

The Impact of Pension Finance Development on Economic Development under the Background of Population Aging

Jiaxuan Song *

School of Finance, Shandong University of Finance and Economics, Jinan, 250220, China

**Corresponding author: Jiaxuan Song*

Abstract

In recent years, the global population structure has undergone profound changes. With the decrease in birth rate and extension of average life expectancy, the world population aging problem has become a hot issue of world development. As the action on the pension issues, pension finance s not only provides life security for the elderly group, but can also make a significant impact on economic development. This article aims to sort out research about the impact of pension finance on consumption and investment by scholars at home and abroad. It will present the existing research results clearly, facilitate subsequent scholars to do research and bring up feasible suggestions. This article concludes that the development of pension finance boosts economic development in most cases. Based on the article's conclusion and the current situation of a large number of countries with immature pension financial systems, this article mainly brings up suggestions, including establishing a suitable pension financial system based on national conditions, innovating pension financial products and services, enhancing supervision and management, and emphasizing cross-regional communication and cooperation.

Keywords

population aging, pension finance, economic development, consumption, investment

1. Introduction

In recent years, the problem of world population aging has become increasingly serious and poses many challenges to the development of society and economics. The aging scale continues to expand, leading to a continuous increase in the dependency ratio of the elderly population, which has increased the burden of social pension. The data of the World Health Organization indicates an upward trend in the quantity and the proportion of the global elderly population. Forecast to 2030, people over 60 will account for about one-sixth of the total population around the world [1]. At the end of 2024, people over 65 in China had reached 220 million, accounting for 15.6% of the total population. Forecast to 2050, the population over 65 years old will increase to 370 million to 400 million, accounting for about 26% of the population. In this context, pension finance becomes the key measure to settle a range of pension challenges, promote the well-being of elderly people, and realize the sustainable development of the economic society. Therefore, all countries around the world are promoting the development of pension finance actively.

Currently, pension finance is at the stage of rapid development of theory and practice. On this basis, the economic potential of the silver economy is greatly released [2]. As of July 16, the data from China Government Network shows the revenue growth of industries related to Chinese pension financial policy was at a high level, and the silver economy developed rapidly. Thus, it can be seen, the development of pension finance has a great push on the economy. Meanwhile, as an indispensable part of the future world economic system, the silver economy has a great demand for pension finance in terms of consumption and investment, and the development of the silver economy needs the support of pension finance. Therefore, pension finance development plays an important role in economic development under the backdrop of population aging. But so far, review articles related to the impact of pension finance development on the development of economic consumption and investment are relatively lacking. Thus, this article will combine and summarize relevant literature from this aspect, helping scholars have a better understanding of this issue.

2. The connotation and current situation of pension finance under the trend of aging

2.1 The connotation of pension finance

According to international standards, when the population over 60 years old accounts for 10% of the total population in a country or region, or the population over 65 years old accounts for 7% of the total population, it means that the country or region has entered an aging era. Developing countries take China as an example. On January 17, 2025, the National Bureau of Statistics released data which show that people over 60 in China have reached 310 million, accounting for 22% of the total population. Furthermore, people over 65 have reached 220 million, accounting for 15.6% of the population. Currently, China has entered deep aging society. According to United Nations Population and social sciences data, the dependency ratio of elderly population in China has clocked up 21.399%, and the social pension burden becomes heavier. Developed countries take America as an example. America entered the aging society in the mid-20th century. National Center for Health Statistics forecast people over 65 in America will account for one fifth by 2030, and the population aged 75 and above will account for 12% of American total population by 2050. In such a severe situation of aging, the development of pension finance is especially important.

Zvi Bodie and E. Philip Davis were the first to study pension finance. Their work, *The foundations of pension finance*, contains many typical achievements concerned with pension finance theory after the 1950s, and becomes an important reference for future pension financial research and relevant policy formulations [3]. However, British scholar David Blake systematically elaborated the concept of pension finance for the first time. Blake defined pension finance as pension finance and focused on the pension fund investment in various financial products [4]. In short, pension finance is a range of financial services and products provided by financial instruments around the pension needs of elderly people. It makes sure that old people can have a stable economic source and life security.

2.2 The current situation of pension finance in China and abroad

During the 1980s, due to the aggravation of the global aging problem, the cash basis used in many countries could not relieve the huge social dependency burden. In this context, the World Bank proposed the Three-Pillar Pension Model in *Preventing the aging crisis: policies to protect the elderly promote growth* in October 1994. This model is beneficial to solve the financial crisis under a single system. Meanwhile, it is the widely used pension institutional model internationally, which contains legally compulsory public pensions, occupational pensions jointly paid by enterprises and individuals, and personal pension saving plans.

The Three-Pillar Pension Model provides the basic framework for the foreign pension finance. On this basis, pension fund investment is more important because the foreign capital market is relatively complete. Therefore, researches on pension finance by foreign scholars are more inclined to pension finance. The results show that foreign pension finance development is mature with the characteristics of a diversified system, strong tax incentives, and a well-developed supervision system. Taking the United States as an example, it established a three-pillar pension system. Each pillar of the system has its own emphasis, where the Individual Retirement Account Plan (IRAs) of the third pillar developed maturely. Meanwhile, the American traditional IRA adapts the mode of Exempt-Exempt-Taxed (EET). It exempts individual income tax in payment link and investment income link, and pays individual income tax in the receive link. This method increases personal investment

income, encourages individuals to have long-term savings and investments, and boosts the accumulation of pensions. In addition, the United States established joint supervision system consisting of Social Security Administration, the Department of Labor, the Internal Revenue Service, the Department of the Treasury, Securities and Exchange Commission. Each department performs its own duties and cooperates with the other in pension supervision, making sure the security and increment of the pension. Taking Japan as an instance again, data shows that Japan entered the super aging society in 2006, so it had years of experience about pension finance development. Accordingly, Japan is a country with advanced pension system among the Asian countries. In 1999, Japan reformed the pension security system. It took the national pension and welfare pension as the first pillar, multi-type employer pension plan as the second pillar, and the individual pension plan as the third pillar. The third pillar contains the individual-type Defined Contribution pension plan (iDeCo) and the Nippon Individual Savings Account (NISA), and develops maturely. In the preferential policy of tax mode, the iDeCo adapts the mode of EET and the NISA adapts the mode of Taxed-Exempt-Exempt (TEE). Two different methods encourage people to have pension arrangements actively and supplement the national and corporate pension plans powerfully. Moreover, Japan takes the Government Pension Investment Fund (GPIF) as the core subject of supervision and implementation. The GPIF improves the management transparency by separating the decision-making, supervision, and implementation, ensuring the development of the national pension finance steady and flexible [5].

Based on the national conditions of China, domestic scholars expand the conception of pension finance constantly. He considered that China should establish a pension finance system containing social basic endowment insurance, enterprise annuity, business endowment insurance, pension savings, reverse mortgage loan for pension housing, pensions trust, pension fund, and other financial service methods [6]. Yang and Zhang reported that pension finance is the comprehensive financial service for managing currency, fixed assets, and equity-based pension assets [7]. Yao and Wang regarded pension finance as the total financial activities for the fundamental purpose of pension care, and emphasized that pension finance is an interdisciplinary field of gerontology, demography, and finance [8]. Dong, Sun, and Zhang [9], Dong and Shi [10] researched and summarized pension finance constantly, establishing the conceptual system of pension finance in China. Currently, the domestic view of pension finance is a conceptual system including pension finance, pension service finance, and pension industry finance. This viewpoint is authoritative and widely accepted by everyone. Nevertheless, under the background of population aging, the multi-pillar pension finance system of China still has a realistic dilemma, as which three-pillar model develops unbalanced. Now, the first pillar covers completely, and the second and third pillar pensions have limited accumulation.

3. The impact of pension finance development on economic development

3.1 The impact of pension finance on consumption

At the microeconomic level, pension finance mainly affects consumption through changing the income status of individuals and families and the consumption expectations. In 1954, American economists Franco Modigliani, R.Brumberg and Alberto Ando proposed the Life-Cycle Hypothesis. They considered that consumption does not depend on current income, but on income of a lifetime [11]. This hypothesis provides theoretical support for the intertemporal smoothing consumption of pension finance. Intertemporal smoothing decreases the volatility of consumption through savings or loans, and slows down the change of consumption. It has a direct impact on pension finance, locking long-term funds through pension financial instruments to form a stable income stream in the future, making people break through the idea of current income determines consumption and smooth the consumption distribution in the life cycle. Relevant research proves that there is an obvious positive correlation between basic pension and individual consumption. From this perspective, pension finance can increase the expected revenue, decrease the preventive savings, increase the current consumption, and have a positive effect on consumption. Meanwhile, through empirical research based on the data of CHFS2019, Liu concluded that business pension insurance not only increases the individual consumption significantly, but also has an obvious promoting effect on household consumption [12]. In addition, Qu utilized the data of CHARL2020 for studying the impact mechanism of pension finance on household consumption from the microeconomic level. The conclusion of this study is that the rise of the pension directly enhances the consumption ability of the elderly [13]. However, in 1968, Hayne Leland put forward the precautionary saving theory, and claimed that risk-averse consumers save for the purpose of

spending retired retirement or providing an inheritance for their children in the case of uncertain income in the future [14]. This will reduce their willingness to consume currently and increase their savings, which has a negative effect on individual consumption.

At the macroeconomic level, pension finance affects consumption through regulating the total amount of social consumption and the social consumption structure. Income redistribution can promote the propensity to consume. Pension finance, especially the basic pension insurance, can narrow the gap through intergenerational and intergroup income transfer and increase the disposable income of the low-income elderly group, stimulating the total social consumption directly. Meanwhile, a pension can offer continuous income to a group of retirees because the pension can be drawn for a long time. Fan and Wang improved the model of consumption conditions and found that the penetration rate of pension insurance contributes 0.4% to the level of consumption. It proved that pension finance has a positive effect on stabilizing and promoting consumption [15]. Besides, pension development changes the consumption of the elderly from satisfying fundamental living demands to quality demands, promoting the upgrade of social consumption structure and the emerging consumption. Relevant data displays that the new generation of the elderly prefer to consume in the field of health management, intelligent elderly care and other areas under the wealth protection of pension finance. The emergence of pension and medical care, pension and cultural tourism and other integrated formats has led to the inflow of funds into the pension industry. It promotes the upgrade of related industries, drives the linkage of the industrial chain, enlarges the consumption multiplier effect, and can continuously expand the total social consumption and promote the development of consumption. Certainly, part countries with relatively late development of social security systems still have unbalanced problems of pension financial service coverage and a three-pillar pension system. These problems make it difficult for the pension security of different types of people to be fully satisfied, and then restrict the consumption conversion of corresponding groups.

3.2 The impact of pension finance on investment

From the view of the impact of pension finance on individual asset allocation of investors, pension finance facilitates multiple individual asset allocations and enriches the choices of investment by changing the risk appetite and lowering the threshold of investment. For example, people with basic support requirements can choose the Individual Pension Account, Business Pension Insurance and other products. These products have wide adaptation ranges of the elderly population and strong risk adaptability, suiting the fundamental elderly group with the demand of the safety of funds. People with stable value-added demands can choose Target Risk Funds and Real Estate Investment Trusts which have the characteristic of long-term value-added. Some scholars studied the influence of pension insurance on Chinese household asset allocation. They reported that there is a positive correlation between the surplus of pension account and the ownership of household risky assets. When every 10% increase in the account balance, the probability of household investment risk increases by 5% and that of risk asset allocation increases by 1.7% [16]. In 2025, the president of the United States, Donald Trump, signed an executive order that groups cryptocurrency and alternative assets, and added it to the Section 401(k) Plan. This measure enriches the allocation of retirement savings and expands the investment path.

From the perspective of the impact of pension finance on enterprise investment efficiency, the long-term investment of pension funds can provide enterprises with stable currency, promote enterprises to focus on long-term projects through participating in governance, and improve investment efficiency. Based on the Danish data, some scholars studied that pension fund equity investments can increase the productivity of enterprises by 3%-5% on average and the higher the shareholding ratio, the longer the holding time, and the more obvious the effect [17]. Meanwhile, the long-term investment of pension funds can alleviate the capital constraints, especially for private companies and small enterprises. However, pension funds have relatively high requirements for risk control, so some enterprises may incline to conservative investments and reduce the project investments with high risk and high return. It has a negative effect on enterprise investment efficiency. Furthermore, some scholars researches the relationship between the payment rate of pension insurance and the enterprise investment efficiency [18]. The study found that there is obvious negative correlation between the payment rate of pension insurance and the enterprise investment efficiency. When the payment rate of pension insurance rises, the Crowding Out Effect on enterprise investment efficiency is obvious, preventing the improvement of enterprise investment.

From the perspective of the impact of pension finance on the market investment scale, pension finance development can expand long-term capital supply in the capital market, directly expanding the market investment scale. In 1994, the World Bank released the *Pension System Reform and Economic Growth Report*. This report, taking the American Occupational Pension, Singapore and Chile Pension Plan as examples, confirmed that pension finance can increase the national savings under the fund accumulation system. After pension reformation in Chile, the proportion of pension savings and total savings in Gross Domestic Product both increased, driving the growth of market investment scale. Furthermore, according to People Daily Online, Dong believes that a fund system or partial fund system pension mode can increase long-term savings, stabilize the market fluctuation, enhance the confidence of investors, prove the market investment activity, and then expand the market investment scale. Therefore, pension finance development can stabilize investment environment, to some extent, driving the growth of market investment scale indirectly.

4. Conclusion

With the aggravation of the world's aging problem, all countries are developing pension finance positively. Based on sorting and summarizing the relevant literature, this article discusses the impact of pension finance development on economic development from two aspects of consumption and investment. This study finds that pension finance development has certain constraints on consumption and investment, but most of them show a positive correlation. Therefore, the development of pension finance is beneficial to economic development.

For countries with immature pension finance should establish a multi-pillar pension system adapted to the national conditions first and activate the second and the third pillar on the basis of giving priority to building the first pillar. At the same time, to solve the unbalanced development, government can low the threshold of participating in pension finance and attract people to participate through related tax allowance and exemption to enterprises, pension savings tax preferential policies and other means.

Then, financial institutions should innovate pension financial products and services constantly. With the target of realizing the specialization of pension finance, financial institutions should keep tapping the needs of the country for pension finance in different phases, and develop a series of pension financial products that meet the current stage of national development and future long-term pension needs and life cycle characteristics. In addition, financial institutions have to fully consider the realistic demands of the national elderly population, optimize domestic service level, and improve the experience of the elderly.

Besides, governments should strengthen the supervision and management of pension finance. Government departments should clarify their job responsibilities, cooperate mutually, establish a supervision system adapted to the characteristics of pension finance and the requirements of risk control, and optimize continuously in practice. Meanwhile, to ensure the security of pensions and enhance the public confidence in national pension finance development, it is essential to strengthen legislative supervision and combat illegal actions suspected of pension finance strictly.

Last, pay attention to differentiated policy formulation and cross-regional exchanges and cooperation in the development of pension finance to promote the rational and coordinated development of pension finance. According to the factors of economic development level in different regions, the degree of population aging, and the realistic needs of the elderly population, governments should formulate differentiated policies to make the development of pension finance more scientific. Moreover, pay attention to promoting the resources inclined to key areas and reducing the regional pension finance development differences in the development process is equally important.

References

- [1] World Health Organization. Ageing and health. Available from: <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health> (accessed 18 December 2025).
- [2] Li, X. T. The inherent logic and pathway of pension finance supporting the high-quality development of the silver economy. *Jiangsu Social Sciences*. 2025(2), pp. 152-160. <https://doi.org/10.13858/j.cnki.cn32-1312/c.20250325.001>.

- [3] Bodie, Z. and Davis, E. The foundations of pension finance. Cheltenham, UK: Edward Elgar Publishing, 2000.
- [4] Blake, D. Pension Finance. Hoboken, NJ: John Wiley & Sons, 2006.
- [5] Liu, Q. Research on the comparison between China's pension finance and that of foreign countries and development suggestions. *Social Enterprise Economic Development*. 2025, 2(6), pp. 39-43. <https://doi.org/10.69979/3029-2700.25.06.013>.
- [6] He, Q. Establishing a Chinese pension finance system is imperative. *International Financing*. 2011(4), p. 35.
- [7] Yang, Y. S. and Zhang, C. The development of the elderly care industry relies on three innovations. *China National Conditions and Strength*. 2014(1), pp. 17-19. <https://doi.org/10.3969/j.issn.1004-2008.2014.01.005>.
- [8] Yao, Y. D. and Wang, G. Y. The Development of Pension Finance and the Supply-Side Structural Reform. *Finance Forum*. 2016, 21(5), pp. 13-17. <https://doi.org/10.16529/j.cnki.11-4613/f.2016.05.002>.
- [9] Dong, K. Y., Sun, B. and Zhang, D. From pension to ageing finance: Conceptual system and logical framework with Chinese characteristics. *Public Administration and Policy Review*. 2021, 10(6), pp. 15-23. <https://doi.org/10.3969/j.issn.2095-4026.2021.06.002>.
- [10] Dong, K. Y. and Shi, W. K. The compositional logic and development path of China's pension finance. *Modern Finance Guide*. 2024(11), pp. 10-13.
- [11] Yin, Q. F. Life cycle theory and consumption savings. *Consumer Economics*. 1992(3), pp. 25-28.
- [12] Liu, X. Y. The impact of commercial endowment insurance on residents' consumption behavior: Empirical research based on CHFS2019 data. Master's Thessi, Chongqing: Southwest University of Political Science and Law, 2023. <https://doi.org/10.27422/d.cnki.gxzf.2023.000387>.
- [13] Qu, B. Pension levels, social activities, and household consumption. *Finance Research Letters*. 2025, 75, p. 106853. <https://doi.org/10.1016/j.frl.2025.106853>.
- [14] Leland, H. E. Saving and Uncertainty: The Precautionary Demand for Saving*. *The Quarterly Journal of Economics*. 1968, 82(3), pp. 465-473. <https://doi.org/10.2307/1879518>.
- [15] Fan, G. and Wang, X. L. Consumption facility model and provincial consumption facility indexes. *Economic Research Journal*. 2004(5), pp. 13-21.
- [16] Chen, H., Guo, Y., Li, D. and Xiao, H. Pension insurance, risk attitudes, and household asset allocation—evidence from China. *Economic Analysis and Policy*. 2025, 86, pp. 2180-2191. <https://doi.org/10.1016/j.eap.2025.05.042>.
- [17] Beetsma, R., Jensen, S. E. H., Pinkus, D. and Pozzoli, D. Do Pension Fund Equity Investments Raise Firm Productivity?: Evidence From Danish Data. Working Paper, Frederiksberg: Department of Economics. Copenhagen Business School, 2024.
- [18] Pei, D. and Wang, B. Pension insurance contribution rate and corporate investment efficiency. *Finance Research Letters*. 2024, 62, p. 105246. <https://doi.org/10.1016/j.frl.2024.105246>.

Funding

This research received no external funding

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).