

# Research on the Impact of China's Population Aging on Economic Development

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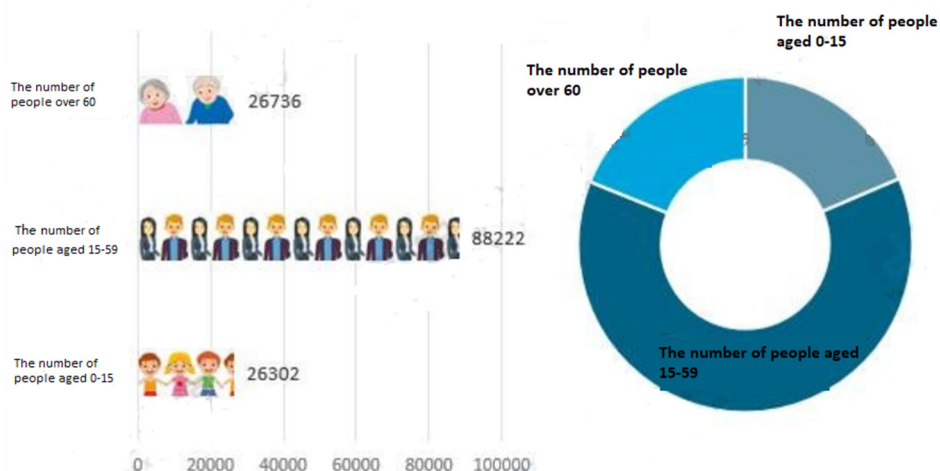
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**Abstract.** China has entered an aging society, and population aging has a different impact on the economy, this paper studies the characteristics of China's population aging, and the causes of aging, this paper expounds on the population aging on consumption, savings, labor, technology, etc. The impact of economic factors, and put forward from the Angle of social welfare and pension industry development strategy to promote the development of the economy.

**Keywords:** Population Aging; Economic Development.

## 1. Introduction

Population aging means that under the combined effect of the decline in population fertility and the prolongation of average life expectancy, the proportion of the aging population aged 65 and over in the entire population is more than 7%, or the proportion of the aging population aged 60 and over in the entire population is 10% or more, then the country is aging [1]. Population aging is a transformative concept, which specifically refers to the transition from a population with high fertility and low life expectancy to a population with low fertility and low mortality [2]. This shift means a growing proportion of the aging population in a country. According to Chinese statistics, as of the end of 2019, the number of people aged 60 and above exceeded 250 million, accounting for more than 18% of the entire population. Compared with 2018, the proportion of China's population aged 60 and over to the entire population increased by 0.2%. As of 2021, the number of people aged 0-15 in China is 263.02 million, a decrease of 5.28 million compared with 2020, and the number of people aged 16-59 is 882.22 million, an increase of 2.47 million compared with 2020. The above population is 267.36 million, an increase of 3.29 million over 2020[3], (Figure 1). It can be seen that China is in an accelerated stage of population aging, which will have an impact on China's economic development.



**Fig 1.** Distribution map of China's population age structure in 2021

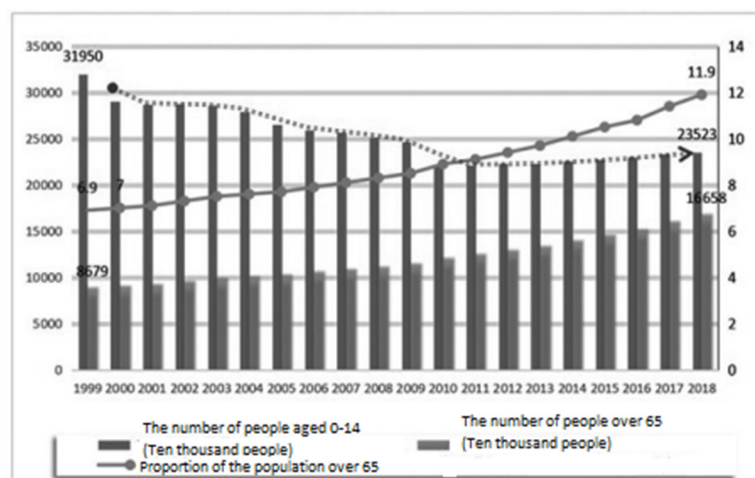
Different from developed countries, China's population aging is developing rapidly, and it presents the following characteristics: 1. China has a large base of the elderly population, according to China's

economic data released by the National Bureau of Statistics in 2021. The population aged 60 and above is 267.36 million, accounting for 18.9% of the entire population, of which 200.56 million are aged 65 and above, accounting for 14.2% of the entire population [4]. The 260 million aging population proves that not only is the aging population large, but also the aging population accounts for a high proportion. As shown in Figure 2, the proportion of the aging population in China reached 7.0% in 2000, marking China's entry into an aging society. The proportion of the aging population is 11.9% in 2018, and the proportion of the aging population in 2021 is 18.9%. It can be seen that China has entered an aging society for a short period, but the rate of aging is relatively fast, and the growth rate of the number of aging people is still rising. Therefore, the degree of China's population aging continues to deepen. 2. There is a situation of getting old before getting rich. Compared with developed countries, China's economy is in a transitional period and has not reached the developed level. It has entered an aging society rapidly, and a series of social problems such as pensions will arise. 3. China's population aging presents the phenomenon of unbalanced development in time and space. At this stage, China is in a period of rapid population aging. It is estimated that by 2025-2050, China's population aging will enter the most serious period, and the proportion of the aging people in the entire population will reach 34% [5]. After 2050, the growth rate of China's population aging will gradually decline. In addition, from a spatial perspective, there are differences in the depth and development speed of population aging in different regions of China. The degree of population aging in China can be divided into four steps. The first step is Shanghai, which has entered a period of high aging. The second step is Beijing and Tianjin, and Zhejiang is in the middle and high aging period. The third step is Hubei, Shandong, and Liaoning, which are in the moderate aging stage. The fourth step is Inner Mongolia, Heilongjiang, Gansu and other provinces are in the transition period from an adult society to an aging society [6]. China's population aging has gradually deepened from the western region to the eastern region, and the speed and degree of population aging in economically developed areas are higher than in the economically less-developed areas. Such development characteristics make the government need to take into account regional differences when formulating economic policies.

Controlling population growth and implementing family planning were once China's basic national policies, and one of the reasons for the rapid development of China's population aging. The level of economic development, the household registration system, and the level of social welfare have also exacerbated the regional differences in China's aging population. For example, the mobility of the labor force has increased the proportion of the young population in the immigration area, and increased the proportion of the aging population in the emigration area. In addition, the well-established pension system and social welfare in economically developed areas attract the aging population with better economic conditions to gather, increasing the proportion of the local population aging, while the opposite is true in economically less-developed areas.

People are the main body of economic and social development. Population aging has a profound impact on economic and social development. Many scholars have studied the impact of population aging on economic growth. Some scholars believe that population aging is not conducive to economic growth. Bloom and Williamson, in *Demographic Transition and the East Asian Economic Miracle*, studied the impact of demographic structure change on the economy and concluded that there was a negative correlation between them [7]. Lindh and Malmberg collected panel data from 34 countries from 1950 to 1990 and concluded that changes in population age structure have a significant negative impact on per capita economic growth rate [8]. Taking the United States as an example, Thornton analyzed the data from 1956 to 1995 in the United States, showing that aging will increase the burden of support and reduce the saving rate [9]. Compared with developed countries, China's population aging has problems such as urban-rural imbalance, gender ratio imbalance, and the social welfare system is not perfect. The impact of population aging on economic development is more complex. Yu Tao believes that entering an aging society with poor economic conditions will result in a heavier support burden on the economy [10]. From the perspective of labor factors, Peng Xiujian proposed that population aging will reduce the growth of the labor force, thereby reducing the growth rate of

physical capital and slowing down the growth rate of China's economy [11]. By analyzing the status of population aging in China and South Korea, Bai Zhongli found that the labor supply and a savings rate of aging societies will decline, slow down the economic growth rate, reduce government taxes, and generate fiscal deficits [12]. Taking Shanghai as an example, Xiao Lanhua pointed out that due to the influence of traditional Chinese thinking, the elderly tend to save, thus inhibiting the optimization of consumption structure and the improvement of consumption level, thus inhibiting the development of Shanghai's economy [13]. To sum up, for developing countries, the population aging will reduce social employment, reduce social human capital, and reduce the proportion of investment, and the government needs to increase social medical care, social insurance, and social relief. Weakening the ability of society to expand reproduction will result in a decline in social capital and weaken the kinetic energy of economic growth. Some scholars believe that population aging is conducive to economic growth, promotes the adjustment of industrial structure, and brings economic growth. For labor-intensive industries, population aging leads to a decrease in the labor force, an increase in labor prices, and Labor-intensive industries lost price advantage. Therefore, it will promote industrial upgrading. In addition, the increase in the aging population will form a consumer market for the elderly and drive the expansion of the elderly industry. Due to the improvement in living standards, people aged 60-65 can still work. Therefore, raising the retirement age and increasing the immigrant population can alleviate the population Aging. Yuan Zhigang believes that population aging will not reduce residents' savings rate, but will encourage residents to increase their savings [14]. Chang Zhongze believes that population aging will promote people's attention to human capital, education investment, and technological innovation. From the perspective of human capital, investment in education increases human capital, thereby promoting technological progress. When the technological progress rate is higher than the aging rate, the additional burden brought by aging can be absorbed by technological progress [15].



**Fig 2.** Evolution of the aging population in my country from 1999 to 2018

Based on studying the characteristics of China's population aging, this paper explores the impact of population aging on China's economic development and proposes measures to reduce the negative effects of population aging on the economy, to promote China's economic development.

## 2. The Impact Mechanism of Population Aging on Economic Development

Marshall believed that population growth affects economic growth by affecting the quantity and productivity of the labor force. As the main body of production, not only the size and quality of the population can affect economic growth through production factors such as labor, capital, and technological progress. The population structure also affects economic growth. First, this article discusses the impact of population aging on consumption. Most scholars believe that population aging will reduce the consumption level of residents. Under the influence of traditional cultural concepts, the elderly will reduce consumption in consideration of the legacy wealth for future generations. With

the extension of life expectancy and the reduction of family size, people are concerned about the pension, the source of living after retirement, which leads to a decline in consumption and consumption ability. Therefore, due to the insufficient supply of social security, the burden of raising the elderly, and the enhancement of the incentive to give, people tend to increase precautionary savings and reduce consumption, which shows that population aging has a restraining effect on consumption. However, it has a positive effect on household savings. In addition, the increase in the elderly changes the proportion of total output used for consumption and savings, which in turn affects investment. China's Population Aging leads to an increase in the savings rate of the whole society and the expansion of the scale of savings, which provides sufficient capital for social investment, and the capital supply increases accordingly. The cost of financing is thus reduced, which in turn leads to an increase in investment. Therefore, population aging has a positive impact on fixed asset investment. Labor is the core element of economic growth. The effect of population aging on the quantity of labor supply is reflected in the labor force participation rate. Some scholars believe that population aging can increase the labor force participation rate. The improvement in medical care has prolonged people's life expectancy. To reduce the pressure of support, some elderly people with better health conditions increase their working hours, reduce the risk of old-age care, and increase the labor force. Population aging provides more employment opportunities for the new labor force or the unemployed. With the development of the population aging, resulting in "silver industries". The development of these industries provides more jobs, prompts the labor force to enter the labor market, and promotes the labor force participation rate. Some scholars believe that population aging reduces the labor force participation rate. To save labor costs and speed up enterprise development, some enterprises tend to recruit young employees and encourage employees approaching retirement age to choose early retirement, resulting in a decline in the labor force participation rate. In addition, older workers can no longer continue to engage in related labor due to the decline in labor capacity and are forced to withdraw from the labor market, which will also lead to a decline in the labor force participation rate. It can be seen that the impact of population aging on the labor participation rate is complex, with both positive effects of increasing the labor participation rate and negative effects of inhibiting the labor participation rate. The impact of population aging on labor quality is reflected in human capital. In the short term, the slower rate of adoption of new knowledge and technologies by the elderly will negatively impact human capital. But in the long run, Chinese people are influenced by traditional concepts. As life expectancy increases, parents will increase investment in education to improve the future development of their children. This is not only a consumption behavior but also an investment behavior. This kind of investment will improve the education and ability of children, thereby improving the overall level of China's labor force. Therefore, in the long run, China's population aging has a significant positive impact on human capital, which can indirectly promote economic growth.

Population aging affects technological progress. Technological progress has always been regarded as the main driving force for economic growth, but population aging has brought great challenges to technological progress. The decline of the elderly's physical function weakens their willingness and ability to accumulate human capital through training and learning. At the same time, the increase in the aging population will increase the state's social security expenditures such as pensions and medical care, and squeeze the state's investment in education and research and development. This is not conducive to technological progress. However, the reduction of labor supply will lead to the renewal of capital and technology. China's population aging on the level of scientific and technological innovation varies in different areas. Under the influence of low fertility rates and high levels of population aging in the eastern areas, labor costs are relatively high. The mode of creating output value for enterprises has changed from relying on reducing labor costs to creating profits to technological innovation. so the population aging has increased the level of local technological innovation. In contrast, due to higher fertility rates and lower population aging levels in the central and western areas, these areas still have certain advantages in labor supply and relatively low labor costs. The "reverse forcing" effect is smaller than that of the eastern areas.

### **3. Relevant Measures to Improve Economic Development under the Background of Population Aging**

China will be in the process of population aging for a long time, and the government needs to take active measures to reduce the negative impact of population aging on the economy. First, attach importance to talent training and turn demographic dividends into talent dividends. China's economic development is in the process of transformation from labor-intensive to technology-intensive. The government can increase the investment in education capital, improve the level of higher education, vigorously promote vocational education, pay attention to the cultivation of innovative talents in colleges and universities, cultivate high-end technology in various fields talents, increase human capital, accelerate the upgrading of China's industrial structure, and increase the industry's return to scale. In addition, attach importance to the development and utilization of elderly talent resources, carry out classes for the elderly, universities for the elderly, and provide a re-employment system or extend the retirement age for the elderly who can work, to give full play to the "residual value" of elderly talents.

Accelerate industrial adjustment and develop the elderly market. With the increase of the population aging, the needs of the elderly are also increasing, such as entertainment needs, medical care needs, pension needs, living consumption needs, education needs for the elderly, etc., which also bring business opportunities to the development of the industry. The government to adjust industrial policies, develop industries for the elderly, such as assistive devices, rehabilitation, medical care, elderly care institutions, and other industries, accelerate the construction of a smart elderly care industry, and formulate an industry development strategy that meets the needs of the elderly and improves policies to support the development of the elderly industry.

Improve the basic old-age insurance system and medical security system. China needs to establish a multi-level old-age insurance system to cope with the population aging, including the basic old-age insurance system, enterprise annuity, and personal savings old-age insurance, and gradually cover all social groups with the multi-level old-age insurance system. Improve the coverage of medical insurance and narrow the medical gap between urban and rural areas. For rural areas and the elderly without endowment insurance, special endowment and medical funds are set up to reduce medical burdens. Establish a nursing insurance system to solve the nursing problems of the elderly who cannot take care of themselves. Improve the social assistance system, establish a scientific and reasonable social assistance system, establish a social assistance information sharing mechanism, improve the social force participation mechanism, and ensure the life of the elderly in need. Improve the management level of social security services, and focus on strengthening the training of front-line social security workers in communities and streets. Increase the number of medical clinics in rural areas, and optimize the allocation of resources such as medical institutions and medical equipment.

Young people in today's society are reluctant to marry and have children early, and even choose to have only one child or become a DINK. Despite the implementation of the "universal two-child policy", due to problems such as high housing prices and difficulty in enrolling in school, the problem of low fertility has not been alleviated. Relevant studies have found that the "universal two-child policy" will not change the number of elderly people in China in the next 65 years. The continuous expansion of the scale and the deepening of the aging degree can only reduce the aging degree of the population to a certain extent. Therefore, the government needs to solve the problems of housing difficulties and school enrollment, relax restrictions on kindergartens, and take measures such as extending maternity leave.

Innovation is a new driving force for high-quality economic development. Technological innovation can reduce the use of labor. In the population aging, the government must seize the development opportunities brought by aging and actively explore new markets, Strengthen independent innovation capabilities, master core key technologies, transform economic growth models, reduce external dependence, and enhance the ability to resist risks.

#### 4. Summary

To sum up, the impact of population aging on economic development needs to be analyzed specifically for different periods and areas of population aging. In the future, research on the impact of population aging on economic development can be carried out from the impact of structural differences in population aging on the economy, and the impact of the health status of the elderly on the economy. The population is one of the factors affecting economic development. The high-quality development of China's economy also needs to rely on related factors such as human capital, technological innovation, and institutional innovation.

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