

The Development Trend of Japan's Aging Population and Its Main Impact on the Economy

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Abstract. In recent years, Japan attracted global attention due to its aging population. This paper analyzes the causes, the process and development trends of aging population in Japan's society. According to the study, it is not difficult to find that the current aging population in Japan comes from the first baby boom and the aging rate will continue to increase. At the same time, this paper analyzes the main impacts of aging population on economy and finds that although Japan's aging population may not only lead to economic recession owing to lack of labor, but lead Japanese government to spend more money on overseas trade. However, it will develop nursing industry and artificial intelligence robots specifically for the elderly. The Japanese government try to solve these problems with positive attitude and has introduced many policies. As a result, these efforts to alleviate aging population are worth learning from all over the world.

Keywords: Aging population; health insurance; development trend.

1. Introduction

Due to the continuous progress of global technology and medical, average life expectancy of humans has increased significantly. However, the issue of population aging has become prominent with rapid development of economy. It makes many scholars and governments pay attention to this issue. According to World Bank statistics, the global population aged 65 and above accounts for 9.32% of the total population, approximately 720 million people. In recent years, Japan's aging population has attracted much attention. Although the definition of a super elderly society is not clear, most scholars have not denied that Japan is now a super elderly society [1]. According to the latest data released by the Ministry of Internal Affairs and Communications of Japan, the aging population is also further developing. As of October 1, 2017, the total population in Japan was 126.71 million, and the population over 65 years old was 35.15 million, with an aging rate of 27.7%. According to a report from the Cabinet Office, among the population aged 65 and above, the population aged 65 to 74 is 17.67 million, accounting for 13.9% of the total population, and population aged 75 and above is 17.48 million, accounting for 13.8% of the total population. This trend will not stop. According to National Institute of Social Security and Population Studies in Japan, the proportion of elderly aged 65 and above will reach 35.3% of the total population in 2035 [2].

Population is the foundation of a country's development. Therefore, aging population will have some impacts on Japanese society and economy in certain aspects. It will lead people focus on how to alleviate it, how to ensure the daily lives of the elderly and how to get rid of the economy impacted on aging population more effectively. This paper will analyze the impact of aging population on Japan's economic development, the impact of aging on Japan's main industries and the challenges that aging poses to the government. At the same time, the study will introduce developing process and characteristics of aging in Japan. It is known that the Japanese government's handling policies and the impact of aging on Japan's main industries. This paper will benchmark Japan's effective actions in facing the issue of aging, in order to encourage more countries to learn and improve their own strategies for dealing with aging.

2. Literature Review

The growth of effective labor force will slow down or even decrease due to the aging of the population, and thus it will have a negative influence on the rate of Total factor productivity, the growth of per capita output will slow down [3]. Du and Feng indicated that aging population has a profound impact on effective labor force, and they believed that labor force is one of the key factors in a stable economic development.

In Japan, where the issue of population aging has become prominent in recent years. Japanese government has tried to integrate medical and nursing care through hospitals. The government also attempt to change the medical model in order that help the elderly avoid some chronic diseases caused by lifestyle habits. Through integrated development, they will provide five services: "shelter", "medical", "care", "prevention", and "life support". At the same time, they will take year 2025 as a goal, dental care which will also be included in the demand of medical and nursing for the elderly [4]. Yutaka pointed out that the rapid growth of the aging population trend will lead Japan to show more attention on the development of medical and nursing care in order to ensure the health of the elderly, the Japanese government is actively taking actions to benefit the elderly. Although Japan has developed well in nursing industry, it still facing the problem of insufficient nursing staffs. The employment rate of nursing staff in October 2019 was 160%, however the demission rate was 149%. According to a survey on the actual situation of nursing labor in Japan's "Reiwa Second Year", it was found that all formal employees in nursing caring have an average monthly salary of 243,135 yen. Starting from 2021, the average monthly salary has increased 8,696 yen [5]. However, the average annual income of the nursing industry is lower than that of other industries in Japan. In order to ensure the number of nursing talents, Japanese government will distribute an additional 80,000 yen per month for nursing staff and nursing support personnel who have been working last for more than ten years. However, there is still a possibility that the salary after the improvement will still be lower than that of other industries [5]. This means that Japanese government has to provide more benefits for nursing staffs because of their low salary and strict requirements for professional work. Besides, Japanese government has had to continue raising salaries in order to ensure that more nursing staffs are willing to join in the nursing caring. There is no doubt that it will increase the government's output on recruiting more nursing workers.

3. Analytical Framework and Discussion

3.1. Process and Characteristics of Aging Population in Japan

As shown in Figure 1, the Cabinet of Japan Office published the Reiwa 5year (2023) white book on the elderly society shown that the total population in Japan reached 124.95 million on October 1, 2022. The population aged 65 and above is 36.24 million, accounting for approximately 29% of the total population. Among the population aged 65 and above, the population aged 65 to 74 is 16.87 million, accounting for 13.5% of the total population. The population aged 75 and above is 19.36 million, accounting for 15.5% of the total population.

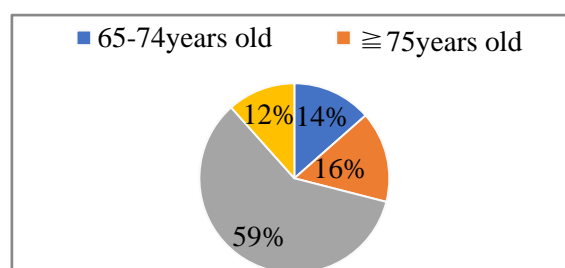


Fig. 1 Population of Japan in 2022 (Photo credit: Original)

The population aged 65 and above in Japan accounted for less than 5% of the total population in 1950, exceeded 7% in 1970, and exceeded 14% in 1994. Since then, the aging rate has continued to

increase, reached 29% as of October 1, 2022 [6]. Across more than 70 years, Japan's aging problem has been aggravating. If people talk about the severe aging problem in Japan today, people should trace it back to the exclusive noun "Group Generation". The 'Group Generation' refers to people born between 1947 and 1949 in Japan. Due to the end of World War II, the first baby boom arrived, as a result, the population has significantly increased. As of 2022, the "group generation" is now in the age group of 75 and above, bringing the aging rate to 29% in 2022. At the same time, the second baby boom, which refers to the offspring of the first baby boom entering the marriage and childbirth period, led to an increase in the population from 1971 to 1974, and will result in a large number of elderly people from 2036 to 2039. Afterwards, the population aged 65 and above will continue to show a tendency of increasing, the population will achieve the peak at 39.53 million in 2020, and then become decreased. Although the total population is decreasing, the number of people aged 65 and above is increasing, and the aging rate will continue to rise to 33.3% in 2037. After 2043, even though the number of people aged 65 and above decreases, it will reach 38.7% in 2070. The population aged 65 to 74 will reach its peak in 2016 with a population of 17.67 million after entering the advanced age stage of the "Group Generation". It will then increase and decrease repeatedly, reaching 17.36 million in 2041 before changing to decrease. In addition, while the number of people aged 75 and above is increasing or decreasing, it will achieve its peak in 2055 and then shift to a decrease [6].

3.2. Challenges Brought by Aging Population to Japanese Government

As shown in Table 1, in 2022, the population of the "Group Generation" was in the advanced age stage of 75 years and above, and has been continuously increasing since then. The number of "elderly people" aged 65 to 74 years continued to decrease. Therefore, the social security used to serve the elderly, such as medical insurance, pension, and nursing, will increase [7]. According to the calculation of the insurance rates of the Health Insurance Portfolio Federation, it is not difficult to see that the average ratio of insurance premiums used for medical care and nursing continues to increase. This means that the government is spending more money to protect people's welfare, but as time goes on, the amount used for social security will increase instead of decreasing.

Table 1. The protection cost of the health insurance portfolio

	Year 2019	Year 2022	Year 2025
Ratio of average medical insurance premiums	9.218%	9.8%	10.4%
Ratio of nursing insurance premiums	1.573%	2.0%	2.3%
Ratio of pension insurance premiums(fixed)	18.3%	18.3%	18.3%
Total	29.091%	30.1%	31.0%

In developed countries, Japan is a country famous for its high welfare and high burden. WHO pointed out that the public insurance, social insurance premiums and publicly funded funds borne by Japanese government have exceeded 80% of medical expenses. Under the nursing security system, Japan still faces a shortage of labor force. According to the "2016 Employment Trends Survey Results Overview" released by the Ministry of Health, Labour and Welfare in 2017, the employment rate in the field of medical welfare in 2016 was 15.8%, the turnover rate was 14.8%. The adoption rate of nursing workers was 19.4%, The turnover rate is 16.7%. The shortage of nursing staff is not only due to an average salary of about 208 thousand and 162 yen, the average salary of ordinary workers is 304 thousand yen, but also due to a survey conducted in 2014 on the impression of the nursing industry, which showed that 65.7% of people believed that the nursing industry is an industry with high physical requirements, 58.9% of people believed that the nursing industry is a highly

focused industry [8]. Through a comparison of average wages between the nursing industry and the general industry, and the survey data on people's impressions of the nursing industry, it is not difficult to understand why Japan lacks labor force in nursing industry.

3.3. The Impact of Aging Population on Japan's Major Industries

Under the severe situation of Sub-replacement fertility and aging, it is difficult for Japan to expand its domestic market. In order to enable sustained economic growth, it is particularly important to attract overseas demand through exports. However, compared to domestic trade, conducting export trade requires more costs. For instance, domestic trade requires transportation fees, while international trade not only requires transportation fees, but also requires spending money on taxes such as insurance taxes and tariffs [9]. Anderson and Wincoop pointed out that regarding the additional export costs, the consumer defines various costs beyond the ultimate production costs as trade costs when obtaining the goods consequently. Trade costs include not only transportation costs, tariffs, non-tariff barriers and other expenses, but also the cost of obtaining information, fulfilling contracts, and circulation costs and so on. Anderson and Wincoop estimate that even in developed countries, these trade costs can be converted into tariff rates as high as 170% [10]. This indicates that trade costs have a significant impact on trade volume. Therefore, in order to expand Japan's exports, improving the international competitiveness of commodities produced by enterprises, and reducing trade strikes are necessary [9]. Although international trade requires to spend lots of money, due to the the issue of aging is urgent need to alleviate, so aging population has impelled Japanese government to engage in international trade in some aspects.

To alleviate the issue of aging, the Japanese government has proposed two solutions: Industry 4.0 and Society 5.0. The tools and technological advancements developed in Industry 4.0 will play an important role in improving the quality of social life, making people happier, more motivated, and having more leisure time. Therefore, it will increase productivity, and humanity will choose the direction and social type they want to create in the future in order that promoting equal distribution of wealth. Due to concerns about population aging, Industry 4.0 has spawned Society 5.0, which focuses on utilizing the tools and technologies developed by Industry 4.0 to benefit humanity. With the assistance of Industry 4.0, Society 5.0 will place humanity at the center of innovation, technological transformation, and industrial automation [11].

Japan is not only a country with severe aging population issues, but also a well-known longevity country around the world. Due to the large number of elderly people and their continuous increase every year, Japanese government will naturally make efforts in nursing and medical care to ensure the health and safety for the elderly. In the service industry, the Japanese government needs more professional nursing staffs. The aging population has led to the rise of the nursing industry, many elderly caring institutions established and many types of robots were invented to provide exclusive services for the elderly.

4. Feasible Solution

In order to alleviate the issue of lacking of labor in nursing industry caused by aging population, Japanese government is taking active attitude to formulate policies and measures. The second baby boom, people who born between 1971 and 1974, nowadays between the ages of 40 and 50 has given up work to take care of their elderly parents. This phenomenon called "kaigo rishoku". This research investigated the practice of elderly caring in Japanese 5.0 society. Society 5.0 is a new concept developed by Japan. It focuses on people, based on technology. In Social 5.0, robots and the Internet are essential to human life [12]. Karen Eggleston D, Yong Suk Lee and Toshiaki Iizuka studied the impact of robots on the staffing of Japanese nursing homes by using the geographical differences of robot subsidies as Instrumental variables estimation. They found that using robots increased the number of nursing staffs to sign a flexible employment contract, it increased employment in the nursing industry. In addition, it reduced the difficulty of retaining employees. They also reduced the

monthly salary of nurses, which undoubtedly reduced the nursing burden on Japanese government. Moreover, their research results also indicated that the impact of robots will not be harmful to the labor force, in fact, robots are likely to alleviate the challenges brought by rapid population aging [13]. Meanwhile, Song and Tang believe that the most important thing should not only be to educate the professional staffs who engaged in elderly healthcare and nursing, as well as all students who want to provide service on healthcare, but also raise students' awareness of this situation. Therefore, the two scholars believed that improving the education of elderly healthcare and nursing personnel is necessary [14]. As of 2019, 107 colleges have provided education for individuals who had already become a certified nursing expert; The courses offered have expanded to 42 elderly caring courses and 19 home caring courses [15]. As of December 2018, the number of certified nursing experts in 13 majors has increased to 2279. Among these nurses, 144 people are specialized in elderly caring, and 53 people are specialized in home caring [16]. In education, providing students with comprehensive knowledge in nursing is more favorable to improve the quality of nursing industry talents, and thus enable further development of the nursing industry in the future.

5. Conclusion

This study mainly focuses on the development process of aging in Japan and its impact on the economy. Because of the large range of elderly people, economic development in Japan is limited by the aging population in some aspects. When Japan is facing an aging problem, it is difficult for it to expand its domestic market, so the Japanese government has to spend more money on overseas trade. The study also found that aging has brought some challenges to Japan - One is the medical and nursing insurance premiums for the elderly is increasing, and the other is insufficient nursing staff. In order to alleviate the issue of aging, the Japanese government has shifted its development from Industry 4.0 to Society 5.0, in addition, emphasize a people-centered development philosophy. At the same time, the Japanese government has attempted to increase the salaries of nursing staff, and tries to convey professional knowledge in nursing to students as soon as possible. As a result, they can alleviate the problem of insufficient nursing staff and ensure the health of the elderly population. Due to the issue of aging, Japan shows greater emphasis on ensuring the welfare of the elderly. In the future, Japan's nursing industry will become more mature and the machines developed for the elderly population will become more reliable. At that time, all countries will benefit from the path that Japan has already explored, and the global aging problem will also be alleviated.

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