The Influence on Household Risky Financial Investment Choices by Commercial Insurance and Risk Attitude

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Abstract: As China's household wealth continues to grow and the financial market develops rapidly, studying the asset allocation of Chinese households has become a hot issue. Research on this issue can optimize the asset allocation of Chinese families and allow residents to enjoy more financial benefits. The gradual improvement of financial literacy of Chinese residents, the gradual enhancement of risk awareness and risk appetite, and the gradual increase in insurance participation. Commercial insurance and risk attitudes have also become one of the influencing factors for household risky financial investment choices. China Household Finance Survey Database is analyzed in this paper2019 (CHFS). Based on the logit model, this paper studies the impact of commercial insurance and risk attitude on the choice of household risk financial assets. The PSM model is applied to the endogenous problem. The results show that: first, commercial insurance has a positive influence on the investment decision of the family. Secondly, Families with higher risk preferences tend to invest in risky financial assets, and thirdly, the coordination effect of commercial insurance and risk attitudes reduces the risky financial.

Keywords: Commercial insurance, risk attitude, risk financial investment, Logit model

INTRODUCTION

At present, China's economy is developing rapidly, and residents' wealth is rapidly increasing. Various financial products, funds, bonds, and other financial products are increasingly diversified, and financial services and financial systems are more perfect. How allocate assets effectively has become an important means of improving people's living standards.

Insurance is a safety net to protect people's livelihood and a social stabilizer. According to the Allianz Global Wealth Report 2020, "More and more Chinese consumers are paying attention to risk protection and retirement planning and making insurance and pensions the key sectors of their household investment portfolios.

In terms of risk attitude, how residents can use the same funds to obtain more significant benefits and reduce risks as much as possible while receiving benefits is closely related to factors such as household risk tolerance, risk attitude, and household asset allocation.

According to the "2019 China Household Financial Assets Report", In China's household financial assets, bank deposits and cash are mostly risk-free. There is still a big gap compared with the United Kingdom and United States.

In order to improve the irrational distribution of household assets in China, the author puts forward a research on the impact of commercial insurance and risk attitude on the choice of household risks. Use logit, PSM method for analysis. This study makes specific contributions to improving the allocation of financial assets of Chinese households and enabling Chinese residents to enjoy more financial well-being.

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2. LITERATURE REVIEW

(1) Major studies on factors influencing household financial investment.

W. Wang et al(2020) Both medical insurance and health level have a significant impact on the risk assets of Chinese households, T.T Shen (2020) relationship between age and The proportion of shares and other risky assets in the entire household's financial assets and the number of types and age shows an inverted “U” shape, W.J.YU (2019) Family risk attitudes are affected by the age structure of the family population, And an increase in the number of older people in the family will significantly reduce risk appetite, thus having a significant impact on residents' investment decisions, Cooper (2016) empirical research found that higher educational attainment is associated with lower stock market entry costs and discount rates, G.S. ZHOU (2018) The increase in the income gap will encourage families to want more physical objects, which in turn will increase the risk of financial investment., C.J. Wang and J.N. Wang (2017) believe that the higher the level of household debt, the less risky financial assets.

(2) Research on the Impact of Business Insurance on Family Risk Investment Selection.

L. Zheng et al. (2020)As a necessary component of social security., commercial insurance has the role of reducing the impact of future uncertain risks and promoting consumption expenditure, W. Wang and L. Sang (2020) is found that

Social medical insurance will be a significant positive impact on the probability of social medical insurance. The further emotional interaction is certainly changed in the following need to be considered by the public, information, and decision。, scale Scale proportion of household risk financial asset allocation, A,X. Lu and K. Wang (2021)Commercial health insurance affects Opportunities for families to participate in the risky financial market by directly influencing, preventive savings and health risk; It influences the proportion of family risk financial assets held by direct effect and preventive savings agency effect, among which preventive savings plays an important role..

(3) Study on the Influence of Risk Attitudes on Family Risky Investment Decisions.

Mu et al. (2019)Dynamic portfolio selection among investors with both risk aversion and risk appetite was studied and found that wealth-related risk aversion would improve risk tolerance., N. Jia (2020) found that retirement had no significant impact on household risk financial asset allocation, but changed the structure of risk financial assets, and risk appetite, financial knowledge and income were the main influencing mechanisms., Y.J. Lu and J.Y. Yin (2021) The risk attitude of the head of household influences the distribution of household financial assets.

(4) Study on risk attitude and commercial insurance influence.

J. Duan and M.Cui（2016）It was found that risk attitude had a negative impact on stock holding, and further believed that risk attitude had a significant positive relationship with commercial insurance and no significant correlation with property selection

A literature review finds that the research on risk attitude and commercial insurance is from the microscopic perspective, and the research on CHFS (20190) data is rare. In China, the distribution of financial assets is more reasonable and scientific. Therefore, This paper studies the impact of commercial insurance and risk attitude on the financial investment of household risk.

From the above discussion, one hypothesis to be empirically is as follows:

Hypothesis 1: Impact of Business Insurance on Financial Assets of Household Risk.

Hypothesis 2: Risk Appetite Influences Households Investing in Risky Financial Assets

Hypothesis 3: The effect of synergy between risk attitudes and commercial insurance on household risky financial assets

3. EXPERIMENT PARTS

3.1. Data Sources

This article uses data from CHFS (Southwestern University of Finance and Economics China Household Finance Survey and Research Center). The sample size is 82,343 households, covering 29 provinces and 345 counties (including counties and counties) nationwide. Level representative.

3.2. Variable Description

(1) Risky financial assets

The explanation variable of this article is the share of financial assets in the household risk Financial assets consist of demand deposits, time deposits, stocks, bonds, funds, derivatives, financial assets, non-RMB assets, gold, cash and loans, Of which risk finance assets are stocks, bonds, funds, derivatives, and financial products, etc. A small proportion of households have invested in non-RMB assets and gold, and lending is an informal financial behavior (A.Li and J.P. Liao 2016), Therefore, the three financial assets are excluded from the calculation of the sum of the financial assets and the risk finance assets.

(2) Commercial insurance

According to the answer to "Which of the following commercial insurances do you have?" in the questionnaire, the conditions for holding commercial insurance are set as follows: Do you have one or more commercial life insurance, commercial health insurance, and other commercial insurances? If you have at least one of the above insurances, you have the option of commercial

(3) Risk attitude

Regarding risk attitudes, we refer to Lu Yanjuan, Yin Junyao, et al. (2021) for setting the amount of practice, which is mainly measured according to the respondents' responses to the CHFS questionnaire.

(4) Control variables

Based on the data of population, the author chose the age, educational level, health condition, income, debt and household registration as the control variables. The setting method is mainly as follows: Due to the nonlinear relationship between age and household financial asset allocation, the square term of age is taken. Education is assigned by educational level, and the variable "health status" is assigned by level. Family income is the wage income of all members of the family, agricultural business income, and transfer income. Since income may be skewed, it is in the form of ln(1+variable). Liabilities include housing liabilities, vehicle liabilities, education liabilities, and credit card liabilities. Ownership of any of the above liabilities is a liability. Household registration Non- agricultural household registration, other categories.

After the literature, there are specific variable description values table **1**.

3.3. Sample Statistical Description

To reduce the regression error, this paper processes the sample data before the regression analysis: first, the relevant data information of the head of household and the family is selected from the database, and the data is matched to ensure the consistency between the information of the head of the home and the family; Samples with missing key variables, incomplete or obviously abnormal data, and inconsistent data were analyzed; the paper finally used sample data from 82,343 families.

Table 1. Variable Definition.

	Variable Name	Variable Declaration
Explained variable	Financen	Take 1 for risky financial assets, otherwise take 0.
Core explanatory variables	insurance	The value of having commercial insurance is 1, otherwise it is 0.
	Risk	According to the level of risk preference, the assignment is divided and assigned as 5, 4, 3, 2, 1 respectively.
Controlled variable	age	Due to the nonlinear relationship between age and household financial asset allocation, the square term of the age of the household head is taken.
	educate	Doctor is 9, master is 8, undergraduate is 7, college is 6, secondary school is 5, high school is 4, junior high school is 3, elementary school is 2, and no school is 1.
	health	The answer is "1. Very good 2. Good 3. Average 4. Not good 5. Very bad", assign the value according to the respondents' answers in the questionnaire, when the respondents choose 1 or 2, and 3 is assigned as 1 option 4, 5 is 0.
	income	Logarithmic treatment of household income
	debt	Debt is 1, otherwise 0.
	city	Non-agricultural household registration is 1, other (agricultural, unified resident registration) is 0;

Table 2. Statistical Description.

Variable	Obs	Mean	Std. Dev.	Min	Max
Finance	82,343	.0993284	.2991043	0	1
Insurance	82,343	.0830915	.2760221	0	1
Risk	82,343	1.874707	1.30213	1	5
Age	82,343	50.94926	17.24858	18	117
Educate	82,343	3.44481	1.768873	1	9
Health	82,343	.8122245	.3905352	0	1
Income	82,343	10.63985	1.294469	.6931472	17.90985
Debtl	82,343	.2568281	.4368864	0	1
City	82,343	.2606658	.4390005	0	1

It can be seen from the descriptive statistics Table **2** of variables that China's risk market participation rate is around 10 %, which is still a relatively low level. The participation rate of commercial insurance in China is about 8%, which is far lower than the investment level of developed countries. The level of risk preference is low. Chinese families have obvious risk aversion characteristics. The average age of the heads of households surveyed is around 51 years old. Compared with the data in 2013 and 2015, the age has increased, which reflects China's aging problem to a certain extent. The educational level is basically at the middle school level, and the family head's educational level is not high The average health status of the head of family is 0.81, which means that most of the family heads are in good health; the average household income in China is around 100,000,but the standard deviation is large, and there are differences in the level of rich and poor. 26% of households surveyed are in debt. There are slightly more rural households surveyed than urban households.

3.4. Model

Model 1: Logit model for the selection of risky financial assets by commercial insurance holdings:

$$\text{Finance} = \alpha + \beta\text{insurance} + \sum_{i=1} \eta_i Z_{ij} + \varepsilon (1)$$

Among them , Finance is a dummy variable of whether a household has risky financial assets, and the holding is recorded as 1, otherwise it is 0. Insurance indicates whether the family holds commercial insurance, which is recorded as 1, otherwise it is 0,Which is the main explanatory variable in this paper. represents a set of control variables.

Model 2 :The Logit Model of Risk Attitude Holds on Risky Financial Asset Selection:

$$\text{Finance} = \alpha + \beta\text{risk} + \sum_{i=1} \eta_i Z_{ij} + \varepsilon (2)$$

Among them, finance is a dummy variable of whether a household has a risky financial asset. holding is recorded as 1, otherwise it is 0. Risk represents the degree of risk prefer-

Table 3. The Impact of Commercial Insurance On Household Risky Financial Investment.

Logistic Regression Loglikelihood=-20106.97		**Number of obs = LR chi2(7) = Prob > chi2 = Pseudo R2 =**				**82,343**
						13079.25
						0.0000
						0.2454
Finance	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Insurance	.9249805	.034903	26.50	0.000	.8565719	.9933891
c.age#c.age	.0002885	8.33e-06	34.62	0.000	.0002722	.0003048
Income	.9381548	.0177626	52.82	0.000	.9033408	.9729689
Educate	.3121743	.0083775	37.26	0.000	.2957546	.328594
Health	.4031394	.0473139	8.52	0.000	.3104059	.4958728
Debtl	.6216977	.028195	22.05	0.000	.5664366	.6769589
City	.3701753	.0275413	13.44	0.000	.3161954	.4241552
Cons	-15.59576	.2005929	-77.75	0.000	-15.98892	-15.20261

ence, which is divided and assigned according to the level of risk preference, which are assigned as 1, 2 , 3, 4 , and 5 respectively.

Model 3: Risk Attitude Through the Log it Model of Commercial Insurance's Choice of Risky Financial Assets:

$$\text{Finance} = \alpha + \beta\text{insurance} * \text{risk} + \sum_{i=1} \eta_i Z_{ij} + \varepsilon \quad (3)$$

Among them, Finance is a dummy variable ofIf a house hold has risky financial assets, and the share is recorded as 1, otherwise it is 0. $\text{insurance} * \text{risk}$Indicates the intersection of risk attitudes and commercial insurance.

3.5. Empirical Test Results and Analysis

(1) The Influence of Business Insurance on Family Involvement in Risky Financial Investment

According to the results of the regression in Table **3**, It can be seen that commercial insurance has a significant impact on the participation of household risks in the financial market, And it is significant at the 1% level, which suggests that commercial insurance can effectively ease the stress of uncertainty in households, reduce precautionary savings, And stimulate the participation of households in risky financial markets. The square of age is positive and significant at the 1% confidence level. Increasing age can increase current disposable income to a certain extent; Funds are more likely to move into risky markets, and households are more likely to hold risky assets. The log of household income is positive and significant at the 1% confidence level, so that increases in income encourage households to become more involved in risky financial markets; Education is positive and significant at the 1% confidence level, indicating that education The higher the, the more likely to hold risky financial assets; Health status significantly affects household risk market participation, and the healthier the household, the easier it is to invest in the risk financial market. Debt significantly affects household risk market participation. The more indebted households are, the more they want to participate in risk investment to change their balance sheet. From the point of view of residence, compared with urban households, Rural families have a lower household income, lower education levels, lower tolerance for uncertain risks, and less preference for risky financial investments.

(2) The Impact of Risk Attitude on Financial Investment in Household Risks

Based on the regression analysis in table **4**, we can find that the risk attitude has a remarkable influence on the risk insurance of the risk, and it is significant at the 1% level. That increase will further optimise the selection of households' risky financial assets. Secondly, age, income, culture, health status, debt, and urban and All of these factors have a significant impact on the involvement of households in risky finance investments.

(3) The impact of commercial insurance and risk attitudes on household risk financial market participation

The results of the regression in Table **5**, it can be seen from the empirical results of the intersection of risk attitude and commercial insurance that the coefficient of the intersection of commercial insurance and Risk attitude is negative at the 1% significance level, which shows that when With the risk attitude unchanged, The growth of business insurance will reduce the investment in risk finance for households. The reason may be that the increase in risk attitude will stimulate residents' risk awareness and promote the allocation of commercial insurance, and the more commercial insurance purchased, the total capital consumed, and commercial insurance can help both in risk prevention and increased profitability. As a result, the desire of residents to invest in risky financial markets will be reduced, and there will be a crowding-out effect on stocks, funds, bonds, etc.

Table 4. The Influence of Risk Attitude On Household Risky Financial Product Investment.

Logistic Regression Loglikelihood= -19695.411		**Number of obs = 82,343 LR Chi2(7) = 13902.37 Prob > chi2 = 0.0000 Pseudo R2 = 0.2609**				
Finance	**Coef.**	**Std. Err.**	**z**	**P>l zl**	**[95% Conf.**	**Interval]**
Risk	.3742047	.0097215	38.49	0.000	.355151	.3932584
c.agelc.age	.0002958	8.57e-06	35.17	0.000	.0002793	.0003123
Income	.8808464	.0178943	49.22	0.000	.8457742	.9159187
Educate	.3062657	.0084594	36.20	0.000	.2896856	.3228458
Health	.4006372	.0478623	8.37	0.000	.3068288	.4944456
Debtl	.5403634	.0284077	19.02	0.000	.4846852	.5960415
City	.3811926	.0277769	13.72	0.000	.3267508	.4356344
_cons	-15.65495	.201256	-77.79	0.000	-16.04941	-15.2605

Table 5. The Impact of Commercial Insurance Risk Attitudes on Investment in Household Risky Financial Products.

Logistic Regression Log likelihood = -19394.592			**Number of obs LR chi2(9) Prob > chi2 Pseudo R2**		**= 82,343 = 14504.00 = 0.0000 = 0.2722**	
Finance	**Coef.**	**Std. Err.**	**Z**	**P>1z|**	**[95% Conf**	**Interval]**
1.Insurance	1.299793	.0774239	16.79	0.000	1.148045	1.451541
Risk	.3924921	.010741	36.54	0.000	.3714402	.413544
lnsurance#c.Risk	-.1561653	.0251226	-6.22	0.000	-.2054047	-.1069259
c.age#c.age	.0003185	8.57e-06	37.16	0.000	.0003017	.0003353
Income	.8450752	.0180046	46.94	0.000	.8097868	,8803637
Educate	.3030649	.0085516	35.44	0.000	.2863042	.3198256
Health	.3812001	.0480078	7.94	0.000	.2871066	.4752935
Debtl	.4622151	.0288749	16.01	0.000	.4056215	.5188088
City	.371099	.0280092	13.25	0.000	.316202	.4259961
_cons	-15.42975	.2024659	-76.21	0.000	-15.82657	-15.03292

Table 6. Comparison of Variable Differences before and after Propensity Value Matching.

Variable	**Unmatched Matched**	**Mean Treated Control**	**%bias**	**%reduct |bias|**	**t-test**	
					t	**P>l 11**
age	U	44.461 51.537	-45.4		-32.70	0.000
	M	44.461 44.055	2.6	94.2	1.67	0.094
Educate	U	4.4795 3.351	63.5		51.33	0.000
	M	4.4795 4.495	-0.9	98.6	-0.49	0.628
Health	U	.91888 .80256	34.1		23.67	0.000
	M	.91888 .93277	-4.1	88.1	-3.10	0.002
Income	U	11.314 10.579	60.0		45.56	0.000

	M	11.314 11.291	1.9	96.8	1.20	0.231
debtl	U	.47632 .23694	51.6		43.90	0.000
	M	,47632 .47574	0.1	99.8	0.07	0.945
city	U	.36919 .25083	25.8		21.41	0.000
	M	.36919 .36481	1.0	96.3	0.53	0.595

3.6. PSM Deals with Endogeneity

The participation of commercial insurance is related to many factors. To avoid possible endogeneity problems, PSM (propensity score matching) method is used to modify the logit model further. The average treatment effect (ATT) is obtained to analyze the net impact of commercial insurance holdings on risky financial asset holdings. The final calculated ATT=0.1 19 is positive, So participation in business insurance has a significant positive effect on the allocation of risky financial assets by households.

Regression results in Table **6** variables are less than 10%, which is less than that of the unmatched group to a certain extent, and there is no significant difference in all variables, so the matching effect meets the balance requirement.

3.7. Robustness Check

In order to test the stability of the conclusions, China's financial market is further subdivided into the wealth management product market and the fund market, and the impact of commercial insurance and risk attitudes on purchasing decisions of different financial assets is examined. The test results are consistent with this study.

4. CONCLUSIONS AND POLICY RECOMMENDATIONS

4.1. Conclusions through Empirical Analysis and Reference to other Literature, the Following Conclusions are Summarized

(1)Those with business insurance tend to hold risky financial assets. On the one hand, commercial insurance can reduce the background risks faced by households, enhance investment confidence, and increase the willingness of households to invest in risky financial markets. On the other hand, commercial insurance is part of the household assets. Families who purchase commercial insurance have higher financial knowledge, family wealth, etc., and they are more willing and more likely to take part in risky financial markets.

(2)Households' risk attitudes have an important influence on the share of the household in the risk insurance assets. For risk-loving families, the increase in their risk appetite Encourages households to engage in investments in risky financial assets.

(3)The coordination of financial literacy and risk attitudes is detrimental to Chinese households' involvement in the financial market. The reason may be that the improvement of risk attitude will stimulate residents' risk awareness and promote the allocation of commercial insurance. The more commercial insurance purchased, the total capital will be consumed, thereby reducing residents' willingness to invest in risky financial markets.

4.2. Policy Recommendations

(1) Improve the commercial insurance system and build a multi-level commercial insurance mechanism. Expand the types of insurance, Enable commercial insurance to facilitate the participation of households in the financial market, and direct households to allocate their financial assets reasonably.

(2) For groups with different risk attitudes, the supply of financial products with various risks will be increased in a targeted manner. Adopt flexible and diverse forms of financial education and further enhance the willingness of families to participate in the financial market by influencing their risk attitudes.

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Received: Apr 12, 2023 Revised: Apr 20, 2023 Accepted: Sep 04, 2023