# An Empirical Study on the Factors Influencing the Choice of Financial Assets by Rural Households

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## Abstract

**With the policy of benefiting farmers, the total assets of rural residents in China are on the rise. Financial assets as an important part of total assets, people also pay attention to the breadth and depth of their holdings. Based on the survey data of China household Financial Survey in 2017, this paper studies the influencing factors of rural residents' financial asset selection, and conducts empirical analysis on the influencing factors of the breadth and depth of rural households' financial asset holding respectively through the construction of binary PROBIT model and TOBIT model. Research shows that the degree of understanding of economic and financial knowledge, health status, family size, the number of real estate is an important factor affecting the choice of financial assets of rural households. According to the research results, this paper also puts forward Suggestions to the Chinese government, financial institutions and rural residents.**

## Keywords

**Rural household finance; Choice of financial assets; Influencing factors.**

## 1. Introduction

With the introduction of PUHUI finance and agriculture policy one after another, the household income of rural residents has been gradually improved, and therefore the living standard has significantly increased. This enables the residents to have surplus disposable income after solving their own food and clothing, and turn their attention to the field of financial investment. As a result, the financial transaction activities of rural households become increasingly frequent. However, due to the relatively slow speed of financial development in rural areas, non-financial assets in the distribution of rural household assets are relatively high, and there are serious unreasonable problems. In addition, low financial literacy, serious information asymmetry and limited participation in the financial market make it difficult for rural residents to find suitable investment channels to maintain and increase the value of their assets.

The existing research on factors affecting household asset selection mainly focuses on three aspects: demographic characteristics, background risk and economic environment. In this paper, it has been sorted out and summarized. In terms of demographic characteristics, the choice of financial assets has a great correlation with the actual situation of each family due to family heterogeneity. Guiso et al.(2000) and McCarthy(2004) found that young families are more likely to buy risky assets, while on the contrary, aging families are risk-averse. Russell Cooper et al. (2016) found that education can increase the participation of families in the financial market. Domestic research in this area is a little later than some developed countries. Lu Yajuan (2014), Hu Zhen (2015) et al. carried out regression analysis on family demographic variables such as gender, age, marriage and the characteristics of family asset portfolio. The defect of this kind of research is that it only considers the factors that affect the holding of financial assets, or only studies the proportion of holding financial assets under different circumstances.

In reality, China's household investment will not only consider the risks and returns of financial assets, but also consider background risks such as investor health risks. Gollier and Pratt (1996) are the first factors that include background risk into the influencing factors of family investment. Using the data of CHFS in 2011, Zhang Bing and Zhao Xuerui (2015) found that when the income of a financier is more uncertain, the allocation proportion of his/her risky financial assets will be lower. Liu Tingting and Song Bingjie (2017) said that for Chinese urban families, their real estate status is positively correlated with their participation in the stock market.

In addition, the macro economic environment will affect the behavior of household asset selection. Li Shi et al. (2005) concluded that the property distribution gap between urban and rural residents in China is obvious. The research of Zhou Bangyao (2008) shows that although there are a lot of money and capital stock in rural areas of China, the shortage of supply of rural finance generally exists, which restrains the demand of rural families for investment financial products. Cao Lanying (2019) found that the new farmer insurance system indirectly increased the participation of rural residents in the financial market.

At present, most scholars, when studying household financial asset allocation, focus on national residents or urban residents, or only consider the impact of a single factor on financial asset allocation, and there are few studies on rural household finance. Therefore, based on the CHFS Chinese Household Financial Survey project carried out nationwide by Southwestern University of Finance and Economics in 2017, this paper USES binary PROBIT model and TOBIT model to conduct empirical analysis on the breadth and depth of rural household financial asset selection in China. After the literature review, this paper will put forward hypotheses on the choice of rural household financial assets from the aspects of age, health status, family population and the degree of attention to economic and financial information, and focus on the study of the relevant factors affecting the choice of rural residents' assets. This will help promote the participation of rural residents in financial markets, increase economic activity in rural areas and eliminate the huge wealth gap between urban and rural areas.

## 2. An Empirical Study on the Influencing Factors of Chinese Rural Residents' Choice of Financial Assets

### 2.1. Source of Data

The data used in this paper are from the fourth Round of China Household Finance Survey (CHFS) conducted nationwide by Southwestern University of Finance and Economics in 2017. The samples covered 29 provinces, autonomous prefectures and municipalities, 355 counties, districts and county-level cities, 1,428 village and neighborhood committees, and obtained microcosmic data of nearly 120,000 individuals from 40,011 households. This paper selects relevant data such as family basic situation and family financial assets from the new sample in 2017. A total of 10,539 samples from rural areas were extracted for research and analysis when partial missing data or improper sample data were eliminated.

### 2.2. Model Setup

After sorting out the previous studies of scholars, the seven explanatory variables selected in this paper are as follows: attention to economic and financial information, health status, family size, age of head of household, income level, education expenditure and Number of real estate .With regard to economic and financial information and health status, this paper carries out virtual variable quantization processing. Specifically, if interviewees pay no attention to economic and financial information, the value is 1; if they pay little attention to it, it is 2; if they normally pay attention to it, it is 3; if they relatively pay attention to it, it is 4; if they pay much attention to it, it is 5. When participants were compared with their peers, if they rated their

health as very unhealthy, the value is 1, 2 for unhealthy, 3 for generally healthy, 4 for healthy, and 5 for very healthy. Total family income and education expenditure respectively refer to the total income of the previous year and the total expenditure spent on education. As for the size of the family, the age of the head of the household and the number of real estate, they are assigned according to the actual number of the family, the actual age and the actual number of real estate.

When studying the breadth of household financial assets holding (the category of financial assets held), financial assets are divided into monetary financial assets, securities financial assets and security financial assets, and the explained variables are all kinds of financial assets. In the study on the depth of household financial assets holding (the proportion of the amount of financial assets to be held by households), since this study takes the holdings of rural residents to all kinds of financial assets as the main research object, the explained variable is the proportion of the three types of financial assets in the total financial assets.

Since the explained variable is a binary choice variable, the PROBIT model is an effective econometric model in the analysis of the breadth of household financial asset selection, that is, whether the household financial asset is held or not.

The PROBIT model is:

$$Y = \beta_0 + \alpha\text{name} + X\gamma + \mu \tag{1}$$

Where, $\mu \sim N(0|\sigma^2)$, Y is the explained variable and is a dummy variable. It is equal to 1 for household participation in securities, currency and security finance, and 0 for non-participation. Explanatory variables are divided into seven categories, including economic and financial information attention, health status, family size, head age, income level, education expenditure and amount of real estate.

In terms of analyzing the depth of household financial assets holding, in order to make the empirical results more robust and credible, this paper adopts the proportion of holding certain types of assets in the total financial assets for analysis. Since not every household holds risky financial assets, the variable of the proportion of risky assets in financial assets is truncated -- the proportion of assets less than or equal to 0 needs to be set to 0. In this case, TOBIT model of tail-breaking regression is used for estimation.

The TOBIT model is:

$$Y^* = \beta_0 + \alpha\text{name} + X\gamma + \mu \tag{2}$$

Where, the explained variable is the proportion of all kinds of household financial assets, the setting of the explanatory variable is the same as above, μ is the error term, and the model obeys the normal distribution.

Table 1. Selection of variables

| | Name | Definition |
|---|---|---|
| Explained variable | Securities financial assets | Funds, stocks and derivatives |
| | Monetary financial assets | Bonds, wealth management products and loans |
| | Security financial assets | Various insurance and annuities |
| | Proportion of securities financial assets | The proportion of securities financial assets in financial assets |
| | Proportion of monetary financial assets | The proportion of monetary financial assets in financial assets |
| | Proportion of protection financial assets | Proportion of security financial assets in financial assets |
| Explanatory variables | Attention to economic and financial information | if interviewees pay no attention to economic and financial information, the value is 1; if they pay little attention to it, it is 2; if they normally pay attention to it, it is 3; if they relatively pay attention to it, it is 4; if they pay much attention to it, it is 5 |
| | State of health | 1 for very unhealthy, 2 for unhealthy, 3 for generally healthy, 4 for healthy, and 5 for very healthy |
| | Family size | Number of people in the family |
| | Age of head of household | The actual age of the head of household |
| | Income level | Log family income |
| | Education expenditure | Logarithm of household education expenditure |
| | Number of real estate | Number of family properties |

## 2.3. Descriptive Statistical Analysis

From a nationwide perspective, when studying the breadth of financial assets held by rural families in China, it is found that rural families pay more attention to practical problems such as old-age care, children going to school, and illness of the elderly, while holding security financial assets can enhance the family's ability to resist risks, so the proportion of rural families holding financial assets is as high as 45%. Holding monetary financial assets is still one of the choices for rural residents, which is suitable for those with low family risk tolerance. Rural residents' general financial knowledge is weak and risk aversion is high, so only 5.9% of households hold bond financial assets. Thus it can be seen that with the development of economy, rural residents begin to pay attention to the field of financial investment, but the capital distribution in the risk financial market is insufficient, which greatly restricts the capital supply in China's rural financial market.

The average health status of rural families in China is 3.423, which is between general health and health. It can be seen that the rural residents in China are in good health on the whole,

which is closely related to the popularization of new rural insurance and medical insurance in China. The average family size is 3.319, which means that the rural residents in China are a family of three, indicating that family planning has been implemented in most areas of China and family size has been controlled. The average age of the household head is 55.235 years old, which indicates that the family members begin to age and their physical condition gradually declines while their investment risk appetite also declines. From the average income level and education expenditure, rural residents gradually pay more attention to education, and the proportion of spending on education has increased to some extent, which is conducive to the reform of rural financial market and the improvement of rural residents' financial participation. The average number of properties was 1.157, and rural residents generally own a home, meaning their living conditions have improved.

Table 2. Analysis results of descriptive statistics for variables

| Variable name | Number of observations | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Securities financial assets | 10539 | 0.059 | 0.237 | 0 | 1 |
| Monetary financial assets | 10539 | 0.164 | 0.371 | 0 | 1 |
| Security financial assets | 10539 | 0.454 | 0.497 | 0 | 1 |
| Proportion of securities financial assets | 10539 | 0.040 | 0.178 | 0 | 0.999 |
| Proportion of monetary financial assets | 10539 | 0.138 | 0.329 | 0 | 0.999 |
| Proportion of protection financial assets | 10539 | 0.368 | 0.469 | 0 | 0.999 |
| Attention to economic and financial information | 10539 | 1.724 | 1.052 | 1 | 5 |
| State of health | 10539 | 3.423 | 1.026 | 1 | 5 |
| Family size | 10539 | 3.319 | 1.577 | 1 | 15 |
| Age of head of household | 10539 | 55.253 | 17.618 | 21 | 120 |
| Income level | 10539 | 8.919 | 3.662 | 0 | 14.516 |
| Education expenditure | 10539 | 3.098 | 4.239 | 0 | 12.765 |
| Number of real estate | 10539 | 1.157 | 0.421 | 0 | 6 |

## 2.4. Results of Empirical Analysis

### 2.4.1. Analysis of Factors Influencing the Holding Width of Rural Household Financial Assets

PROBIT model is used to analyze the influencing factors of the breadth of rural households' financial assets holding to study whether rural households hold certain financial assets. This paper divides financial assets into bond financial assets, monetary financial assets and security financial assets. As can be seen from the table, the P values of the models are all lower than 0.05, that is, the models are all significant, which means that the empirical results are robust.

It can be found from the analysis of the significant influencing factors and their influencing directions that the four factors of economic and financial information attention degree, health status, family size and real estate quantity all have significant influences on the width of rural household financial assets holding in China. The more people pay attention to economic and financial information, the better their physical health, the smaller their family size and the more houses they own, the more they prefer securities financial assets. The obtained experimental data show that the significance of age partial regression coefficient is not high, which indicates that there is no significant difference between age and the holding of various financial assets.

The following is a further analysis. The age of investors has a significant negative impact on monetary financial assets -- the older the investor is, the less risk bearing capacity he has and the more he prefers security financial assets. Family size has a significant negative impact on three types of financial assets. Studies have shown that the larger the family, the less risk it has, and the less income it earns when it spends more on its members, and therefore the less likely it is to hold financial assets. In the statistical analysis, investors' attention to economic and financial information and the number of real estates have a significant impact on the holdings of three types of financial assets, which become an important factor affecting the investment decisions of households. Rural household income increases with the growth of rural economy, and rural residents pay more and more attention to education expenditure, which weakens the status of family income and education expenditure in the selection of family financial assets, and has less influence on the holding of three types of financial assets. Except family size and head age, the other factors are positively correlated with the holding of three kinds of financial assets.

### 2.4.2. Analysis of Factors Influencing the Holding Depth of Rural Household Financial Assets

TOBIT model is used to analyze the factors affecting the depth of rural households' financial assets holding to study the proportion of rural households' financial assets in the total financial assets. As can be seen from the table, the P values of the models are all lower than 0.05, that is, the models are all significant, which means that the empirical results are robust.

The analysis of the significant influencing factors and their influencing directions in the table shows that, like the research on the breadth of financial asset holding, the four factors of economic and financial information attention, health status, family size and housing quantity have significant influences on the depth of rural residents' financial asset holding in China. Specifically, residents who pay more attention to economic and financial information, are in better physical health, have smaller families and have more real estate will increase the proportion of certain financial assets.

Table 3. PROBIT regression results

| Explanatory variables | Securities financial assets | Monetary financial assets | Security financial assets |
|---|---|---|---|
| Attention to economic and financial information | 0.392*** (23.88) | 0.179*** (13.58) | 0.119*** (9.86) |
| State of health | 0.0690** (3.28) | 0.0787*** (4.90) | 0.0673*** (5.22) |
| Family size | -0.238*** (-11.66) | -0.0551*** (-4.94) | -0.0460*** (-4.80) |
| Age of head of household | 0.00541*** (3.72) | -0.00368*** (-3.69) | 0.0118*** (14.30) |
| Income level | 0.0470*** (5.60) | 0.0730*** (11.07) | 0.0289*** (7.55) |
| Education expenditure | 0.0347*** (5.64) | 0.0154*** (3.83) | 0.00407 (1.18) |
| Number of real estate | 0.259*** (6.42) | 0.0937** (2.82) | 0.145*** (4.84) |
| Cons | -3.063*** (-18.13) | -2.050*** (-17.17) | -1.491*** (-15.75) |

Note: ① The value in parentheses is the standard error of the estimated value of each variable; ②***, **, * indicate 1%, 5%, and 10% significance levels, respectively.

Further research tells us that the age of household head has little impact on the holding of three types of financial assets, and even has a negative impact on monetary financial assets. The more attention paid to economic and financial information, the more inclined rural residents are to increase their holdings of securities financial assets and reduce their holdings of security financial assets. Households with more real estate will have better economic conditions and relatively strong risk tolerance, and will also increase their holdings of securities financial assets. Except family size, the other factors are positively correlated with the proportion of the three types of financial assets. Family size proportion of securities financial assets, the money and security have little impact on financial assets - because of domestic population growth will reduce the possibility of family asset growth, the greater the population there is family consumer spending, the greater the decrease in number of assets for investment, and the more risk-averse investors, so don't want to increase the securities financial assets accounted for. The higher the education expenditure is, the more receptive the family is to new things, and the more willing it is to increase the proportion of securities financial assets in order to maintain

and increase the value of assets. As the main source of household assets, the higher the level of household income is, the higher the proportion of monetary financial assets is, while the proportion of security financial assets is the lowest, which is attributed to its high risk tolerance.

Table 4. TOBIT regression results

| Explanatory variables | Securities financial assets | Monetary financial assets | Security financial assets |
|---|---|---|---|
| Attention to economic and financial information | 0.458*** (17.88) | 0.202*** (12.00) | 0.0432*** (4.68) |
| State of health | 0.0940** (3.21) | 0.105*** (5.31) | 0.0431*** (4.27) |
| Family size | -0.273*** (-10.20) | -0.0552*** (-3.90) | -0.0213** (-2.85) |
| Age of head of household | 0.00674*** (3.71) | -0.00454*** (-3.74) | 0.00924*** (13.95) |
| Income level | 0.0547*** (5.93) | 0.0885*** (12.38) | 0.0141*** (4.69) |
| Education expenditure | 0.0382*** (5.05) | 0.0175*** (3.58) | 0.00138 (0.51) |
| Number of real estate | 0.297*** (5.77) | 0.0936* (2.29) | 0.0748** (3.27) |
| Cons | -3.780*** (-15.07) | -2.530*** (-16.24) | -0.910*** (-12.03) |

Note: ①The value in parentheses is the standard error of the estimated value of each variable; ②***, **, * indicate 1%, 5%, and 10% significance levels, respectively.

## 3. Research Conclusions

With the development of economy, the total amount of family assets in China keeps rising. In this context, the study and analysis of the factors that influence the assets of rural households are of certain reference value in terms of how rural households allocate their financial assets scientifically and reasonably, how to promote the participation of rural residents in the financial market, and how to promote the scientific and efficient financing of financial institutions under different economic conditions.

Based on the 2017 China Household Financial Survey data (CHFS), this paper analyzes the influencing factors of rural residents' household asset choice. It can be found from empirical

research that the four most important factors affecting rural residents' household asset allocation are the degree of attention to economic and financial information, health status, family size and the number of real estate, which have a significant impact on the breadth and depth of financial asset holding. In other words, residents with more financial knowledge, better health, smaller family size and more real estate are more inclined to hold financial assets.

In view of the above conclusions, this paper puts forward corresponding policies and Suggestions. What financial institutions should do is to innovate financial products for rural areas, provide customized investment portfolios for rural residents, and help rural residents optimize resource allocation. For rural residents, only by paying attention to improving the education level, reasonably allocating idle funds and changing the previous conservative mentality, can they ensure the preservation and appreciation of assets. From the perspective of the government, it is necessary to further improve the education level and medical security of residents nationwide, and focus on the work of PUHUI finance to help rural residents improve their financial knowledge, so that residents can personally experience the benefits of finance.

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