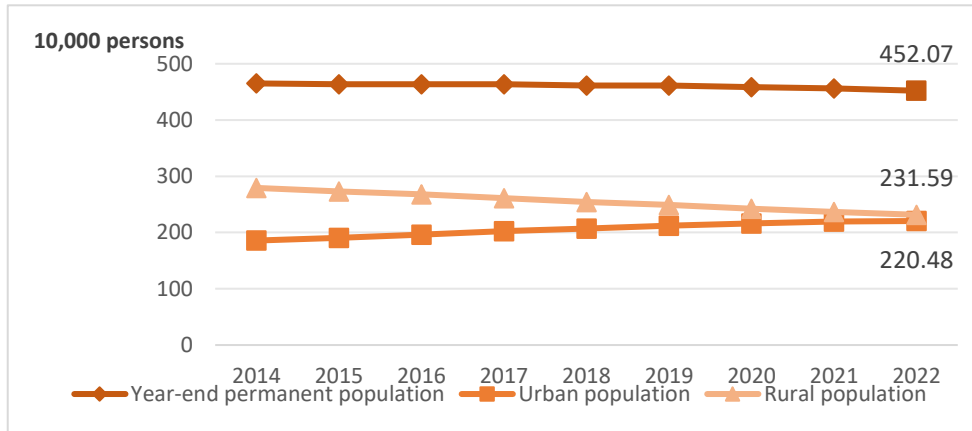
Urbanization and Population Mobility in the Southwestern Hunan Area

As an inland city, Huaihua is committed to developing the port economy, shipping logistics, e-commerce and new-generation information technology industries with its geographical advantages and policy support. It has become a logistics center for the Wuling area and the five bordering provinces of Hunan, Hubei, Chongqing, Guizhou and Guangxi, and a demonstration zone for inland port economy. Thus, it boosts the economic prosperity of the project’s impact area and brings new vitality to the region’s development. Since 2019, the level of urbanization has been rising. However, the city’s population has declined, and the deceleration has shown a steady trend. As shown in Figure 5, the total population of Huaihua City is decreasing, but the rural and urban people present opposite directions. The rural population continues to decline while the urban population continues to rise.

Huaihua and the surrounding five provinces are populous and have abundant labor resources. Due to the economic disadvantages, the western Hunan region has long seen massive population outflows, with the urbanization rate significantly lower than the national level. The construction of Huaihua International Inland Port will guide the industrial restructuring and arrangement adjustment of Huaihua City. It will promote trade circulation and drive the rapid development of commerce, logistics and transportation industries. As a result, it will drive population and economic growth in the local and radiating areas. However, the construction of the international inland port remains at an initial stage. Due to the high

population outflows, the floating population has no significant growth. Local urbanization and population mobility may change in settings.

**FIGURE 5
POPULATION CHANGE IN HUAIHUA CITY, 2014-2022**



The information in Table 1 can be analyzed in terms of population structure. Regarding the sex ratio, the ratio of males to females in 2022 was 51:48; there is no significant difference between males and females, with males slightly outnumbering females. Regarding age structure, 13% of the population is over 65, 18.6% is under 15, and 49.7% is between 16 and 59. The old-age dependency ratio is 20%, the child dependency ratio is 27%, and the total dependency ratio is below 50%. Therefore, there is some room for a demographic dividend.

**TABLE 1
POPULATION STRUCTURE OF HUAIHUA CITY IN 2022**

Category	Age				Gender	
	0-15	16-59	60-65	Over 65	Male	Female
Population (10,000 persons)	96.79	260.09	95.19	71.19	233.8	218.27

Generally speaking, the southwestern Hunan area is characterized by hollow cities with high dependency ratios due to the massive population outflow. However, due to Huaihua's unique geographical location and the international inland port project, the population structure is reasonable, and the dependency ratio is less than 50%. There is still room to utilize the demographic advantage. With the continuous improvement of the inland port project, more human resources will be introduced, and the population structure will be rationalized.

EXPECTED CHANGES IN URBAN RESIDENTS' HOUSING DEMAND IN SOUTHWEST HUNAN

The change in the population flow structure will affect urban residents' housing demand and the local housing market. Currently, the housing prices in Huaihua are low and stable, and residents have strong affordability and high accessibility to housing. The construction of the international inland port brings population siphoning power to Huaihua. In the future, with the continuous inflow of population, urban residents' demand for housing will shift from satisfying primary living conditions to upgraded, family-style

housing. The government and related industries should accelerate the housing market's improvement and integrate the development of affordable, commercial, and rented housing markets.

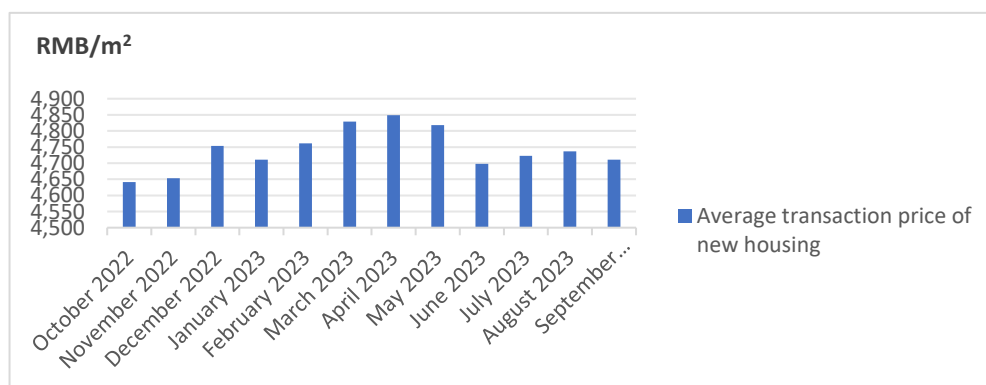
Housing Status Analysis of Huaihua

The southwestern Hunan area is a typical region of population outflow due to its economic underdevelopment and severe brain drain. With convenient transportation facilities and the opportunity to build an international inland port in recent years, Huaihua's population outflow has been alleviated. The urban population is increasing continuously, and its urbanization has accelerated. With the progress of the international inland port project, Huaihua promotes the import and export trade of unique industries by relying on the global inland port platform. It facilitates the formation of industrial clusters, the cultivation of new trade patterns, the expansion of investment promotion, and the attraction of corporate investment in Huaihua.

Moreover, it can contribute to the high-quality development of Huaihua's open economy. The high-quality development of the regional economy will fuel its urbanization. Population agglomeration will inevitably lead to rising housing demand. The local government and industry practitioners should plan on how to cope with the housing problem arising from the population inflow and how to address the housing demand of the residents in phases.

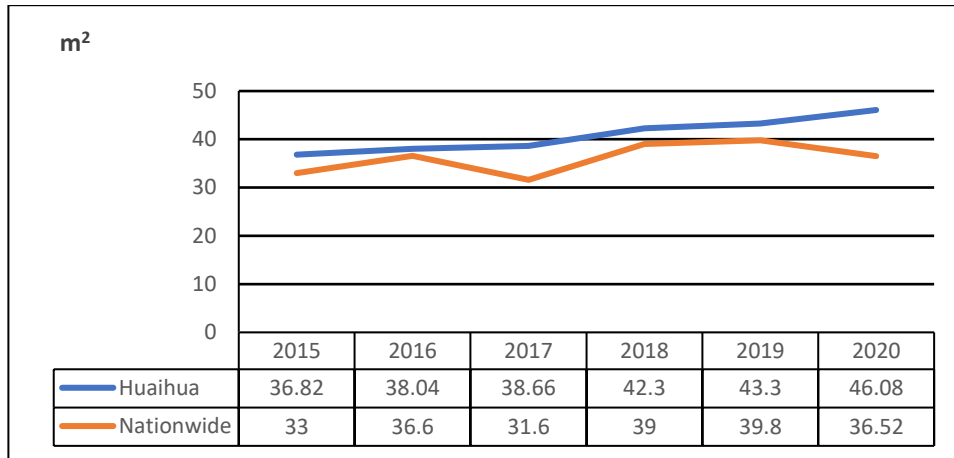
According to the statistics provided by the Huaihua Municipal Bureau of Statistics, the construction area of housing buildings in Huaihua in 2022 was 21.97 million square meters, of which 3.92 million square meters were new starts. The housing market has been developing steadily. In recent years, housing prices have fallen due to the pandemic and the policy that housing is for living in, not for speculation. Since last year, housing stimulus policies such as mortgage rate adjustments and removal of purchase restrictions have been introduced. The price of new commercial housing in Huaihua has increased but stabilized at around RMB 4,700/m², as shown in Figure 6. Huaihua has been subject to population outflows for many years, with oversupply in the housing market. Commercial housing prices are low, and housing accessibility is high. It is desirable for the inflow of talent in the region.

FIGURE 6
AVERAGE PRICES OF NEW HOUSING TRANSACTIONS IN HUAIHUA, 2022-2023



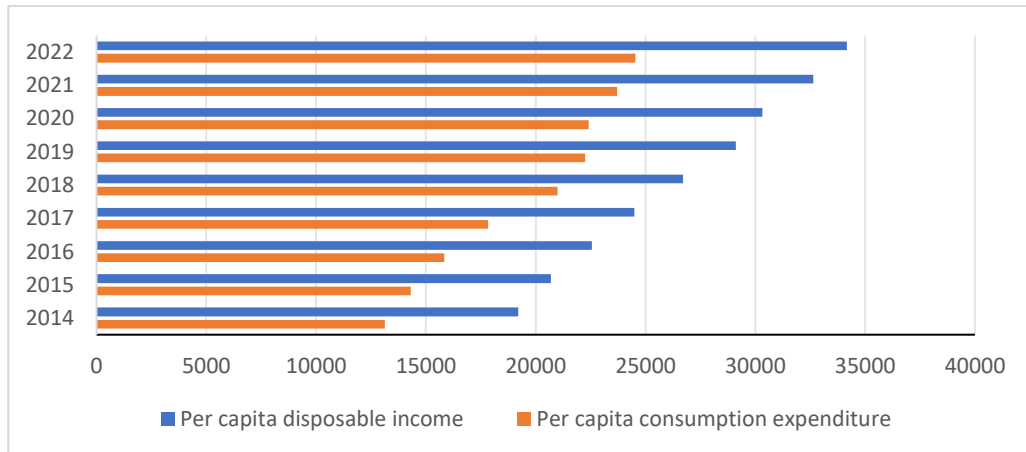
The per capita urban living space in Huaihua is higher than the national level, indicating high redundancy in the current housing market in Huaihua. With the continuous improvement of affordable housing policies, the demand for upgraded housing in the future will be dominated by commercial housing. In small and medium-sized cities with rapid development and low house prices, residents' need for upgraded housing can be easily satisfied, which will also become one of the attractions for the inflow of people from neighboring regions (Figure 7).

**FIGURE 7
COMPARISON OF URBAN PER CAPITA LIVING SPACE, 2015-2020**



The accessibility of housing lies in its affordability. We must also consider the housing market’s supply situation and, more importantly, consumers’ ability to pay. In 2022, the per capita disposable income of urban residents in Huaihua City was RMB 34,168, and the per capita consumption expenditure was RMB 24,543. Both per capita disposable income and consumption expenditure of urban residents in Huaihua show a rising trend. Since 2019, per capita disposable income growth rate has been significantly higher than per capita consumption expenditure. It shows that urban residents in Huaihua can pay for their housing, and their ability to pay will continue to rise. From the perspective of the housing-price-to-income ratio (calculated for an 80-square-meter house for a family of two), the ratio is 5.5, within a reasonable range. It suggests low housing prices and high accessibility in Huaihua (Figure 8).

**FIGURE 8
DISPOSABLE INCOME AND CONSUMPTION EXPENDITURE OF URBAN RESIDENTS IN
HUAIHUA, 2014-2022**



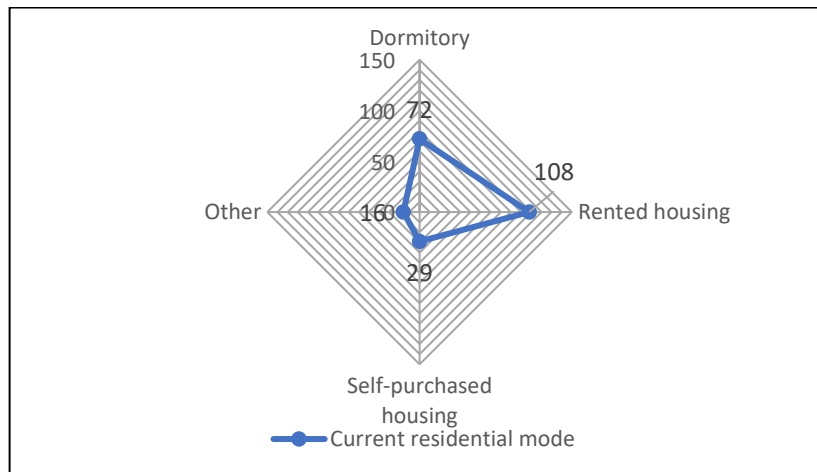
The housing market in Huaihua is developing healthily by considering housing prices, urban per capita consumption and disposable income, and urban per capita living space. Housing prices are low and stabilized, and there is sufficient supply in the housing market. The living area of urban residents is higher than the national level. The comparison of consumption expenditures shows that Huaihua residents have a solid ability to pay for their housing, and the accessibility of housing is high.

New Trends of Population Mobility and Residents' Housing Demand in Southwest Hunan

Population inflow leads to higher housing demand, but housing demand varies among phases of population inflow. The research group conducted a field study in October 2023 at the Huaihua International Inland Port Project to better understand the change in housing demand by population inflow. The project is located in the Economic Development Zone. The study aims to investigate the impact of population inflow driven by the International Inland Port Project on residents' housing demand in the region. The research group selected the service companies most affected by the project, such as logistics, catering, and retail. Sampling was conducted to control the gender ratio of the permanent population in Huaihua City in 2022. An anthropological fieldwork method was applied, and one-to-one long-duration interviews were conducted. A total of 224 valid questionnaires were collected. The respondents were mostly aged between 45 and 55, accounting for 52%. It shows that the incoming population of Huaihua is mainly middle-aged, while it is not attractive to the young. Respondents are generally of low educational level, of which only 23% have a college education or above, and 66% have junior and senior high school education. There is a shortage of high-caliber talents. The investigation mainly analyzes the current residential mode, the desired residential mode in the future and the type of housing.

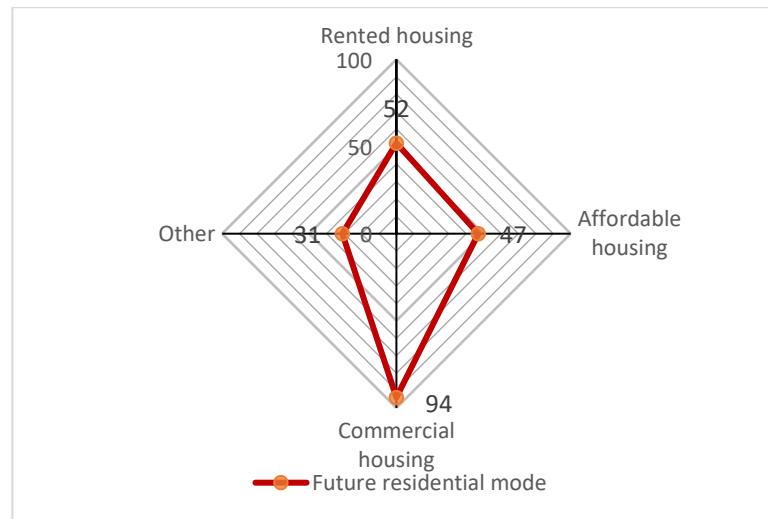
From the current residential modes, rented housing (48%) is the most dominant, followed by unit dormitories (32%) and self-purchased housing (13%). The international inland port project is at an initial stage, and the talent attraction effect is gradually visible. The incoming people need to adapt to the work and environment in the areas they are coming into before deciding whether to settle down or move with their families. Therefore, the leading residential modes are rented housing or dormitories (Figure 9).

**FIGURE 9
CURRENT RESIDENTIAL MODES**



For the future residential modes, the desired residential way in three to five years is dominated by self-purchased housing, accounting for 63% of the total. The proportion of rented accommodation decreases compared to the current residential mode, at 23%. In the medium to long term, most residents opted for self-purchased housing, intending to settle down. Some chose affordable housing. Due to the impact of the recent affordable housing policy, 21% of respondents mainly satisfied their housing demand by resolving the primary housing demand. 42% were willing to buy a better-quality commercial property to determine their housing demand. As the policy of equal treatment between residents who rent and buy properties continues to improve, a few who choose to rent want to settle down in the area (Figure 10).

FIGURE 10
RESIDENTIAL MODE PREDICTION OF FUTURE RESIDENTS



Regarding future housing types, after determining that they will settle down in the city, 47% choose family-style apartments, 39% select single apartments, and 14% choose collective dormitories. In the long run, 47% of respondents preferred to move to large properties with their family members. 39% chose small units or preferred not to get married. It is consistent with young people's view of not marrying or having children. However, there is also an error caused by the age structure of the sample.

As the international inland port project develops, its impact will gradually be magnified. The population inflow will stabilize progressively and attract more high-caliber talents. Demand for housing is expected to rise as the population grows. Residents will tend to rent in the short term and purchase their own homes in the medium to long time. In the long run, they will mainly purchase upgraded units.

Response to Population Mobility and Residents' New Housing Demand

Huaihua International Inland Port has been developing rapidly since its construction. The research group anticipates that by 2026, Huaihua International Inland Port will achieve a foreign trade dependency of more than 10%. The annual cargo throughput will reach 10 million tons, and the rail-sea intermodal transportation and cross-border trains will run daily, with more than 500 trains per year. The total volume of container arrivals and departures will reach 50,000 TEUs. The port industry cluster with an output value of RMB 100 billion will be formed. With the deepening of the project, Huaihua will develop into a first-class international inland port in Central and Western China and a significant engine for the high-quality development of the surrounding five provinces. Population siphon force will also be gradually demonstrated. The housing demand from population inflow should be addressed in phases depending on the status quo of the local housing market.

In the short term, when the population first flows in, it is also the beginning of the international inland port. The low population inflow cannot cover the population outflow. Since Huaihua has always been a city of population outflow, a small influx of people does not affect the housing market supply. Most of the incoming people rent houses to meet their housing demands. On the one hand, the government should revitalize the local housing market and provide multi-level and diversified housing to meet residents' housing demand.

On the other hand, it should improve the rental market by building a high-quality and compliant rental platform so that residents can rent their homes properly. In the medium and long term, the effect of population inflow has emerged, and the international inland port project has taken shape and is developing rapidly. The considerable increase in population inflow can cover the population outflow, and the local

housing stock cannot meet the housing demand from the population increase. Affordable and commercial housing will become the leading residential modes in this stage. The government should speed up the construction of affordable housing, improve the procedures for access and transfer, and solve fundamental housing problems. Real estate enterprises should develop family-type and upgraded housing units as their primary products and promote the trading of residential commodities. In the long run, industrial clusters will be formed in Huaihua based on the development of the international inland port project and will influence the surrounding areas. Population inflows will continue and stabilize, with high-quality professionals dominating the influx, creating higher demands on the local housing market. Their housing needs shift from basic residential needs to upgraded, high-quality, and unique properties. The government should continue to improve the policy of equal treatment for residents who rent and buy homes and integrate the rental and purchase markets. Real estate companies should adopt a consumer demand-oriented approach to develop high-quality properties and emphasize after-sales services like property management.

CONCLUSION

The development of the Huaihua International Inland Port has generated positive policy signals and economic confidence in the southwestern Hunan area. It is effectively promoting the economic and social development of Huaihua City. In 2022, the annual GDP of Huaihua City grew by 3.8%, the total imports and exports rose by 135.6%, the employed population increased by 1.67%, and the urbanization rate reached 48.77%. The effect of population inflow will generate new housing demand, and the current housing market in Huaihua is healthy, with sufficient supply and low and stable prices. Key real estate indicators have performed well: urban per capita consumption and disposable income, urban per capita living space, and housing-price-to-income ratio. It reflects residents' strong ability to pay for housing and the high accessibility of housing in Huaihua. It is found that with the continuous progress of the project, the incoming population will increase significantly and gradually cover the outgoing. Residents' housing demand will also change in phases. In the short term, the population inflow is low and does not cover the population outflow. The incoming people tend to satisfy their housing needs by renting apartments. The population inflow is large enough to cover the population outflow in the medium to long term. The local housing stock cannot meet the housing demand of population increase. Affordable and commercial housing will become the primary residential modes in this stage. In the long run, the population inflow will continue and stabilize and be dominated by the influx of high-quality talents. Their demand for housing will shift from basic housing needs to upgraded, high-quality, featured properties.

The government and the industry should respond to the new housing demand in different stages. In the near and short term, the government should revitalize the local housing market and provide multi-level and diversified housing to meet residents' housing demand. On the other hand, it should improve the rental market and build a high-quality and compliant rental platform so that residents can rent their homes properly. In the medium and long term, the government should speed up the construction of affordable housing, improve the procedures for access and transfer, and solve the fundamental housing problems. Real estate enterprises should develop family-type and upgraded housing units as their primary products and promote the trading of residential commodities. In the long run, the government should continue to improve the policy of equal treatment for residents who rent and buy homes and integrate the rental and purchase markets. Real estate companies should adopt a consumer demand-oriented approach to develop high-quality properties and emphasize after-sales services like property management.

This study aims to clarify the impact of the Huaihua International Inland Port on local urbanization and the changes in housing demand caused by population mobility. It provides planning and development ideas for the local government and related industries, which is significant to the local economy and people's livelihood. At the same time, this study also has some theoretical implications for developing the real estate industry in the urbanization of small and medium-sized cities. Since the Huaihua International Inland Port project is still in the initial stage of development, the data has not been collected sufficiently. In the future, the scope of the survey can be increased. It is also feasible to observe the changes in housing demand from

different perspectives (consumers or producers) and summarize the relevant rules more comprehensively and systematically.

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ENDNOTE

- ¹ The Three Highlands refer to shaping a national advanced manufacturing industry, nurturing innovative technology with a competitive edge, and expanding opening-up and reform; four missions include realizing integrated development, assuming new responsibilities in promoting the development of China's central region and Yangtze River Economic Belt, striving to write a new chapter for Hunan to adhere to, and developing socialism with Chinese characteristics in the new era.

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