

## Research Article

# The Influence of Financial Cognition on Rural Families' Participation in Financial Market—An Empirical Test Based on the Risk Classification of Financial Assets

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In recent years, the per capita disposable income of Chinese residents has notably improved, and there are more and more residents participating in the financial market. Using 2015 CHFS data, this study divides financial assets into three categories according to asset risk: no risk, low risk, and high risk, and studies its impact on rural families' participation in the financial market from the financial cognitive point of view. The main conclusions are as follows: China's rural families are still mostly cash, demand deposits, and time deposits for participating in the financial market, and it is hard to accept other risk assets; financial cognition effectively improves the participation of rural households in the financial market, especially in the high-risk asset market; financial cognition will weaken the impact of other variables on rural households' participation in the financial market, including risk-free asset market and risk asset market.

## 1. Introduction

In 2006, American scholar Campbell first proposes the concept of “family finance” [1]. From then on, the scholars from various countries began to carry out a lot of research on family financial behavior. In 2008, Wang, a Chinese scholar, first proposed a study on the impact of rural household portfolios and found that the factor of financial deepening had a different impact on rural households in eastern and Western China [2]. Shi [3] used the CHFS data of 2011 to study all the reasons for Chinese families to take part in the financial market [3]. Min [4] proposed that financial cognition has a significant positive relationship between the proportion of household financial assets and the total amount of household wealth [4]. More and more scholars pay attention to the cognitive level of family finance. Hu and Zang [5] studied the positive correlation between financial cognition and family financial planning practice [5]. Sen [6] used CHFS data to study the impact of various factors on family financial asset selection behavior in China [6]. Kejing [7] found that there are obvious differences between urban and rural families in participating in the financial market

when analyzing the allocation of household financial assets in China. Urban households prefer the formal market, while rural households prefer the informal financial market [7]. Luo and Liang [8] pointed out that the improvement of family cognitive level has a U-shaped influence on risk assets [8]. Zhixin [9] proposed that family financial cognition has a significant positive correlation with investment in commercial insurance and insurance scale [9]. Morgan and Long [10] found that the cognitive ability of household finance has a statistically positive influence on formal or informal savings in the case of Laos [10]. Zhao and Zhou [11] analyzed the relationship between financial cognition level and household savings willingness, and believed that improving household financial cognition level can effectively reduce their household savings rate [11].

## 2. Current Situation of Rural Households' Participation in Financial Market in China

According to the statistical yearbook of China Securities Depository and Clearing 2020, the number of investors nationwide at the end of 2020 was 177774000, and there is a

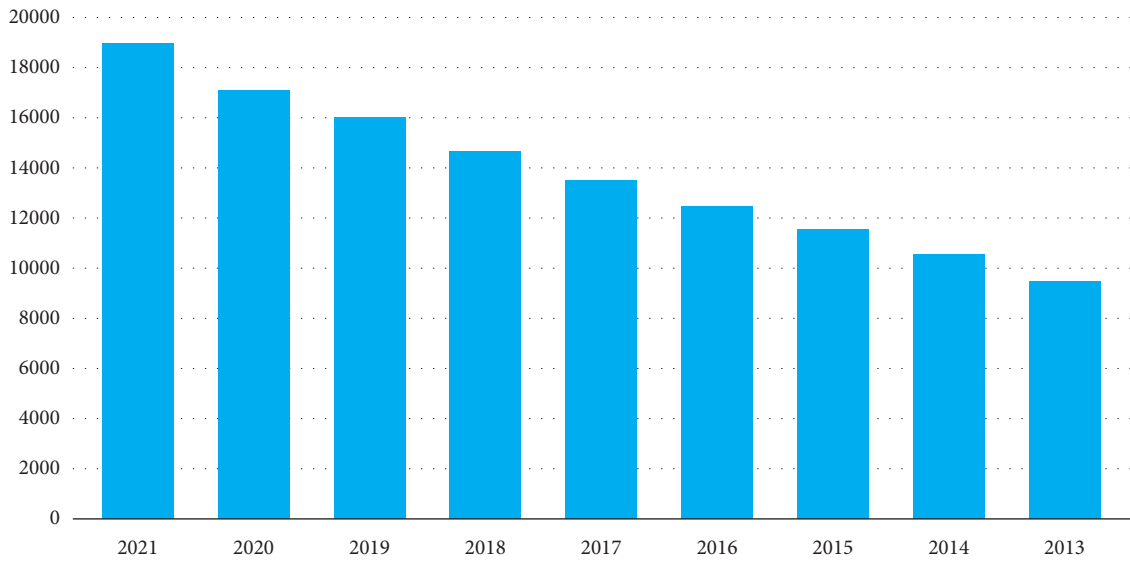


FIGURE 1: Per capita disposable income of rural households in China from 2013 to 2021. Note: the data are from the website of the National Bureau of Statistics.

11.28 % growth rate compared to the last year. However, compared with the total size of 1.413 billion people, the participation rate of China's household financial market is still relatively low. From the Gan Li's survey data on China's household finance, the participation rate of China's household financial market is 11.5%, including 14.3% in the urban household stock market and 2.3% in the rural household stock market; the participation rate of urban families is 7.6% and that of rural families is 1.3% [12]. The research group on household assets and liabilities of urban residents of the survey and the Statistics Department of the People's Bank of China also issued a document in 2020, pointing out that compared with the United States, the proportion of household financial assets of urban residents in China is low, that is, 22.1 % points lower than the United States.

Of course, while seeing the gap, we should also see some good changes. From the data on the website of the National Bureau of Statistics, as shown in Figure 1, we will find the per capita disposable income of China's rural residents reached 18931 yuan in 2021. From 2013 to 2021, the absolute per capita disposable income of China's rural residents increased by 9501 yuan, with an increase of 100.75%. In the past eight years, the growth rate has surpassed the growth rate of disposable income of urban residents. The express growth of disposable income and the rapid popularization of mobile Internet provide a basic possibility for China's rural families to take part in the financial market. However, from the absolute value of disposable income, there still exists a large gap between urban and rural areas.

We have also noticed the risk appetite of Chinese rural households taking part in the financial market. According to the data released in 2015 by the China Household Finance Survey report and the China Household Wealth Survey report, in 2015, evenly there is 30996 yuan in financial assets and 123436 yuan in assets other than finance for Chinese households. Financial assets accounted for only 20.1% of total household assets. From the perspective of risk appetite,

among the financial assets accounting for 20%, the proportion of purchasing risk-free assets is higher than that of others, and the proportion of medium- and high-risk financial assets is less than 5%. When rural families participate in venture capital, such as buying stocks, but in fact, the remaining cash in the stock account is more than the cash used and higher than the stock account of urban families, which shows that even if rural families participate in venture capital, they also deposit more cash in the account and invest with less money. It can also be seen from the CHFS report that Chinese families participate in the market. Most families use most of their assets to buy houses and only use a small amount of funds to buy financial assets. Rural families are more prominent in this performance. From the survey of the People's Bank of China, we can see, by the end of 2019, the household assets of urban residents in China were mainly physical assets, with an average household of 2.53 million yuan, accounting for 80% of the total household assets. Compared with the United States, the proportion of housing assets of Chinese households was higher, 28.5 % points higher than that of American households. However, in recent years, although the upward trend is small, on the whole, the proportion of Chinese rural households participating in the financial market is increasing. Moreover, we can see that under the policy background of common prosperity, the optimization of rural household asset structure has become an urgent thing in the process of implementing the rural revitalization strategy, narrowing the urban-rural income gap and increasing rural capital accumulation.

### 3. The Influence of Financial Cognition on Rural Families' Participation in Financial Market

Family investment decision-making is a complex process, especially in rural areas where financial knowledge is very common. In the process of studying the influence mechanism of decision-makers' financial knowledge on financial

information processing, we first need to define several basic categories. The first is financial cognition. Some literature also call it financial literacy and financial knowledge. In 1997, the American Financial Education Alliance defined it as a kind of ability, “the ability to use their learned knowledge to ensure that finance is always safe and managing resources is always feasible.” So far, there is no very standard definition of financial cognition. In 2012, the international student assessment program adopted the latest definition: “financial cognition is not only an understanding but also an ability, which is the ability to understand and use finance adequately. It can accurately adjust its financial situation even in a very complex financial environment” [13]. Compared with foreign countries, most domestic scholars study with financial knowledge instead of financial cognition. Hongshen [13] used the CHFS data in 2011 and took the answer to the question “does anyone in the family work in the financial industry” as an indicator to measure the level of family financial cognition [14]. Yin et al. [14] wrote in economic research that the increase in financial knowledge will promote families to take part in the financial market and increase the allocation of risk assets, especially stock assets. After families join the financial market, with the accumulation of investment experience, the proportion of investment in risk assets, especially stock assets, will also significantly increase [14]. Zeng et al. [15] used factor analysis to select three questions in CHFS (2013) and constructed indicators reflecting the level of financial knowledge [15]. Based on Zeng et al. [15], we selected six questions and used factor analysis to obtain financial cognitive variables [16] and made the measurement system of financial cognition more unified in academic circles. Zou et al. [17] constructed the unconditional quantile regression (UQR) model, combined with the development of digital finance, and proposed that improving the financial cognition level of rural households promoted the improvement of rural families’ income, but this active influence was greatly various in different quantile levels of rural household income [17].

Followed by rural families, the family is the composition of society and the basic unit of social independence, while the rural family is the most grassroots social unit based on blood and marriage in rural areas. The rural family in this study has three important conditions: ① there are at least two family members and if they can help each other; ② they are married or related by blood or adoption; and ③ the family should be stable and can be maintained for a long time. The patriarchal characteristics of rural families in China or the connotation of the father-son relationship must be included, because it is not related to the research problem and is not considered. At the same time, the rural families in the CHFS data used in this study take the current family of the respondents as the measurement unit. When investigating whether the family holds financial assets, it is by asking whether the respondents have some financial assets in their homes. If the respondent’s answer is that his or her family holds a certain financial asset, we assume that the respondent’s family is involved in the financial market.

*3.1. Data Sources.* The data of this study are from the CHFS, which are organized and managed by the China Household Finance Survey and Research Center of Southwest University of Finance and Economics. As the 2017 project data only ask new respondents about whether families hold financial assets, and there are no previous data in the data, so it cannot be directly used, and so the 2015 data are selected. The year 2015 was the third turn of survey, including 29 provinces (autonomous regions and municipalities directly under the central government), 351 districts and counties, and 1396 village (neighborhood) committees in China. There are 37289 households in the sample, and 21775 households were followed up in 2013. The data are very representative. The data include problems related to financial cognition, which provides a data source for the analysis of this study.

This study selects the sample data of families living in rural areas (rural=1), takes the subjective attitude and personal characteristics of the respondents as the family characteristics, and finally selects the effective sample of 47965 rural families.

### 3.2. Selection of Variables

*3.2.1. Selection of Financial Cognitive Indicators.* In terms of index selection, this study uses Yin Zhi-Chao’s measurement method of financial cognition in financial research [18] for reference and uses the factor analysis method to construct financial cognition index. According to the sample data of the respondents’ subjective attitudes and seven questions in the financial knowledge part of the CHFS questionnaire, descriptive statistics are carried out through the family’s attention to financial information, interest rate and inflation, risk calculation, risk and return, risk dispersion, etc., and the factor analysis method is used to construct the core variables.

The seven questions about residents’ financial cognition standard in the questionnaire in 2015 are shown in Table 1:

In response to the above questions, we reassigned the answers to the questionnaire:

The answers to the first question are ① most concerned, ② very concerned, ③ generally, ④ little concerned, and ⑤ never concerned. If you choose ① and ②, we think the respondent has a good financial cognition, expressed by 2; if you choose ③ and ④, we think it is general, expressed by 1; and if ⑤ is selected, we think there is no financial cognition, which is represented by 0.

If the answer to the second question is ① yes, it means that the respondents have taken professional courses and have high financial knowledge, which is indicated by 1. If the answer is ② no, it is indicated by 0.

By analogy, the answer to question 3 has risks and rewards: ① high, ② slightly high, ③ average, ④ slightly low, ⑤ unwilling to bear, and ⑥ unknown. If ① and ② are selected, it indicates that the respondent has high-risk acceptance ability, which is represented by 2; if ③ and ④ are selected, it indicates that the risk acceptance ability is general, which is represented by 1; if ⑤ and ⑥ are selected, it means that the risk cannot be accepted, and 0 is used to

TABLE 1: Financial cognition level.

Seven problems about financial understanding in CHFS
1. How long do you pay attention to economic and financial information in normal times?
2. Have you attended any economic courses or finance?
3. If you have lots of money for investment, which investment project would you choose?
4. Assuming that the annual interest rate of the bank is 4%, if you deposit 100 yuan for one year in the bank, how much can you get after one year?
5. Assuming that the annual interest rate of the bank is 5% and the inflation rate is 3% every year, what is the actual value after saving 100 yuan for a year?
6. If you must choose two lottery tickets, if you choose the first one, you have a 100% chance to get 4000 yuan and if you choose the second one, you have a 50% chance to get 10000 yuan, and 50% chance to have nothing, which one would you like to choose?
7. Which do you think is more risky, stocks or funds?

indicate that we do not know by default as the ability to accept the risk; the answer to question 4 is ① less than 104 yuan, ② equal to 104 yuan, ③ more than 104 yuan, and ④ cannot be calculated. If the answer is correct, it is indicated by 1, and if the answer is wrong, it is indicated by 0. This question examines the accuracy of the respondents' calculation of interest rates; the correct answer to question 5 is indicated by 1, and the wrong answer is indicated by 0. This question examines the respondents' ability to calculate inflation and interest rates; the sixth question examines the respondents' attitudes toward risk and return. If ① is selected, it indicates that the respondents prefer low return and low risk, which is expressed by 1; on the contrary, it is represented by 0; the last question examines whether the respondents understand financial instruments. If ① stock is selected, it means that the respondents have a basic understanding of stocks and funds, which is indicated by 1. If others are selected, it is indicated by 0.

This study uses stata16.0 for the KMO test, the result is 0.698, greater than 0.5, indicating that the core variable index can be established by factor analysis. The results of the principal component factor analysis are shown in Table 2.

Using the rotation method to calculate the factor to maximize the variance of the rotated factor, we can extract the factors Factor 1 and Factor 2 to calculate the comprehensive score function  $f$ , which is used to judge the financial cognition standard of rural families, as shown in Table 3.

After rotation, it is found that attention and course have the highest load on Factor 1.

The comprehensive score function is constructed through  $F_1$  and  $F_2$  to calculate the factor weight. The contribution rate of variance is divided by the accumulation to obtain the variable  $F$ .

$F = 0.6274 * F_1 + 0.3726 * F_2$ , which can be used as the core variable of financial cognition.

**3.2.2. Analysis and Descriptive Statistics of the Explained Variables.** How to judge whether rural families participate in the financial market depends on whether they hold financial assets. In the 2015 CHFS questionnaire, some questions about the explained variables are shown in Tables 4 and 5.

Use Stata software to analyze the correlation of the explained variables. The command process and results are shown in Figure 2.

TABLE 2: Results of principal component factor analysis.

Variable	Factor 1	Factor 2	Uniqueness
Attention	0.608	-0.153	0.607
Course	0.367	-0.326	0.759
Attitude	0.575	-0.291	0.585
Rate	0.521	0.386	0.579
Inflation	0.533	0.317	0.616
Return	-0.012	0.776	0.398
Instrument	0.636	0.031	0.594

TABLE 3: Maximum variance method of orthogonal rotation factor.

Variable	Factor 1	Factor 2
Attention	0.344	-0.134
Course	0.216	-0.300
Attitude	0.330	-0.264
Rate	0.276	0.370
Inflation	0.285	0.305
Return	-0.034	0.727
Instrument	0.353	0.039

The correlation test between them shows that there is a correlation between them. We can explore their relationship with the probit model. Their description and statistics are shown in Figure 3, which shows the participation rate of each asset. Basically, every household in rural areas holds cash, followed by 67% of demand deposits and 14% of time deposits, which is far lower than demand deposits. The participation rate of the other few is very small, and the financial derivatives are even 0. Here, we can also find some problems. Cash, demand deposits, and time deposits have the highest participation rate. They have one common feature: they are risk-free assets. The income of rural family residents is very unstable, and the income is generally low, which makes rural families dare not to participate in high-risk assets and are willing to participate in savings activities. Second, rural families have low years of education and a lack of understanding of financial assets. They will have a lot of worries and concerns, so they are too conservative to allocate risky assets.

**3.2.3. Analysis and Descriptive Statistics of Control Variables.** According to the previous literature, the personal information of the respondents, their family status, including their age, gender, risk attitude, and years of education,

TABLE 4: Questions about the explained variables.

Problem	Option
Does the interviewee have a current deposit card D1 or not?	① Yes, ② No
D2101 is to investigate whether the respondents have undue RMB time deposits at home, including certificates of deposit?	① Yes, ② No
D3101 is whether the respondents have a stock account at home?	① Yes, ② No
D5102 is whether the respondent has a fund account at home?	① Yes, ② No
D7102 is to investigate whether the respondents have bank financial products at home?	① Yes, ② No
D7113 is whether the respondents have other financial assets besides those mentioned above?	① Bonds, ② financial derivatives, ③ noble metals, ④ non-RMB assets.

TABLE 5: Explained variables.

Variable	Name	Variable assignment	Asset risk classification
Current	Demand deposit	Yes for 1, no for 0	No risk
Time	Time deposit	Yes for 1, no for 0	No risk
Stock	Shares	Yes for 1, no for 0	High risk
Fund	Fund	Yes for 1, no for 0	Low risk
Bank	Financial banking products	Yes for 1, no for 0	Low risk
Cash	Cash holdings	If it is greater than 0, it is 1; otherwise, it is 0	Exclude
d7113_1_mc	Bond	Yes for 1, no for 0	Low risk
d7113_2_mc	Financial derivatives	Yes for 1, no for 0	Exclude
d7113_3_mc	Noble metal	Yes for 1, no for 0	Low risk
d7113_4_mc	Non-RMB assets	Yes for 1, no for 0	Low risk

```
. correlate d7113_1_mc d7113_2_mc d7113_3_mc d7113_4_mc current time stock fund bank fl
> ank fl
(obs=16, 480)
```

	d71~1_mc	d71~2_mc	d71~3_mc	d71~4_mc	current	time	stock
d7113_1_mc	1.0000						
d7113_2_mc							
d7113_3_mc	-0.0025		1.0000				
d7113_4_mc	-0.0015		0.1894	1.0000			
current	0.0311		0.0390	0.0236	1.0000		
time	0.0762		0.0150	0.0174	0.1511	1.0000	
stock	0.0664		0.0221	-0.0039	0.0549	0.0401	1.0000
fund	0.0327		0.0532	0.1399	0.0319	0.0605	0.0479
bank	0.1049		0.0380	-0.0034	0.0526	0.1100	0.2142
fl	0.0070		0.0049	0.0256	0.1329	0.1410	0.0981

	fund	bank	fl
fund	1.0000		
bank	0.0898	1.0000	
fl	0.0562	0.0763	1.0000

FIGURE 2: Correlation results.

whether their rural families are engaged in industry and commerce, and whether they own their own houses and other factors have a significant impact on rural families' participation in the market [19]. Therefore, this study selects them as control variables, as shown in Table 6.

The control variables are described and counted as shown in Figure 4:

It can be obtained that the average age of the rural family members of the sample is about 40 years old; there is little difference in the proportion of men and women, and there are still a little more men; the years of education are small, with an average of 5 years, which has not reached the level of primary school; 76% of the marital status is married and cohabiting; only about 10% of rural households are engaged in industry and commerce; and almost every family has its own housing, accounting for 97%.

```
. proportion d7113_1_mc d7113_2_mc d7113_3_mc d7113_4_mc current time stock fund bank
> d cash bank [fweight = rural]
```

Proportion estimation                      Number of obs       =       19, 047

	Proportion	Std. Err.	Logit [95% Conf. Interval]	
d7113_1_mc				
0	.9980049	.0003233	.9972593	.998548
1	.0019951	.0003233	.001452	.0027407
0.d7113_1_mc	1	0	.	.
0.d7113_3_mc				
0	.9963249	.0004385	.9953572	.9970915
1	.0036751	.0004385	.0029085	.0046428
d7113_4_mc				
0	.9986875	.0002623	.9980582	.999113
1	.0013125	.0002623	.000887	.0019418
current				
0	.321573	.0033844	.3149756	.3282423
1	.678427	.0033844	.6717577	.6850244
time				
0	.8599779	.0025144	.8549766	.8648341
1	.1400221	.0025144	.1351659	.1450234
stock				
0	.9875046	.0008049	.9858245	.9889878
1	.0124954	.0008049	.0110122	.0141755
fund				
0	.9946448	.0005288	.9935019	.9955876
1	.0053552	.0005288	.0044124	.0064981
1.cash	1	0	.	.
bank				
0	.9908122	.0006913	.9893532	.9920728
1	.0091878	.0006913	.0079272	.0106468

FIGURE 3: Descriptive statistical results of explained variables.

3.3. Empirical Model. Combined with the reference of existing literature, this study uses the probit model in the discrete choice model to study the influence of financial cognition on rural household financial market participation.



TABLE 6: Control variables.

Variable	Name	Assignment
Age	Age	Age of respondents
Age 2	Age square	Square of respondents' age
Gender	Gender	1 for boys and 0 for girls
Education	Years of education	No schooling is 0; in elementary-high school is 6; in junior middle school is 9; in senior high school is 12; for technical secondary school/vocational high school is 13; for junior college/higher vocational education is 15; for undergraduates is 16; for postgraduates is 19; the doctor is 22
Marriage	Marital status	Married and cohabiting: 1; 0 for unmarried, separated, divorced, and widowed
Industry	Whether engaged in commercial industry	Engaged is 1, not engaged is 0
House	Is there any real estate	Yes, 1; not 0
Attitude	Risk attitude	Choosing high or slightly high indicates that the respondents have high ability to accept risks, which is represented by 2; if average or slightly lower is selected, it indicates that the respondents' ability to accept risks in general, which is represented by 1; if you choose not to or do not know, it means that the respondent's ability to accept risk is 0, which is represented by 0; we do not know by default, so we cannot accept the risk.

Variable	Obs	Mean	Std. Dev.	Min	Max
age	47, 923	40.78084	21.8062	1	116
age2	47, 923	2138.577	1885.427	1	13456
gender	47, 933	.5209772	.499565	0	1
education	40, 702	5.222127	4.481397	0	22
marriage	40, 135	.7590632	.4276574	0	1

FIGURE 4: Description and statistics of control variables.

Probit model:  $y^* = \alpha + \beta_1 F + \beta_2 X_i + \varepsilon_i$

The dummy variables  $y$  and  $y^*$  have the following relationship:  $Y = 1$ , if  $y^* > 0$ ;  $Y = 0$ , if  $y^* \leq 0$ .

Here,  $y^*$  is the latent variable and  $Y$  is the dummy variable of type 0–1. When rural households hold financial assets,  $Y = 1$ , on the contrary,  $Y = 0$ ;  $F$  represents the financial cognition level of rural households;  $X_i$  is the control variable; and  $\varepsilon_i \sim N(0, \sigma_2)$ .

At the same time, this study divides financial assets into three parts.  $Y_i$  is the participation rate of risk-less assets, involving financial products, including current deposits and time deposits;  $Y_{i1}$  is the participation rate of low-risk assets, involving financial products, including funds, bonds, financial products, and non-RMB assets and precious metals;  $Y_{i2}$  is the participation rate of high-risk assets, including stocks; and  $Y$  is the asset participation rate of rural households, including all types of risk assets. Finally, we also need to verify a control group to better see the impact of adding financial cognition when other variables remain unchanged. Since each family in the sample has cash and none of the financial derivatives, these two variables are removed. We carry out the probit model test, respectively. The empirical results are listed in Table 7

3.4. Empirical Results. The influence of sample age on rural families' participation in risk-free financial assets, high-risk financial assets, and total financial assets are significant at 5% level. For low-risk assets, the  $p$  value is more than 0.1, which is normal. The correlation coefficient between age and the participation rate of risk-less assets, high-risk assets, and overall financial assets is positive and negatively correlated

with the participation of low-risk assets. The  $p$  value of the square of the sample age for rural families to participate in risk-free assets is less than 0.01, which is regarded as notable at the 1% level. The  $p$  value of the square of age for rural families to participate in low-risk and high-risk assets is greater than 0.1, which is not significant. The correlation coefficient between age and risk-free assets, high-risk assets, and financial assets is negative, and the correlation coefficient with low-risk assets is positive. It shows that the older the respondents are (i.e., the elderly), the more they prefer to invest in risk-free financial assets and are less willing to invest in low- and high-risk financial assets. The middle-aged children and the elderly in rural families have low-risk acceptance ability and prefer risk-free assets, while the middle-aged people prefer low-risk and high-risk assets.

The effect of gender on rural households' participation in risk-free assets and overall financial assets is significant at 5% level; the participation of rural families in low- and high-risk financial assets is not significant. The correlation coefficients of gender to them are negative. It shows that men in rural families are more inclined to participate in the financial market, and rural men will reduce the family's investment in nonrisk assets and high-risk assets, and are more inclined to participate in the investment of low-risk assets.

In each model, the years of education show significant characteristics, and the correlation is positive, indicating that the years of education have a significant impact on rural families' participation in various financial products. The longer the years of education, the more financial knowledge they receive, the deeper the understanding of financial assets, and the higher the willingness of rural families to participate.

Marital status has no significant impact on rural families' participation in low-risk financial assets and has a significant negative correlation with rural families' participation in overall financial assets, risk-free assets, and high-risk financial assets, indicating that most rural married or cohabiting families are reluctant to take part in the financial market, and risk-free assets are also the main way to take part in the financial market. The traditional stable life mode is more common in rural married families.

TABLE 7: The probit model results of financial cognition on rural families' participation in various risk assets.

	$Y_i$	$Y_{i1}$	$Y_{i2}$	$Y$	CG
F	0.306*** (0.009)	0.297*** (0.02)	0.342*** (0.029)	0.309*** (0.009)	
Age	0.003** (0.001)	-0.004 (0.004)	0.003** (0.006)	0.003** (0.001)	0.003** (0.001)
Age 2	0*** (0)	0 (0)	0*** (0)	0*** (0)	0*** (0)
Gender	-0.027** (0.012)	-0.016 (0.032)	-0.027** (0.047)	-0.027** (0.012)	-0.038*** (0.012)
Education	0.024*** (0.002)	0.024*** (0.006)	0.028*** (0.008)	0.024*** (0.002)	0.031*** (0.002)
Marriage	-0.203*** (0.023)	-0.069 (0.069)	-0.185*** (0.098)	-0.203*** (0.023)	-0.248*** (0.023)
House	0.119*** (0.038)	0.227* (0.127)	0.047*** (0.143)	0.123*** (0.038)	0.127*** (0.038)
Industry	0.275*** (0.019)	0.511*** (0.036)	0.633*** (0.049)	0.28*** (0.019)	0.324*** (0.018)
Attitude	0.111*** (0.01)	0.202*** (0.023)	0.227*** (0.035)	0.113*** (0.01)	0.236*** (0.01)
Constant	0.009*** (0.043)	-2.709*** (0.137)	-2.96*** (0.162)	0.01 (0.043)	-0.058 (0.043)
Pseudo $r$ -squared	0.132	0.102	0.151	0.040	0.022
Number of obs	47965	47965	47965	47965	47965

Note. \*\*\*, \*\* and \* are significant at the level of 1%, 5%, and 10%, respectively.

Whether rural households have real estate or not have a  $p$  value of less than 0.01 for rural households to participate in the overall financial assets and risk-free assets, which is regarded as significant at the 1 % level, the  $p$  value of rural households participating in low-risk assets is 0.074, less than 0.1, which is regarded as significant at the 10% level; the  $p$  value of rural households participating in high-risk assets is 0.744, which is greater than 0.1, which is not significant. The correlation coefficient of whether rural households have real estate to rural households' participation in financial assets, risk-free assets, and low-risk assets is positive, which is a positive correlation, and the correlation coefficient of whether rural households have real estate to rural households' participation in high-risk assets is negative, which is a negative correlation.

It shows that rural investors with real estate have a certain risk tolerance. They are willing to participate in risk-free or low-risk assets rather than high-risk assets. After having real estate, their remaining assets are used more to maintain a basic living, educational, and medical expenses. Therefore, self-owned housing will reduce the willingness of families to participate in high-risk assets.

Similarly, whether the rural sample families are engaged in industry and commerce shows a significant and positive participation rate in all kinds of financial assets. It shows that rural families engaged in individual industry and commerce will improve their willingness to participate in financial assets. Because rural families engaged in industry and commerce show that they have a certain risk tolerance, they are not risk averse, and they will take the initiative to participate in the financial market in order to obtain higher profits.

Finally, we look at the core variable of financial cognition. The influence of financial cognition on the participation rate of financial assets at different risk standards is

notable at the 1 % level, and the coefficient is positive. However, in consideration of the regression coefficient, the influence of financial cognition on risk assets is more than that of risk-free assets. From the control group, we can evaluate that adding the variable of financial cognition will reduce the  $p$  value of other variables, that is, adding the variable of financial cognition will reduce the impact of other variables. It shows that the higher the financial cognition, the higher the willingness of rural families to participate in financial assets. Adding the variable of financial cognition will reduce the impact of other variables on rural families' participation in financial assets. This result is because no matter what age, gender, and marital status, as long as the financial cognition increases, it will affect their willingness to take part in the financial market; people with more years of education have the strong financial cognitive ability and will take the initiative to join in the financial market; risk attitude itself is regarded as a factor in calculating financial cognition, so increasing financial cognition will weaken the influence of these variables.

#### 4. Conclusions and Recommendations

The participation of rural families in the financial market is mainly risk-free assets, especially cash. The participation in low- and high-risk assets is too low, and the scale of financial assets such as stocks and bonds is too small, especially financial derivatives, and is close to none. This shows that China's rural families are still mostly cash, demand deposits, and time deposits for participating in the financial market, and it is difficult to accept other risk assets.

Financial cognition can affect rural households' participation in the financial market. Whether it is a risk-free asset market or a low-risk asset market, financial cognition can

help rural households improve their participation rate in the financial market, especially the high-risk asset market. The higher the financial cognition level of rural families, the stronger the willingness of rural families to participate in the financial market, especially the impact on the participation of high-risk assets. Financial cognition will weaken the impact of other variables on rural households' participation in the financial market, including risk-free asset market and risk asset market.

At present, the low level of financial cognition of rural residents in China leads to the low probability of family financial market participation and the low degree of portfolio diversification. Residents with higher financial cognition have a greater probability of benefiting from financial investment than the residents with lower financial cognition, and will diversify risks and improve returns through the portfolio of financial products. Therefore, rural residents should spontaneously improve their family financial awareness and increase their financial expertise through thematic training or mobile internet and other channels. Of course, the government and financial institutions are also obliged to popularize financial knowledge in the rural market during the depression of financial cognition. Finally, we should attach great importance to the popularization of knowledge on preventing financial fraud. The government should actively carry out special knowledge publicity on antifinancial fraud for rural residents, especially middle-aged and elderly rural residents.

### Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

### Conflicts of Interest

The authors asserted that they have no conflicts of interest or personal relationships that could have appeared to influence the work reported in this paper.

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### References

- [1] J. Y. Campbell, "Household finance," *The Journal of Finance*, vol. 61, no. 4, pp. 1553–1604, 2006.
- [2] Y. Wang, "An empirical study on rural household asset allocation and financial market participation—a case

- study of Jinhua area," *Journal of Zhengzhou Institute of Aeronautical Industry Management*, vol. 26, no. 5, pp. 103–108, 2008.
- [3] L. Shi, *Research On Influencing Factors of Household Financial Asset Investment Behavior in China*, Fudan University, Shanghai, China, 2013.
- [4] W. Min, *Research on Chinese Household Asset Allocation Based on Financial Literacy*, Southeast University, Dhaka, Bangladesh, 2015.
- [5] Z. Hu, *Research On the Influence of Financial Literacy on the Choice of Financial Assets of Urban Families*, Agricultural University, China, 2017.
- [6] C. Sen, *Influencing Factors of Household Financial Asset Selection Behavior in China*, Northwestern University, Illinois, 2018.
- [7] C. Kejing, *Research on Influencing Factors of Household Financial Asset Allocation in China*, Zhengzhou University, China, 2020.
- [8] W. Luo, "Liang Jianying Financial literacy and family venture capital investment decision -- an Empirical Study Based on CHFS 2017 data," *Financial theory and practice*, vol. 496, no. 11, pp. 45–56, 2020.
- [9] L. Zhixin, *Research on the Impact of Financial Literacy on Family Commercial Insurance Investment Decision*, Hunan Normal University, China, 2020.
- [10] P. J. Morgan and T. Q. Long, "Financial literacy, financial inclusion, and savings behavior in Laos," *Journal of Asian Economics*, vol. 68, 2020.
- [11] G. Zhao and X. Zhou, "Can financial literacy reduce household savings—analysis based on micro survey data of Chinese households," *Research on rural finance*, vol. 504, no. 01, pp. 48–57, 2021.
- [12] L. Gan, "Research On income gap from China's household financial survey," *Yicong*, vol. 190, no. 04, pp. 41–57, 2013.
- [13] G. Hongshen, *The Impact of Financial Knowledge and Investment Experience on China's Household Financial Market Participation and Asset Allocation*, Southwest University of Finance and economics, China, 2013.
- [14] Z. Yin, Q. Song, and Y. F. Wu, "Knowledge Investment experience and family asset selection," *Economic Research*, vol. 49, no. 4, pp. 62–75, 2014.
- [15] Z. Zeng, Q. He, Y. Wu, and Y. Zhichao, "Financial knowledge and family portfolio diversity," *Journal of Econometrics*, vol. 444, no. 6, pp. 86–94, 2015.
- [16] H. Zhang and Y. Zhichao, "Financial knowledge and financial exclusion of Chinese households -- an empirical study based on chfs data," *Financial research*, vol. 433, no. 7, pp. 80–95, 2016.
- [17] F. Zou, T. Li, and F. Zhou, "Does the level of financial cognition affect the income of rural households? Based on the Moderating Effect of the Digital Financial Inclusion Index," *Agronomy*, vol. 09, 2021.
- [18] W. Wu, K. Wu, and W. Xuan, "Financial literacy and household debt -- an analysis based on the micro survey data of Chinese households," *Economic Research*, vol. 53, no. 01, pp. 97–109, 2018.
- [19] A. Lusardi, "Household saving behavior: the role of financial literacy, information, and financial education programs," *NBER Working Paper*, vol. 2008, Article ID 13824, 2008.