Impact of China's Aging Population on Economic Development and Possible Solutions

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Abstract. China's economic structure has been unbalanced for a long time, and now it faces the severe challenge of the aging population. This article will deeply analyze the impact of population aging from the aspects of social impact, labor force and medical security. With the unexpected arrival of an aging society, the government, society, and individuals should remain calm. They should recognize the negative and positive aspects of its effect on social development. The reduction of cheap labor will undoubtedly harm the development of labor-intensive enterprises. However, it can force these businesses to increase their labor productivity rate, move into the field of high technology and high added value, and increase the employment rate of college students and another high-quality talent. Moreover, the aging population will drive the growth of the elderly economy and related service industries such as home Economy. In this article, we will also list several ways to solve the economic crisis caused by the aging population

Keywords: Aging; demographic dividend; aging industry; aging economy.

1. Introduction

According to the results of the sixth China Census and table one below, we can see that China's population aged 60 and older is 177648705, accounting for 13.26% of the total population, and 118831709 are aged 65 and older, accounting for 8.87%; According to the United Nations standard that the population over 60 years old accounts for 10% of the total population and the population over 65 years old accounts for 7% of the total population, it is evident that China has entered an aging society [1]. Aging is not inherently harmful. It can be said that human social development is inevitable. At the International Symposium on "population and economic analysis of China's pension policy in the 21st century," sponsored by the Institute of Population and labor economics of the Chinese Academy of Social Sciences and the center for strategic and international studies of the United States, the most recent research report "silver China" presented by CSIS drew the attention of the participants. The report reveals: "China's child population to elderly ratio was 6:1 35 years ago. Over the next 35 years, the ratio will flip. The elderly population will double the size of the youth population. The life expectancy of the population has increased from 41 years in 1949 to 70 years currently.

On the other hand, the working population has decreased significantly. By 2050, China's total labor force will be between 18% and 35% smaller than it is now. The decline in the birth rate and the increase in life expectancy are the driving forces of China's aging, and the relative decline in the labor force is the second of the two fundamental forces." He also stated solemnly, "China's economy will undergo a remarkable demographic transformation, and a country that was once young will soon age." The so-called population aging refers to the increase in the proportion of the total population that is elderly. According to internationally accepted standards, the proportion of the elderly over 60 years of age or over 65 in the total population is greater than 10% and 7%, respectively, which can be interpreted as the aging of the population. In 2003, 11% of the total population comprised individuals aged 60 and older. China will soon face an unprecedented new challenge posed by an aging population.

The Chinese government prioritizes resolving the problem of an aging population and actively advances the cause of the elderly. A working model for advancing the cause of the elderly has been

established, with the government taking the lead, society participating, and the entire population caring. The state has established a National Committee for the Work of the Elderly, which has outlined the goals, responsibilities, and fundamental policies for the work of the elderly. The cause of the elderly has been explicitly incorporated into the plan for economic and social development and the sustainable development strategy.

2. Characteristics of Aging Population

2.1 Definition of an Aging Population

Population aging refers to the proportion of the elderly population in the total population, which exhibits a continuous growth trend relative to the proportion of the young population; i.e., the proportion of the elderly population is growing. As a result of an increase in life expectancy and a continuing decline in the fertility rate, the absolute number and percentage of China's elderly population are growing. When social and economic development reaches a particular stage, when people's values have improved, and when the concept of fertility has shifted from mandatory birth control to conscious birth control, this is referred to as population aging. As a result, the birth rate has declined significantly, the proportion of the young population in the total population has decreased, and the proportion of the elderly population has increased. In this sense, population aging represents the improvement of people's living standards and health conditions, the culmination of social and economic development to a particular stage, and the embodiment of social and historical progress.

Table 1. Result of Sixth China Census (http://www.stats.gov.cn/tjsj/pcsj/rkpc/6rp/indexce.htm)

Age	Population			Proportion of population			sex ratio
	total	male	female	total	male	female	(female=100)
total	1.33E+09	6.82E+08	6.5E+08	100	51.19	48.81	104.9
20-24	1.27E+08	64008573	63403945	9.56	4.8	4.76	100.95
25-29	1.01E+08	50837038	50176814	7.58	3.81	3.76	101.32
30-34	97138203	49521822	47616381	7.29	3.72	3.57	104
35-39	1.18E+08	60391104	57634855	8.86	4.53	4.32	104.78
40-44	1.25E+08	63608678	61145286	9.36	4.77	4.59	104.03
45-49	1.06E+08	53776418	51818135	7.92	4.03	3.89	103.78
50-54	78753171	40363234	38389937	5.91	3.03	2.88	105.14
55-59	81312474	41082938	40229536	6.1	3.08	3.02	102.12
60-64	58667282	29834426	28832856	4.4	2.24	2.16	103.47
65-69	41113282	20748471	20364811	3.08	1.56	1.53	101.88
70-74	32972397	16403453	16568944	2.47	1.23	1.24	99
75-79	23852133	11278859	12573274	1.79	0.85	0.94	89.71
80-84	13373198	5917502	7455696	1	0.44	0.56	79.37
85-89	5631928	2199810	3432118	0.42	0.17	0.26	64.09
90-94	1578307	530872	1047435	0.12	0.04	0.08	50.68
95-99	369979	117716	252263	0.03	0.01	0.02	46.66
>100	35934	8852	27082	-	-	-	32.69

2.2 Characteristics of the Aging of China's Population

2.2.1 China has a large elderly population base and a relatively rapid population aging rate.

China has both a large population and a vast territory. The rate of population aging is rapid, and the elderly population is expanding, making China the nation with the most significant proportion of elderly citizens. In 2000, China's elderly population accounted for 29.1% of the global elderly population; by 2050, the population is projected to increase to over 423 million, representing 22.3% of the global elderly population [2]. At that time, one out of every four seniors will be Chinese.

China is one of the nations with the fastest-growing elderly population. Internationally, the proportion of the elderly aged 65 and older has doubled from 7% to 14%, taking 115 years in France, 85 years in Sweden, 45 years in former West Germany and the United Kingdom, 75 years in the United States, 26 years in Japan, and 26 years in China, making China one of the countries with the fastest aging rate.

2.2.2 China's population is significantly aging

In the process of population aging in China, all the phenomena of a highly aging society in western countries appeared earlier; that is, the proportion of middle-aged and elderly individuals over the age of 80 proliferated. The elderly population in China is growing faster than the total population, and the elderly population aged 80 and older is growing faster than the elderly population. In 1955, the population of China aged 80 or older was less than 2 million. It reached 12 million in 2015 and is projected to reach 88 million by 2075 [3].

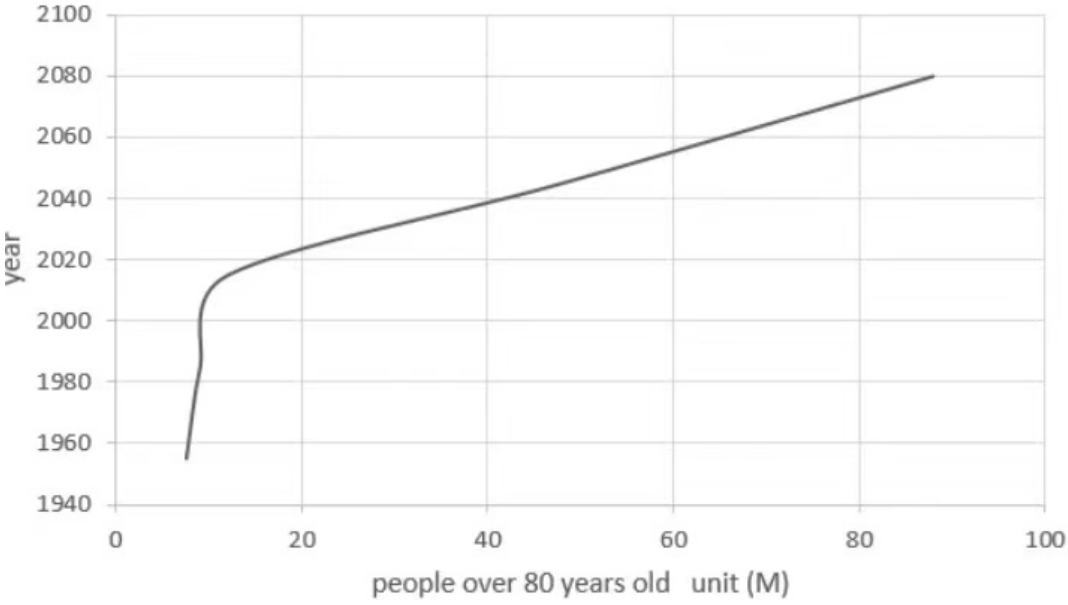

Fig. 1 people over 80 in China and forecast
(Source: https://www.un.org/development/desa/pd/content/World-Population-Prospects-2022)

2.2.3 China will enter an aging society against the backdrop of a socially underdeveloped economy

In European and American nations, industrialization and urbanization accompany the aging of the population. Nonetheless, population aging in China is a rigid process in which the birth rate, fertility rate, and natural growth rate of the population are sharply reduced through the comprehensive implementation of the family planning policy under artificial conditions; consequently, the proportion of the young population decreases and the proportion of the old population increases. Some countries with an elderly population in Europe and the United States have achieved industrialization and formulated a series of relatively complete social endowment security systems, which can be described as "rich first and old later"; when China entered a country with an elderly population, 64% of the population was rural and lacked the necessary material and institutional preparations. It can be said that "old precedes wealth".

3. Impact on Economic and Social Development

3.1 The Consumption Structure is Undergoing Change

The increase in the elderly population has a minimal effect on total consumption, but it will alter the structure of consumption. The medical care-related expenditures of the elderly will increase

significantly. Simultaneously, the consumption demand for tourism, elderly service consumption, leisure, and other corresponding service industries will increase, and a significant amount of funds will be diverted to the consumption of the elderly, which will directly result in a relative decline in production investment. The rate of economic expansion will decelerate.

3.2 Innovation in Science and Technology Encounters Obstacles

Age-related increases in the population will hinder society's assimilation of new knowledge and ideas, which will reduce its capacity for technological innovation. This will lead to the implementation of trade restrictions to safeguard the domestic labour market and lessen their positive effects on long-term prosperity. The innovation capacity of young and middle-aged people is more important than that of the elderly in the innovative society currently advocated, and the ageing population reduces the proportion of young and middle-aged people in the labour force, which is harmful to China's economic development and enterprise growth.

3.3 The Labor Force Participation Rate has Decreased.

Population aging will result in a relative decline in the proportion of the population that is of working age. The proportion of the population of working age to the total population is crucial to the economic development of a country or region. The population of working age determines labor supply, which is an essential factor influencing labor productivity—the relative decrease in the working-age population results in decline in the employable population. Under specific production means and technical conditions, a shortage of labor resources may result in the inactivity of specific production means and equipment, thereby affecting the regular operation of social production activities and, consequently, productivity and economic development. The aging of Europe's population structure, caused by a decline in the birth rate, is a significant factor impeding the continent's economic development, as evidenced by Europe's developed nations.

3.4 The Strain on Pension and Medical Security has Grown

According to the Ministry of labor and social security, as the number of retirees increases by 6% per year, the number of empty individual pension insurance accounts increases to 100 billion yuan annually. Moreover, over 80 percent of Chinese workers lack pension coverage. According to statistics, the dependency ratio between employees and retirees in 1980 was 13:1, but it had decreased to 3:1 by 2003. The number of retirees receiving pensions is projected to exceed 100 million by 2030. The reliance ratio will approach 2.5:1. The elderly are the primary consumers of medical and health resources. According to Ministry of Health statistics, the prevalence of chronic diseases among those over the age of 60 is 3.2 times that of the general population, and the rate of disability is 3.6 times that of the general population. The elderly consumes 1,9 times the average amount of health resources consumed by the entire population. However, the development of China's health and medical service lag its economic development, and the issue of elderly care, which is both complex and expensive, is particularly prominent [4].

4. Solutions of Aging Population

4.1 Modify the Policy on Family Planning

Family planning is a basic state policy published in 1982. It was written into the constitution in December of 1982. By limiting the birth rate and advocating the eugenics, postponing the marriage and fertility, the population in China has been curbed significantly. The increasing rate of Chinese population has been flattening from 1982 to 2022. The annual population growth rate is merely between 0.3 to 0.6 percent in recent years, and it was even descending after 2015. The population is predicted to reach a peak on around 2022 [5]. The impact of family planning policy is significant. However, as a prudent policy maker, instead of curbing the population, it is also crucial to control the aging structure. Since the family planning only focus on the refrainment of population and does not pay attention to the population refreshment [6]. Aging population has appeared as an accompanying

problem because of the implementation of family planning policy. It is stubborn for policy maker to stick on the one-child family planning.

In October of 2015, the China government announced the universal two-child policy, which allows all couples to have two children. It had been replacing the previous one-child family planning policy from 2016 to 2021. However, the two-child policy had fallen short of government's expectations. The ethical issue, which is reflected in the conflict between the individual reality and the national profit is the obstacle of the smoothly implement of two-child policy. To move forward, on May 31st, 2021, the China government announced the three-child policy. And still, the accumulated fertility rate of China is pessimistic. According to the statistical yearbook of China, the fertility rate in 2020 which subtracts the stacking effect has falls into 1.3. Arguments around low fertility trap and aging problem are still rising. Family planning policies are loosening to fit the serious demographic situation in China.

Many opinion surveys and the voices on the public platform show that the willingness of giving birth to a new life for people in China is quite low. Considering the personal statement, many people, especially the generations born after 1990s, find it difficult and reluctant on fertility. It is contrary to the promotion of the policy on national aspect. Moreover, owing to the unique construction of women's body, women must suffer from the great pain of pregnancy [7]. Furthermore, the difficulty for the women who have finished the gestation period and the mandated maternity leave to back to their workplace would affect the working efficiency are all the worries of contemporary women. The economic dilemma is also the mountain gets in the way of the policies to raise the fertility rate. The economy condition of most of the families in China do not match the policy. In a humanized point of view, it is irresponsible to give birth to a new life without any preparation, especially the economic ability to raise the child. In a word, the present family planning policy is contrary to the fighting of women's right, the economic condition in many middle-class families, and additionally, the willingness of many people to realize the value of themselves. All these obstacles lead to the stagnant or even declination of fertility rate in China.

To deal with those obstacles, both government and individuals should make efforts. For individuals, men should also undertake the responsibility for fertility. The actual actions to take care of pregnant women and the newly born child would relieve the pressure on women to have children to a certain degree. Also, for employment market. Efforts made to eliminate the gender employment discrimination like maternity leave for men and more rational division of labor among men and women would make sense. On national government, instead of superfluous propaganda of fertility policy, which will abet the reverse psychology for people, it is more helpful to subsidize the middle-class families. What's more, China should adjust the economy and labor construction to make it more friendly for families to bring a new life. Since the announcement of a new demographic policy should accompanied with a lot of policies in economy, ethics, human rights. If the policy maker become more prudent and humanized, the policy would be widely accepted by the public in China.

4.2 Enhance the Social Security and Medical Insurance Systems

As the essay mentioned before, in China, there is a lagging indicator for the development of medical services behind the economic development. The medical care for elderly in China is facing 3 problems, the high cost, the lagging of medical technology, and objectively, the complexity of the diseases for elderly.

To alleviate the heavy social health care burden, firstly, government should take aging population into consideration when having macro control on medical field. More medical technology research and development expenses should be spent. It is also significant to introduce advanced medical technology and equipment from abroad. What's more, government should also layout the related medical service industry in advance, which would provide more complete and comprehensive service for elderly. Secondly, the innovation of medical care for elderly should aim at specialization and refinement. As mentioned last paragraph, the diseases on senior patients are always complicated and need long-term treatment. Chronic diseases, such as diabetes, high blood pressure and coronary heart

disease are diseases with a high incidence in the elderly. To enhance the social security and medical insurance systems, it is important to introduce different supporting services for different senior audiences. The demands of elder people are quite various, thus, trying to meet every specific demand reflects humanism. Also, chronic diseases need long-term health care services, which means the government need to increase the investment on long-term treatment for elder people. Training plenty of professional nursing personnel is important. Additionally, enhance the medical care on the technical aspect would not only be beneficial for improving treatment efficiency, but also requisite for reducing the pain of elders. Thirdly, to resolve the problem of high medical costs, government have the duty to cut the price of medical service appropriately and rectify the unreasonable charging phenomenon [8]. Finally, from the perspective of supply-side reform in China, encouraging the competition of supply-side in medical service market for old people would activate the market vitality [8]. It is beneficial to introduce more private hospitals to encourage the benign competition between different hospitals in the medical care system. The supply-side reform could increase the efficiency and quality of health care and provide various humanized choices for elder people.

4.3 Promote the Combination of Family Pension and Community Service

In China, the pattern of endowment can be divided into 3 types, family pension, institutional pension, and community pension [9]. Family pension is the most fundamental and traditional pattern, which provides treatment, accompany and emotional support for the elderly stay at home with their family members. The offspring of elderly have the obligations to support the elderly. However, as the construction of urbanization and the development of the society and economy, labor forces from countryside choose to migrate to the city, which consequently leads to a phenomenon called empty-nest elderly in the countryside. These senior residents, who are so-called empty-nest elderly, are living alone without children. Moreover, because of the announcement of one-child family planning policy in China, the treatment elderly could enjoy from family pension pattern is less than before. Many youngsters choose the second pattern, institutional pension. The resources of institutional pension are provided by pension agency like the nursing home. Whereas many families still do not prefer this way since the expenses of nursing home are always high. Additionally, many senior citizens have psychological barriers of be sent into nursing home by their children, which means they cannot get well with their family members and be seen as a burden. It is humiliating for elderly to go to the pension institutions. Many elder people also find it difficult to handle the relationships with the elder partners in nursing home. In general, institution pension is not widely recognized by Chinese families.

Therefore, it is significant to reform the endowment patterns to become socialized. Communities provide deliberate and specialized organization and management for the elder residents in the region of responsibility. Elder people still live at home, and enjoy the rights provided by community on a regular basis. Communities offer relevant equipment, medical care, psychological solicitude, legal aid, exercises, and entertainment and so on. The stress of the endowment for society would be relieved because of the community pension. Firstly, staff in the community can conveniently contact with elder people and directly meet their needs, instead of the generation gap between elder people with their family member which may exist on the pattern of family pension. What's more, nearby treatment could also cut the cost unlike the institutional pension. Secondly, community pension pattern always includes the family pension. In this way, the principal of service outstrips the family and government. It covers almost the whole society. Community pension breakthrough the rigid pattern that government is dominant in the pension systems [9].

In summary, community pension has its advantages over the family and institution pension, and it adapts the contemporary trend most. To improve this pattern, government should decentralize its function appropriately to the neighborhood committees and increase the investment towards communities. Communities should refine the equipment and create a warmer environment for elder people. It is practical for neighborhood committees to involve and mediate relationships between elderly and their offspring. Furthermore, as an emerging pattern, community pension still needs

regulatory and a mature evaluation system. Supervision makes the community service system more professional and complete.

4.4 Develop Human Resources for Senior Citizens

On the one hand, making old people be looked after carefully is important on the aging society in contemporary China, on the other hand, senior citizens, especially, younger senior citizens can still play an important role in the society. It is still a positive strategy to fight against aging society and prevent China from the getting old before getting rich. It is commonly suggested that human resources for senior citizens are worthy to be developed.

Introduce elderly back to the workplace can transform consumers to producers, relieve the heavy burden of social pension and fill the leakage of labor force in China. This economic pattern called silver economy has already been implemented in Korea and Japan in early 21st century. It was written into the law that Korea had set a fundamental employment rate for elder workers. Elder workers could also have a cut-down tax rate and get trained professionally in vocational training [10]. In the "Medium- and Long-term Plan for the State to Actively Respond to Population Aging" issued in 2019, China has elevated the active response to population aging as a national strategy, aimed to improve the human resources. China has implemented to gradually postpone the retirement age and develop silver economy. There is a concept called low-age senior human resources, which includes the elderly aging from 60 to 69 with the working willingness and ability. Elderly aging between 60 and 69 are the backbone of elderly population in China. Senior citizens at this aging interval are healthy. They get used to social labor and many of them still do not want to be marginalized.

As the life expectancy in China has become longer and national health has become better, the development of elder human resources has been more feasible and practical. Moreover, elder people in the city have a high level of education together with rich working experience. Senior citizens have a wealth of practical knowledge and can make significant contributions to the country's scientific and technical advancement as well as economic and social development [11]. Rather than stuck with jobs that can be replaced by young workers, they can dedicate their remaining enthusiasm in the fields that they are good at. They have their own superiorities compared with youngsters. Their working attitude and ability are trustworthy.

However, to construct a healthy and everlasting pattern of silver economy, there are still many problems should be refined. Laws in China to protect the retirees need to be more flexible, so that more elder people could have chances and guarantees to back to their workplaces again. Moreover, government can strengthen the public propaganda and reverse the old opinions that retired elder people cannot realize their value for the society. The whole society should strengthen a consensus that elder people can play an important role. Also, the education for elderly should be improved to be more practical, intelligent, and digital. It will be more convenient and efficient for senior workers to own an intelligent device. Education for elderly could narrow the digital gap for senior workers. For elderly in countryside, elder human resources can still be developed according to the local conditions. Liberate the elderly from the soil while ensuring that the benefits of agriculture. There are many innovations could improve the current situation of elder human resources. Positive strategy against aging population is tendency and is also the future of China.

5. Conclusion

Population aging is the result of a particular stage in the evolution of human society. Changes in population age structure have extensive and profound effects on all facets of social life. As China's population ages more rapidly, the impact of aging on social development increases. China has ushered in an aging population against the backdrop of a low level of social production and an underdeveloped economy, which will undoubtedly exert significant pressure on economic and social development. But there are many methods could be used to fight the aging population. By refining the policy of family planning, improving the social medical care systems for elder people, developing the

community pension and actively introduce senior citizens back to work and exploring elder human resources, the side-effect of aging population would be mitigated or even reversed soon.

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