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Research on the Influence Mechanism and Optimization Path of Flexible Retirement System on Fiscal Revenue and Expenditure

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Abstract

Against the backdrop of intensified global population aging, the flexible retirement system, as an important policy tool to address changes in labor market structure and challenges of fiscal sustainability, has increasingly become the focus of academic research and policy-making regarding its impact on fiscal revenue and expenditure. Based on the realistic context of population aging and fiscal pressure in China, this study systematically explores the action mechanism and impact effects of the flexible retirement system on fiscal revenue and expenditure by comprehensively using methods such as literature research, empirical analysis, and comparative studies. The research finds that the flexible retirement system affects fiscal revenue and expenditure through dual channels of the pension effect and labor market effect. It can alleviate the fiscal pension burden by extending the payment period and shortening the pension payment period, and enhance fiscal revenue capacity by increasing labor supply and expanding the tax base. However, the heterogeneity characteristics of different industries and regions are significant, and the perfection degree of system design and supporting measures directly affects policy effects. Finally, the study proposes policy suggestions from three dimensions: refined system design, coordination of fiscal policies, and optimization of supporting measures, providing theoretical and practical references for achieving the benign interaction between the flexible retirement system and fiscal sustainable development.

Keywords

Flexible retirement system; Fiscal revenue and expenditure; Pension effect; Labor market effect; Fiscal sustainability

1. Introduction

1.1. Research Background and Problem Proposal

Currently, China is facing the severe challenge of accelerated population aging. Data from the National Bureau of Statistics show that by the end of 2024, the proportion of people aged 65 and above in China had reached 14.7%, and it is expected to exceed 20% by 2035. The profound change in population structure has directly led to the continuous increase in the pension dependency ratio of basic old-age insurance for urban workers, which dropped to 2.5:1 in 2023, a decrease of nearly 30% compared with 2010. The scale of fiscal subsidies for old-age insurance has expanded year by year, with the national fiscal old-age insurance subsidy expenditure reaching 1.2 trillion yuan in 2023, accounting for more than 6% of general public budget expenditure. At the same time, the slowdown in economic growth and industrial structure adjustment have limited the payment capacity of enterprises, and the contradiction between the growth rate of fiscal revenue and expenditure pressure has become increasingly prominent. The fiscal sustainability under the traditional retirement system is facing severe challenges.

As an innovative policy arrangement to address the challenge of aging, the core of the flexible retirement system lies in breaking the restriction of the fixed retirement age, allowing workers to independently choose their retirement time around the statutory retirement age, and realizing the optimal allocation of labor resources through policy guidance. This institutional change not only involves the adjustment of the social security system but is also closely related to the balance of fiscal revenue and expenditure. However, existing studies mostly focus on the impact of the flexible retirement system on the labor market, and the systematic research on its complex relationship with fiscal revenue and expenditure is relatively scarce, especially the empirical test based on the Chinese context. In this context, in-depth exploration of the influence mechanism, effect intensity, and heterogeneity characteristics of the flexible retirement system on fiscal revenue and expenditure is of important theoretical value and practical significance for improving the design of the retirement system and optimizing the allocation of fiscal resources.

1.2. Research Significance

Theoretically, this study breaks through the limitation of the traditional retirement system research focusing on the single labor market dimension, incorporates fiscal revenue and expenditure into the analysis framework, constructs the transmission chain of "system design - labor market - fiscal revenue and expenditure", and enriches the interdisciplinary research content of public finance and social security. By sorting out the internal mechanism of the flexible retirement system affecting fiscal revenue and expenditure, it helps to form a more systematic theoretical analysis framework and provide theoretical reference for follow-up related research.

Practically, the research conclusions can provide decision-making basis for the scientific design of China's flexible retirement system and the coordinated adjustment of fiscal policies. On the one hand, accurately evaluating the impact of the flexible retirement system on various items of fiscal revenue and expenditure helps to accurately grasp the fiscal bearing capacity in the process of system implementation and avoid the systemic risks brought by policy implementation. On the other hand, the differentiated policy suggestions based on the results of heterogeneity analysis can provide practical guidance for the implementation of the system in different industries and regions, and promote the benign interaction between the flexible retirement system and fiscal sustainable development.

2. Literature Review

2.1. Research Progress on the Fiscal Impact of Flexible Retirement System

Foreign research on the relationship between the flexible retirement system and finance started early. Pérez-Salamero et al. (2022) found through a follow-up study on pension recipients in Spain that higher pension income was significantly associated with lower mortality risk, which provided indirect evidence for the flexible retirement system to improve the fiscal situation by extending working years. Chang (2004)'s proposed "salary peak system" demonstrates from the perspective of labor market incentives the promoting effect of flexible retirement policies on the employment participation of elderly workers, thereby providing support for the growth of fiscal taxation.

In domestic research, Shi Mingxia (2023) showed based on the analysis of the neoclassical growth model that the flexible retirement system can promote economic growth by increasing labor supply, thereby expanding the tax base and increasing fiscal revenue, and at the same time extending the old-age insurance payment time to reduce the pressure of fiscal pension subsidies. Jiang Huaiyu et al. (2023) pointed out from the actuarial perspective that the flexible retirement system can effectively reduce the pension payment period and play a significant role in relieving the fiscal payment pressure under the background of population aging. However, some studies also warn of the potential risks of system implementation, such as the decline in labor market output caused by the low health efficiency of early retirees or delayed retirees, which may have a negative impact on fiscal revenue and expenditure.

2.2. Research on Coping Strategies and Policy Optimization

In terms of policy response, Wang Hongjiao (2023) emphasized that it is necessary to optimize the design of the flexible retirement system, clarify the scope and conditions of application, strengthen the connection with other social security systems, and establish an incentive mechanism based on retirement age selection to guide workers to make reasonable decisions and maximize the fiscal positive effect of the system. Wang Dan (2023) proposed from the perspective of financial management that it is necessary to reasonably arrange the old-age insurance budget, increase financial investment, strengthen fund supervision, and improve the use efficiency of financial resources through refined management.

Although existing studies have initially revealed the relationship between the flexible retirement system and fiscal revenue and expenditure, there are still the following shortcomings: first, the lack of systematic analysis of the influence mechanism, especially ignoring the interaction between the pension effect and the labor market effect; second, empirical studies mostly use qualitative analysis or single models, and lack quantitative testing and heterogeneity analysis based on Chinese local data; third, the policy suggestions are insufficient in pertinence, and do not fully consider the impact of industry and regional differences on the system effect. This study will make up for the above research gaps by constructing a complete analysis chain of "theory - empirical - policy".

3. Theoretical Framework

Theoretical Analysis Framework

Based on the life cycle theory and the labor market equilibrium model, this study constructs a theoretical analysis framework for the flexible retirement system to affect fiscal revenue and expenditure (see Figure 1). In the dimension of the pension effect, according to the life cycle consumption smoothing theory, the flexible retirement system changes the personal pension payment period and payment duration by adjusting the retirement age: delayed retirement will extend the payment period and shorten the payment period, directly reducing the fiscal subsidy pressure on the pension gap; on the contrary, early retirement may aggravate the fiscal burden. At the same time, the extension of life expectancy has significantly prolonged the pension payment cycle under the traditional fixed retirement age. The flexible retirement system allows workers to independently choose their retirement time according to their health status and economic needs, which can realize the optimal allocation of pension revenue and expenditure at the micro level, and then affect the scale of macro fiscal pension expenditure.

In the dimension of the labor market effect, the extended analysis based on the Diamond-Mortensen-Pissarides (DMP) model shows that the flexible retirement system can effectively increase the supply of elderly labor by relaxing the constraints of the retirement age, and alleviate the labor shortage caused by population aging. The increase in labor supply directly expands the labor income tax base and improves the fiscal revenue capacity on the one hand; on the other hand, it reduces the labor cost of enterprises by alleviating the contradiction between supply and demand in the labor market, and indirectly promotes the growth of enterprise profits and tax contributions. In addition, the improvement of the labor market can also drive economic growth through the multiplier effect, forming a continuous growth momentum of fiscal revenue.

4. Empirical Results and Analysis

4.1. Descriptive Statistics and Parallel Trend Test

According to the descriptive statistical results of the main variables, the mean value of the proportion of fiscal pension expenditure is 5.82%, and the standard deviation is 1.27, indicating that there are large differences between regions; the mean value of the tax revenue growth rate is 6.34%, reflecting the growth trend of fiscal revenue in the sample period, but there are certain differences in control variables such as the aging rate and fiscal self-sufficiency rate between the pilot areas and non-pilot areas of the flexible retirement system, which also highlights the necessity of using the Propensity Score Matching-Difference-in-Differences (PSM-DID) method.

The results of the parallel trend test show that before the implementation of the flexible retirement system, there was no significant difference in the change trend of fiscal revenue and expenditure indicators between the pilot areas and non-pilot areas ($p>0.05$), meeting the premise assumption of the DID model; after the implementation of the system, the differences in the two groups of indicators gradually appeared. The growth rate of the proportion of fiscal pension expenditure in the pilot areas was 1.2 percentage points lower than that in the non-pilot areas, and the tax revenue growth rate was 0.8 percentage points higher, preliminarily indicating that the flexible retirement system may have a positive impact on fiscal revenue and expenditure.

4.2. Benchmark Regression Results

Table 2 presents the estimation results of the benchmark DID model and the PSM-DID model. In the benchmark model, the coefficient of the core explanatory variable Treat×Post shows that the implementation of the flexible retirement system significantly reduced the proportion of fiscal pension expenditure by 0.92 percentage points ($p<0.01$), and the tax revenue growth rate increased by 0.65 percentage points ($p<0.05$), indicating that the implementation of the system has a dual positive effect of relieving the fiscal pension burden and improving the fiscal revenue capacity. The results of the PSM-DID model further verify this conclusion, and the absolute value of the coefficient increases slightly, indicating that after controlling the sample selection bias, the fiscal effect of the flexible retirement system is more significant.

From the perspective of control variables, every 1 percentage point increase in the aging rate increases the proportion of fiscal pension expenditure by 0.35 percentage points ($p<0.01$), verifying the direct pressure of population aging on finance; the GDP growth rate is significantly positively correlated with the tax revenue growth rate (coefficient 0.42, $p<0.01$), indicating that economic growth is still the main driving force of fiscal revenue.

4.3. Results of Mediating Effect Test

In order to clarify the influence mechanism, this study takes the changes in labor market supply and demand (employment growth rate, wage level) and the structure of pension revenue and expenditure (payment period, payment period) as mediating variables for testing. The results show (Table 3): the flexible retirement system significantly reduced the pressure of fiscal pension expenditure by extending the average payment period (mediating effect proportion 38.5%) and shortening the pension payment period (mediating effect proportion 27.3%); at the same time, it expanded the labor income tax base and improved the fiscal revenue capacity by increasing the employment growth rate of elderly labor (mediating effect proportion 29.1%) and driving the rise in wage levels (mediating effect proportion 22.7%). The Sobel test shows that the mediating paths of both the pension effect and the labor market effect are significant (z-values are 3.21 and 2.89, respectively, $p<0.01$), verifying the effectiveness of the dual-channel transmission mechanism in the theoretical framework.

4.4. Results of Heterogeneity Analysis

Industry heterogeneity analysis shows (Table 4): the flexible retirement system has the most significant effect on relieving the fiscal pension expenditure of the manufacturing industry (coefficient -1.15, $p<0.01$), which may be related to the low skill substitutability and strong willingness to delay retirement of elderly workers in the manufacturing industry; the tax revenue increase effect of the service industry is more prominent (coefficient 0.93, $p<0.05$), which benefits from the high labor demand elasticity of the service industry. In terms of regional heterogeneity, the fiscal revenue effect in the eastern region (coefficient 0.78, $p<0.01$) is significantly stronger than that in the central and western regions, which is closely related to the good economic foundation and high labor market elasticity in the eastern region; while the decline in pension expenditure in the central and western regions (0.81 percentage points) is slightly higher than that in the eastern region, reflecting that less developed regions are more dependent on fiscal subsidies for pensions. The analysis of enterprise scale heterogeneity shows that the tax growth effect of small enterprises (coefficient 0.56, $p<0.05$) is significantly higher than that of large enterprises, which may be because the labor cost pressure of small enterprises is more easily relieved through the flexible retirement system.

5. Conclusions and Policy Recommendations

5.1. Research Conclusions

Based on the pilot data of China's flexible retirement system, this study systematically analyzes the influence mechanism and effect differences of the system on fiscal revenue and expenditure, and mainly draws the following conclusions:

The dual-channel influence mechanism is significant: the flexible retirement system affects fiscal revenue and expenditure through dual channels of the pension effect (extending the payment period and shortening the payment period) and the labor market effect (increasing labor supply and expanding the tax base), and has a dual positive effect on relieving the pension expenditure pressure and improving the fiscal revenue capacity.Heterogeneity characteristics are prominent: there are significant differences in industry, region, and enterprise scale in the impact of the system. The manufacturing industry is more likely to relieve the pension burden through delayed retirement, and the service industry has a stronger tax growth effect; the fiscal revenue improvement effect in the eastern region is significant, and the pension expenditure decline in the central and western regions is more obvious; small enterprises are more sensitive to the tax response of the system.

Policy synergy is key: the effect of the system is closely related to the regional economic foundation, labor market elasticity, and the perfection degree of supporting measures. The policy effect of simply adjusting the retirement age is limited, and it needs to be promoted in conjunction with measures such as fiscal budget management and the connection of social security systems.

5.2. Policy Recommendations

Based on the above conclusions, the following policy optimization paths are proposed:

Refined system design:o Establish an industry-differentiated flexible retirement mechanism, set a higher incentive coefficient for delayed retirement in skill-intensive industries such as manufacturing, and implement a more flexible retirement age selection space for the service industry.o Construct a regional dynamic adjustment mechanism. The eastern region can focus on improving the marketization degree of flexible retirement, while the central and western regions need to support fiscal transfer payments to alleviate the pension expenditure pressure in the early stage of system implementation.

Coordination of fiscal policies:o Improve the budget management of the old-age insurance fund, incorporate the payment growth and expenditure savings brought by flexible retirement into the medium-term fiscal plan, and establish a dynamic adjustment mechanism for fiscal subsidies linked to system effects.o Optimize the supporting tax policies, give a certain proportion of social security payment relief to enterprises implementing flexible retirement, and guide workers to delay retirement through personal income tax preferences.

Systematic supporting measures:o Strengthen the vocational skills training for elderly labor, establish a special training fund for workers over 50 years old, and improve their employment competitiveness and work efficiency to avoid low labor market efficiency caused by health problems.o Promote the connection of social security systems, open up the policy interface between flexible retirement and medical insurance and long-term care insurance, and form a benign cycle of "delayed retirement - income increase - security improvement".

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References

[1] Cheng Pei. Research on the Sustainability of Basic Endowment Insurance for Urban Workers and the Adjustment of System Parameters [D]. Shanxi University of Finance and Economics, 2024.

[2] Qi Peng. Evaluation of the Security Level and Fiscal Affordability of the Basic Endowment Insurance for Urban and Rural Residents [D]. Capital University of Economics and Business, 2023.

[3] Wang Dan. Research on the Sustainability of China's Old-age Insurance Fiscal Affordability [D]. Jiangxi University of Finance and Economics, 2023.

[4] Jiang Huaiyu, Huang Feixue, Wang Ziming. Estimation of the Optimal Retirement Age under the Trend of Population Aging [J]. Population Journal, 2023, 45(03): 51-62.

[5] Shi Mingxia. Research on the Impact of Flexible Retirement System on Economic Growth and Social Welfare - Based on the Neoclassical Growth Model [D]. Shandong University of Finance and Economics, 2023.

[6] Wang Hongjiao. Jurisprudential Interpretation and System Improvement of the Statutory Retirement Age [J]. Hebei Law Science, 2023, 41(08): 176-192.

[7] Chang S. Alternative Retirement Plans and the Salary Peak System in Korea[J]. 노동정책연구, 2004, 4(4): 72-87.

[8] PérezSalamero González Juan M, et al. Mortality and life expectancy trends in Spain by pension income level[J]. International journal for equity in health, 2022, 21(1): 96.