

The Impact of Population Aging on the Sustainability of China's Endowment Insurance Fund and Its Countermeasures

Jiang Kun¹ Zhou Jiabin² B.Bas-Orgil^(Corresponding author)

1 MongolianNationalUniversity, Ulaanbaatar city,"Bayangol.District.11th • Khoroo,National University of Mongolia, 16060;

2 Hainan Vocational University of Science and Technonlogy, No.18 Qiongshan Avenue,Meilan District, Haikou City, Hainan Province, 570100;

Abstract: Population aging has become a core variable affecting the sustainability of China's endowment insurance fund. It systematically impacts the pay-as-you-go system by altering the system dependency ratio and distorting the fund's revenue and expenditure structure. From a multidisciplinary perspective, this paper analyzes the transmission mechanism of aging on fund balance. Integrating international reform experiences and domestic practical explorations, it proposes a sustainable development path centered on national pooling and supported by institutional innovation. Research indicates that a single policy is insufficient to resolve deep-seated contradictions. Comprehensive reforms, including elevating the pooling level, optimizing the financing mechanism, and making the benefit system more flexible, are needed to construct an operational system for the endowment insurance fund adaptable to an aging society.

Keywords: Population Aging; Endowment Insurance Fund; Pay-as-you-go System

DOI:10.69979/3041-0843.25.02.062

1 Research Background and Significance

1.1 Research Background

Population aging, as a global social phenomenon, is characterized by accelerated progression in China, and its pervasive impact on the economic and social system is gradually becoming apparent. The endowment insurance system, as the core mechanism for addressing old-age risks, has its fund's operational sustainability directly related to the stability of the social security system and the realization of social equity. The pay-as-you-go model formed at the inception of China's endowment insurance system operated efficiently during the demographic dividend period relying on intergenerational transfer payments. However, with the deepening of aging, the inherent vulnerability of this model has become increasingly prominent. In recent years, although the government has actively responded through measures such as raising pension standards and promoting system reforms, the structural pressure faced by fund operations has not been fundamentally alleviated. How to resolve the fund sustainability dilemma caused by aging has become a major practical issue requiring urgent solution.

1.2 Research Significance

Theoretical Significance: By analyzing the intrinsic relationship between aging and fund sustainability, this paper enriches interdisciplinary research perspectives in the field of social security, particularly forming a systematic explanation of the adaptability of the pay-as-you-go system amidst demographic structural changes, providing theoretical supplementation for cross-disciplinary research in institutional economics and population sociology.

Practical Significance: The targeted countermeasures proposed by the research can provide decision-making references for policymakers, assist in deepening the reform of the endowment insurance system, and hold significant

practical value for safeguarding the pension rights and interests of hundreds of millions of people and promoting social harmony and stability.

2 The Internal Mechanism of How Population Aging Affects the Sustainability of the Endowment Insurance Fund

2.1 Intensification of the Endogenous Contradictions of the Pay-as-you-go System

The pay-as-you-go system, centered on an "intergenerational contract," uses contributions from working employees to pay benefits for retirees. Its sustainability highly depends on a stable system dependency ratio. Population aging disrupts this balance. As the proportion of the elderly population rises, the quantitative structure of the contributing group and the benefit-receiving group reverses, creating dual pressure of "fewer contributors, more recipients." This structural change is not a short-term fluctuation but a long-term trend of demographic transition, leading to a rigid imbalance in fund revenue and expenditure – benefit expenditures have an irreversible growth inertia, while contribution revenue growth is constrained by the shrinking working-age population. The endogenous balancing mechanism within the system struggles to self-correct. The evolution of the German pension insurance system shows that even its country of origin needed to introduce adjustment tools such as demographic factors and sustainability factors to address the intergenerational imbalance caused by aging.

2.2 Prominent Structural Constraints from Low Fund Pooling Levels

China's endowment insurance fund has long operated under a pattern of "regional fragmentation," with the pooling level mostly remaining at the prefectural/city level, failing to form a nationwide risk-sharing mechanism. Against the backdrop of significant regional disparities in aging degrees, this structure leads to a severe imbalance in fund resource allocation: developed regions with labor inflows have ample fund surpluses, while regions with severe aging and labor outflows fall into the predicament of expenditures exceeding revenues, relying on fiscal subsidies to maintain operation. This Matthew effect of "the rich get richer, the poor get poorer" not only reduces the overall efficiency of fund use but also amplifies the impact of aging on fund sustainability in specific regions. Although the central adjustment system has alleviated inter-provincial differences to some extent, the adjustment capacity is limited and has not fundamentally resolved the systemic risks arising from insufficient pooling levels.

2.3 Lack of Flexible Mechanisms in System Operation

Coping with the impact of aging requires the endowment insurance system to possess dynamic adjustment capabilities. However, China's current system lacks flexible mechanisms on both the contribution and benefit sides. On the contribution side, the enterprise contribution rate is already at a relatively high international level. Further increasing the contribution rate would increase the burden on enterprises and weaken economic vitality. Moreover, against the background of slowing employment growth due to aging, the growth space for the contribution base is limited. On the benefit side, pension benefit adjustments are mostly linked to prices and wages, lacking an automatic adjustment mechanism linked to demographic changes, leading to an increasingly sharp contradiction between the rigid growth of benefits and the fund's affordability. Simultaneously, issues such as low compliance rates and unstable participation of flexible employees further erode the fund's revenue base, making the system more vulnerable under the impact of aging.

3 International Experience for Enhancing Endowment Insurance Fund Sustainability

3.1 Germany: Reform of the Benefit Mechanism with Multi-Factor Adjustment

Germany, as the birthplace of the pension insurance system, facing aging pressures, has constructed a flexible benefit adjustment system through gradual reforms. The demographic factor introduced in 1994 links pension benefits to changes in life expectancy, automatically reducing benefit levels when increased aging leads to longer life expectancy; the sustainability factor added in 2004 dynamically adjusts benefit standards based on changes in the dependency ratio, making both working employees and retirees share the costs of aging. This mechanism design of "linking benefits to

demographic structure" avoids unlimited increases in contribution rates while achieving intergenerational fairness, providing direct reference for China in establishing a benefit adjustment mechanism.

3.2 Common Insights from International Experience

Although reform paths differ among countries, they all follow three core logics: First, adhere to the comprehensiveness of system reform, avoiding reliance on a single policy tool. Second, establish dynamic adjustment mechanisms linked to demographic structure to enhance system flexibility. Third, strengthen the construction of a multi-level security system to disperse the pressure on the basic endowment insurance fund. These experiences indicate that enhancing the sustainability of the endowment insurance fund is essentially a process of matching institutional adaptability with demographic structural changes, requiring a dynamic balance between fairness and efficiency, the present and the long term.

4 Countermeasure System for Enhancing the Sustainability of China's Endowment Insurance Fund

4.1 Institutional Restructuring: Advancing National Pooling and Account Optimization

Accelerate the achievement of national pooling: Implement the requirement put forward in the report of the 19th National Congress of the CPC to "achieve national pooling of endowment insurance as soon as possible," break down regional administrative barriers, and establish a nationally unified fund pool and management system. By unifying the contribution base and benefit calculation standards, achieve the adjustment of fund surpluses and shortages nationwide, resolving the fund imbalance caused by regional differences in aging degrees. National pooling can not only integrate dispersed fund resources but also create room for reducing enterprise contribution rates. Indirectly strengthening the fund's contribution base by unleashing economic vitality.

Optimize account system design: While adhering to the pay-as-you-go system as the mainstay, improve the individual account system, and enhance the fund's accumulation capacity by fully funding accounts and standardizing account management. Research from Tianjin University indicates that a full transition from pay-as-you-go to a fully funded system is unnecessary; sustainability can be improved through account optimization. Mechanisms linking individual accounts with the personal pension system can be explored to form a positive interaction between basic security and supplementary security.

4.2 Mechanism Innovation: Constructing a Flexible Revenue and Expenditure Adjustment System

Improve the financing mechanism: Under the premise of stabilizing the enterprise contribution rate, increase subsidies from the general public budget to the endowment insurance fund, disperse financing pressure through tax channels such as Value-Added Tax and corporate income tax, avoiding excessive tax burden concentrated on labor factors. Simultaneously, expand diversified financing channels, explore supplementary sources such as transfers of state-owned capital and shares of land transfer fees, to enhance the fund's risk resilience.

Establish a dynamic benefit adjustment mechanism: Drawing on German experience, introduce benefit adjustment factors linked to demographic structure and life expectancy, so that pension benefit growth aligns with the fund's affordability. Establish a consultation mechanism for benefit adjustments, comprehensively considering factors such as the degree of aging, economic development level, and price changes, to achieve scientific and regular benefit adjustments.

Steadily promote delayed retirement: As a key measure to address aging, delayed retirement can bilaterally improve the fund's revenue and expenditure status by extending the contribution period and shortening the benefit receipt period. A gradual reform path should be adopted, setting reasonable transition periods and flexible options, taking into account the interests of different groups, to ensure the smooth implementation of the reform.

4.3 System Support: Developing Multi-level Security and the Silver Economy

Strengthen the third pillar of endowment insurance: Implement the personal pension system, stimulate residents' participation enthusiasm through tax incentives, account management innovations, and other measures, and cultivate

market-based supplementary pension forces. Promote financial institutions such as insurance companies, fund companies, and banks to develop diverse pension financial products to meet the needs of different groups and disperse the pressure on the basic endowment insurance fund.

Promote the linkage between the silver economy and fund development: Relying on the policy orientation of "vigorously developing the silver economy," explore synergistic development models between the endowment insurance fund and the elderly care industry. Through compliant investment operations, invest part of the fund into the construction of elderly service facilities, development of elderly products, etc., achieving both fund value preservation and appreciation, and creating more jobs and tax revenue through industrial development, forming a virtuous cycle of fund sustainability and industrial development.

4.4 Management Strengthening: Enhancing Fund Operational Efficiency

Standardize fund investment operations: Under the premise of controllable risk, broaden investment channels, optimize investment portfolios, and improve the fund's rate of return. Establish professional investment management teams and strict risk prevention and control systems to avoid fund losses due to investment errors, and enhance the fund's self-generating capacity through steady investment.

Strengthen coverage expansion and supervision: Targeting the low participation rate among groups like flexible employees, optimize participation services, simplify contribution procedures, and expand system coverage. Strengthen social security audits and dishonesty punishment, combat fraud and contribution evasion, improve the compliance rate, and consolidate the fund's revenue base.

5 Theoretical Support and Policy Guarantee

5.1 Theoretical Support: Collaborative Efforts from Multidisciplinary Perspectives

Research on the sustainability of the endowment insurance fund involves multiple disciplines such as economics, demography, and public management. The overlapping generations model should be used to analyze intergenerational resource allocation efficiency, actuarial methods to calculate critical conditions for system operation, and public management theory to optimize system design and management processes. The integration of multiple disciplines can provide more comprehensive theoretical support for reforms, avoiding one-sidedness in policy formulation.

5.2 Policy Guarantee: Constructing a Systemic Reform Environment

Strengthen top-level design: Establish cross-departmental coordination mechanisms to coordinate the linkage between endowment insurance system reform and population policies and economic policies, forming policy synergy. Formulate medium and long-term reform plans, clarify goals and implementation paths for each stage, and ensure the continuity and stability of reforms.

Improve legal safeguards: Accelerate the legislative process for endowment insurance, clarify legal norms for system operation, and ensure that all links such as fund raising, management, and payment have laws to follow. Stabilize social expectations through legal means and enhance public trust in the endowment insurance system.

Strengthen publicity and guidance: Interpret reform policies through various channels, popularize knowledge about aging and endowment insurance, guide the public to establish rational pension expectations, understand and support reform measures, and create a favorable social environment for enhancing system sustainability.

6 Conclusion

The impact of population aging on the sustainability of China's endowment insurance fund is essentially a manifestation of the incompatibility between the institutional model and demographic structural changes. Its core contradiction lies in the broken intergenerational balance mechanism of the pay-as-you-go system and the lack of risk sharing caused by insufficient pooling levels. International experience shows that reform is the fundamental path to address this challenge, and a single policy cannot resolve deep-seated contradictions.

Enhancing the sustainability of China's endowment insurance fund requires constructing a four-in-one

countermeasure system of "institutional restructuring - mechanism innovation - system support - management strengthening": use national pooling to solve the problem of regional fragmentation, use flexible revenue and expenditure mechanisms to cope with structural changes, use multi-level security to disperse fund pressure, and use efficient management to enhance operational efficiency. Simultaneously, it is necessary to strengthen multidisciplinary theoretical support and systematic policy guarantees to ensure the effective implementation of reform measures.

The endowment insurance system, as the "safety net" for social stability, has sustainability that not only concerns the vital interests of hundreds of millions of people but also relates to the long-term stability and security of the nation. Against the background of continuously deepening population aging, only by adhering to reform and innovation and constantly enhancing the system's adaptability and flexibility can the long-term healthy operation of the endowment insurance fund be achieved, providing a solid social security support for Chinese modernization.

References

- [1] Zhang Mengyu. Research on Financial Support for the Sustainable Development of Endowment Insurance Funds under the Background of Population Aging [D]. Fujian Normal University, 2021.
- [2] Xie Zhenfa. Research on the Sustainability of China's Endowment Insurance [D]. Xiamen University, 2002.
- [3] Tan Yating. Research on the Impact of Provincial Pooling on the Sustainability of Urban Employee Basic Endowment Insurance Funds [D]. Zhongnan University of Economics and Law, 2022.
- [4] Yi Hao. Research on Sustainable Development Strategies of Social Security Funds under the Background of Population Aging [J]. Township Enterprise Guide, 2024(21).
- [5] Huo Yingying. Research on Aging and Endowment Insurance Sustainability [J]. Chinese Scientific Journal Database (Full Text Edition) Social Sciences, 2023(3):4.
- [6] Li Zhihua. Research on Risk Avoidance of Urban Employee Endowment Insurance Funds in China [D]. Henan University, 2014.