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Scientific Publishing

Statistical Analysis of The Economic Impact of an Aging Population

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Abstract: In this paper, using the data of the National Bureau of Statistics, analysis of the relationship between population aging and the variables that directly or indirectly affect the economy, and then analysis of the impact of population aging on the economy, found that there is an obvious correlation between population aging and the economy. Specifically, population aging for the labor market, economic structure, consumption structure, income distribution pattern, scientific and technological progress and industrial structure directly or indirectly affect the national economy of the factors have a certain impact.

Keywords: Population Aging; Economy; Population Censuses; Data

1. General

At present, the total number of aging population in our country is the first in the world, and the growth rate of population aging is also the first in the world. The results of the 7th Census of Population in China were announced by the National Bureau of Statistics on April 28, 2011. The total population of China reached 1.3397 billion. Under the background of low level of social production and underdeveloped economy, the aging of the population is coming, which will surely bring profound changes to China's economic and social development.

2. The impact of population aging on the labor market

2.1 Population aging will directly change the scale of labor supply and demand

As the age increases, the labor force participation rate of the elderly population declines, causing the total labor force participation rate to decline.Our per capita GDP is more than 10000 US dollars, but only 1000 US dollars when we enter the aged country. This shows that China still lacks the strength to cope with the challenges of aging.

2.1.1 The direct impact of population aging on labor supply

The direct impact of population aging on labor supply is manifested in five aspects:

(1) Reduce the scale of labor supply

Population aging will reduce the size of labor supply. For example, the proportion of the elderly population increases, the proportion of the working-age population decreases, and the scale of labor supply decreases

(2) Reduce labor participation rate

With the increase of age, the labor participation rate of the elderly population declines, resulting in a decline in the total labor force participation rate

(3) The total labor supply time decreases

After the improvement of aging level, the labor supply time of the elderly population decreases, and the total labor supply time decreases

(4) The quality of labor supply decreases

The physiological and psychological function of the elderly changes, it is difficult to adapt to the labor intensity of most posts, and the quality of labor supply begins to decline

(5) It affects the development of human resources for the elderly

The life expectancy of the elderly population is increasing, part of the younger elderly population is ready to return to the labor market,

and most of the elderly remain independent and continue to contribute to their families, communities and even to the national economy.

2.1.2 The direct impact of population aging on labor demand

The direct impact of population aging on labor demand is mainly manifested in four aspects.

(1) The increasing demand for posts in the old-age service industry

With the growth of the aging population, the demand for medical care, health services and other professional or industry personnel is growing rapidly

(2) Aging promotes the development of elderly care services

Aging population drives and expands the demand for jobs in the upstream and downstream industrial chain of pension services, generating a multiplier effect and driving the demand for employment in related industries

(3) The aging population has an impact on the employment structure

In the deepening process of aging, the employment structure is also transferred from secondary industry to tertiary industry, and the service industry will create more jobs for the elderly workers. Aging has increased the number of enterprise retirees

(4) Aging will increase the number of retirees in some enterprises and public institutions, which will produce a series of new positions, conducive to promoting the employment of young people.

2.2 The Indirect impact of aging population on labor market

Population aging will indirectly affect employment, income, human capital investment, labor flow and regional distribution. The indirect impact of population aging on the labor market is mainly reflected in the following six aspects.

2.2.1 Aging will affect the dependency cost, and then affect the employment intention

The micro decision-making mechanism of labor supply lies in working age. The tradeoff of labor time input between household and firm. In the age of aging, the old-age dependency ratio keeps increasing, and the labor input of families to take care of the elderly increases, which will increase the opportunity cost of employment of working-age workers.

2.2.2 Aging will affect the structure of residents' income and expenditure, and thus affect the ability of social security

According to Modigliani's "life-cycle hypothesis", there will be two shifts in the income and expenditure of the elderly population. The first is a shift from "production-consumer" to "consumer" in the personal-income-consumption cycle, where income and savings are in decline and consumption and spending are in rise. The second change is in the structure of social income expenditure, aging will reduce the potential economic growth rate, reduce the creation of new national wealth, reduce savings rate and investment, increase consumption in related fields, accelerate the intergenerational transfer of income, expand the government's social security and public service expenditures for the elderly, which will put a heavy pressure on social health care, insurance and social and economic development.

2.2.3 Aging will affect the structure of production, which in turn affects the structure of human capital

As the aging process accelerates, the proportion of working-age population decreases, the labor market oversupply, labor costs begin to rise quickly, and market main bodies tend to reduce labor input and increase capital or technology input. This kind of capital and technology deepening, in turn, will further reduce the demand for labor, the remaining jobs also put forward higher requirements for the quality of labor supply, forcing workers to increase human capital investment, improve the level of skills and quality.

2.2.4 Aging will affect wages and productivity, which in turn affects the employment demand of enterprises

At present, many empirical studies at home and abroad have found that the relationship between age and labor productivity presents an "inverted U curve", that is, with the growth of age, labor production rises first and then declines. At the same time, aging affects the wage level of different industries and positions.

2.2.5 Urban-rural aging difference will affect urban-rural labor mobility

At the demand level, the modern service industry has obvious characteristics of economies of scale and will form agglomeration advantages in large and medium-sized cities. The demand for old-age service jobs in cities will be far greater than that in rural areas. At the same time, the general service industry will also create jobs for the elderly human resources.

2.2.6 Regional aging differences will affect the regional distribution of labor force.

The "Hu Huanyong Line" is taken as the reference, and the east of this line. The area is densely populated, economically developed and has a higher aging level than the area west of the line. This spatial distribution and stage difference outline the regional pattern of China's labor supply. Taking Guangdong as an example, the aging degree of Guangdong is lower than that of other labor-exporting provinces such as Sichuan, Henan and Anhui at the same time, due to attracting young labor force from the surrounding areas and the whole country.

3. The impact of aging population on consumption structure

3.1 The demand for different consumer goods has changed

As the population grows older, people's demand for different consumer goods will change. Older people will have an increased need for basic necessities, such as medical treatment, health care, housing and insurance. At the same time, the elderly's demand for other consumer goods will decrease.

3.2 Change the housing demand structure

Aging population will change the housing demand structure. Demand for housing for the elderly will shift from large properties to smaller nursing homes or services such as nursing homes.

3.3 The demand for convenience in daily life will increase

With the increase of the elderly population, the demand for convenience, safety and convenience of daily life will also increase.

3.4 The increasing demand for new types of intelligence

With the development of smart home and other technologies, the elderly's demand for new smart housing is also increasing. The aging of the population is also significantly changing the demand for health care. With the progress of science and technology, technologies such as telemedicine and smart health care will be more widely used. These technologies will enable the elderly to receive more convenient, effective and considerate medical care services.

3.5 Increased demand for community education and mental sports

With the increase of the elderly population, the demand for community education and mental sports will be higher and higher. This means that community education and other convenient activities for the elderly will be greatly developed. At the same time, more attention should be paid to the spiritual life of the elderly. This calls for providing more arts, culture, entertainment and other activities to meet the needs of the elderly.

4. The impact of an aging population on scientific and technological development

4.1 The demand for scientific and technological products presents a diversified trend

The elderly population has an increasing demand for technology products such as telemedicine, social software and health monitoring devices, and technology products have penetrated into every aspect of the elderly's life, such as smart fitness, smart home and smart transportation.

4.2 Technology product design needs to be more humane

Due to difficulties in cognition and use of the elderly, the design of scientific and technological products should pay more attention to humanization and usability, so as to facilitate the use and operation of the elderly. For example, functions such as smell, touch and sound

feedback can be added to the products to make it convenient for the elderly to choose according to their habits, physical conditions and psychological needs.

4.3 Education and training are essential for the elderly to use scientific and technological products

As older people often have difficulties in cognition, education and training are crucial to the proper use of technology. For example, training courses and lectures can be held to provide technical support and learning opportunities for older people, tailored to their needs and situations.

5. Conclusion

Through the above analysis, it can be concluded that population aging has a direct or indirect impact on the labor market, the consumption structure and the development of science and technology, three factors that significantly affect the development of national economy. Our country should expand aging advantage and reduce disadvantage, so as to further promote national economic development, so that population aging will become an advantage from disadvantage and become a sharp edge.

References

[1] Population ageing in China: crisis or opportunity? The Lancet[J]. Volume 400, Issue 10366. 2022. PP 1821-1821.

[2] McSwain Janet. From crisis to opportunity. Water Environment & Technology[J]. Volume 27, Issue 5. 2015. PP 46-49.

[3] Liu Rangxin;Yang Feng.The Ethical Problems and Remedies for Population Aging in China. Aussie-Sino Studies[J]. Volume 1, Issue 1. 2015

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