Frontiers in Economics and Management Volume 7 Issue 7, 2026
ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

Research on the Influencing Factors and Problems of Financial Asset Allocation of Family Care

Jie Geng, Yao Ma

Nanjing University of Science and Technology ZiJin College, Nanjing 210023, China

Abstract

In recent years, China's population aging has become increasingly severe due to the continuous decline in birth rates and the extension of average human life expectancy. Consequently, some residents have begun to pay attention to and systematically allocate personal and family pension financial assets. However, given the profound degree of population aging, the relatively low financial literacy of residents, and the limited financial inclusiveness of pension services in China, there remain certain challenges in how families manage their pension financial assets.This paper selects the 2019 data from the China Household Financial Survey (CHFS) and constructs the residents 'financial literacy index and the financial inclusiveness index of elderly care services using factor analysis. It employs the Probit model and Tobit model to study the impact of population aging, financial literacy, and the financial inclusiveness of elderly care services on the allocation of household financial assets for elderly care. The study reveals: (1) China has a deepening degree of population aging, with residents' overall financial literacy level being relatively low and the financial inclusiveness of elderly care services being insufficient; (2) Improving the national financial literacy level and enhancing the financial inclusiveness of elderly care services are conducive to increasing the proportion of elderly care finance in household total assets.

Keywords

Aging; Financial Literacy; Pension Finance; Asset Allocation.

1. Introduction

1.1. Research Background

As China's economy transitions from a phase of "high-speed" growth to one of "high-quality" development, urban and rural residents have seen their disposable incomes rise to varying degrees, while household wealth reserves and scales have grown significantly. To better serve the real economy and align with the broader trend of high-quality economic development, financial institutions have been continuously reforming, financial products are emerging in abundance, and financial infrastructure is being steadily enhanced.

Against the backdrop of continuously improving economic conditions, China has also faced an increasingly severe aging population. According to the "Bulletin of the Seventh National Population Census (No.4)" released by the National Bureau of Statistics in 2021, China's total population was 1,411,780,000, among which the population aged 60 and above was 264,020,000, accounting for 18.70%. Six provinces in the country had an elderly population exceeding 10 million. From a demographic perspective, over the past decade, China has crossed the first rapid aging phase, and we are soon to face an even faster aging phase. Since entering an aging society in 2000, the proportion of the elderly population has increased by 8.4 percentage points over the past two decades. The larger cohort formed by the two birth peaks in the 1950s and 1960s will subsequently enter old age, shifting China's population aging level from a relatively slow evolution in recent years to a "fast lane" of growth. Additionally,

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

according to the "China Pension Actuarial Report 2019-2050," the "coverage dependency ratio" and "contribution dependency ratio" in 2019 were 37.7% and 47.0%, respectively. They then rose slowly before accelerating, steadily increasing from 2023 onward, showing signs of acceleration after 2043, and reaching 81.8% and 96.3% by 2050. Therefore, when considering only the institutional dependency ratio (excluding per capita benefit increases), the financial burden on urban enterprise employees' basic pension insurance continues to grow. Put simply, in 2019, nearly two contributors supported one retiree, but by 2050, almost one contributor will be required to support one retiree. In conclusion, research on pension finance and pension asset allocation has become an urgent priority.

1.2. Research Objectives and Significance

Population aging has become a defining trend in China's social development and a fundamental reality that the nation must address for the foreseeable future. The Fifth Plenary Session of the 19th CPC Central Committee first elevated proactive population aging strategies to a national priority. Compared to OECD countries, China's aging population faces unique challenges characterized by "aging before prosperity" and "aging before preparedness." As the aging population grows in proportion, the elderly-already navigating cognitive decline-face compounded challenges: limited education from historical circumstances and conservative financial mindsets shaped by upbringing. This results in lower financial literacy than younger generations, potentially worsening asset allocation patterns and leading to homogenized household financial portfolios. Beyond the widespread conservative attitudes and low financial literacy among Chinese citizens, the country's elderly care finance sector remains nascent, plagued by innovation gaps and limited coverage. This highlights significant room for improvement in financial inclusion for seniors, further exacerbating the homogeneity of household asset allocation. Such limitations hinder the smooth flow of family investment channels, impede the growth of property income and risk management capabilities, and ultimately weaken the vitality and efficiency of China's capital markets, slowing the progress of financial system reforms.

In summary, against the backdrop of China's accelerating population aging, the urgency to actively address demographic challenges and enhance the pension financial system has reached unprecedented levels. Research on household financial asset allocation should examine the real impacts of financial literacy, population aging, and the financial inclusiveness of elderly care services. At the micro level, this can help families recognize the importance of improving financial literacy, thereby increasing household property income and enhancing residents' well-being through rational asset allocation. At the macro level, policy guidance to promote financial inclusiveness in elderly care services and encourage diversified household asset allocation can not only accelerate financial system reforms and optimization, but also stimulate consumer demand under the new economic development model by elevating residents' wealth levels.

2. Literature Review

Regarding pension finance and its allocation in household assets, domestic scholars have focused on the rationality and effectiveness of household asset allocation portfolios, as well as the analysis of factors influencing household asset allocation, particularly in pension finance. Qin Hailin, Li Chaowei, and Wan Jiale (2018) conducted a systematic study on the role of financial literacy in household financial asset allocation and its impact on portfolio effectiveness, based on a dynamic optimal control theory model and using China's household micro-survey data. The study found that, considering endogeneity, financial literacy significantly increases the probability of households allocating assets to stocks and funds, while showing no statistical significance for risk-free assets such as government bonds. Lu Yajuan and He Puzhen (2022)

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

discovered that improved financial literacy can mitigate or even offset the adverse effects of aging on the homogeneity of household financial asset allocation[1]. The empirical results indicate that the overall financial literacy of college students still needs improvement, particularly the issue of insufficient subjective financial literacy caused by investment confidence.

The life cycle hypothesis, a consumption theory proposed by Italian scholar Modigliani and colleagues, posits that rational consumers allocate their lifetime consumption based on accumulated labor and property income. Their consumption pattern typically follows this sequence: saving during working years to prepare for retirement, followed by negative savings post-retirement. Consequently, both average and marginal propensity to consume remain relatively stable over the long term. This aligns with the perspective of Zhu Wenpei and Lin Yi (2022), who argue that pension asset allocation should be tailored to an individual's life cycle stage[2]. Similarly, Qi Mingzhu and Zhang Chenggong (2019) demonstrated that age influences risk appetite, with different life cycle groups exhibiting distinct investment risk preferences[3].

Financial literacy refers to the ability to understand financial-related terms and issues. Good financial literacy can positively influence a family's risk asset holding preferences, while also helping residents make informed financial decisions and implement proactive asset management strategies. Qin Hailin, Li Chaowei, and Wan Jiale (2018) found that improving family financial literacy has a significant positive effect on portfolio efficiency, enabling families to achieve higher excess returns[4]. Additionally, financial literacy levels significantly impact the asset allocation of retirees, with those having lower financial literacy exhibiting less diversified asset allocation. Students are important members of future China families, and their financial literacy levels significantly influence the family's pension financial investment choices.

The level of financial literacy is also influenced by the inclusiveness of elderly care finance. Financial inclusiveness in elderly care refers to enabling people across different social strata and age groups to purchase commercial financial products and services for retirement while maintaining basic pension security. This approach maximizes the supplementary role of personal retirement financial asset allocation in elderly income sources, serving as a key factor affecting both demand and supply of financial products for the elderly. It will inevitably play a significant role in household retirement financial asset allocation. Zhu Wenpei and Lin Yi (2022) examined the impact of national financial literacy and financial inclusiveness in elderly care on household retirement financial asset allocation from both supply and demand perspectives[2]. Their research indicates that China's current financial inclusiveness in elderly care remains at a relatively low level, leading to irrational asset allocation among households. This is caused by factors such as mismatched supply and demand of financial products, insufficient innovation, and high purchase thresholds, resulting in overly conservative investment tendencies in retirement financial assets.

3. China's Population Aging and Current Status of Financial Asset Allocation for Family-Based Elderly Care

3.1. Current Status of Population Aging in China

The elderly population refers to the population above the age limit of old age. It is a social group that reflects the distinction between a specific age stage and other age stages (infancy, youth, and adulthood) from a demographic perspective. It is an indispensable part of population composition. The age threshold is generally 60 or 65 years old and above. Globally, the proportion of women in the elderly population is higher than that of men. China's elderly population includes: low-age elderly population (60-69 years old), middle-age elderly population (70-79 years old), and high-age elderly population (over 80 years old).

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

Using 2019 data from the China Household Finance Survey (CHFS) at Southwestern University of Finance and Economics, this study analyzes elderly population distribution with household head age as the primary reference, categorized by region (Northeast, East, West, and Central). Given that younger participants face economic constraints in asset allocation while older ones are limited by cognitive abilities, only samples aged 18 to 90 were retained. The detailed statistical results are presented in Figure 1.

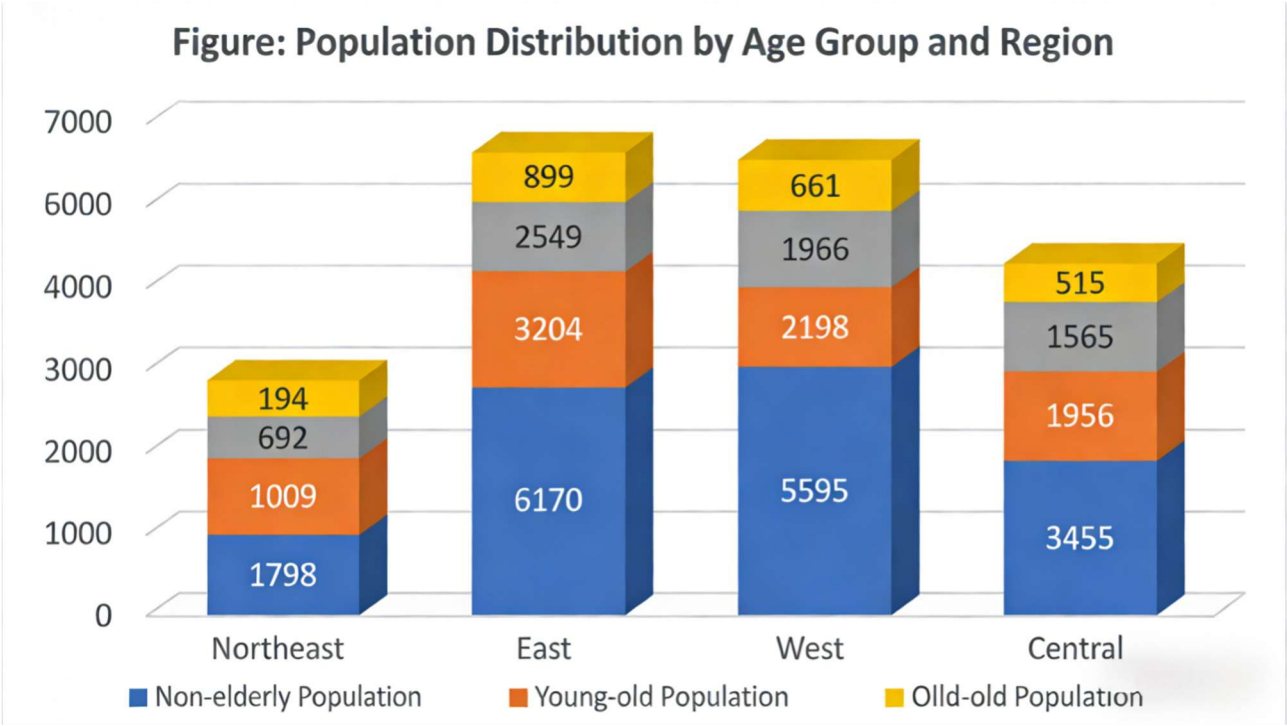


Figure 1. General distribution of the elderly population in China
(Data source: 2019 China Household Finance Survey Report)

As shown in Figure 1, the sample size statistics indicate:

The total sample size of Northeast China was 3693, and the sample size of the elderly population was 1895, accounting for 51.31% of the total sample size of the region (including 27.32% of the elderly population in the younger age group, 18.74% in the middle age group, and 5.25% in the older age group).

The total sample size of the eastern region was 12,822, with 6,652 being elderly population samples, accounting for 51.88% of the total sample (the proportion of younger elderly population was 24.99%, middle-aged 19.88%, and elderly 7.01%).

The total sample of western region was 10420, and the sample of the elderly population was 4825, which accounted for 46.31% of the total sample of the region (the proportion of the elderly population was 21.09%,18.87% and 6.34% of the elderly population were of middle age and old age respectively).

The total sample size in the central region was 7,491, with 4,036 samples from the elderly population, accounting for 53.88% of the total sample (the proportion of younger elderly was 26.11%, middle-aged 20.89%, and elderly 6.87%).

The data indicate that while the western region has nearly 50% elderly population, all other regions have over 50% elderly residents, highlighting the severe aging trend in China. Notably, the central region leads these four areas in elderly population proportion, demonstrating its more pronounced aging challenges compared to other regions.

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

3.2. Current Situation of Financial Asset Allocation for Family Pension in China

China's current pension system exhibits significant structural imbalances among its three pillars. The pay-as-you-go basic pension insurance dominates the system, while the second and third pillars remain underdeveloped. Compared to countries with mature third-pillar systems, China's residents face an irrational wealth allocation structure and overly conservative investment attitudes, hindering the preservation and appreciation of savings assets. Notably, tax-deferred commercial endowment insurance stands as the only third-pillar financial product in China that benefits from tax incentives. Therefore, when analyzing household pension asset allocation patterns, the study primarily examines residents' commercial insurance purchases and life insurance premium payments. The detailed statistical findings are presented in Figures 2 and 3.

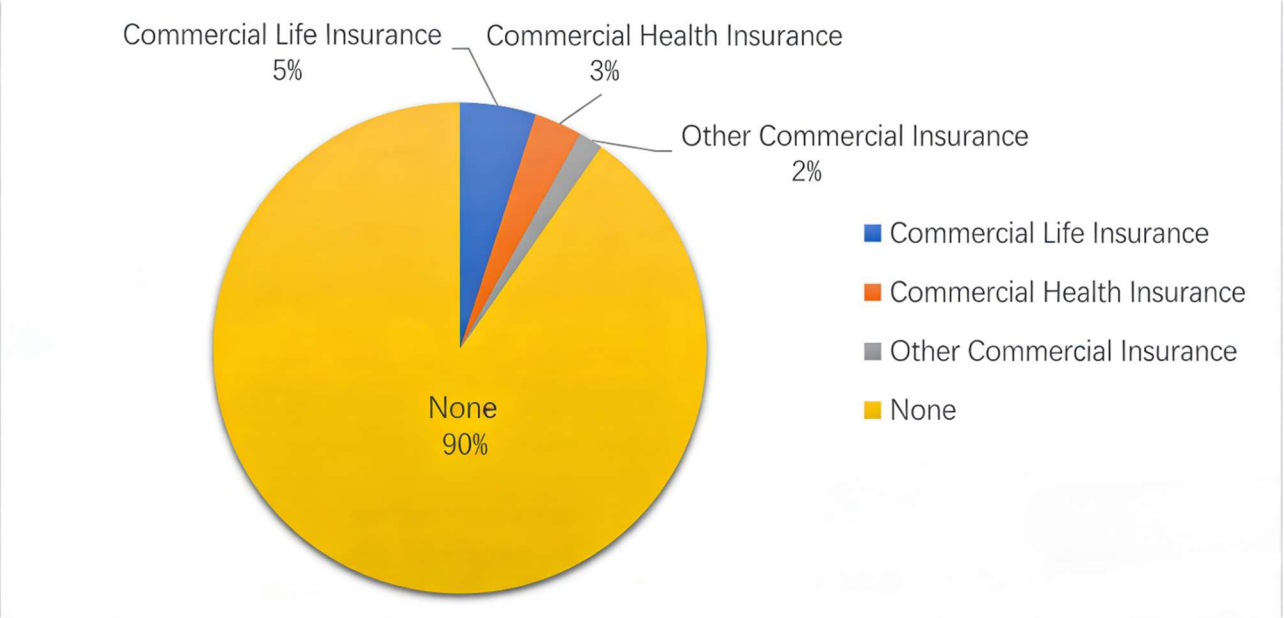


Figure 2. Types of Commercial Insurance Purchased by Residents
(Data source: compiled from China Statistical Yearbook 2019 China Household Finance Survey Report)

As shown in Figure 2, the proportion of Chinese residents purchasing commercial insurance remains remarkably low, accounting for merely 10% of the surveyed population. This also indicates that compared to countries with more developed third-pillar pension systems, China's residents still hold a relatively small share of investment-oriented financial assets. Regarding insurance behavior, it is evident that the vast majority of Chinese citizens have yet to develop awareness of purchasing commercial endowment insurance. When assessing whether commercial life insurance purchases serve as the primary factor in household pension asset allocation, the data reveals that among those who have purchased commercial insurance, life insurance coverage constitutes 50% of the surveyed population. This suggests that a significant portion of these conscious policyholders, while participating in social endowment insurance, continue to plan for their future retirement by investing current savings in commercial endowment insurance, thereby diversifying their pension reserves.

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

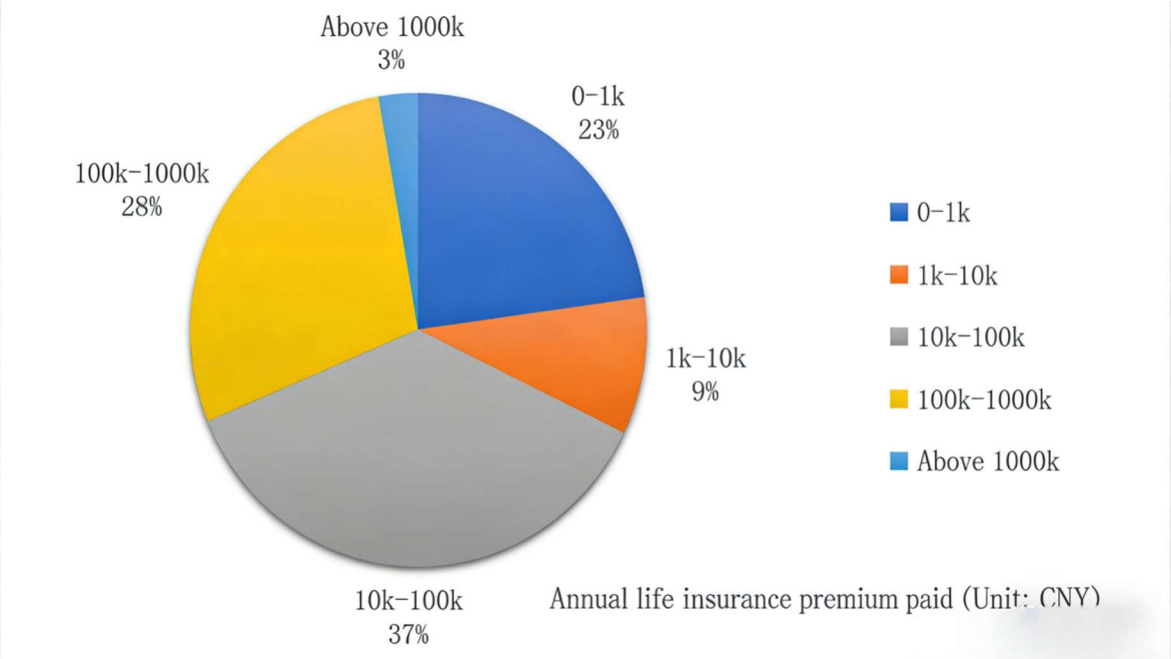


Figure 3. Average annual life insurance premium
(Data source: compiled from China Statistical Yearbook and 2019 China Household Finance Survey Report)

Figure 3 reveals that among participants enrolled in commercial endowment insurance, the largest proportion fall within the 10,000-100,000 yuan premium range. The 100,000-1 million yuan premium bracket accounts for 28% of the total, second only to the 10,000-10,000 yuan range. Additionally, approximately 3% of participants contribute over 1 million yuan annually to their commercial endowment insurance plans.

Life insurance is characterized by its long-term and savings-oriented nature, making investment in this sector both feasible and essential. Theoretically, as disposable income grows alongside economic development and improved living standards nationwide, coupled with China's aging population, the demand for personal and family pension reserves continues to rise. Consequently, when disposable income increases, individuals often consider allocating it for investment to maximize returns, thereby converting savings into future retirement funds. Life insurance products with investment attributes have attracted more demand-driven residents to invest, while also drawing premium assets into the commercial life insurance system.

4. Empirical Research on Financial Asset Allocation for Family-Based Elderly Care

4.1. Data Source

The data in this article comes from the 2019 China Household Finance Survey (CHFS) conducted by Southwestern University of Finance and Economics. CHFS is a nationwide sampling survey project carried out by the China Household Finance Survey and Research Center, aiming to collect information on the micro-level of household finance. The main contents include: demographic characteristics, assets and liabilities, insurance and protection, expenditures and income, financial knowledge, grassroots governance and subjective evaluations, and information related to family members' education, providing a comprehensive and detailed portrayal of household economic and financial behaviors. The fifth round of follow-up surveys in 2019 covered 29 provinces (autonomous regions and municipalities), 170

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

cities, 345 districts and counties, and 1,360 village (neighborhood) committees, with a sample size of 34,643 households, making the data representative at both national and provincial levels.

4.2. Variable Selection

Family pension financial assets differ from conventional financial assets primarily in their investment focus on achieving retirement planning, addressing longevity risks, and sustaining elderly living standards. Most of these assets are long-term oriented, requiring allocation adjustments based on the individual's life cycle stage. For this study, the dependent variables are whether households hold life insurance (life) and their annual life insurance premiums (premiums).

The core explanatory variables of this paper are the degree of population aging, financial literacy and financial inclusion of elderly care services.

(1) Degree of population aging

To assess the impact of population aging on household financial asset allocation, we use household head age (age) as the indicator. Given the potential nonlinear relationship between pension asset allocation and age, we incorporate age squared (age^2) to examine whether the relationship follows a "positive U" or "inverted U" pattern-determining whether the marginal effect increases or decreases with advancing age.

(2) Financial literacy

To assess financial literacy, the CHFS (2019) survey employs objective metrics to avoid respondent bias that might skew subjective assessments. The questions on interest rate and inflation calculations effectively evaluate participants' fundamental financial knowledge, thereby providing an accurate measure of their objective financial literacy scores.

The questionnaire included four options- "Incorrect," "Don't know," "Never heard of," and "Refused to answer" -for the two aforementioned questions. Although none of these options directly answered the questions, they nevertheless provided indirect insights into respondents' financial literacy levels. For instance, those who selected "Incorrect" demonstrated slightly higher financial literacy than those who chose "Don't know" or "Never heard of." This suggests that their financial literacy levels cannot be simply equated. Therefore, this study adopts the factor analysis method proposed by Lu Yajuan and He Puzhen (2022) to assess individual financial literacy levels.

Table 1. Settings of dummy variables

Is it possible? Understanding the problem	Understand the problem	Dummy variable=1
	Cannot understand the question (select "Don't know" or "Never heard of")	The dummy variable is 0
Is it right question answering	Answer the question correctly	dummy variable=1
	Incorrect answer	The dummy variable is 0

Then the factor analysis of the above four dummy variables is carried out.

The first step is to test whether the four dummy variables are suitable for factor analysis. Table 2 presents the results of the KMO and Bartlett's sphericity tests for these variables.

Table 2. KMO and Bartlett sphericity test

Sampling Sufficientness of the Kaiser-Meyer-Olkin Measure		0.674
Bartlett's sphericity test	Approximate Chi-square	48088.801
	df	6
	conspicuousness	0.000

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

As shown in Table 2, the KMO value of 0.674 exceeds the critical threshold of 0.6, indicating suitability for factor analysis. Furthermore, the Bartlett's test for sphericity yields a p-value of 0.000, which is below the significance level of 0.05, confirming the strong correlation among variables. These findings support the appropriateness of the selected indicators for factor analysis.

In the second step, principal component analysis was applied to four dummy variables for total variance explanation, with Table 3 presenting the results. The table indicates that only one principal component factor has an absolute value exceeding 1, accounting for merely 61.335% of the total variance, suggesting some data loss. (A cumulative variance contribution rate above 85% is generally considered satisfactory for index explanation.) Given the single factor with an absolute value greater than 1, the data loss indicates insufficient explanatory power. To enhance the factor's explanatory strength, three factors were selected and rotated.

Table 3. Total variance explanation

Ingredient	Initial eigenvalue			Extract square and load		
	amount to	% of variance	accumulative total %	amount to	% of variance	accumulative total %
1	2.453	61.335	61.335	2.453	61.335	61.335
2	0.806	20.144	81.480			
3	0.475	11.881	93.361			
4	0.266	6.639	100.000			

Table 4. Total variance explained after rotation

Ingredient	Initial eigenvalue			Extract square and load			Rotate square and load		
	amount to	% of variance	Accumu -lative total %	amount to	% of variance	Accumu -lative total %	amount to	% of variance	accumulative total %
1	2.453	61.335	61.335	2.453	61.335	61.335	1.670	41.748	41.748
2	0.806	20.144	81.480	0.806	20.144	81.480	1.039	25.974	67.722
3	0.475	11.881	93.361	0.475	11.881	93.361	1.026	25.638	93.361
4	0.266	6.639	100.000						

As shown in Table 4, the three rotated factors account for 93.361% of the total variance. The supplementary data shows minimal loss of information and effectively explains the original data. Moreover, these three factors demonstrate strong explanatory power for the four dependent variables.

Table 5 reveals that all variables exhibit at least one loading coefficient exceeding 0.4 in their respective rows, confirming the usefulness of these four variables and their retention. Specifically, the variables "Understanding Inflation Issues" and "Correctly Answering Inflation Questions" show the highest loading coefficients on Component 1, while "Understanding Interest Rate Issues" and "Correctly Answering Interest Rate Questions" demonstrate the strongest loading on Component 2 and Component 3 respectively.

Table 5. Rotation of component score coefficient matrix

	Ingredient		
	1	2	3
Understanding of interest rate	-0.220	1.142	-0.226
Answering the Interest Rate Question Correctly	-0.147	-0.261	1.135
Understanding inflation	0.552	0.131	-0.270
Correct answer to the inflation question	0.662	-0.365	0.074

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

(3) Financial Inclusiveness in Elderly Care Services

Finally, in measuring the financial inclusiveness of elderly care services, we established two dummy variables to assess how this inclusiveness affects household financial asset allocation. These variables tracked holdings of: bank savings accounts (including current accounts and fixed deposits), financial derivatives (stocks, bonds, funds, options, and futures), gold, and foreign currency assets (including foreign exchange and overseas real estate). The 'holding' variable was coded as 1, with 0 indicating absence. The resulting factor scores were then analyzed using principal component analysis to derive the financial inclusiveness score for elderly care services (Score1).

As shown in Table 6, the CHFS (2019) survey collected 32,384 samples with bank accounts, accounting for 93.48% of respondents. This indicates that the vast majority of Chinese residents hold bank savings as risk-free financial assets. However, the proportion of respondents holding any investment-type financial assets-including stock accounts, bonds, funds, financial wealth management products, derivatives, gold, or foreign currency assets-remains below 10%. This further demonstrates that, compared to developed countries, China's residents still hold relatively low levels of investment-type financial assets. Additionally, the weak inclusiveness of financial services due to financial exclusion factors results in over 90% of respondents not holding any of these investment-type financial assets. In summary, although the bank account ownership rate among Chinese residents is relatively high, there is significant room for improvement in the inclusiveness of investment-type financial products.

Table 6. Definition of dummy variables for financial inclusion measurement of elderly care services

Measurement indicator	Descriptive indicators	Specific indicators	Answer 1	Answer 0
Savings behavior	Bank account	Hold a bank savings card or passbook (Yes=1, No=0)	26509	8134
		Hold a fixed deposit (yes=1, no=0)	5875	28768
Investment behavior	Shares	Holds shares (yes=1, no=0)	1994	32649
	Bond	Hold bond (yes=1, no=0)	102	34541
	Fund	Hold fund (yes=1, no=0)	644	33999
	Financial products	Hold financial wealth management products (Yes=1, No=0)	2479	32164
	Financial derivative	Hold financial derivatives (Yes=1, No=0)	16	34627
	Gold	Hold gold (yes=1, no=0)	86	34557
	Foreign currency assets	Foreign currency assets (Yes=1, No=0)	63	34580

The first step is to test whether the nine dummy variables-defined based on the specified conditions and related to financial products like deposits, stocks, funds, bonds, financial derivatives, gold, and foreign currency assets-are suitable for factor analysis. Table 7 presents the results of the KMO and Bartlett's sphericity tests for these dummy variables.

Table 7. KMO and Bartlett sphericity test

Sampling Sufficientness of the Kaiser-Meyer-Olkin Measure		0.662
Bartlett's sphericity test	Approximate Chi-square	13168.909
	df	36
	Conspicuousness	0.000

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

As shown in Table 7, the KMO value of 0.662 exceeds the critical threshold of 0.6, indicating suitability for factor analysis. Furthermore, the Bartlett's test for sphericity yields a p-value of 0.000, which is below the significance level of 0.05, confirming the strong correlation among variables. These findings support the appropriateness of the selected indicators for factor analysis.

In the second step, principal component analysis was applied to measure the financial inclusiveness of elderly care services using nine relevant dummy variables. Table 8 presents the variance explanation results. The analysis reveals that four principal component factors with absolute values exceeding 1 account for only 55.227% of the total variance, indicating significant information loss in the data. Typically, a cumulative variance contribution rate above 85% is considered satisfactory for explaining the index.

Table 8. Total variance explained

Ingredient	initial eigenvalue			Extract square and load		
	amount to	% of variance	accumulative total %	amount to	% of variance	accumulative total %
1	1.807	20.083	20.083	1.807	20.083	20.083
2	1.103	12.259	32.342	1.103	12.259	32.342
3	1.045	11.615	43.957	1.045	11.615	43.957
4	1.014	11.270	55.227	1.014	11.270	55.227
5	0.937	10.409	65.636			
6	0.881	9.788	75.424			
7	0.841	9.350	84.773			
8	0.747	8.301	93.074			
9	0.623	6.926	100.000			

Among the nine dummy variables, only four principal component factors exhibit absolute values exceeding 1, indicating significant data loss and insufficient explanatory power for the indicators. To enhance the explanatory capacity of the factors for the financial inclusiveness of elderly care services-ensuring a cumulative variance contribution rate above 85%-eight factors were selected and subjected to rotation.

As shown in Table 9, the eight rotated factors account for 93.074% of the total variance. The supplementary data significantly reduces information loss while maintaining strong explanatory power for the original dataset. These factors demonstrate robust explanatory capacity for the nine dependent variables. The final composite score of financial inclusiveness in elderly care services is derived from the rotated factor scores.

Table 9. Total variance explained after rotation

Ingredient	Initial eigenvalue			Extract square and load			Rotate square and load		
	amount to	% of variance	accumulative total %	amount to	% of variance	accumulative total %	amount to	% of variance	accumulative total %
1	1.807	20.083	20.083	1.807	20.083	20.083	1.274	14.152	14.152
2	1.103	12.259	32.342	1.103	12.259	32.342	1.087	12.080	26.232
3	1.045	11.615	43.957	1.045	11.615	43.957	1.016	11.288	37.520
4	1.014	11.270	55.227	1.014	11.270	55.227	1.001	11.125	48.644
5	0.937	10.409	65.636	0.937	10.409	65.636	1.000	11.115	59.760
6	0.881	9.788	75.424	0.881	9.788	75.424	1.000	11.114	70.873
7	0.841	9.350	84.773	0.841	9.350	84.773	0.999	11.104	81.977
8	0.747	8.301	93.074	0.747	8.301	93.074	0.999	11.097	93.074
9	0.623	6.926	100.000						

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

Table 10. Component score coefficient matrix after rotation

	Ingredient							
	1	2	3	4	5	6	7	8
Holding financial products	0.621	0.420	0.200	0.066	-0.019	0.048	0.006	0.021
Holding fund	0.137	0.951	0.008	0.002	0.018	0.017	0.055	0.028
Holding a bank card or checking account	0.065	0.030	0.080	0.010	0.003	0.007	0.006	0.994
Holding account	0.071	0.034	0.984	0.019	0.001	0.011	0.013	0.080
Stock account	0.924	0.012	-0.027	0.005	0.039	0.019	0.045	0.058
Bond holding	0.039	0.013	0.020	0.997	0.037	0.016	0.018	0.009
Holding foreign currency assets	0.026	0.013	0.001	0.036	0.998	-0.02	0.025	0.003
Hold gold	0.044	0.053	0.012	0.019	0.025	0.052	0.995	0.006
Holding financial derivatives	0.043	0.025	0.011	0.016	-0.002	0.997	0.052	0.006

Table 11. Variable Definitions

Variable type	Variable name	Variable-definition
Explained variable	Life insurance purchase status	Enter 1 if the family has life insurance, or 0 otherwise.
	ln (annual average life insurance premiums) (ln premiums)	The logarithm of the annual life insurance premium paid.
Explain variable	Householder age (age)	Sample age.
	The square of the household head's age (age^2)	The square of the sample age.
	Objective Financial Literacy Score	The scores are calculated by weighted principal component analysis of four dummy variables derived from the answers to two objective financial literacy questions: interest rate and inflation.
	Financial Inclusion of Pension Services (Score 1)	The scores are calculated by weighted principal component analysis of nine dummy variables derived from responses to nine questions on financial inclusion in elderly care services.
Control variable	risk appetite	The risk attitude of the household head is from 1 to 5, which respectively represents extreme risk preference, slightly risk preference, average risk preference, slightly risk aversion and extreme risk aversion.
	Gender	The household head's gender is coded as 1 for males and 0 for females.
	Education level (edu)	The highest educational level of the household head is rated from 1 to 9, representing no schooling, primary school, junior high school, senior high school, secondary vocational school/vocational high school, college/vocational college, undergraduate, master's degree, and doctoral degree, respectively.
	Health status	The physical condition of the household head was rated on a scale of 1 to 5, with 1 indicating excellent, 5 indicating very poor.
	Marriage status	If married, assign 1; if unmarried, assign 0.
	ln (household income)	Total household income comprises wage income, net income from agricultural production and operation, net income from industrial and commercial production and operation, property income, and transfer income. (The total household income is calculated as the logarithm, with negative values excluded in the computation.)

Table 10 reveals that all variables exhibit at least one loading coefficient exceeding 0.3 in their respective rows, confirming the usefulness of these eight variables without deletion. Specifically, the variables "holding financial wealth management products" and "holding stock accounts" show the highest loading coefficients on component 1; "holding funds" on component

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

2; "holding fixed-term accounts" on component 3; "holding bonds" on component 4; "holding foreign currency assets" on component 5; "holding financial derivatives" on component 6; "holding gold" on component 7; and "holding bank cards/current deposits" on component 8.

Overall, the financial inclusiveness of elderly care services remains low, and the current development cannot yet meet the goal of transitioning from savings-oriented to investment-oriented elderly care.

Based on the literature review identifying factors influencing household financial asset allocation, this study selects risk appetite, household head's gender, education level, health status, marital status, and household income as control variables. All variable names and definitions are detailed in Table 11.

4.3. Descriptive Statistics of Variables

Table 12 presents the descriptive statistics of the variables. As shown in Table 12, the per capita holdings and average annual premiums of life insurance are relatively low. In addition to the four primary explanatory variables-household head age, the square of household head age, objective financial literacy, and financial inclusiveness of elderly care services-this study incorporates other potential factors influencing household pension financial asset allocation into the control variables. These factors include risk appetite level (risk appetite), household head gender (gender), education level (education), health status (health), marital status (marriage), and household total income (income). The average risk appetite level is approximately 4.182, falling between mildly risk-averse and extremely risk-averse, reflecting the generally conservative investment tendencies of Chinese residents. Regarding financial literacy, the average score is 8.37e-09, indicating a relatively low overall financial literacy level among Chinese residents. In terms of household head age, the average age is 44.07 years, showing an aging trend. The average education level of household heads is about 3.35, ranging between junior high school and high school education, suggesting that household heads do not have highly advanced educational backgrounds. However, the per capita annual household income has exceeded 60,000 yuan, indicating that China has made progress toward achieving common prosperity.

Table 12. Descriptive statistics of variables

Variable name	Sample capacity	Average value	Standard error	Minima	Maxima
life insurance purchase	34640	0.0496536	0.2172314	0	1
ln(average annual life insurance premium)	1356	11.22154	1.909379	0	15.76142
householder age	34640	44.06533	14.78131	1	83
Square of the household head's age	34640	36.22624	16.48304	1	83
objective financial literacy	34643	8.37e-09	1.048157	-0.8228638	2.337125
financial inclusiveness of pension service	34643	-3.60e-09	0.4042625	-0.3255208	11.67639
risk appetite level	34640	4.182448	1.100207	1	5
sex	34640	1.475808	0.4994216	1	2
Education level	34640	3.349827	1.683105	1	9
physical condition	34640	2.751588	1.003781	1	5
marital status	34640	0.911403	0.2841653	0	1
ln(Household Income)	31457	10.45168	1.549754	0	17.90985

5. Regression Results and Analysis

5.1. Theoretical Hypothesis

Based on the above analysis and variable setting, the hypothesis H1 and H2 are proposed.

H1: Enhancing financial literacy helps optimize the allocation of financial assets for family pension planning.

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

H2: Enhancing financial inclusiveness in elderly care services can optimize the allocation of family financial assets for elderly care.

5.2. Model Design

Since the dependent variable is whether households hold commercial life insurance (life), a binary variable, a Probit model was used for regression analysis. Model (1) is specified as follows:

$$life = \beta_0 + \beta_1 age + \beta_2 age2 + \beta_3 score + \beta_4 score1 + \sum_{k=4}^{i} \beta_k X_k + \varepsilon \quad (1)$$

In this model $life$, the household's financial age asset $score$ $score1$ holdings are represented by variables,, and, where denotes the core explanatory $age2$ variables (household head X age, financial literacy, and ε financial inclusion in elderly care services). The term is included to account for the nonlinear effects of household head age, while serves as the control variable from Table 4.11, and represents the random disturbance term.

Furthermore, since the variables requiring interpretation also include the annual average life insurance premiums (ln premiums), which are non-binary variables, a Tobit model was employed for regression analysis. Model (2) is specified as follows:

$$\ln premiums = \beta_0 + \beta_1 age + \beta_2 age2 + \beta_3 score + \beta_4 score1 + \sum_{k=4}^{i} \beta_k X_k + \varepsilon \quad (2)$$

The model $\ln premiums$ includes the annual age average $score1$ $score$ life insurance premium, where and represent core explanatory variables $age2$: household head age, financial X literacy, and financial ε inclusiveness of elderly care services. The term is included to account for the nonlinear effect of household head age, while is the control variable from Table 11, and is the random disturbance term.

5.3. Regression Results

Table 13 presents the correlations between three core explanatory variables-population aging, financial literacy, and financial inclusiveness in elderly care services-and household financial asset allocation for elderly care. For the dependent variable, whether households hold commercial life insurance (life) is a binary variable, hence the Probit model was employed for regression analysis. The annual average life insurance premiums (lnpremiums), being a non-binary variable, required the Tobit model for regression analysis.

The Probit regression results in Column 2 of Table 13 reveal that while the correlation coefficient between life insurance ownership (life) and household head age (age) is significantly positive at the 1% level, the coefficient for the square of household head age (age^2) shows a significant negative correlation at the same level. This indicates a nonlinear impact of household head age on residents 'life insurance ownership. The coefficient demonstrates a significant positive effect on the likelihood of holding risk-free financial assets (specifically life insurance in this study), which then reverses to a negative effect, revealing an inverted "U" -shaped trend in life insurance adoption as age increases. In reality, China's rising living standards and advanced medical technology have extended average life expectancy, consequently delaying retirement age. This allows residents to accumulate substantial wealth during working years, potentially triggering wealth effects that stimulate family insurance purchases. Conversely, as populations age or retire, individuals may develop uncertainty about

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

their health, leading to financial exclusion or risk aversion, which reduces insurance adoption rates. Compared to financial literacy scores, life insurance ownership (life) is more significantly influenced by the financial inclusiveness of elderly care services (score1). Higher financial literacy and greater financial inclusiveness levels increase residents' likelihood of purchasing commercial life insurance. Higher financial literacy among household heads enhances residents' understanding of financial terminology and issues. The increased financial inclusiveness of elderly care services expands the coverage of pension financial products. Both factors promote rational financial decision-making, encouraging residents to prioritize profit maximization. This reduces information costs for financial market participation, leading to more rational and effective allocation of family pension financial assets. In addition to the core explanatory variables, Table 5.1 also shows that other control variables selected in this study have some explanatory power regarding life insurance ownership (life).

Specifically, regarding individual household head factors, households with higher risk appetite, greater education levels, and better health conditions tend to maintain better life insurance coverage and allocate higher proportions of assets to family pension financing. The correlation coefficient between life insurance holdings (life) and the household head's risk appetite (risk appetite) is significantly negative at the 1% significance level, indicating that households with higher risk appetite maintain better life insurance coverage. Conversely, in households with risk-averse tendencies, the proportion of life insurance holdings and even the allocation ratio of pension financing assets may decrease accordingly. Households with higher education levels demonstrate more comprehensive and scientific approaches to pension asset allocation, making rational life insurance purchases and demonstrating greater familiarity with financial market rules. The household head's health status also influences asset allocation: families with poorer health conditions are more likely to allocate larger portions to daily medical expenses, resulting in a significant reduction in pension financing assets as a percentage of total household assets. Additionally, unhealthy physical conditions may lead to conservative consumption expectations and risk-averse attitudes, further reducing life insurance holdings. The correlation coefficient between life insurance ownership and household head's marital status shows a negative relationship. Unmarried heads are more likely to hold life insurance than married heads, likely due to their greater financial flexibility. Without immediate responsibilities for future generations' wealth accumulation, unmarried heads can allocate more stable savings to their own pension preparations, which promotes a positive trend in life insurance purchases. Men are more likely to purchase life insurance than women. Regarding household factors, the correlation coefficient between life insurance ownership and ln household income is significantly positive at the 1% level. Higher household income leads to greater asset reserves and per capita disposable income, encouraging families to consider wealth effects when allocating pension financial assets, thereby increasing the likelihood of purchasing life insurance and enhancing pension financial allocation.

Similarly, the Tobit regression analysis of ln(premiums) reveals that the average annual premium payment exhibits a significant positive correlation with household head age at the 1% significance level, while showing a significant negative correlation with the square of household head age at the same level. This indicates that household head age exerts a nonlinear influence on average annual premium payments, with residents' premium payment behavior following an inverted "U" -shaped trend as age increases. Similar to the relationship with life insurance ownership, the regression results demonstrate that both the correlation coefficient between ln(premiums) and financial literacy (score) and that between ln(premiums) and financial inclusion in elderly care services (score1) are significantly positive at the 5% and 1% significance levels, respectively. The improvement in financial literacy and the deepening of financial inclusion in elderly care services will increase the cost of life insurance for Chinese residents and enhance the allocation of pension financial assets within household total assets.

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

From an individual perspective, consistent with the Probit regression analysis on life insurance holdings, households with higher risk appetite, greater education levels, and better health conditions tend to allocate more pension-related financial assets to family financial portfolios. Notably, males and unmarried individuals exhibit higher life insurance premium payments. Regarding household factors, higher total household income correlates with increased investment in life insurance.

Table 13. Benchmark regression results

Variable	Probit	Tobit	Reg
	life	lnpremiums	score1
Age	0.0971***	0.0958***	0.00214*
	-13.03	-11.7	(2.00)
Age2	-0.000960***	-0.000956***	-0.00000811
	(-14.12)	(-12.69)	(-0.91)
Score	0.0188	0.0369**	0.0541***
	-1.56	-2.86	(24.76)
Score1	0.0973***	0.0891***	
	-4.09	-3.55	
Riskappetite	-0.101***	-0.105***	-0.0193***
	(-8.85)	(-8.51)	(-8.77)
Gender	0.121***	0.131***	0.0172***
	-4.67	-4.65	(3.80)
Edu	0.106***	0.103***	0.0281***
	-11.86	-10.63	(17.07)
Health	-0.0824***	-0.0812***	-0.00804***
	(-5.70)	(-5.16)	(-3.38)
Marriage	-0.0316	-0.0334	-0.0119
	(-0.67)	(-0.66)	(-1.36)
lnincome	0.0864***	0.0948***	0.0159***
	-7.23	-7.04	(9.96)

(Note: ***, **, and * indicate significance at the 1%,5%, and 10% levels, respectively; t-values are provided in parentheses.)

Finally, the last column of Table 13 presents an OLS regression analysis on the financial inclusiveness of elderly care services. The results indicate that enhancing financial literacy levels can further improve the financial inclusiveness of elderly care services in China.

In conclusion, when other factors remain constant, enhancing residents' financial literacy and expanding financial inclusion in elderly care services can optimize family financial asset allocation for elderly care. Hypothesis H1: Improved financial literacy facilitates better family asset allocation for elderly care, and Hypothesis H2: Enhanced financial inclusion in elderly care services improves family asset allocation for elderly care are both valid.

5.4. Heterogeneity Analysis

Since the influence of age on financial literacy is nonlinear and shows an inverted "U" trend, this paper divides the samples into different age groups and different education levels to analyze the heterogeneity.

In this study, we conducted heterogeneity testing using age groups as the classification criterion: individuals under 39 were categorized as young adults, those aged 40-59 as middle-aged, and those aged 60 and above as elderly. For educational attainment, those without schooling or only

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

primary education were classified as low-education, while those with junior high school, high school, secondary vocational/technical education, college, or vocational college education were categorized as middle-education, and those with university, master's, or doctoral degrees as high-education.

Table 14. Results of Heterogeneity Tests by Age Group

Variable	Youth		Mid-life		Old age	
	(1)	(2)	(3)	(4)	(5)	(6)
	probit1	tobit1	probit2	tobit2	probit3	tobit3
score	-0.188*	0.459	0.233***	0.152	0.0806	0.129
	(-2.18)	(1.48)	(3.69)	(0.62)	(1.15)	(0.37)

(Note: ***, **, and * indicate significance at the 1%,5%, and 10% levels, respectively; t-values are provided in parentheses.)

Table 14 presents heterogeneity analysis results categorized by age groups. The study reveals distinct patterns in how financial literacy scores influence life insurance ownership among individuals and households. This effect is particularly pronounced in younger and middle-aged demographics, where improved financial literacy significantly enhances life insurance participation and premium payments, thereby increasing household allocations to retirement financial assets. However, financial literacy improvements show limited impact on older adults, with no notable changes in insurance ownership or premium levels. This discrepancy may stem from age-specific restrictions inherent in retirement financial products targeting this demographic.

Table 15. Heterogeneity test results by educational level

Variable	Low academic qualification		Secondary education		Highly educated	
	(1)	(2)	(3)	(4)	(5)	(6)
	probit4	tobit4	probit5	tobit5	probit6	tobit6
score	0.542***	0.0447	0.0856***	0.104	-0.187	0.0522
	(4.55)	(0.05)	(5.85)	(1.88)	(-1.77)	(0.16)

(Note: ***, **, and * indicate significance at the 1%,5%, and 10% levels, respectively; t-values are provided in parentheses.)

Table 15 presents the heterogeneity test results categorized by educational attainment. The findings demonstrate that financial literacy impacts vary across different educational groups. Individuals with lower and intermediate education levels show greater potential for financial literacy improvement compared to those with higher education. Consequently, enhancing financial literacy has a more pronounced effect on these two groups, with the most significant impact observed among the lower-educated population. This evidence strongly suggests that prioritizing financial literacy development for this demographic can yield better outcomes in optimizing household pension asset allocation.

5.5. Robustness Test

To test the robustness of the research findings, this study replaced the original explanatory variables by recalculating financial literacy levels and the financial inclusiveness of elderly care services using a score aggregation method. When reconstructing the financial literacy indicator, a new score (Score2) was assigned based on the number of correct answers to objective financial literacy questions (including those related to interest rates and inflation rates), with 1 point for correct answers and 0 points for incorrect answers, resulting in a score range of 0 to 2. For the financial inclusiveness indicator of elderly care services, a new score (Score3) was

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

established according to the quantity of risk assets or risk-free assets (including bank savings accounts, fixed deposits, stocks, bonds, funds, financial derivatives such as options and futures, gold, and foreign currency assets) held by residents, with 1 point for possession and 0 points for non-possession, yielding a score range of 0 to 9. The regression process was repeated, and the updated regression results are presented in Table 16.

Table 16. Regression Results After Substitution of Explanatory Variables

Variable	Replace objective financial literacy (score)		Financial Inclusion of Elderly Care Services (Score 1)	
	probit21	tobit21	probit31	tobit31
	life	lnpremiums	life	lnpremiums
Age	0.0972***	0.0519	0.0962***	0.0530
	(13.04)	(1.68)	(12.87)	(1.72)
Age2	-0.000960***	-0.000838**	-0.000957***	-0.000856**
	(-14.12)	(-2.87)	(-14.04)	(-2.93)
Score			0.00290	0.0167
			(0.23)	(0.35)
Score1	0.0985***	0.140		
	(4.15)	(1.71)		
Score2	0.0278	0.0705		
	(1.51)	(1.03)		
Score3			0.103***	0.111*
			(6.89)	(2.10)
Riskappetite	-0.102***	-0.0536	-0.0960***	-0.0466
	(-8.91)	(-1.21)	(-8.36)	(-1.04)
Gender	0.121***	-0.421***	0.116***	-0.425***
	(4.67)	(-4.09)	(4.46)	(-4.13)
Edu	0.106***	0.164***	0.100***	0.165***
	(11.90)	(4.49)	(11.15)	(4.52)
Health	-0.0825***	-0.152**	-0.0815***	-0.151**
	(-5.71)	(-2.62)	(-5.63)	(-2.61)
Marriage	-0.0319	-0.0947	-0.0263	-0.0774
	(-0.68)	(-0.53)	(-0.56)	(-0.44)
lnincome	0.0867***	0.123**	0.0801***	0.121**
	(7.25)	(3.25)	(6.71)	(3.20)

(Note: ***, **, and * indicate significance at the 1%,5%, and 10% levels, respectively; t-values are provided in parentheses.)

As shown in Table 16, the household head's age maintains an inverted U-shaped relationship with the likelihood of family life insurance ownership. The improvement in financial literacy and the expansion of inclusive elderly care finance continue to significantly boost both the proportion of family life insurance investments and the allocation of financial assets for elderly care. Both the direct regression and instrumental variable results align with earlier findings, demonstrating the robustness of the study's conclusions.

6. Research Findings and Policy Recommendations

6.1. Research Conclusion

In recent years, China's population aging has become increasingly severe due to declining birth rates and extended life expectancy. As the aging population accelerates nationwide, the traditional pay-as-you-go pension system faces sustainability challenges, making diversified pension schemes better suited for an aging society worthy of exploration. Consequently, some residents are strategically allocating personal and family retirement financial assets. However,

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

given the profound aging trend, low financial literacy among the population, and limited financial inclusion in elderly care services, individuals and families often lack sufficient understanding of financial markets. This results in diminished pension asset allocation capabilities, leaving unresolved issues in household retirement financial planning.

This paper selects data from the China Household Financial Survey (CHFS) in 2019, constructs the residents 'financial literacy index and the financial inclusiveness index of elderly care services using factor analysis, and studies the impact of population aging, financial literacy, and the financial inclusiveness of elderly care services on household financial asset allocation for elderly care through Probit and Tobit models. The research findings indicate: (1) China has a deepening degree of population aging, and the overall financial literacy level of residents is relatively low; (2) In terms of the financial inclusiveness of elderly care services, although the proportion of samples holding bank accounts exceeds 90%, the proportion of samples holding investment-type financial assets is below 10%, indicating a narrow coverage and overall low financial inclusiveness of elderly care services. Moreover, financial literacy levels also affect the financial inclusiveness of elderly care services in society. Low financial literacy restricts residents' investment behavior and may lead to financial exclusion sentiments, which are the main reasons for the low financial inclusiveness of elderly care services in China; (3) The empirical results show that improving the national financial literacy level and deepening the financial inclusiveness of elderly care services have significant positive impacts on optimizing household financial asset allocation for elderly care, which helps increase the proportion of elderly care financial assets in total household assets to mitigate the impact of population aging on household and individual elderly care. At the same time, the improvement of financial literacy also has a positive moderating effect on the financial inclusiveness of elderly care services, which facilitates deeper participation of elderly care financial products in financial markets and increases their coverage among residents.

6.2. Policy Recommendations

First, from the government's perspective, population aging is crucial to a nation's future development. Addressing the severe challenges of aging and proactively tackling its urgent crisis are vital for building a modern socialist country. The government must fully recognize its role as a regulator in financial markets. For the government, it must address the challenges of aging by improving basic livelihood projects like education, healthcare, social security, and housing to reduce future uncertainties and ensure elderly care. Simultaneously, it should act as a mediator by promoting financial literacy nationwide. For students, curricula should incorporate age-appropriate financial knowledge to cultivate proactive retirement planning awareness. For middle-aged and elderly individuals, enhancing financial literacy can be achieved through community financial education campaigns and practical financial behavior dissemination via media. Such initiatives not only encourage public participation in financial market investments but also effectively prevent financial fraud, safeguarding investors 'legitimate rights. Furthermore, to transform residents' pension savings into substantial pension wealth, the government should strengthen financial infrastructure development, expand investment channels for financial assets, promote the comprehensive development of the three-pillar pension system, and continuously reinforce the economic role of family-based elderly care. This requires guiding family members to prepare for life-cycle expenditure needs through health, financial, and skill development.

Secondly, financial institutions and markets should capitalize on the substantial household wealth levels and significant idle funds in China to expand their business scope. Currently, elderly care financial services in China are predominantly limited to savings deposits and pension investment products offered by banks, with insufficient participation from other financial institutions such as securities firms, trusts, and insurance companies. The products

ISSN: 2692-7608 DOI: 10.6981/FEM.202607_7(7).0023

lack innovation and exhibit strong homogeneity, primarily targeting middle-to-high-income groups, resulting in low financial inclusion in elderly care services. Issues like non-standardized sales practices, inadequate supervision, and opaque profit disclosures further dampen demand for such products. Financial institutions and markets could accelerate the establishment of offline branches in remote and economically underdeveloped regions to broaden coverage. They should also lower entry barriers for investors in financial markets and products, while leveraging online platforms for transactions. Additionally, they must address product homogenization by enhancing innovation and adaptability in elderly care financial products, thereby providing more comprehensive support for residents' retirement planning needs.

Thirdly, from a family perspective, the household head, as the primary manager of family wealth and key decision-maker in financial matters, should proactively enhance financial literacy through both online and offline channels. This not only helps individuals accumulate investment experience and develop sound financial management concepts, but also facilitates the rational and optimal allocation of pension-related financial assets across the entire family. Additionally, households should be guided to dynamically manage pension-related financial assets according to the life stages of family members, maintaining a balance between risk, return, and liquidity based on current and projected consumption needs. It is advisable to implement long-term and well-structured pension planning. Furthermore, in the context of an aging society, families should establish a suitable pension financial asset system and consciously increase investments in pensions and pension insurance.

Acknowledgments

General Research Project of Philosophy and Social Sciences in Jiangsu Universities 2022SJYB0727-Exploring the Empowerment Role and Path of Pension Finance in Jiangsu Province Based on Dynamic Programming Principles.

References

[1] Lu, Y. J., He, P. Z., & Zhang, H. (2022). Research on family financial asset allocation in the context of aging population: An empirical analysis based on CHFS. *Financial Theory Exploration*, (5), 9–19. https://doi.org/10.16620/j.cnki.jrjy.2022.05.002

[2] Zhu, W. P., & Lin, Y. (2022). International experiences in the development of elderly care finance and household financial asset allocation. *Southwest Finance*, (7), 3–17.

[3] Qi, M. Z., & Zhang, C. G. (2019). The impact of age on the efficiency of household financial asset allocation in the context of population aging. *Population and Economy*, (1), 54–66.

[4] Wan, J. L., Li, C. W., & Qin, H. L. (2018). Binary finance, social networks, and household borrowing: An empirical study based on a repeated game model and CFPS data. *Financial Development Research*, (7), 42–49. https://doi.org/10.19647/j.cnki.37-1462/f.2018.07.006