

# Research on the Influencing Factors of Household Financial Asset Selection

Empirical Evidence from China Financial Survey (CHFS) Data

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**Abstract**—This paper describes the development of family finance in China and the "mystery of limited participation" of family financial risk assets, and analyzes the characteristics of family asset selection with Chinese financial survey data and the factors influencing residents' participation in the financial market by Probit model. This research finds that the holding rate of non-financial assets of Chinese residents is much higher than that of financial assets, and the real estate is the non-financial asset with the highest holding rate of residents. The asset allocation is unbalanced, and both the real estate holdings and social insurance have an impact on residents' participation in the stock market.

**Keywords**—*household finance; selection of risk assets; household asset allocation*

## I. INTRODUCTION

With the development of financial market and the availability of household micro-data, household finance has become a new direction of finance research. At present, researches on family finance are mainly carried out from two aspects: the degree of family's participation in the financial market and the choice of family's risky assets. On the one hand, according to the portfolio theory, investment diversification can effectively disperse non-systematic risks, and investment in certain risky assets can obtain risk premium, which is conducive to the maximization of wealth. According to Merton's (1971) model prediction, every family should hold some stock assets to obtain equity premium. In fact, individuals and households around the world have low participation rates in financial markets, and many people do not own stocks. This is known as the "limited participation puzzle" of stock markets. On the other hand, in Chinese household financial assets structure, a single risk of financial assets in the proportion of total wealth is still relatively low in general. There is large difference between urban and rural household financial asset allocations. Partial conservative family asset allocation is conducive to family wealth maximization objective situation theory. Both family financial situation and the development of financial market are not perfect constraint to each other and are confronting with bottleneck. Therefore, it is of great practical significance to study the influencing factors of family risk asset selection for understanding the current situation of

family asset allocation in China. By sorting out and analyzing the micro-data of household assets in China, this paper explores the specific situations and influencing factors of family participation in financial market and risk asset selection.

## II. THEORETICAL ANALYSIS OF FAMILY FINANCIAL RISK ASSETS SELECTION

Family finance is a discipline that analyzes how families use financial tools to achieve their goals. Specifically, families use securities investment tools, such as stocks, bonds and funds, to realize the optimal allocation of resources across the period and maximize the long-term consumption utility of families. Household financial risk assets selection refers to individual or family's own asset allocation behavior at the micro level. Individuals and families construct asset portfolio through asset allocation to maximize family wealth and consumption, which is an important part of family finance.

In recent years, with the rapid development of our economy, our country's financial markets is increasingly perfect, profound changes have taken place in the financial sector, residential investment choice increasingly diverse, financial management consciousness also gradually set up, by participating in the financial markets, risk assets to manage household wealth phenomenon is also common residents bloom, the proportion of family financial risk assets is more and more big, the proportion of residents to participate in the financial market is becoming more and more high. Thus, reasonable guiding residents to participate in the financial markets and optimizing the structure of family asset allocation is the realistic requirement of domestic financial development, it is also one of the keys to promote the prosperity of financial market in China.

Although family financial is popular in our country, the residents' participation in financial markets is still relatively low. GanLi (2012), using China's financial survey data, found that Chinese households' stock market participation rate was 8.84%, the share of household financial assets ratio is 15.45%, the family financial markets are still very underdeveloped, the other empirical researches showed that

the family of financial markets, especially in the stock market is very limited.

According to the theory of asset selection, investors who diversify to a certain proportion of wealth invested in risky assets, will be more advantageous to realize the goal of wealth maximization, but in reality, many people will not invest in stocks, investors to participate in the stock market is not timely hold all types of stock in the market, theoretically display data is much lower than the minimum risk assets holding share, this is known as the riddle of "limited participation" in the stock market. Existing studies explain "limited participation" in terms of factors such as transaction friction, household income, housing assets, corporate assets, and demographic characteristics, and the reality of these factors may restrict household participation in financial markets.

The limited participation of the stock market is not conducive to the development of the domestic financial market, meantime it's not conducive to the optimization of household assets structure and the growth of household wealth, understand the status quo of family financial asset allocation in China. In this paper, we analyze the family investment in the stock market and the influence factors of risk assets for households and financial market development, which is of great significance.

### III. STATUS ANALYSIS OF FAMILY FINANCIAL RISK ASSETS SELECTION

#### A. Data Specification

The data in this paper is from the China Household Finance Survey (CHFS) project of southwest university of Finance and economics, which was carried out nationwide in 2011. The Survey samples are distributed in 25 provinces, 80 counties, 320 villages (residential) committees, with a sample size of 8438. The survey covers financial assets and non-financial assets including housing assets, liabilities and credit constraints, income, consumption, social security and insurance, demographic characteristics, etc. The survey is nationally representative, with comprehensive contents, low interview rate and high data quality. This paper excludes the original data of household income is negative and zero, and is lack of some data of samples, the final valid sample is including of 8068 households.

#### B. Characteristics of Chinese Family Financial Assets

"Table I" summarizes the participation and holding amounts of various types of financial assets of the sample families. The results show that, firstly, the participation rate of risk-free financial assets represented by cash, demand deposits and time deposits is significantly higher than that of stocks, funds and other risky financial assets, but the amount of risky financial assets is higher than that of risk-free assets. Cash and demand deposits are the main risk-free financial assets held by residents. The amount of time deposits is the highest among the risk-free assets, which is related to the high interest rate of time deposits and idle funds in people's hands. Secondly, in terms of risk of financial assets, the

highest equity participation in the risk of financial assets, holding amount is the highest, shows that compared with other types of risk assets, the stock market is the main way of investment, residents funds and financial products also have certain participation, financial product holding amount is higher than that of stock, this may be due to risk of financial products is lower than the stock risk, people are more willing to put more money to invest in a certain return and low risk projects, number and type of bonds receive existence, therefore was associated with significantly lower participation, financial derivatives holdings in the risk of financial assets in the bottom. On the one hand, the reasons are similar to bonds; on the other hand, financial derivatives are emerging financial products. China's derivative market is still immature, and the public has relatively little understanding of derivatives.

Compared to urban and rural residents' financial assets holdings, town residents of financial assets stock overall participation and hold amount is higher than that of rural residents, and the risk difference is bigger, the financial assets of urban residents in 2011 equity participation rate is 16.96%, holding amount is 105200 Yuan, while rural residents participation rate is only 1.89%, holding amount is 48900 Yuan, the reason may be related to the total income and total assets and the level of knowledge and relevant financial market development of urban and rural differences.

TABLE I. HOUSEHOLD FINANCIAL ASSET HOLDINGS BY REGION

Asset category	Urban household		Rural household	
	Rate (%)	Mean (Wan Yuan)	Rate (%)	Mean (Wan Yuan)
Cash	96.83	0.54	94.33	0.49
Current Deposit	69.08	2.96	46.19	2.61
Fixed time Deposit	24.91	9.21	12.21	3.86
Stock	16.96	10.52	1.89	4.89
Fund	7.87	4.97	1.3	2.31
Bond	1.33	0.96	0.31	0.02
Derivatives	0.08	5.89	0.02	0
Financial Products	2.13	12.76	0.21	0.34

### IV. EMPIRICAL ANALYSIS

This paper will be based on the household asset allocation situation in-depth analysis of family risk assets selection factors. After data cleaning, the effective sample was 8,086 households, 3,761 urban households and 4,226 rural households.

In this paper, the Probit model is used to analyze the impact of housing ownership, social insurance and other factors on household financial market participation. In this study, we used the participation of the residential stock market as the proxy variable of household financial market participation. The Probit model is:

$$P(Y_i = 1) = \beta_0 + \beta_1 Estate_i + \beta_2 Insure + \alpha^T X + \varepsilon_i \quad (1)$$

Where, Y is whether to participate in the stock market; the Estate is the holding situation of the real Estate; the

insurance is the social security situation; X is the other control variables, including demographic characteristic variables, risk attitude variables, and household income asset variables.

#### A. The Introduction of Variables

According to the description of the asset allocation of Chinese households above, Chinese households hold more non-financial assets, while real estate is the most important component of non-financial assets. The high holdings rate of residents' real estate is a major feature of China's residents' asset allocation. Under the background of "limited participation" in the stock market, whether residents' investment in real estate will restrict residents' participation in the financial market deserves in-depth analysis. The housing variable used in this paper is the answer of respondents in the Chinese financial survey to whether they own their own houses.

Theoretically, the higher the social welfare is, the better the social security will be, the better the residents' expectation of the future economy is and the higher degree of participation in the financial market will be. The social security degree of residents is also an important factor influencing residents' investment decisions. This paper takes social security as the main variable to verify its impact on residents' participation in financial market. We use the endowment insurance and medical insurance with high coverage in social insurance to measure social security degree.

In order to study the influencing factors of household risk asset selection, the explained variable selected in this paper is the household risk asset holdings, and the most important investment type of residents in financial risk assets — stock market participation is taken as the proxy variable of risk asset selection. Stock market participation means whether the family owns the stock of a listed company, if it owns the stock take 1, not take 0.

The demographic characteristic variables of householder include gender, educational level, household registration, marriage and work status. The male value is 1 and the female value is 0; Degree, this article defines the five culture has not been to school, elementary school and junior high school is defined as the elementary education, high school and technical secondary school is defined as the secondary education, higher education, university and college is defined as a graduate student and Dr Defined as graduate or above, and build the cultural level of the four virtual variables, if the level of education for primary and junior high school, the elementary education variable value is 1, the rest is 0, if the level of education for high school and technical secondary school, secondary education variable value is 1, the rest is 0, for university and college, higher education variable value is 1, the rest is 0, for graduate students and doctoral, graduate and above variable value is 1, the rest is 0. Household registers use the agricultural household variable, if is the agricultural household then takes 1, the non-agricultural household takes 0. Marital status: married 1, unmarried,

divorced, cohabiting, separated, widowed 0. The working condition is 1 if there is work, and 0 if there is no work.

In this paper, risk attitudes are defined as three categories: risk aversion, risk preference and risk neutrality. The dummy variable is constructed with risk aversion as the benchmark variable. If it is risk neutral, the risk neutral variable is 1 and the rest are 0; if it is risk preference, the risk preference variable is 1 and the rest are 0.

Household asset income variables include: household disposable income, household net worth, whether to engage in individual industry and commerce. Taking into account the possible nonlinearity and heteroscedasticity of economic value variables such as disposable income and net assets, this paper conducts a logarithmic treatment of household disposable income and net assets. Whether to engage in individual industry and commerce, engage in value is 1, do not engage in value is 0.

#### B. Empirical Results

"Table II" reports the impact of property ownership, pension and medical insurance on residents' participation in the stock market. Probit (1) shows the regression of the housing and insurance variables that residents are mainly concerned about. Probit (2) adds the control variables of household population characteristics and household asset income. Probit (3) adds the control variables of residents' risk attitude. Probit model represents the influence of independent variables on the probability of the choice of dependent variables. Since the value of the regression coefficient of Probit model has no practical significance, this paper calculates the more intuitive average marginal effect.

TABLE II. FACTORS AFFECTING HOUSEHOLD PARTICIPATION IN THE STOCK MARKET

Variables	Probit Model		
	(1)	(2)	(3)
gender		-0.014**	-0.017**
primary education		0.037	0.032
Middle education		0.076***	0.066***
High education		0.081***	0.067***
graduate education		0.084**	0.059*
Agricultural hukou		-0.066***	-0.067***
Marriage		0.008	0.013
Work		0.039	0.029***
Risk neutral			0.023***
Risk Preference			0.067***
Resident happiness		0.029	0.029
individual business		-0.027***	-0.031***
Home ownership	0.002	-0.092***	-0.088***
Endow insurance	0.158***	0.039***	0.042***
medical insurance	0.009	0.021*	0.023**
disposable income		0.017***	0.016***
net assets		0.045***	0.043***
Observed value	6538	6468	6468
Wald test	379.78***	726.35***	717.91***

<sup>a</sup> Note: \*\*\*, \*\* and \* respectively indicate that the estimated coefficients are significant at the significance level of 1%, 5% and 10%.

According to the results of regress, first, the residents have their own home and family to participate in the stock market, has negative correlation property holdings limited

the residents to invest in stocks, due to the residents of most assets investment and property, whether for their own lives need or demand for investment, real estate is the main part of residents' asset allocation, hold to the estate will compress the proportion of residents' other assets, and configuration to the proportion of risky assets is smaller, there "crowd out" effect, holding property than the probability of holding property of residents to participate in the stock market is about 8.8% lower; Second, endowment insurance and medical insurance was significantly positively related with the residents to participate in the stock market, suggests that residents participate in endowment insurance and medical insurance will increase the probability of investing in stocks, insurance can reduce the uncertainty of residents for the future, to enhance residents' economic situation are more confident about the future, make domestic investment, financial assets choice risk greater financial assets, encourage the residents to participate in the stock market, not to participate in social insurance, safeguard residents with low levels of expectations of future economic is relatively low, factors such as the uncertainty of future income risk impact, make the residents didn't want to assume the risk of risky assets such as stocks, The probability of holding stocks is low. According to the results of probit (3), the probability of residents holding endowment insurance is about 4.2% higher than that of residents lacking endowment insurance to participate in the stock market, and the probability of medical insurance is about 2.3% higher.

In terms of other explanatory variables, since household heads are mostly male, there is a significant correlation between male and participating in the stock market. Cultural degree, secondary education and higher education, graduate and above education level and resident participation was significantly positively related to the stock market, and the marginal effect of them are around 6%, effect is very big, higher educational level, the economic situation, financial knowledge will more, accept to the economic and financial information and the information is also more, natural understanding of financial markets will be a wider more comprehensive, certain financial knowledge makes residents holding a risky financial assets to optimize the structure of household assets, improve the safety of assets, increase in household wealth. Family of agricultural registered permanent residence to participate in the stock market has significant negative correlation, and the degree of influence is bigger, there will be more urban than rural residents to participate in the financial markets, the reason may be due to the financial markets is usually found in the city, urban residents in contact with the chance and frequency of the financial markets were higher, the limitation of rural residents receive their own financial environment, the risk of financial assets of contact and understanding are very few, therefore less invest in stocks and financial assets, to participate in the financial markets. Risk attitude is a significant effect on the financial markets to participate in, risk neutral and risk appetite can significantly increase the probability of residents to participate in the financial markets, the marginal effect of risk neutral is small, the marginal effect of high risk is higher, the risk preference of family than risk aversion, the possibility of investing in the stock

market about 6.7% higher income. The total amount of financial assets is significantly positively correlated with the probability of household investment in stocks, which validates the wealth effect and the possibility that households with high income and total household assets may hold risky assets. Engaging in individual businesses and residents to participate in the probability of the stock market has significant negative correlation, that family engaging in individual industrial and commercial will reduce the investment risk assets, this is consistent with the conclusions in the literature, is engaged in individual industrial and commercial households in the industrial and commercial management to take risk, in order to invest in alternative and risk aversion will lower the proportion of families holding a risky asset. The working of householder also significantly improves the risk assets held by the family. The working of householder indicates that the family has a stable source of income, and the uncertainty about the future will be relatively low, because it is possible to participate more in the financial market and hold more risky financial assets. In addition, residents' marital status and family happiness had no significant influence on stock market participation.

## V. CONCLUSION

Family financial theory were introduced in this paper, and the limited of the stock market to participate in the mystery, understand the main research content of the family finance, using the data analysis of China's banking survey (CHFS) the development of the domestic financial market in China, and influence the residents to participate in the financial markets, risk assets factor has carried on the regression analysis, the study found that:

Residents in our country hold non-financial assets rate is far higher than that of financial assets, residents and property is the highest rate of non-financial assets, asset allocation is highly uneven, without risk of financial assets in financial assets holding rate is much higher than the risk of financial assets, cash and deposits is the main risk free to own financial assets, stocks are the main risk of residential investment financial assets, but in general, stock holding rate is still low, the financial market participation of rural residents is markedly lower than the urban residents. Through the regression analysis of the influencing factors of residents' participation in the stock market, this paper finds that property ownership can significantly reduce the possibility of residents' participation in the stock market, and household investment in real estate can crowd out household investment in other assets, especially venture assets. Family holding endowment insurance and medical insurance will significantly increase the possibility of family participation in the stock market. A better social security degree will reduce residents' uncertainty about the future, make them more qualified to bear the volatility of return of risk assets, and hold more risk assets relatively. In addition, the higher education level and higher family income and assets of the householder also increase the possibility of the family investing in risky assets, which has the "knowledge effect" and "wealth effect".

In this paper, the research results show that the high property holdings will limit families to participate in the financial markets, asset allocation of a single, does not favor the assets structure optimization, this may be related to our country held home ownership rate is the highest in the world and domestic to high prices, countries should actively implement price control, guide residents rational allocation of household assets.

Social insurance will increase the probability of residents holding risk assets, and the improvement of social endowment insurance and medical insurance system has a remarkable effect on Chinese residents' participation in the financial market. At present, China's social security system is still imperfect, which not only affects the household asset structure, but also is a major livelihood issue faced by China. Therefore, the government should speed up the reform of the social security system, especially the endowment insurance system, to guide residents to reasonably allocate household assets and optimize the household asset structure.

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