

The Choice Behavior of Financial Asset Allocation of Chinese Residents: Based on CHFS2017 Research

Jie Geng, Xiao Qin

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

Abstract

With the overall increase in household income in China, more and more Chinese residents are beginning to pay attention to the allocation of household assets. Financial assets are the main channel for household participation in investment, and the allocation of investable household assets across various subcategories of financial assets is an important aspect of household financial asset allocation decisions. The household financial asset allocation studied in this paper mainly focuses on household investment behavior in financial risk assets, including two aspects: the first aspect is the choice of whether to invest in financial risk assets, which reflects the breadth of participation of Chinese household residents in financial risk asset investments; the second aspect is the proportion of financial risk assets held by households in total household assets, reflecting the depth of participation of Chinese household residents in financial risk investments. The purpose of this study is to identify the degree of influence and interrelationships among various factors affecting household financial asset allocation in China, and to provide effective recommendations for household financial asset allocation in China based on the research findings.

Keywords

Family Financial Assets; Risky Assets; CHFS2017.

1. Introduction

1.1. Research Background

Households constitute one of the fundamental microeconomic entities in a nation's economy, with their financial activities exerting direct and significant influence on macroeconomic development. The selection behaviors of household financial assets have become a focal point in academic research, as they directly impact the supply and evolution of household financial markets and social welfare issues. In 2006, British economist John Campbell first introduced the concept of "household finance" at the Financial Annual Conference in the United States, highlighting its potential as a crucial research domain in finance. Since then, household finance has emerged as the third major research focus in financial studies, following asset pricing and corporate finance. In China, the rapid growth of household wealth and investable assets, coupled with objective factors like inflation and the swift development of capital markets, has heightened demands for effective wealth management. Asset allocation has become a critical component of household investment decisions, while the demand for financial risk assets continues to rise. Against this backdrop, theoretical research on household asset allocation has become imperative.

Current academic research demonstrates that numerous scholars worldwide have empirically established intrinsic correlations between household characteristics and financial asset allocation, including studies on financial literacy, housing, and the impact of social/commercial insurance on investment choices. These theoretical findings provide a scientifically validated framework for analyzing China's household financial asset allocation. It should be emphasized

that such decisions are shaped by multifaceted factors. Focusing on a single characteristic would obscure the complexity of these interactions. By correlating key household features with their asset allocation choices, we can better understand the underlying relationships between these elements—a central objective of this study.

1.2. Research Objectives and Significance

Compared with mature domestic theories of household financial allocation, China's household financial asset allocation remains irrational and unhealthy. Research on this topic in China is still in its developmental and refinement phase. Furthermore, differences in national conditions between China and other countries lead to significant variations in the causal relationships between household financial asset allocation and various influencing factors. While foreign research theories and achievements can only be partially referenced, there is a need for further enrichment and development of localized research theories tailored to China's national conditions. This study contributes to enriching domestic theoretical frameworks on household financial asset allocation and provides valuable references for subsequent similar research.

First, as participants in the financial market, different households exhibit varying investment behaviors. For financial institutions, understanding the underlying reasons for the divergent performance of household investors in the financial market is a critical step to grasp investor needs, innovate in a targeted manner, and provide services with clear objectives. Second, the total amount of assets available for investment by Chinese households is increasing, which urgently requires a financial market environment and supporting systems that better align with China's social realities. At the same time, there is an urgent need for theoretical guidance based on research into the financial asset allocation of Chinese households. From this perspective, this study examines how the characteristics of Chinese household investors influence their participation in the financial market, which is a practical necessity.

1.3. Literature Review

Examining the Impact of Risk Aversion on Household Financial Asset Allocation: American economist Harry Markowitz (1952) proposed the mean-variance model, positing that all rational economic agents hold a fully diversified portfolio encompassing all risk assets, known as the market portfolio. They then allocate their wealth between this market portfolio and risk-free assets based on their risk aversion levels to maximize individual utility. In analyzing household financial strategies for holding risk assets, prior research has predominantly focused on stock holdings. Studies by Wang Cong and Tian Cunzhi (2012)[1], as well as Lü Xueliang and Wu Weixing (2017)[2], have demonstrated that borrowing constraints significantly reduce household participation in the stock market and the proportion of stock assets held by households.

From the perspective of "financial education," this study examines its impact on household financial asset allocation. Residents with financial education demonstrate a more pronounced risk attitude influence on investment decisions compared to those without financial education, indicating that financial education better enables residents to make investment decisions aligned with their risk preferences. Chen Ximing and Huang Wei (2020) found that financial education effectively enhances household participation in financial markets and increases the proportion of risk assets in total financial holdings[3]. Path analysis results indicate that financial education improves household investment rationality through two mechanisms: enhancing financial knowledge acquisition and improving risk preference, thereby boosting household participation rates in risk markets.

2. Analysis of the Current Status of Financial Asset Allocation in Chinese Household

2.1. The Financial Asset Allocation of Chinese Households is Unreasonable

The classic investment theory holds that whether a household holds risky assets depends on whether the available risky assets have a positive risk premium, while the degree of risk aversion can only affect the amount of risky assets held. Therefore, almost all households should hold a certain proportion of risky assets to some extent. However, the classic investment theory based on the assumptions of complete rationality and complete information does not align with reality: Chinese household participation in risky assets is very limited, meaning the vast majority of households do not hold risky assets. Moreover, the allocation of household assets by Chinese households is also unreasonable. This is specifically manifested in the following three aspects:

(1) The investment channels for urban and rural residents are increasingly diversified, but the financial investment structure of households remains monotonous. Nearly 90% of household financial assets are non-risky financial assets such as fixed deposits, demand deposits, and cash on hand, while the proportion of risky financial assets is too low. Taking the stock market as an example, the participation rate of Chinese household residents in the stock market is less than 10%. However, the excessively high savings deposit rate and overly monotonous financial asset structure are not only detrimental to the preservation and appreciation of household assets and the balancing of household asset risks, but also fail to balance household asset risks.

(2) Household financial assets constitute a disproportionately small share of total household assets. Fixed-asset investments, particularly in housing, consume the majority of household resources, significantly reducing asset liquidity and indirectly diminishing residents' participation in financial markets. Given that mortgage loans are currently the primary means of home purchase in China, housing assets acquire leverage effects, effectively freeing up liquidity from current assets. This endows real estate with investment attributes, making it widely accepted and favored by households.

(3) The allocation of financial risk assets is overly simplistic. Many households hold only stocks as their investment tool. Among the numerous household investors who choose to invest in various stock markets, only 22% achieve positive returns. The majority of resident households lack professional investment knowledge and skills, resulting in low investment profitability.

It can be seen that there is a significant issue of "limited participation" in the financial market of Chinese households. Chinese households have insufficient and incomplete access to financial market information, and their asset allocation choices do not conform to the "perfect rationality" assumption. The asset allocation and investment decisions of Chinese households are influenced by more complex and diverse factors. It is necessary to deeply interpret the causes of the allocation and investment status of Chinese households' assets, and to improve and develop them at the practical level. Therefore, rich and scientific theoretical research is indispensable.

2.2. The Change Period of Asset Allocation for Chinese Households

In the broader historical context, the income allocation behavior of Chinese households exhibits certain phased characteristics as income levels change.

(1) Intuitive display: Residents' income allocation evolves throughout their life cycle, starting with basic necessities, progressing to durable goods, and eventually large physical assets like cars and housing. Once these essential needs are largely met, a significant portion of household income may be allocated to financial assets. In 2019, China's per capita GDP exceeded \$10,000. Adjusted for purchasing power parity, China's per capita GDP level was equivalent to Japan's mid-1970s level, when Japanese households peaked in real estate investment. However,

between 1970 and 1990, the proportion of real estate investment in Japanese households declined. Under China's "housing for living, not speculation" policy, the growth rate of housing prices has slowed, leveraging has become more challenging, and the policy has demonstrated strong resilience. Over the past three years, housing prices in first-tier cities have entered a plateau phase, while growth rates in second-, third-, and fourth-tier cities have moderated since 2019. The investment appeal of real estate is quietly undergoing transformation.

(2) China's capital market has initially taken shape, and Chinese residents have already met the basic conditions for financial asset allocation. With the advancement of reform and opening-up in the multi-level capital market, the transformation and innovation upgrading of the real economy structure have increased the demand for capital. In recent years, the institutional reform of China's capital market has accelerated, and the multi-level capital market has been basically established. Two-way capital flows have become more convenient, and investment tools and products have become increasingly diverse, providing residents with high-quality and diversified investment channels to help preserve and increase the value of their assets. As the breadth and depth of the capital market improve, the complexity of investment and market efficiency have also increased, leading to a growing demand among residents for professional assistance in asset allocation.

(3) A low-interest-rate environment may encourage residents to seek income through multiple channels.

In a declining interest rate environment, residents tend to increase their exposure to riskier assets to chase higher returns, thereby elevating their risk appetite. With low interest rates meaning minimal returns from bank deposits or bond purchases, people are compelled to allocate more funds to assets offering superior investment returns.

(4) China's pension market has huge potential and the pension system is in urgent need of improvement

In developed countries such as Japan, Germany, the UK, and the US, there has been a trend of household financial assets flowing into pensions and insurance, which is inseparable from the incentive of improved tax-advantaged pension policies in each country. However, China's annuity system has a relatively small coverage, the tax-deferred pension system is still in the pilot stage, and supplementary pensions have not developed. This can also be seen from the comparison of household financial asset allocation structures both domestically and internationally. The main reason for the lack of dedicated pension allocation in Chinese households is the absence of a tax-deferred pension system. The establishment of a reasonable pension system can help promote the transformation of savings into investments, especially in countries with relatively developed capital markets and financial institutions. Analysis of Japan, Germany, the UK, and the US shows that residents' pension sources are mainly cash and deposits, reflecting the characteristics of financial asset reallocation and serving as an effective way to withstand low interest rates and improve the efficiency of capital allocation. For China, with the increasing breadth and depth of the capital market, establishing a tax-deferred pension system now not only helps improve the efficiency of household capital allocation but also holds significant importance for the development of China's capital market and asset management institutions.

3. Empirical Research Analysis

The data in this paper comes from the 2017 questionnaire survey of the China Household Finance Survey (CHFS), which conducted a detailed investigation into China's household demographic statistics, various asset allocation data, and other relevant data, providing nationally representative data for studying how multiple factors influence household asset choices at the micro level. The CHFS 2017 sample covered 29 provinces (municipalities and

autonomous regions) across the country, excluding Xizang, Xinjiang, Inner Mongolia, and the Hong Kong and Macao regions. After removing missing values, the sample size in this paper reached 8,086 households.

3.1. Selection of Primary Variables

This study primarily examines household financial asset allocation, with a particular focus on their engagement with financial risk assets. The dependent variable measures whether households participate in such assets and the extent of their involvement. The explanatory variables are defined as follows:

(1) Variable Explanation

Table 1. Variable Explanation

Variable name	Variable explanation
participation in risky assets	The value is set to 1 if holding at least one risk asset, otherwise 0. Here, financial assets primarily refer to risky financial assets, including stocks, bonds, funds, and gold derivatives.
risk exposure	The proportion of risky financial assets in household total assets is between 0 and 1.
participation in family assets	The household assets here refer to risk assets plus non-risk assets such as demand deposits and time deposits. If the participation is 1, it is 0 otherwise.
household assets ratio	The proportion of household assets to total assets ranges from 0 to 1.
sex	Female=0; Male=1
age	Under 18 = 0; 18-35 = 1; 35-55 = 2; 55-75 = 3; ≥75 = 4
degree of education	Primary school or below = 0; Middle school = 1; High school = 2; University or above = 3
Household registration type	Non-agricultural=0; Agricultural=1
marital status	Unmarried, divorced, or widowed = 0; Married = 1
after tax salary	Ln(income)
risk attitude	Unwilling to take risks = 1; Slightly lower risk, slightly lower return = 2; Average risk, average return = 3; Slightly higher risk, slightly higher return = 4; High risk, high return = 5
happiness	Very unhappy = 1; unhappy = 2; neutral = 3; happy = 4; very happy = 5
health level	Poor = 1; Average = 2; Good = 3; Very good = 4; Excellent = 5
Family size	human being
own home	A family with a property is assigned a value of 1; otherwise, it is 0.

3.2. Empirical Analysis

This paper establishes both Probit and Tobit models respectively.

$$\begin{aligned}
 P_i &= k_1 * sex_i + k_2 * age_i + k_3 * edu_i + k_4 * edu_i + k_5 * type_i + k_6 * \\
 &marriage + k_7 * income + k_8 * risk + k_9 * happiness + k_{10} * health + k_{11} * \\
 &family + k_{12} * house + \epsilon_{1i} \\
 Y_i &= k_1 * sex_i + k_2 * age_i + k_3 * edu_i + k_4 * edu_i + k_5 * type_i + k_6 * \\
 &marriage + k_7 * income + k_8 * risk + k_9 * happiness + k_{10} * health + k_{11} * \\
 &family + k_{12} * house + \epsilon_{2i}
 \end{aligned}$$

Equation (1) is a Probit model that describes asset participation. The dependent variable is a binary variable (0 or 1), where 1 indicates asset selection and 0 indicates no selection. Equation (2) is a Tobit model that measures the proportion of asset participation. The dependent variable is a continuous variable between 0 and 1, while other variables include gender, age, ϵ_{1i} education ϵ_{2i} level, household registration type, marital status, post-tax income, risk attitude, happiness level, health status, family size, and homeownership status. The error terms in equations (1) and (2) are denoted by ϵ_1 and ϵ_2 , respectively.

(2) Descriptive statistics of variables

Table 2. Descriptive statistics of variables

Variable name	Mean	Standard deviation	Least value	Crest value
participation in risky assets	0.5817	0.4933	0	1
risk exposure	2.5156	0.8812	1	4
participation in family assets	1.9544	1.0987	0	3
household assets ratio	0.5928	0.4914	0	1
sex	0.8113	0.3913	0	1
age	10.2533	1.4540	0	14.6901
degree of education	3.8548	0.8322	1	5
Household registration type	2.2862	1.2222	1	5
marital status	3.4567	1.4596	1	13
after tax salary	0.3569	0.6895	0	2
risk attitude	3.8311	0.7776	1	5
happiness	0.0072	0.0362	0	0.6897
health level	0.0985	0.1412	0	0.9813
Family size	0.1193	0.3242	0	1
own home	0.7336	0.4421	0	1

(3) Empirical Results of Variables

Table 3. Empirical Results of Variables

Variable name	Participation in risky assets		Risk exposure	
	regression coefficient	standard deviation	regression coefficient	standard deviation
sex	-0.130**	0.041	-0.013**	0.005
age	0.182***	0.030	0.024***	0.004
degree of education	0.324***	0.027	0.040***	0.004
Household registration type	0.484***	0.057	0.062***	0.008
marital status	0.035	0.063	0.028	0.008
after tax salary	0.179***	0.023	0.017***	0.003
risk attitude	0.255***	0.017	0.034***	0.002
happiness	-0.030	0.028	-0.006*	0.004
health level	-0.067	0.027	0.001	0.003
Family size	-0.087***	0.018	-0.010***	0.002
own home	-0.091**	0.033	0.010	0.004
N	8086			

***, **, * indicate statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

The two regression models were established with yy1 (whether residents hold financial risk assets, excluding deposits) and y1 (the proportion of residents holding financial risk assets, excluding deposits) as dependent variables, respectively, to determine the impact of the relevant independent variables.

Table 4. Empirical Results of Variables

Variable name	Participation in family assets		Household assets ratio	
	regression coefficient	standard deviation	regression coefficient	standard deviation
sex	-0.035	0.031	-0.003	0.004
age	0.067**	0.021	0.013***	0.003
degree of education	0.154***	0.017	0.007**	0.002
Household registration type	0.021	0.036	-0.005	0.004
marital status	0.106**	0.046	-0.005	0.006
after tax salary	0.047***	0.010	0.005***	0.001
risk attitude	0.095***	0.013	0.008***	0.001
happiness	0.007	0.020	0.002	0.002
health level	0.058**	0.019	0.002	0.002
Family size	-0.900***	0.011	0.001***	0.001
own home	-0.015	0.023	0.003***	0.003
N	8086			

The two regression models were conducted with yy1 (whether residents hold financial risk assets, including deposits) and y1 (the proportion of residents holding financial risk assets, including deposits) as dependent variables, respectively, to determine the impact of the relevant independent variables.

The Progit model examines household asset participation. Household head age positively affects financial asset participation at the 10% confidence level. At the 1% level, household size negatively impacts participation. Positive effects are observed at the 1% significance level for child population ratio, education level, marital status, risk attitude, household income, industrial/commercial status, urban/rural location, and eastern region. Health status influences participation at the 5% confidence level.

The Tobit model was employed to analyze the proportion of household financial assets. The empirical results indicate that household financial asset participation rates are significantly and positively influenced by the following factors: the head of household's age, the proportion of elderly and child populations, the head's gender, education level, risk attitude, health status, income, industrial or commercial status, urban-rural location, and eastern metropolitan area. Conversely, household size has a significant negative impact on this participation rate.

The above empirical findings indicate that

(1) Family size has a significant negative effect on the participation rate of family financial assets, which may be related to the fact that larger family size corresponds to lower per capita income and higher per capita expenditure, which restricts the accumulation of family wealth and makes the family risk-averse, thus the probability and proportion of holding family financial assets are lower.

(2) From the perspective of housing, families with existing homes are more likely to hold financial assets than those without, yet housing still has a crowding-out effect on household

financial assets. The higher the proportion of housing assets in total household assets, the lower the proportion of financial assets.

(3) The life cycle effect is significantly present in the decision-making of Chinese households to participate in financial risk investments. When the household head is in their youth or old age, family participation in financial risk investments is relatively low. However, when the household head is in their middle age, family participation in financial risk investments is the most active, with the highest probability and holding proportion. The possible reasons for this phenomenon are: middle-aged household heads have higher wealth levels, experience, and investment experience compared to young household heads, while they have more stable income sources, lower risk expectations, and weaker motives for property gifts compared to elderly household heads, making them more willing to participate in investments in financial risk assets.

4. Recommendations

4.1. Regarding the Government's Proposal

(1) Strengthen publicity and guidance to encourage residents to invest. China's financial market is developing increasingly, and various financial systems are becoming more sound and complete. However, Chinese households have very limited participation in the financial market, and the proportion of financial risk assets in total assets is only about 2% among urban households. This is detrimental to the development of the financial market and the preservation and appreciation of residents' wealth. Therefore, the government should strengthen publicity and guidance to encourage residents to participate in financial market investments appropriately, so as to maximize the utility of household wealth.

(2) Strengthening social security to boost household confidence. Our research indicates that households' active investment in financial risk assets stems from their strong belief in life security. When families lack stable safeguards-such as large household sizes, lack of homeownership, or poor health-their risk tolerance declines, making them risk-averse. To encourage household participation in financial markets, it is crucial to promptly enhance social security systems covering healthcare, education, and pensions. This will foster greater optimism about the future, thereby motivating more proactive engagement in financial risk investments.

4.2. Recommendations for Financial Institutions

(1) Precise customer targeting and diversified financial product offerings. Family investors' participation in financial markets is influenced by multiple factors, with their investment needs and expectations varying significantly. For instance, the size of the household, living arrangements, housing asset status, and health conditions of family members all substantially affect a family's engagement in financial markets. Therefore, financial service providers should tailor products and investment channels to these attributes, ensuring they align with the risk tolerance levels of different households.

(2) Accelerate innovation to diversify investment channels. The information gap between financial markets and individual investors remains a major barrier to household participation in financial risk investments. On one hand, households often lack awareness of available investment products and channels, coupled with limited access to investable assets, which objectively hinders their involvement in financial risk investments. On the other hand, insufficient market knowledge among individual investors may subjectively reduce their willingness to participate, a disparity particularly evident in investment performance between urban and rural areas as well as across economic regions. Financial institutions should therefore drive industry innovation, expand investment participation channels, lower market

entry barriers for households, and provide them with more comprehensive information during investment processes to guide them in refining their investment strategies.

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