

A Study on the Impact of the Aging Population-Driven Silver Economy on Social Development and Healthcare Systems in Russia

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Abstract. Russia, the largest country in the world by land area, holds significant geopolitical influence in Eastern Europe and beyond. Its tumultuous history, marked by events such as World War II, widespread famine, and the disintegration of the Soviet Union, has led to complex social and economic challenges. Understanding Russia's economic policies and their impacts is crucial for anticipating future trends on the European continent. This article seeks to explore the implications of Russia's aging population on its social and economic development. The analysis begins by compiling comprehensive data on Russia's demographic shifts, focusing on the increasing proportion of elderly citizens. It also reviews the perspectives of various scholars on the issue of population aging, highlighting both the challenges and opportunities this demographic trend presents. Utilizing the SWOT model, the article systematically examines the opportunities and vulnerabilities associated with Russia's aging population, identifying key issues that require attention. The analysis then integrates SWOT with strategic frameworks to propose targeted measures that could mitigate the challenges and leverage the potential benefits of an aging society. In conclusion, the article offers insights into the broader implications of Russia's demographic changes, providing a nuanced understanding of how these shifts may shape the nation's future trajectory and influence the wider European landscape.

1 Introduction

1.1 Research background

The Eurasian economy is still experiencing a trend of turbulence and development in the 21st century. As a country with the largest land area in the world, Russia plays a vital role in the Eurasian economy and its future prospects. Its social policies and the economic development of major industries have been studied and discussed by scholars. According to statistics from the Eurasian Economic Commission, the population of Russia will be 146,980,061 in 2022 and 146,447,424 in 2023. In terms of population, although Russia has the largest land area,

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its population ranks only ninth in the world. From the growth trend, the population has increased instead of decreased, which is closely related to Russia's age structure and social consciousness. Historical reasons have caused Russia's population to continue to decline since the 1990s, such as World War I, World War II, the Great Patriotic War, and the disintegration of the Soviet Union [1]. Aging is a serious problem that cannot be ignored. According to the Eurasian Economic Commission, in 2023, the proportion of people over 65 in Russia will reach 16.4%. This has pushed Russia into the ranks of aging countries, which has a profound impact on its social development and economy. For example, population aging will lead to huge demand for the health industry [2].

1.2 Literature review

In 2019, Du Lin proposed in "A Study on the Aging Problem of the Russian Population" that the main population problems in Russia include that the rural population is higher than the urban population, the number of female and male elderly people is very different, and the pension system is in urgent need of improvement. He believes that the pension insurance system should be reformed.

In 2007, You Liying proposed in "The Impact of Russia's Population Crisis on Economic Development" that population aging will drag down the development of the national economy by increasing the burden of support, affect personal consumption to inhibit economic development, affect the age structure to affect the consumption structure directly; and reduce capital accumulation.

In 2018, scholars such as Wang Hemaop proposed that population aging and chronic diseases will promote the development of the big health industry. This includes the huge market demand for the health industry caused by population aging and policy support for the health industry. Although the research object is China, due to the high similarity of geopolitical and economic development and historical background between China and Russia, it has a strong reference significance for studying Russia's aging-driven social and economic development issues.

In 2024, Song proposed in "Analysis of the Current Situation and Prospects of Sino-Russian Medical and Health Industry Cooperation" that Russia is still a net importer of drugs, Sino-Russian health industry cooperation is constantly strengthening, and the trade between the two sides is close.

1.3 Research gap

When scholars try to study the social and economic development of Russian regions, most of them focus on the energy economy and agricultural economy. In the first half of 2024, Russia's oil and natural gas increased by 41% year-on-year, which proves that the energy industry is the main pillar of national finance. The cultivated land area is vast, but due to the climate problems caused by the high latitude, Russia's agricultural economy has been reformed many times, which has been controversial and concerning. Few scholars are now conducting further research on Russia's social health security system from the perspective of demography, statistics, and socioeconomics, which is what this article attempts to study. In the subject of population economics, most scholars' judgments on the impact of population aging on economic growth are divided into three types: positive correlation, negative correlation, and nonlinearity, which are highly controversial.

1.4 Research framework

This paper first organizes and analyzes the views of different scholars on a series of social phenomena, such as Russia’s aging population, silver economy, and medical insurance system, and establishes a certain logical connection between them; then describes the development of the case from a qualitative perspective. The innovation of the analysis part is to use the SWOT model combined with economic models such as Solow growth to analyze the impact of the case and finally propose strategies and suggestions for solving the problem based on the SWOT model. At the same time, this paper collects the latest data and relevant documents from the Russian census and will update and explain the characteristics of Russia’s population problems and medical insurance system.

When raising the problem, we mainly use the W, O, and T in the SWOT analysis model, combined with the Solow growth model and the life cycle theory, to propose the current social problems in Russia due to the aging of the population.

2 Case description

According to the World Health Organization, by 2030, one in six people in the world will be over 60 years old. Many countries are experiencing an aging population, which is a global trend. Population theory points out that population is a necessary prerequisite and element of social productivity [3]. Du proposed that the most favorable population age structure is a pyramid-shaped society that is young and maintains a dynamic balance. However, Russia's population structure has been distorted for many years. For example, the aging degree of the rural population is significantly higher than that of the urban population, and the proportion of female and male populations is very different too [4].

How each country can correctly and quickly respond to changes in population structure has become the key. Under the coverage of the perspective of universal health, from the perspective of past policies, Russia has taken certain measures and reforms.

According to Table 1, the following index indicates the structure of the population in Russia and the trend in the aging problem.

Table 1. The structure of the population in Russia

Data/Year	2022	2023	2024
Total population(million)	147.0	146.4	144.2
Male population (%)	46.4	46.3	46.5
Female population (%)	53.6	53.7	53.5
People over 65 years old (%)	15.8	15.8	16.42

According to data released by the Russian State Statistics Service on August 9, 2024, the natural population decline in Russia in the first six months of 2024 increased by 18% compared with the same period last year, indicating that Russia continued to be trapped in the dilemma of an aging population, low fertility rate and fewer children in 2024.

3 Analysis of the Problem based on SWOT analysis and related economic models

When raising the problem, it mainly uses the Weakness (W), Opportunity (O) in the SWOT analysis model, combined with the Solow growth model and the life cycle theory, to propose the current social problems in Russia due to the aging of the population.

3.1 Weaknesses

Robert Solow's Solow Growth Model emphasizes that in the steady state of an economy, the growth of per capita output and per capita capital is directly linked to the rate of technological progress. This model suggests that technological advancement is the primary driver of long-term economic growth, particularly in developed economies where capital and labor inputs alone cannot sustain growth. However, the implications of this model are particularly concerning for aging populations, where demographic shifts can adversely affect capital accumulation and, consequently, economic growth.

According to Franco Modigliani's life cycle hypothesis, individuals plan their consumption and savings behavior based on their expected future income to maximize their lifetime utility. This hypothesis posits that people save more during their working years and dissave during retirement. As the proportion of elderly individuals in a population increases, the overall savings rate tends to decline. This trend is exacerbated in Russia, where inflationary pressures further erode the propensity of the elderly to save. As savings dwindle, so does capital accumulation, leading to a reduction in available investment funds. This decline in investment not only stymies economic development but also poses significant challenges to sustaining long-term economic growth.

Moreover, the aging population in Russia has profound implications for the country's demographic structure, particularly in the labor force. With Russia's already low fertility rate, the shrinking proportion of the working-age population relative to the non-working elderly population is a growing concern. As the labor force ratio declines, gross national output is likely to decrease, leading to slower economic growth. Concurrently, an increasing proportion of elderly non-labor forces places additional strain on the country's fiscal resources. The rising costs associated with pensions, healthcare, and social welfare programs for the elderly necessitate a reevaluation of the sustainability of Russia's current fiscal policies. The challenge lies in effectively utilizing the medical insurance system and other social safety nets to support the elderly without overwhelming the national budget. As these demographic shifts continue, the need for innovative solutions to manage the fiscal burden becomes increasingly urgent.

3.2 Opportunities

Despite the challenges posed by an aging population, there are also significant opportunities that can be harnessed to drive economic growth and social development in Russia. One of the key opportunities lies in the role of the elderly as a substantial source of savings for both the pension and healthcare systems. As the elderly population grows, their accumulated savings become a critical resource for funding these systems, provided that effective financial management strategies are in place.

Additionally, Russia's well-educated population presents a unique opportunity to leverage the skills and knowledge of its elderly citizens. A study by the Russian Higher School of Economics reveals that 54% of Russians hold a higher education diploma, placing the quality of education among the highest globally. This highly educated elderly population can contribute to the economy in ways that go beyond traditional retirement, potentially reducing the economic burden of aging. By encouraging the participation of elderly individuals in various economic activities, Russia can transform the perceived challenge of an aging population into a valuable asset.

One promising avenue for economic growth is the development of the silver economy, also known as the elderly economy. The silver economy encompasses the economic activities of the elderly, including the production and consumption of goods and services tailored to their needs, as well as the implementation of supporting policies and the creation of

specialized industrial chains. This economic model has the potential to stimulate innovation and growth across multiple sectors, such as healthcare, elderly care, education, and entertainment. For example, the medical industry can expand to include more geriatric services, while the education sector can offer lifelong learning opportunities tailored to older adults. The entertainment industry, too, can develop new products and services that cater to the interests and needs of the elderly, thereby opening new markets and driving economic expansion.

Moreover, the strengthening of trade relations between China and Russia presents additional opportunities for the growth of the silver economy. The deepening cooperation between the two countries, particularly in the medical and healthcare industries, is supported by various bilateral policies and agreements. These collaborative efforts can accelerate the development of Russia's healthcare infrastructure and the broader silver economy, ensuring that the aging population becomes a driver of economic growth rather than a burden. By capitalizing on these opportunities, Russia can not only address the challenges associated with an aging population but also pave the way for sustainable economic and social development.

4 Suggestions for optimizing strategies

4.1 Strengths and opportunities: growth strategy

In response to the challenges posed by an aging population, Russia can leverage its unique strengths and opportunities to implement a growth strategy that mitigates the disadvantages while maximizing the advantages. This strategy focuses on enhancing the efficiency of medical services and fostering collaboration between the government and the private sector, ultimately ensuring a more sustainable and resilient social and economic environment.

4.1.1 Enhancing medical service efficiency

Russia boasts a relatively well-established healthcare system, which, if optimized, can play a pivotal role in alleviating the pressures of an aging population on medical resources. As the elderly demographic grows, there is an increasing demand for accessible and efficient healthcare services. By focusing on optimizing the allocation of medical resources and improving service efficiency, Russia can significantly reduce the strain on its healthcare infrastructure.

One of the key strategies to achieve this is the promotion of telemedicine. Telemedicine has the potential to revolutionize healthcare for the elderly by providing remote access to medical consultations and services. This is particularly beneficial for those living in rural or remote areas where healthcare facilities may be limited. By expanding telemedicine services, Russia can ensure that elderly patients receive timely and convenient medical care without the need for frequent hospital visits, thereby reducing the burden on healthcare institutions.

Another approach to improving medical service efficiency is the enhancement of family doctor services. By strengthening the role of family doctors as primary healthcare providers, Russia can create a more personalized and continuous care model for the elderly. Family doctors, who are familiar with the medical history and needs of their patients, can provide preventive care, manage chronic conditions, and offer health education, thereby reducing the need for more intensive and costly medical interventions. This approach not only improves the quality of care for the elderly but also helps to optimize the use of medical resources across the country.

4.1.2 *Government-private sector collaboration*

The Russian government's growing focus on addressing the challenges of an aging population presents a significant opportunity for public-private collaboration. By encouraging partnerships between the government and the private sector, Russia can effectively address the financial pressures associated with its pension system and the broader needs of its aging population.

One of the most promising avenues for such collaboration is through the Public-Private Partnership (PPP) model. PPPs allow for shared investment and risk between the government and private enterprises, leading to more efficient and innovative solutions. In the context of an aging population, PPPs can be particularly effective in the development of elderly care facilities and services.

For instance, the government can work with private companies to invest in the construction and operation of state-of-the-art elderly care centers. These facilities can offer a range of services, from assisted living and nursing care to rehabilitation and wellness programs, tailored to the diverse needs of the elderly population. By leveraging the expertise and resources of the private sector, Russia can ensure that these facilities are not only well-funded but also innovative and responsive to the needs of the aging population.

Furthermore, PPPs can facilitate the development of new technologies and services that cater specifically to the elderly. For example, private companies can be incentivized to develop advanced healthcare technologies, such as wearable health monitors or smart home systems, that enhance the quality of life for the elderly. These innovations can be integrated into the broader healthcare and social service systems, providing a comprehensive solution to the challenges of aging.

4.2 **Weakness and opportunity: turnaround strategy**

By analyzing and understanding the current deficiencies of the country at the level of security system and technology, a turnaround strategy is proposed in combination with opportunities.

4.2.1 *Strengthening technological innovation with robust government support*

According to the Solow growth model, the long-term economic output growth rate is determined by the increase in the number of labor and technological progress. However, the sustained growth of per capita output must come from technological progress. In the weakness analysis, we can see that the change in the labor force structure caused by the aging of the population will lead to a tight supply of labor in the labor market. In the face of this and the pressure of pensions, Russia can seize the opportunities brought by technological innovation and promote the application of science and technology in the fields of medical care and elderly care through policy support and incentives. The following strategies are proposed. 1. Training and introduction of scientific and technological talents: Liying pointed out that a large proportion of the number of Russians going abroad (corresponding to the number of immigrants) are scientists, athletes, and artists [5]. Song pointed out that in the further development of health industry cooperation between Russia and china, the exchange and deepening of medical technology is very important, and relevant personnel are needed to engage in such activities [6]. Ellra proposed that when EU countries face the challenge of an aging population, it is necessary to create high-tech jobs and create jobs for men and women in the elite group [7,8]. This is worth reflecting on by the Russian government. In this technology-driven world, relevant policies should be enacted to attract high-tech talents to settle down. Zhao et al. proposed that the current education level and income distribution are highly correlated. For example, the white group in the United States who have not completed

higher education are trapped in a low-income trap and have a high suicide rate [9]. Therefore, it is particularly important to strengthen local education and training and improve the quality and efficiency of the labor force. 2. Issue relevant policies: encourage enterprise innovation and development through scientific research subsidies, talent preferential policies, etc.

4.2.2 Strengthen exchanges and cooperation between neighboring countries

Omakaeva pointed out that although the degree of population aging in Mongolia and Russia is different, the tool to overcome the problem is mainly the pension reform system [10]. Neighboring countries often have commonalities in geographical factors, demographic factors, and historical and political factors. Strengthening exchanges between countries and establishing international forums can introduce advanced medical and elderly care service experience. For example, exchange and share experiences with other European countries in the reform of the pension security system or cooperate with Asian countries such as Japan and China in the field of smart elderly care technology to improve the quality and efficiency of elderly care services and promote the further development of the silver economy and health industry.

5 Conclusion

5.1 Key findings

Based on the SWOT analysis model, this paper mainly analyzes the weaknesses and opportunities of Russian society, the negative impact on the accumulation of national capital savings, and the negative impact on the country's fiscal expenditure from the perspective of pensions. But at the same time, the impact of population aging on the economy also has a positive, innovative effect.

5.2 Research significance

5.2.1 Business value

This paper analyzes and proposes strategies for the silver economy driven by the aging population in Russia, which is of great significance for the scientific decision-making and development of Russia's microeconomic and social units. The health industry is mainly divided into two types: the health product industry chain and the health service industry chain. It is proposed that by promoting the development of technologies such as artificial intelligence in the field of medical and health industry, products and services can be significantly improved, thereby promoting the health industry and the silver economy to flourish.

5.2.2 Social value

The problem of aging will be most directly reflected in the government's difficulty in paying pensions, resulting in a government fiscal deficit. This paper analyzes the pension security system in Russian society and proposes improvement strategies. It plays a certain role in reducing the burden on the Russian national government.

5.3 Limitations

This paper lacks primary data and mainly uses secondary data. This paper mainly uses the SWOT analysis model and the understanding of the economic model to analyze the problem and plan the strategic policy. The overall bias is to review and qualitative analysis and no empirical and primary data analysis is used. In the future, primary data can be obtained through surveys, interviews, etc., so that the article has stronger originality.

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