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The Economic Impact of China's Aging: Saving, Consumption and Labor Market

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Abstract: With the advancement of technology, everyone has the right to live longer, which leads to a serious problem: aging. This article examines the differences in consumption, savings, and investment between older and younger people, as well as the impact of aging on the labor market, technology, and the economy. Thus, people can know what aspects of society will be affected by the seriousness of aging. Through this research, it is found that older people are more rational in their consumption compared to younger people. Moreover, as aging becomes more serious, it will reduce the proportion and number of labor force causing labor shortage and also slow down the technological innovation. The problems associated with aging identified in this article can be a useful reminder of some of the implications of aging. Investors can invest in nursing homes, health care products, and elderly-friendly products to further develop the silver economy and drive economic development.

Keywords: aging problem, consumption, saving, innovation, economic growth

1. Introduction

As China's population continues to grow, it has contributed to the country's economic development and social progress, while at the same time exacerbating the aging process.As can be seen from figure1 that from the 1950s to the early 1980s: China was in a planned economy and the aging process was relatively slow. Late 80s to early 90s: With the deepening of reform and opening up, China's population structure changed. The elderly population began to gradually increase and the aging process accelerated. The elderly population exceeds 8% of the total population. Mid to late 1990s to early 2000s: China's aging process accelerated further, with the elderly population reaching 10% of the total population. From the mid-2000s to the early 2010s: China's aging process continued to accelerate.

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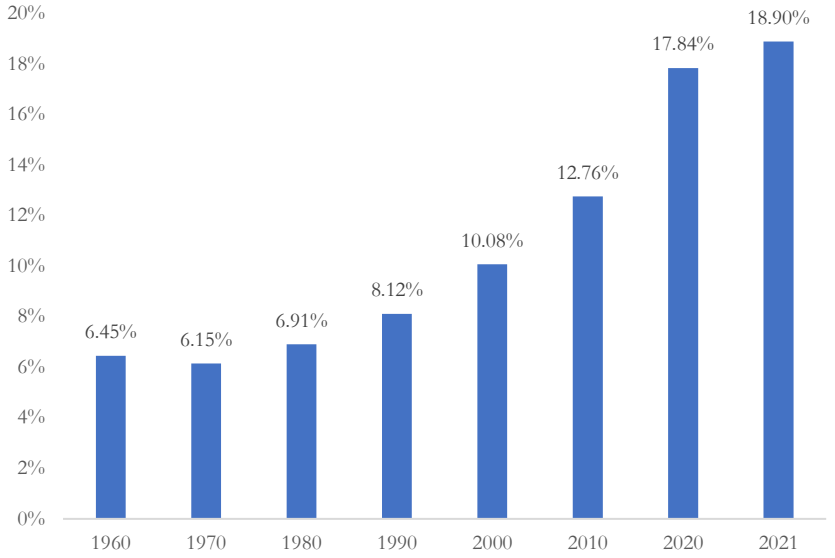

Figure 1: Population aged 60 and older in China.
Data source: www.statista.com
Photo credit: Original

The elderly population exceeded 12% of the total population. 2010s to present: China's aging process has further accelerated. According to the 2021 National Census data, the elderly population has reached a staggering 18.9% of the total population (please see Figure 1) [1]. And aging affects society in many ways. The first is the economic pressure, as the increase in the elderly population requires society to provide more elderly services and benefits. The second is the shortage of labor, as the elderly population increases, it will lead to a shortage of labor supply, which will affect the social and economic development. The third is the pressure on social security. The increase in the elderly population will put more pressure on the social security system, including pension insurance, medical insurance, unemployment insurance, etc. In summary, aging will have an impact on many aspects of socio-economic and social security. That's why people should pay attention to aging.

This paper examines the differences in consumption and savings allocation between the elderly and the young, and the changes in the labor market brought about by the aging of society. The remaining sections of this paper will be organized as follows: Section 2 analyze the impact of aging on consumption and saving; Section 3 analyze the impact of aging on workforce.

2. The Impact of Aging on Consumption and Saving

2.1. Income

The income structure of older and younger people changes significantly as they age. Young people's income comes from several sources: the first is wage income i.e., income earned through labor, which is the main source of income for most young people. These wages can come from businesses, government agencies or personal entrepreneurship, etc. The second is income from self-employment. Some young people choose to engage in self-employment, such as opening a store, doing business, etc. The income obtained through such activities can also be counted as self-employment income. The third is capital income, which includes interest, dividends, rents, etc., earned through capital investment or ownership of assets. The fourth is other income, such as alimony, bonuses, allowances, etc. And there is a completely different income structure for the elderly. The main income of the elderly is divided into the following components. The first component is pensions, which include

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pension insurance, corporate pensions, and in 2018 pensions accounted for 41% of the total income of seniors. The second is income from wages and labor. Some older adults continue to work in some capacity after retirement or start their own businesses, earning income from wages and labor, which accounted for 30% of the total income of older adults in 2018[2]. The third one is property income. Seniors may own some property, such as property and stocks, and receive income through rent and dividends. The fourth is government welfare and social assistance: including low-income insurance, medical assistance, disability benefits, pensions, etc. The fifth is child support and gifts from relatives and friends. Some older adults may rely on gifts from children or relatives or friends for income.

2.2. Consumption Habits

There is a clear difference in consumption between young and old people. Young people tend to buy fashionable and popular items, such as trendy clothes and shoes. As can be seen from figure2 that shopping can account for 17.2% of young people's monthly spending. And like to spend on entertainment for example: mobile games can account for 14.2 % of young people's monthly spending. And many young people love to travel around the world, and travel can account for 10.1% of young people's monthly expenses [3].

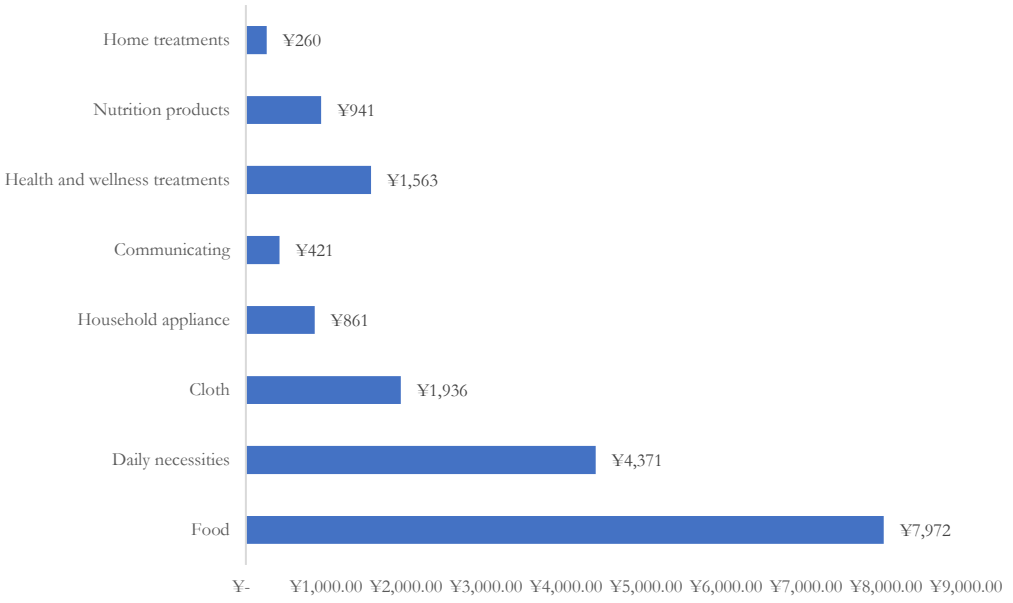

Figure 2: Daily spending on consumption of the elderly.
Data resource: White Paper on Food Consumption and Product Innovation Trends in China.
Photo credit: Original

But for the elderly, as their age increases and their body functions decline, the spending habits of the elderly change greatly from those of young people, who prefer to spend money on household goods. In terms of food, the elderly will choose healthy and digestible food, and in terms of clothing, the elderly will choose thicker and warmer clothing. In the 2019 statistics, the average annual spending of seniors was 22,600, with $15,560 spent on daily living and $2,763 spent on health and wellness. In Figure 2, it can be seen that daily life includes 7972 for food products accounting for 35.2% of the annual average consumption, 4371 for daily necessities accounting for 19.3% of the annual average consumption, 1936 for clothing items accounting for 8.5% of the annual average consumption, 861 for household appliances accounting for 3.8% of the annual average consumption

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and 421 for communication services accounting for 1.8% of the annual average consumption. In Figure 3, it can be seen that health consumption includes 1563 health and wellness treatments accounting for 6.9% of annual consumption, 941 nutrition products accounting for 4.1% of annual consumption and 260 home treatments accounting for 1.1% of annual consumption [4]. In the consumer decision, the elderly and young people also have differences, young people will pay more attention to the appearance of the product, the brand, and young people like to impulse spending more like the satisfaction that comes with the purchase, but for the elderly, the elderly usually choose good quality products, cost-effective, and the advice of their children and friends will influence their decisions.

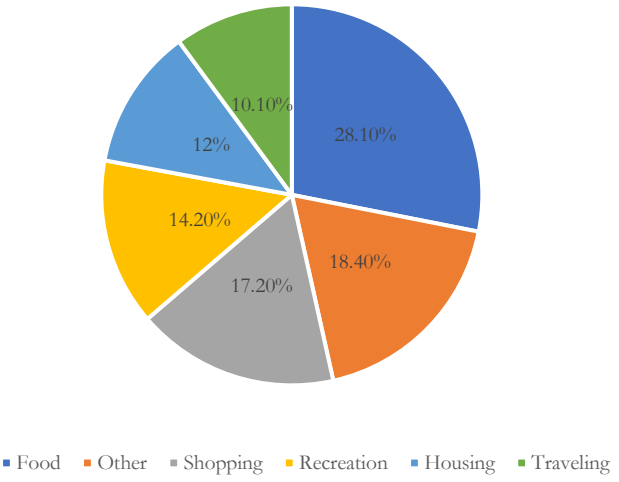

Figure 3: The proportional distribution of monthly expenses among young people.
Data resource: https://www.51cto.com/article/669079.html
Photo credit: Original

2.3. Investment

With the change of age, income, the investment of young and old people also occurred a great variability. As can be seen from figure4 those 20-29 years old young people tend to medium-high risk investment, while as people get older, more and more people tend to medium-low risk investment, after entering old age, people tend to low-risk investment (please see Figure 4). This phenomenon is mainly due to the following reasons. The first reason is the ability to take risks, as they get older, the income of the elderly decreases, so the ability to take risks will gradually weaken, thus, the elderly is more inclined to low-risk investments such as bank deposits, while for young people, with the gradual increase in wages, the corresponding ability to take risks is gradually increasing, so they will be more inclined to medium and high-risk investments. The second reason is that as they get older, older people are more inclined to a stable life and they will be inclined to stable investments so they will be inclined to low-risk investments. But for young people, they will be more inclined to high-risk and high-return things, so they will tend to high-risk investments [5].

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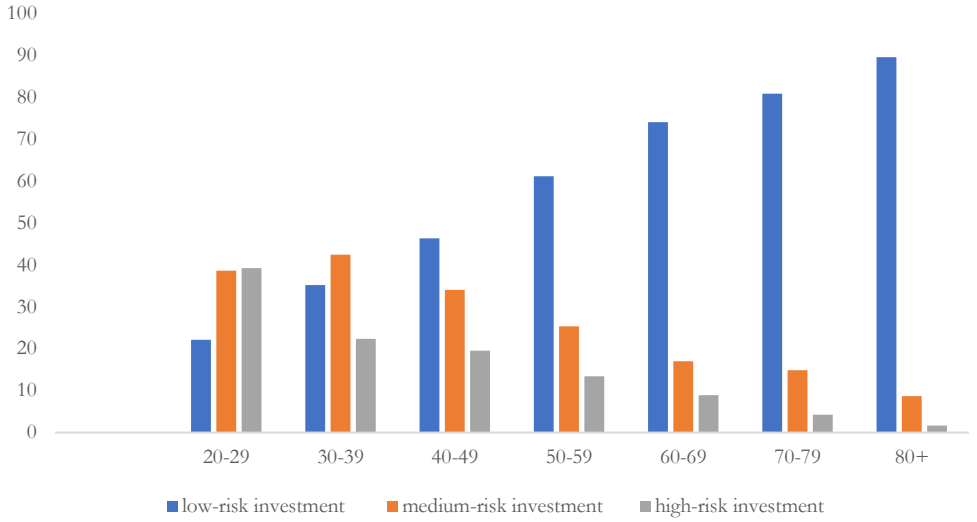

Figure 4: Investment preference by age.
Data resource: The Influence of Population aging on Investment Risk Preference
Photo credit: Original

3. The Aging Problem's Influence on the Labor Market

3.1. Labor Force

The aging problem makes the proportion of the elderly population increases, which will naturally lead to the reduction of the proportion of children or the working population. The data of population in China at the end of each year from 1998 to 2018 are as Figure 5:

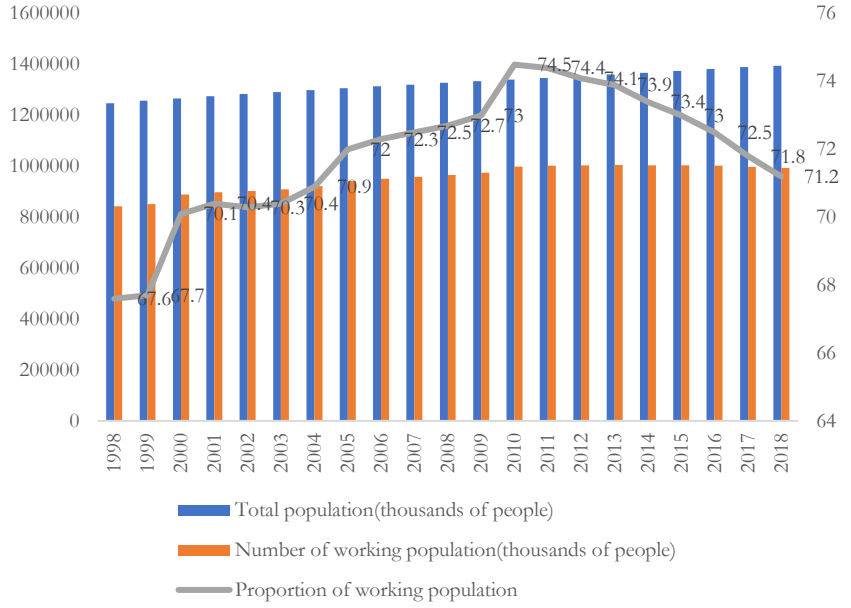

Figure 5: Total population and labor force in China from 1998 to 2018.
Data source: National Bureau of Statistics
Photo credit: Original

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It can be seen that the number of working people in China has increased year by year from the end of 1998 to the end of 2010, but has remained stable since then, and has declined slowly since the end of 2013. However, due to the growth of the total population, the proportion of the working population in China has been declining year by year since the end of 2010, and the rate of decline has also become faster.

When these two figures begin to decline, China's aging problem is also aggravating. Therefore, it can be seen that aging problem will lead to a decline in the population of labor force and make the country's labor force insufficient.

3.2. Technological Innovation

The aging of the population will reduce both the proportion and quantity of the labor force in the future, resulting in the shortage of labor force, which will have a negative impact on scientific and technological innovation.

Czaja and Lee believe that when people become older, the decline of people's physical health and cognitive ability will lead to the decline of innovation ability [6]. In addition, people's thoughts and behaviors will also change, and the innovation awareness will decline [7]. Therefore, in general, the older an adult is, the lower the innovation efficiency. So an important factor determining the efficiency of scientific and technological innovation in a country or region is the number of working people (especially young working people) and the average innovation efficiency of them.

First of all, the aging of the population in a country or region will lead to a decline in the number of (young) working people, which will inevitably slow down technological innovation.

In addition, the aging problem will also lead to the shortage of labor force in the future, which in turn will make the average wage of the market higher. As a result, for more (young) working people, the income of taking up postgraduate studies will be less than the income of employment, so it is likely that a larger proportion of them will choose direct employment instead of postgraduate studies, which will cut down on the number of masters and doctors. However, entering a higher school or graduate school often allows people to have a deeper understanding of their majors, master more new technologies, fully improve their knowledge level and ability, and cultivate people's good thinking mode, thus improving the innovation efficiency of the (young) working population. Therefore, the reduction of the number of students entering higher education will reduce the innovation efficiency of the (young) working population. From this perspective, population aging will also have a negative effect on the average innovation efficiency of the population.

Considering the above two factors, the aging of the population will have a negative effect on the efficiency of scientific and technological innovation.

3.3. Economic Growth

The impact of population aging is not limited to the increase of the proportion of the elderly population or the decrease of the proportion of the working population. It will also drive the overall change of the age structure of the population in the future, resulting in the aging structure of the labor force. These changes will have a negative impact on economic growth.

First of all, the reduction of the working population leads to the shortage of labor force, which is the basis for the production and development of various industries. Sufficient labor force can guarantee the rapid development of labor-intensive industries. As is mentioned in Guangming Daily by Junxiang Wang, since the reform and opening up in China, the average employment elasticity of China's economic growth is around 0.2, which means that employment growth is about 0.2% for every 1% increase in GDP, which reflects the dependence of China's economic growth on labor input [8]. In this respect, the labor shortage caused by population aging will inhibit economic growth.

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In addition, as mentioned above, the physical functions of adults tend to decline with age. According to Lehman's research, in the field of pure physical theory research, the peak of labor productivity appears at about 30 years old, while medical research and historical research reach the peak at 40-50 years old [9]. The aging of the age structure of the labor force caused by aging will increase the proportion of the population aged 50-65 in the future working population, which is likely to reduce the average labor productivity of the working population.

Another negative impact of population aging is in industrial upgrading and optimization. Zhiguo Lu believes that the adjustment of the industrial structure requires sufficient mobility of the labor force, which enables people to flow between different regions or different industrial sectors [10]. However, the living habits and professional skills of the elderly labor force tend to be relatively solidified, and it is difficult for it to adapt to the new industrial sectors and workplaces, which is not conducive to the upgrading of the industrial structure. Therefore, the aging of the age structure of the labor force will, to a certain extent, inhibit the upgrading and optimization of the industrial structure, thus affecting economic growth.

Last but not least, the aging of the population will increase the demand for social services of the elderly, which will increase the cost to provide for the elderly and cause economic burden. In this way, it is likely to reduce the expenditure on capital investment, urban construction, national scientific research and education, which will have a negative impact on the average productivity of the working population and the development of various industries.

From the above analysis, it can be seen that population aging will have a negative effect on both the quality and quantity of labor supply, thus reducing the total labor productivity of the working population; on the other hand, the burden of old-age care caused by the elderly population will expend various social resources, thus limiting the development of urban construction and various industries. On the macro level, population aging will also slow down the upgrading and optimization of industries. These results show the negative impact of population aging on economic development.

4. Conclusion

The aging problem will not only increase the proportion of the elderly population and reduce the proportion of the working population, but also cause the overall change of the age structure of the population in the future, leading to the aging of the labor force. aging will have an impact on consumption, savings, technological innovation and economic growth of a country or region. Due to the differences in sources of income between the elderly and young people and the changes of the era, their savings and consumption patterns vary greatly. In general, compared with the young population, the elderly is more rational and conservative in consumption, more inclined to save, and use less credit cards. In addition, the aging problem will lead the decline in both the number of young working people and the average innovation efficiency of them, thus inhibiting the scientific and technological innovation. Finally, aging will have a negative impact on the quality and quantity of labor supply, reduce the total labor productivity, cause the social burden, and hinder industrial upgrading and optimization, which slow down the economic growth. Therefore, aging countries should take this problem seriously and take active measures to deal with it. For example, they can defer retirement, encourage fertility, reduce education costs, establish a fair market mechanism that pays more for more work, or improve the quality of the population.

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