

Research on the Synergy Between Population Changes and Real Estate Market Development — A Case Study of Zibo City, Shandong Province

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Abstract: *This paper analyzes the population changes and the development of the real estate market in Zibo City, Shandong Province, through the seventh national population census, studies the impact of the changes in the number and structure of the permanent population on the real estate market, and puts forward suggestions on how to promote the coordinated development of the real estate market and population.*

Keywords: The seventh national population census; Population changes; Development of the real estate market.

1. INTRODUCTION

The real estate industry, as a leading, fundamental, and pillar industry in the operation of the national economy, has a long industrial chain and high correlation. It can drive investment, expand production, stimulate consumption, and directly or indirectly drive the development of multiple industries upstream and downstream. The stable and healthy development of the real estate market is of great significance to the growth of the national economy. Factors such as national regulatory policies, macroeconomic development, population characteristics, urbanization process, and development costs will all affect the development of the real estate market. Overall, the development of the real estate market depends on factors such as population in the long term, land in the medium term, and finance in the short term. This paper analyzes the population changes and the development of the real estate market in Zibo City, Shandong Province, through the seventh national population census, studies the impact of the changes in the number and structure of the permanent population on the real estate market, and puts forward suggestions on how to promote the coordinated development of the real estate market and population.

2. POPULATION CHANGES OVER THE PAST DECADE

According to the data of the seventh national population census, Zibo has maintained a steady and rapid economic development in the past decade, while the size and structure of the permanent population have changed significantly, mainly with the following characteristics:

2.1 The Total Permanent Population Has Increased, and the Population is Gathering Towards the Central Urban Area

In 2020, the permanent population of Zibo City was 4.7041 million, ranking 11th in the province in terms of total population. Compared with the results of the sixth national population census in 2010, the permanent population increased by 173500, or 3.83%, ranking eighth in Shandong Province, 2.16 percentage points lower than the provincial average growth rate of 5.99%, and 1.55 percentage points lower than the national average growth rate of 5.38%. The average annual population growth rate of Zibo City is 0.38%, which is 0.20 percentage points lower than the provincial average growth rate (0.58%) and 0.15 percentage points lower than the national average growth rate (0.53%). As shown in Table 1.

Table 1: Permanent population in sub districts and counties of Zibo City

Region	Permanent population (10000 people)
Zibo City	470.41
Zichuan District	61.42
Zhangdian District	79.58

Boshan District	41.06
Linzi District	64.92
Zhoucun District	35.38
Huantai County	48.95
Gaoqing County	31.31
Yiyuan County	51.51
Zibo High-Tech Development Zone	23.93
Zibo Economic Development Zone	27.86
Wenchang Lake Tourism Resort	4.49

Compared to 2010, there are significant regional differences in population distribution. The districts and counties with an increase in permanent population are Zhangdian District, Linzi District, Zhoucun District, High tech Zone, and Economic Development Zone; The counties with a decrease in permanent population are Zichuan District, Boshan District, Huantai County, Gaoqing County, Yiyuan County, and Wenchang Lake District. Among them, the three districts and counties with rapid population growth are Zhangdian District, High tech Zone, and Economic Development Zone, with populations increasing by 209500, 90900, and 35200 respectively compared to 2010, with growth rates of 35.74%, 61.24%, and 14.45%. From this, it can be seen that the population agglomeration capacity of the central urban area is constantly increasing, and the population size is constantly expanding, while the permanent population of the three counties in Zibo City has decreased to varying degrees. As shown in Table 2.

Table 2: Increase and decrease of permanent population in sub districts and counties of Zibo City

Region	Increase or decrease in permanent population (10000 people)
Zibo City	17.35
Zichuan District	-5.66
Zhangdian District	20.95
Boshan District	-5.24
Linzi District	0.63
Zhoucun District	2.83
Huantai County	-1.45
Gaoqing County	-3.47
Yiyuan County	-3.44
Zibo High-Tech Development Zone	9.09
Zibo Economic Development Zone	3.52
Wenchang Lake Tourism Resort	-0.41

2.2 The Size of Households Has Shrunk, and the Per Capita Housing Area Has Significantly Increased

In 2020, there were a total of 1.7082 million households and 128500 collective households in Zibo City. Compared to 2010, the number of households increased by 183800 and 98600 respectively, with growth rates of 12.05% and 329.50%. The average population per household in the city is 2.52 people, a decrease of 0.29 people from 2.81 people in 2010, 0.18 people lower than 2.70 people in Shandong Province, and 0.10 people lower than 2.62 people nationwide, indicating a shrinking trend in household size. The shrinking size of households is mainly influenced by factors such as increasing population mobility, improved housing conditions, and young people living independently after marriage. As shown in Table 3.

Table 3: Household situation in sub districts and counties of Zibo City

Region	Family Households		Household population		Household size (person/household)	
	2020	2010	2020	2010	2020	2010
Zibo City	1708174	1524413	4305672	4276423	2.52	2.81
Zichuan District	231258	226320	572127	622260	2.47	2.75
Zhangdian District	265566	194422	678178	515883	2.55	2.65
Boshan District	170630	170620	393807	443872	2.31	2.6
Linzi District	231379	218946	590988	622820	2.55	2.84
Zhoucun District	117251	100436	304197	287248	2.59	2.86
Huantai County	171639	156048	456326	488297	2.66	3.13
Gaoqing County	119313	115857	302464	342604	2.54	2.96
Yiyuan County	202841	192609	496236	539477	2.45	2.8

Zibo High-Tech Development Zone	80698	47491	217537	137251	2.7	2.89
Zibo Economic Development Zone	100159	85135	250745	228084	2.5	2.68
Wenchang Lake Tourism Resort	17440	16529	43067	48627	2.47	2.94

In 2020, the per capita housing construction area of households in Zibo City was 41.05 square meters, an increase of 7.41 square meters or 22.03% compared to 2010, indicating a significant increase in per capita housing area. Looking at urban and rural areas, the per capita housing construction area of urban households in Zibo City is 39.54 square meters, an increase of 5.88 square meters or 17.47% compared to 2010. The per capita housing construction area in all counties and cities is over 35 square meters. The per capita housing construction area of rural households in the city is 45.08 square meters, an increase of 11.48 square meters or 34.17% compared to 2010. As shown in Table 4.

Table 4: Per capita housing area and per capita housing number of households in Zibo City

Region	Urban Per Capita Residential Floor Area (sqm)	Urban Per Capita Number of Rooms	Rural Per Capita Residential Floor Area (sqm)	Rural Per Capita Number of Rooms
Zibo City	39.54	1.09	45.08	1.39
Zichuan District	37.48	1.18	34.27	1.47
Zhangdian District	40.29	1.05	43.22	1.31
Boshan District	37.29	1.15	31.91	1.44
Linzi District	38.62	1.1	45.15	1.44
Zhoucun District	39.45	1.01	40.86	1.51
Huantai County	44.08	1.1	61.34	1.44
Gaoqing County	43.38	1.19	57.04	1.54
Yiyuan County	38.14	1.01	40.74	1.11
Zibo High-Tech Development Zone	41.18	1.03	37.89	1.17
Zibo Economic Development Zone	37.55	1.1	45.26	1.57
Wenchang Lake Tourism Resort	38.31	1.31	40.3	1.62

2.3 The Proportion of Working Age Population is Decreasing, and the Degree of Population Aging is Deepening

In 2020, the population of children aged 0-14 in Zibo City was 700500, accounting for 14.89%; The population aged 15-59 is 2.9105 million, accounting for 61.87%; The elderly population aged 60 and above is 1.0932 million, accounting for 23.24%, while the elderly population aged 65 and above is 776000, accounting for 16.50%. Among them, the proportion of the working age population aged 15-59 has decreased by 8.55 percentage points compared to 2010, 1.55 percentage points higher than Shandong Province, and 1.48 percentage points lower than the national average. The proportion of the working age population in the city has decreased significantly. As shown in Figure 1.

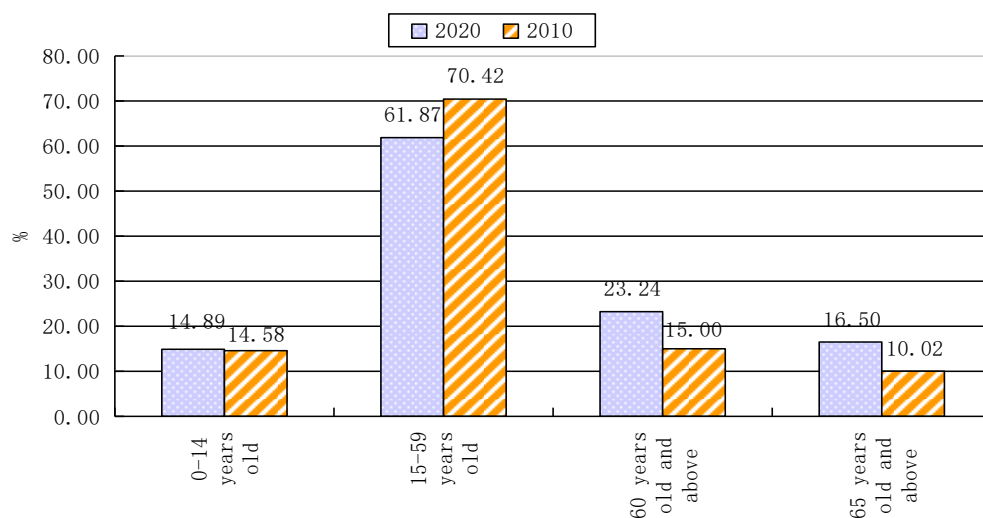


Figure 1: Age structure of permanent residents in Zibo City

In 2020, the population aged 60 and above in Zibo City accounted for 23.24%, an increase of 8.24 percentage points from 2010, 2.34 percentage points higher than Shandong Province, and 4.54 percentage points higher than the national average. The proportion of population aged 65 and above is 16.50%, an increase of 6.48 percentage points from 2010, 1.37 percentage points higher than the province, and 3.00 percentage points higher than the national average. According to international classification standards, when the proportion of people aged 65 and above in a country or region exceeds 7%, it marks the entry into an aging society; When it reaches 14%, it is a deeply aging society; When it exceeds 20%, it enters a super aging society. According to this standard, Zibo City is currently in a deeply aging society as a whole. As shown in Figure 2.

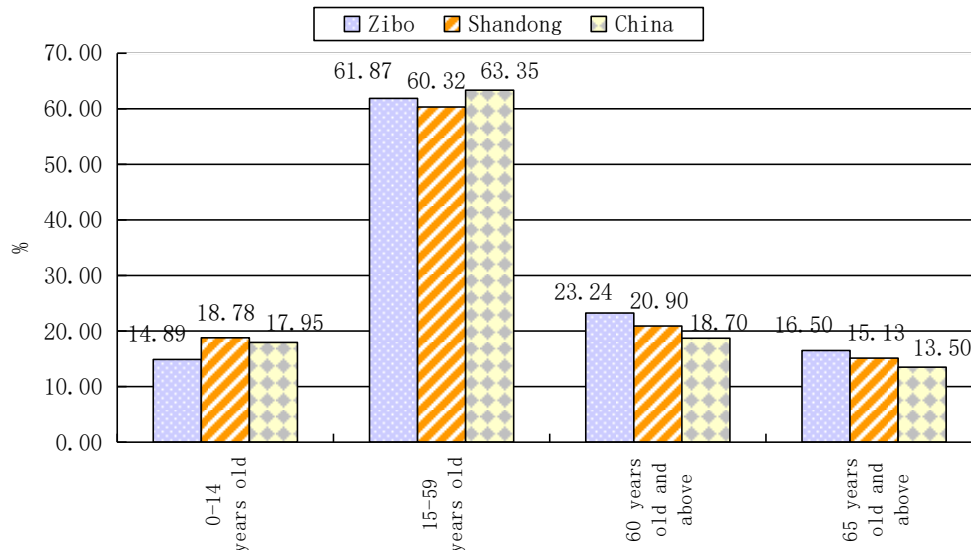


Figure 2: Age structure of permanent residents in Zibo City compared to the provincial and national levels

2.4 The Urbanization Rate Has Further Increased, and the Scale of Population Mobility Has Significantly Increased

Among the population of Zibo City, the number of people living in urban areas is 3.4937 million, accounting for 74.27%. The urbanization rate ranks second in the province, 11.22 percentage points higher than the 63.05% in Shandong Province and 10.38 percentage points higher than the national 63.89%. The population living in rural areas is 1.2105 million, accounting for 25.73%. Compared with 2010, the urban population increased by 634100, the rural population decreased by 460600, and the proportion of urban population increased by 11.15 percentage points. The three districts and counties with high urbanization rates are Zhangdian District, High tech Zone, and Economic Development Zone, with rates of 96.77%, 91.24%, and 87.65%, respectively. As shown in Figure 3.

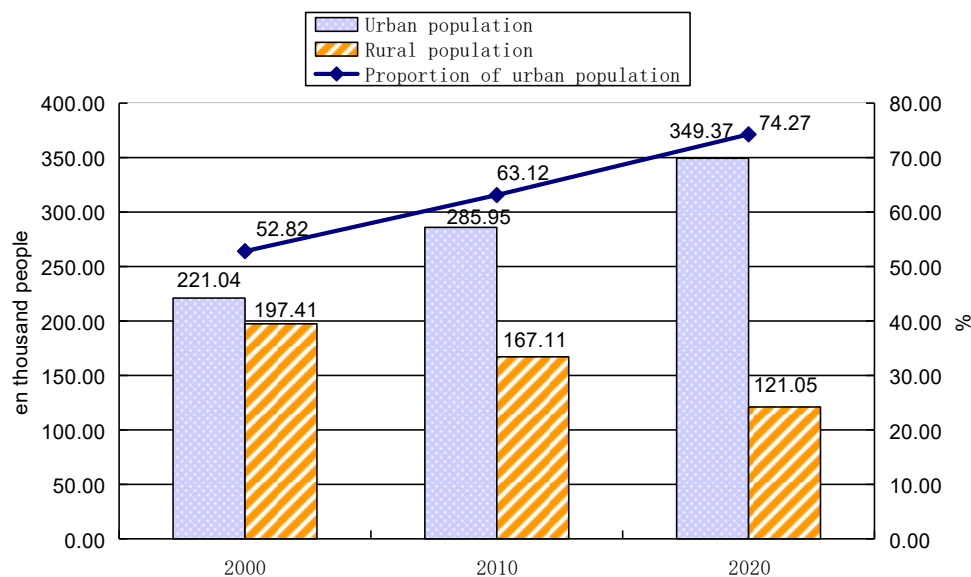


Figure 3: Changes in the permanent population of urban and rural areas in Zibo City

In the population of Zibo City, the number of people separated from households is 1.6474 million, an increase of 844800 people or 105.25% compared to 2010. The growth rate is 0.65 percentage points higher than the 104.60% in Shandong Province and 16.73 percentage points higher than the national average of 88.52%. The number of people flowing in from outside Zibo City is 663700, including 150300 from outside the province (registered outside the province) and 513400 from inside the province (registered in other cities within the province). From the perspective of population mobility within the city, there were 192700 people moving between districts and counties within the city (registered with other districts and counties within the city), and 791100 people moving between townships (registered with other townships within the city).

3. DEVELOPMENT OF THE REAL ESTATE MARKET IN THE PAST DECADE

In the past decade, Zibo City has resolutely implemented the national regulation policies on the real estate market, established and improved the joint conference system for real estate market regulation in Zibo City, strengthened the organization, leadership, and overall coordination of the city's real estate market regulation work, continuously expanded the scale of real estate development in the city, further improved the residential attributes of commercial housing, and maintained stable and healthy development of the development market.

3.1 The Scale of Commercial Housing Construction is Steadily Expanding

From the perspective of construction area of commercial housing, in the past decade, the construction scale of commercial housing in Zibo City has steadily expanded. The construction area of commercial housing in the city has increased from 12.547 million square meters in 2010 to 31.294 million square meters in 2020, with an average annual growth rate of 9.6%. From the perspective of the growth rate of construction area of commercial housing, except for negative growth in 2015 and 2017, all other years have maintained positive growth. In 2020, the construction area of commercial residential buildings was 22.516 million square meters, accounting for 71.9% of the total construction area of commercial housing. As shown in Figure 4.

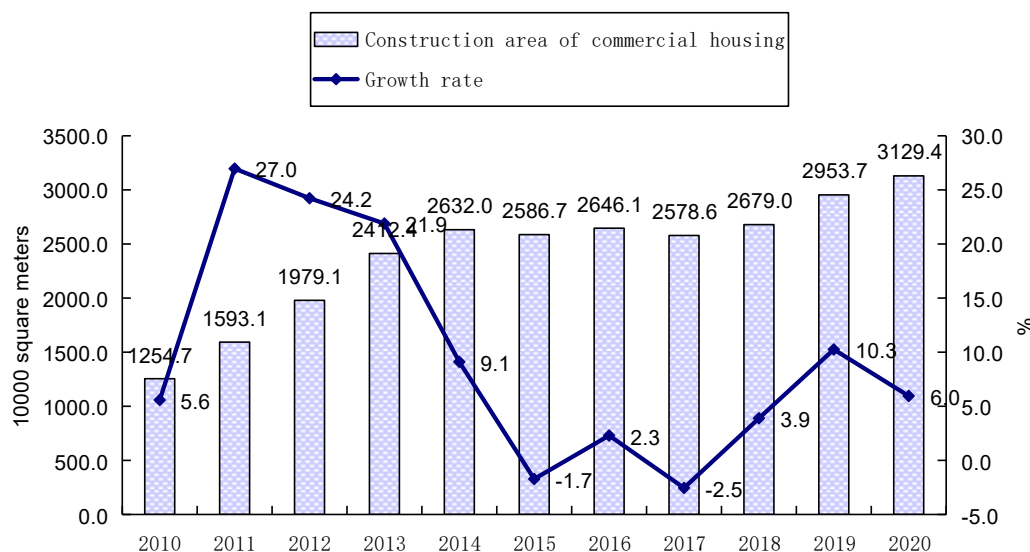


Figure 4: Construction Area of Commercial Housing in Zibo City from 2010 to 2020

From the perspective of the newly started and completed area of commercial housing, in the past decade, the newly started area of commercial housing in Zibo City has grown rapidly. From 2011 to 2020, the cumulative newly started area of commercial housing in the city was 66.284 million square meters, with an average annual growth rate of 3.6%. Among them, the newly started area of commercial housing in 2020 reached 8.207 million square meters. From 2011 to 2020, the cumulative completed area of commercial housing in Zibo City was 34.142 million square meters, with an average annual growth rate of 2.8%. Among them, the completed area of commercial housing reached 2.654 million square meters in 2020. From 2011 to 2020, the newly started and completed areas of commercial housing were 50.212 million square meters and 26.577 million square meters, respectively, accounting for 75.8% and 77.8% of the total newly started and completed areas of commercial housing, respectively. As shown in Figure 5.

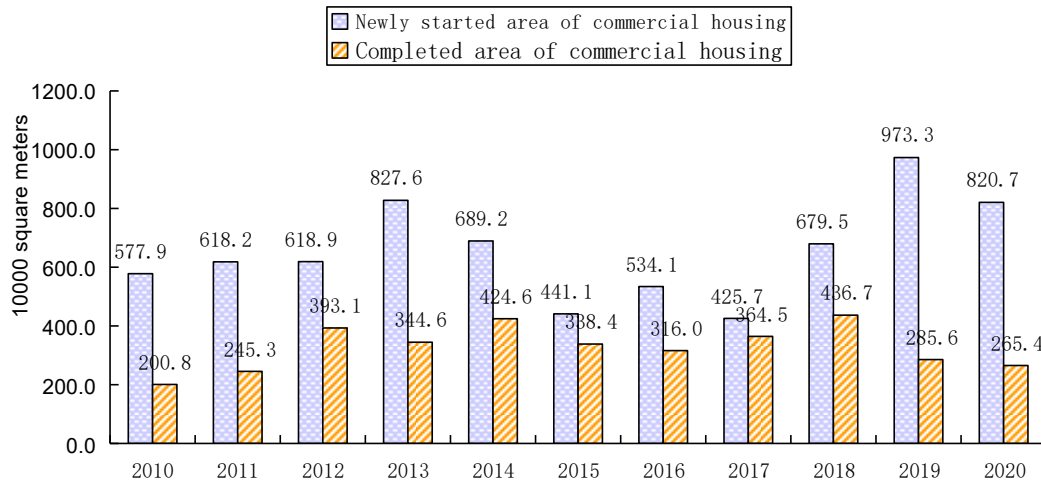


Figure 5: New construction area and completion area of commercial housing in Zibo City from 2010 to 2020

3.2 Steady Growth in Real Estate Development Investment

Over the past decade, real estate development investment in Zibo City has steadily increased. From 2011 to 2020, the city has completed a total of 243.05 billion yuan in real estate development investment. The amount of real estate development investment has increased from 16.7 billion yuan in 2010 to 36.69 billion yuan in 2020, with an average annual growth rate of 8.2%. Except for negative growth in 2012, 2015, and 2016, all other years have maintained positive growth. As shown in Figure 6.

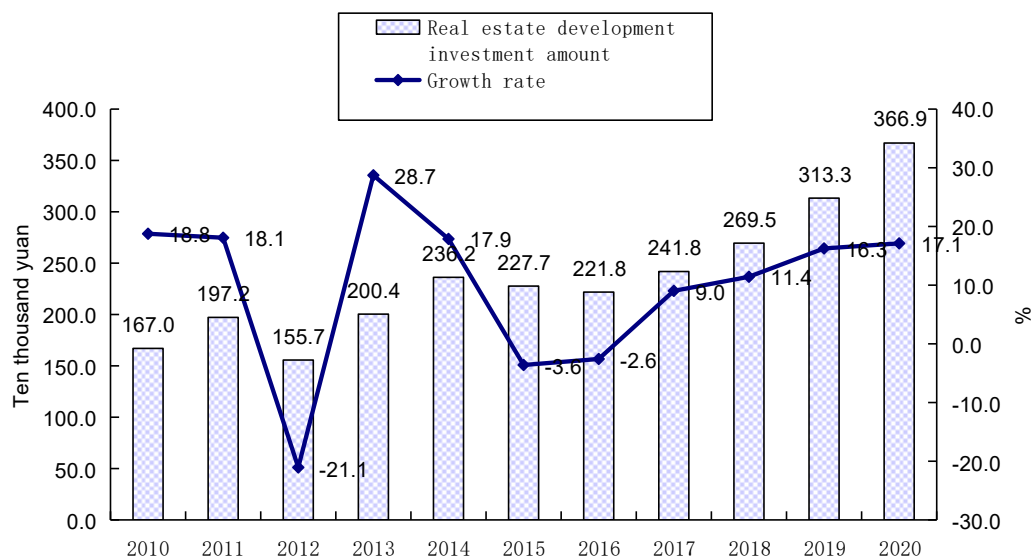


Figure 6: Investment in Real Estate Development in Zibo City from 2010 to 2020

From the perspective of districts and counties, in 2020, the real estate development investment in Zhangdian, Huantai, Linzi, and Zhoucun exceeded 3 billion yuan, with 13.64 billion yuan, 3.73 billion yuan, 3.61 billion yuan, and 3.46 billion yuan respectively. The total real estate development investment completed by the four districts and counties was 24.43 billion yuan, accounting for 66.6% of the total investment completed in the city, a decrease of 11.2 percentage points compared to 2010.

3.3 Rational Adjustment of the Sales Market for Commercial Housing

Over the past decade, the commercial housing sales market in Zibo City has made rational adjustments. From 2011 to 2020, the city has completed a total sales area of 50.697 million square meters of commercial housing. The sales area of commercial housing decreased from 6.548 million square meters in 2010 to 4.958 million square meters in 2020, with an average annual decrease of 2.7%. The highest sales area of commercial housing was 7.071 million square meters in 2011, and the lowest was 3.908 million square meters in 2014. As shown in Figure 7.

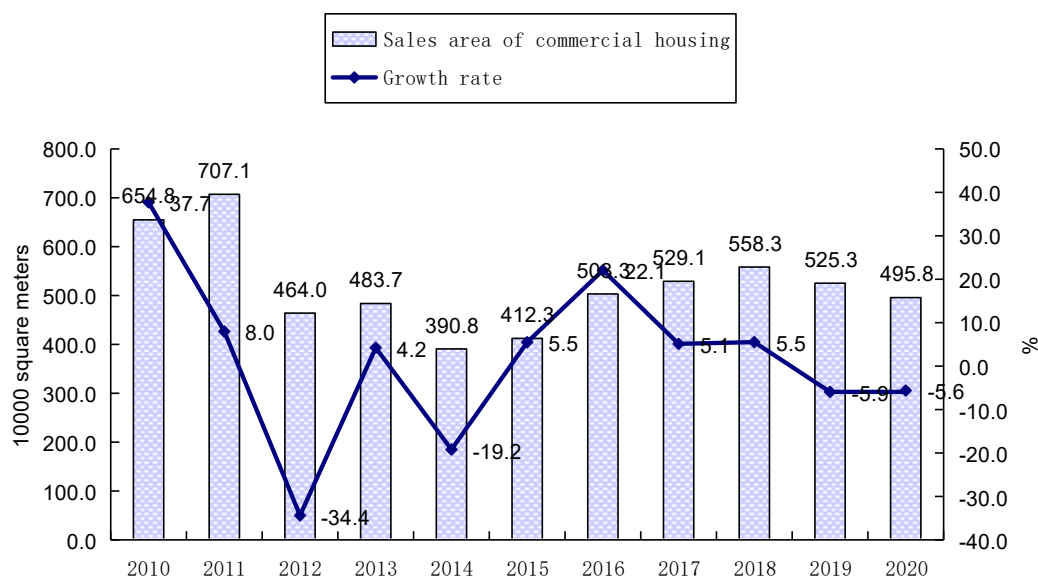


Figure 7: Sales Area of Commercial Housing in Zibo City from 2010 to 2020

From the perspective of districts and counties, in 2020, the sales area of commercial housing in Zhangdian, Linzi, Zichuan, and High tech Zone was close to or exceeded 500000 square meters, with 1.366 million square meters, 574000 square meters, 564000 square meters, and 497000 square meters respectively. The total sales area completed by the four districts and counties was 3.002 million square meters, accounting for 60.6% of the total sales area of commercial housing in the city, a decrease of 12.8 percentage points compared to 2015.

3.4 The Supply and Demand Structure of Real Estate Continues to Optimize

Over the past decade, the supply and demand structure of the real estate market in Zibo City has been continuously optimized, with a focus gradually shifting towards the residential sector and the demand for improved housing.

From the perspective of investment structure, in 2020, residential investment in Zibo City reached 27.63 billion yuan, accounting for 75.3% of real estate development investment. Among them, the investment in medium and large-sized residential units with an area of over 90 square meters, mainly focused on improving demand, was 26.68 billion yuan, accounting for 96.6% of residential investment, an increase of 11.6 percentage points compared to 2010. As shown in Table 5.

Table 5: Real Estate Development Investment in Zibo City by Apartment Type (in billions of yuan)

Year	Total Real Estate Development Investment	Residential Investment	Residential Investment (≤ 90 sqm)	Residential Investment (90-144 sqm)	Residential Investment (≥ 144 sqm)
2020	36.69	27.63	9.5	172.1	94.7
2010	16.7	13.12	19.7	86.8	24.6

From the perspective of sales structure, in 2020, the residential sales area in Zibo City was 4.56 million square meters, accounting for 92.0% of the total sales area of commercial housing. Among them, the sales area of medium and large-sized residential units over 90 square meters is 4.434 million square meters, accounting for 97.2% of the residential sales area, an increase of 14.8 percentage points compared to 2010, and the demand for improvement has become the focus of the market. As shown in Table 6.

Table 6: Commercial Housing Sales Area in Zibo City by Apartment Type (in ten thousand square meters)

Year	Total Commercial Housing Sales Area	Residential Sales Area	Residential Sales Area (≤ 90 sqm)	Residential Sales Area (90-144 sqm)	Residential Sales Area (≥ 144 sqm)
2020	495.8	456	12.6	319.8	123.5
2010	654.8	604.8	106.3	358	140.4

4. ANALYSIS OF THE IMPACT OF POPULATION CHANGES ON THE REAL ESTATE MARKET

4.1 The Relationship Between the Number of Permanent Residents and Housing Demand

According to the results of the seventh national population census, through the correlation calculation between the permanent population data of 16 cities in Shandong Province and the sales area data of commercial housing in 2020, the correlation coefficient between the number of permanent residents and the sales area of commercial housing in 16 cities reached 0.94, showing a strong positive relationship between the number of permanent residents and housing demand, that is, the more permanent residents in a city, the more housing demand in that city, and the population provides a strong support for the development of the real estate market. From the situation of 16 cities, Linyi City, Qingdao City, Weifang City, and Jinan City, which rank among the top 4 cities in terms of permanent population, all rank among the top 4 cities in terms of sales area of commercial housing in the province. However, Dongying City, Weihai City, Rizhao City, Zaozhuang City, and Binzhou City, which rank lower in terms of permanent population, except for Weihai City, which ranks 10th in the province in terms of sales area of commercial housing due to a higher proportion of out of town customers purchasing houses, all other cities rank after 10th. As shown in Table 7.

Table 7: Resident Population and Sales Area of Commercial Housing in 16 Cities of Shandong Province

Region	Permanent Population (10,000)	Rank	Commercial Housing Sales Area (10,000 sqm)	Rank
Jinan City	920.2	4	1335.7	3
Qingdao City	1007.2	2	1653.6	1
Zibo City	470.4	11	495.8	12
Zaozhuang City	385.6	13	515.8	11
Dongying City	219.4	16	272.6	16
Yantai City	710.2	7	1038.1	6
Weifang City	938.7	3	1312.4	4
Jining City	835.8	6	1111.4	5
Taian City	547.2	10	461.3	13
Weihai City	290.7	15	554.5	10
Rizhao City	296.8	14	326.7	15
Linyi City	1101.8	1	1522.2	2
Dezhou City	561.1	9	693.3	8
Liaocheng City	595.2	8	649.4	9
Binzhou City	392.9	12	442.9	14
Heze City	879.6	5	886.1	7

From the situation in Zibo City, the city's permanent population ranks 11th in the province, and the sales area of commercial housing ranks 12th. The population size is highly in line with housing demand. From the perspective of the number of newly added population, compared with the results of the sixth national population census in 2010, the permanent population of Zibo City increased by 173500, an increase of 3.83%, 2.16 percentage points lower than the provincial average growth rate of 5.99%. The annual average growth rate of the city's population was 0.38%, 0.20 percentage points lower than the provincial average growth rate of 0.58%. The slowdown in population growth will lead to a significant decline in the demand for the real estate market.

4.2 The Relationship Between Urban Rural Structure of Permanent Residents and Housing Demand

Through the correlation calculation between the urban population data of 16 cities in Shandong Province in the seventh national population census and the commercial housing sales area data in 2020, the correlation coefficient is 0.96, showing a high positive relationship between the two, indicating that the real estate market has a large development space in cities with a large urban population. From the situation of 16 cities, Qingdao, Jinan, Linyi, Weifang, and Jining, which rank among the top 5 cities in terms of urban population, all have the highest sales area of commercial housing in the province. Dongying City and Rizhao City, which rank lower in terms of urban population, also have the lowest sales area of commercial housing in the province. As shown in Table 8.

Table 8: Urban Population and Sales Area of Commercial Housing in 16 Cities of Shandong Province

Region	Urbanization Rate (%)	Rank	Urban Population (10,000)	Rank	Commercial Housing Sales Area (10,000 sqm)	Rank
Jinan City	73.5	3	676	2	1335.7	3
Qingdao City	76.3	1	768.8	1	1653.6	1
Zibo City	74.3	2	349.4	9	495.8	12
Zaozhuang City	59.3	12	228.7	13	515.8	11
Dongying City	71.4	4	156.7	16	272.6	16
Yantai City	67.3	6	478	6	1038.1	6
Weifang City	64.4	7	604.6	4	1312.4	4
Jining City	60.1	10	502.2	5	1111.4	5
Taian City	63.9	8	349.8	8	461.3	13
Weihai City	70.2	5	204.1	14	554.5	10
Rizhao City	61.1	9	181.5	15	326.7	15
Linyi City	55.1	13	606.6	3	1522.2	2
Dezhou City	53.3	14	299.1	11	693.3	8
Liaocheng City	53	15	315.3	10	649.4	9
Binzhou City	59.6	11	234.3	12	442.9	14
Heze City	50.7	16	446.2	7	886.1	7

From the situation in Zibo City, the city's urban population ranks 9th in the province, and the sales area of commercial housing ranks 12th. With the advancement of urbanization, the center of gravity of the city's real estate market is further concentrated towards the central urban area. From the perspective of real estate development investment, in 2021, the central urban area (including Zhangdian District, High tech Zone, and Economic Development Zone) completed real estate development investment of 22.7 billion yuan, an increase of 21.7% over the previous year, and the proportion of real estate development investment in the city increased from 50.8% last year to 54.8%. From the sales area of commercial housing, in 2021, the central urban area (including Zhangdian District, High tech Zone, and Economic Development Zone) completed a sales area of 2.449 million square meters of commercial housing, an increase of 7.5% over the previous year, and the proportion of the city's commercial housing sales area increased from 45.9% last year to 46.3%.

It should be noted that according to international experience, when the urbanization rate reaches 30% to 70%, it means that urbanization is in an accelerated stage, and the demand for housing and commercial real estate brought about by population mobility is relatively prosperous during this period. When the urbanization rate reaches around 80%, the regional structure of the population becomes relatively stable, and the flow of population from rural areas to cities basically stops, and even reverse flow may occur. With the stability of the regional structure of the population, the demand for the real estate market is also relatively stable. In 2020, the urbanization rate of Zibo City was 74.27%, ranking second in the province, 11.22 percentage points higher than the province's 63.05% and 10.38 percentage points higher than the national 63.89%. The urbanization rate in Zibo City is already relatively high, indicating a weakening of population flow to urban areas. Although there is still room for demand in the real estate market, the growth rate of demand is beginning to weaken, which is consistent with the low growth rate of sales area of commercial housing in recent years.

4.3 The Relationship Between Household Size, Per Capita Housing Area, and Housing Demand

The family is the basic unit of housing demand. In the case of a constant total population, the smaller the average population per household, the more households there are, and the stronger the housing demand. In recent years, due to rapid economic development and the continuous increase in residents' income levels, coupled with the gradual change in lifestyle concepts, the size of two person and three person households has been on the rise and has become the main family model. The change in household population size has led to an increase in the total number of households, becoming one of the important reasons for the rise in housing demand. According to the data of the seventh national population census, the average household population of Zibo in 2020 will be 2.52, 0.29 fewer than 2.81 in 2010. There are a total of 1.7082 million households in the city, an increase of 183800 households or 12.05% compared to 2010. The increase in the number of households has formed demand support for the real estate market.

In addition, the seventh national census data shows that although the size of Zibo's households is shrinking, the per capita housing area continues to increase. In 2020, the per capita housing construction area of households in the

city was 41.05 square meters, an increase of 7.41 square meters or 22.03% compared to 2010. Among them, the per capita housing construction area of urban households in the city is 39.54 square meters, an increase of 5.88 square meters or 17.47% compared to 2010. The per capita housing construction area of urban households in all districts and counties is above 35 square meters. Reflected in the sales area of commercial housing, in 2020, the sales area of residential properties over 90 square meters in Zibo City was 4.434 million square meters, accounting for 97.2% of the total residential sales area, an increase of 14.8 percentage points from 2010. Among them, the sales area of residential properties over 144 square meters is 1.235 million square meters, accounting for 27.1% of the total residential sales area, an increase of 3.9 percentage points from 2010.

4.4 The Relationship Between the Age Structure of the Permanent Population and Housing Demand

The demand and purchasing power for housing vary among different age groups, with the 15-64 age group being the absolute main force in purchasing commercial housing. Among them, the population aged 20-35 is the group with the strongest housing demand. The housing needs of homebuyers in this age group are mainly for first-time home buyers and wedding homes, which are rigid demands with relatively low price elasticity; The population aged 36-50 is the second largest group of homebuyers, who have stable occupations. With the increase of income and savings, the demand for housing is mostly for improvement. Generally, the purchase area is large, and some families even buy houses for their children's marriage. At the same time, this group of people is often the main body of investment oriented home purchases; The housing needs of homebuyers aged 51-60 are both improvement oriented and retirement oriented; People aged 60 and above tend to purchase homes for their elderly care.

According to the data of the seventh national population census, the age structure of Zibo's permanent population in 2020 will show the characteristics of "two rises and one fall", that is, the proportion of children and the elderly in the city's population will increase, while the proportion of working age population will decrease. Among them, the population aged 0-14 is 700500, accounting for 14.89%, an increase of 0.31 percentage points from 2010; The population aged 15-59 is 2.9105 million, accounting for 61.87%, a decrease of 8.55 percentage points from 2010; The elderly population aged 60 and above is 1.0932 million, accounting for 23.24%, an increase of 8.24 percentage points from 2010. The proportion of working age population in Zibo City has decreased, which will lead to a decrease in residents' purchasing power for housing; The proportion of children in the city has slightly increased, reflecting that the adjustment of the birth policy has achieved certain results. The number of families with two or three children is gradually increasing, which will generate greater demand for housing with three or more bedrooms; The proportion of elderly population is increasing, and the city has entered a deeply aging society. The demand for elderly care real estate will increase.

5. CONCLUSION

Research shows that the long-term focus of real estate is on population, and there is a high correlation between population data and real estate demand, which is an important factor in judging the development of the real estate market. The number of permanent residents, urbanization rate, household size, and age structure of the population have important impacts on the size trend and structural changes of the real estate market.

- 1) The more permanent residents in a city, the more housing demand in that city, and the population provides a strong support for the development of the real estate market. The slowdown in population growth will lead to a significant decline in the demand for the real estate market.
- 2) Indicating that the real estate market has a large development space in cities with a large urban population. The urbanization rate is already relatively high, indicating a weakening of population flow to urban areas. Although there is still room for demand in the real estate market, the growth rate of demand is beginning to weaken.
- 3) The family is the basic unit of housing demand. In the case of a constant total population, the smaller the average population per household, the more households there are, and the stronger the housing demand. The increase in per capita housing area has also become a key factor contributing to the rising housing demand.
- 4) The demand and purchasing power for housing vary among different age groups, with the 15-64 age group being the absolute main force in purchasing commercial housing. The proportion of working age population has decreased, which will lead to a decrease in residents' purchasing power for housing.

6. RECOMMENDATIONS

In the long run, in the context of slowing population growth and urbanization rate, in order to promote the sustained, stable and healthy development of the real estate market in Zibo City, it is necessary to follow the development concept centered on the people. On the basis of accelerating economic development, improving urban attractiveness, and continuously increasing population size, we must unwaveringly adhere to the positioning of "housing for living, not for speculation", scientifically plan, reasonably guide, and continuously strengthen and improve the construction of the housing market system and housing security system.

6.1 Accelerate Economic Development and Promote Consumption Upgrading in the Real Estate Market

Developing the economy is the key to solving all problems. Adhering to the people as the center, taking the people's aspiration for a better life as the goal of struggle, ensuring that all people have more sense of gain in the joint construction and sharing of development, and constantly promoting the all-round development of people and the common prosperity of all people are the spiritual essence of Xi Jinping's thought of socialism with Chinese characteristics for a new era. The stable and healthy development of the real estate market cannot be achieved without the high-quality development of the city's economy. Only with economic growth and continuous improvement of residents' income levels can their housing consumption ability be enhanced. The whole city should focus on the transformation and upgrading of old industrial cities, and strive to do a good job in "innovative green, kinetic energy conversion and optimal stock" and "focusing on the future, leading the expansion of high-end". We will promote the overtaking and transformation of traditional industries, the overtaking and accumulation of new economy and future industries, and strengthen the promotion of Zibo Phoenix's rebirth and accelerated rise. On the basis of accelerating economic development and continuously improving residents' income levels, we will steadily implement a long-term mechanism for the healthy development of the real estate market, adhere to the positioning of "houses are for living in, not for speculation", base ourselves on the current development status of the real estate market, implement policies tailored to the city and local conditions, fulfill the main responsibility of the city government, stabilize prices, housing prices, and expectations, and promote the stable and healthy development of the real estate market.

6.2 Enhance Population Size and Lay a Solid Foundation for the Development of the Real Estate Industry

Population is an important factor affecting the development of the real estate market. A slowdown in population growth will not only directly reduce housing demand, but also affect economic development, reduce residents' ability to purchase houses, and thus affect the real estate market. We must make every effort to increase the population size of cities, cultivate and strengthen consumer groups, and lay a solid foundation for the stable and healthy development of the real estate market. One is to actively implement policies that encourage childbirth and increase the birth rate. According to the national decision on optimizing the birth policy to promote long-term balanced population development and related supporting policies, we aim to improve the level of eugenics and child rearing services, develop a universal childcare service system, reduce the costs of childbirth, nurturing, and education, and provide birth subsidies, extended maternity and paternity leave, and other guarantee and encouragement measures to alleviate the concerns of the masses about childbirth, promote the achievement of moderate birth rates, and promote long-term balanced population development. The second is to implement long-term policies of "snatching" and "retaining" personnel. Further implement various measures of "37 Items of Zibo's Talent Policy", constantly attract high-level talents to work and start businesses in Zibo, local college students with registered residence return to Zibo to work and start businesses, and college graduates in Zibo stay in Zibo to work and start businesses. By creating "Five Good Cities", issuing talent rewards, and providing talent housing, we will do everything possible to attract and retain talents. The third is to further promote a new type of urbanization centered around people. By continuously increasing efforts in infrastructure construction, enhancing the comprehensive carrying capacity of cities, establishing employment service systems, and improving living security mechanisms, we aim to attract more rural and migrant populations to work, live, and reside in Zibo, further expanding the demand for home purchases.

6.3 Carry Out Scientific Regulation and Guide the Rational Development of the Real Estate Market

The regulation of the real estate market is a long-term task in the process of urbanization. It is necessary to implement a long-term mechanism for the real estate market, strengthen monitoring and early warning of the real estate market, and carry out precise and scientific regulation. One is to start from the supply side and make scientific planning, based on urban development and population changes, reasonably control the investment of

funds and the intensity and pace of land transfer, maintain the balance of supply and demand in the real estate market, and promote a virtuous cycle and healthy development of the real estate market. The second is to adhere to market-oriented measures to meet the demand for both basic and improved housing. We need to continuously improve the quality of housing, improve related supporting facilities, and fully meet the improvement needs of residents. In particular, we need to coordinate the supply of the real estate market with the characteristics of population changes. Based on factors such as population age structure, family size, and the third child birth policy, we should adjust the residential area and layout structure reasonably, and appropriately increase the construction of compact multi bedroom residential units. We need to launch more housing products suitable for the elderly based on the deepening of population aging. The third is to take multiple measures and focus on doing a good job in housing security. Focusing on low-income groups, new citizens, and young people in cities, we will vigorously promote the construction of affordable rental housing and talent housing, further promote the establishment and improvement of a housing security system that combines renting and purchasing, and fully meet the housing needs of different levels of people.

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