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The impact of financial literacy on household financial asset allocation

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Abstract: This paper uses data from the 2019 China Household Finance Survey (CHFS) to investigate the impact of financial literacy on household allocations to financial and stock assets. It is found that increased financial literacy promotes household participation in financial markets and increases household allocation to risky financial assets, especially stock assets. Further analyses indicate that increased financial literacy promotes household participation in the financial market, and with the accumulation of investment experience and the power of the Internet, households will be biased towards investing in risky assets, which will result in a significant increase in the proportion of investment in stock assets. In addition, the higher the total household assets, the more the household can afford to take risks and thus may allocate more risky financial assets. Household size, the number of people in the labour force, household self-employment in business and owning a home are negatively associated with risky asset allocation.

1. Data, Variables and Modelling

1.1. Data

The data used in this paper come from the China Household Finance Survey (CHFS), a nationwide survey project conducted by Southwestern University of Finance and Economics in 2019. CHFS collects information on various aspects of household assets and liabilities, income and expenditure, household demographic characteristics and employment. The purpose of this paper is to examine the impact of residents' financial literacy on the share of household allocation to high-risk financial assets. Thus, the rational construction of indicators to measure residents' financial literacy is the key to this paper. In the following, the financial literacy indicators, allocation of high-risk financial assets, share of stock assets and other control variables are specified respectively.

1.2. Variable Definition

1.2.1. Explanatory Variable

The explanatory variable selected in this paper is the share of high-risk financial assets.

According to the degree of risk classification financial assets can be divided into low-risk, medium-risk and high-risk. Low-risk financial assets include treasury bonds, bank time deposits and so on. Medium-risk financial assets include stock funds, bond funds and so on. High-risk financial

assets include stocks, futures and so on. The ratio of high-risk financial assets in this paper represents the proportion of high-risk financial assets in all financial assets. The ratio of stock assets indicates the proportion of stock assets to all financial assets. In data processing, extreme values are treated by the upper and lower 1 per cent of the share of high-risk financial assets and the share of stock assets of households.

1.2.2. Independent Variable

The independent variable in this paper is financial literacy, which helps investors to better understand the workings of the financial markets and helps them to learn. According to Guison & Jappelli (2008), measuring financial literacy by simply asking respondents how much they know about finance is too subjective and wrong[1]. There are too many subjective factors involved, and overconfident investors are prone to overestimate their financial literacy, and there will be some investors who underestimate their financial literacy excessively. Therefore, this paper adopts the measure of financial literacy from Lusardi & Mitchell (2011) to examine the level of financial literacy of the respondents in terms of whether they answered the three questions on interest rate calculation, inflation understanding and investment risk perception correctly[2]. In order to better differentiate the financial literacy level of different households, this paper measures household financial literacy by the correct rate of answering the questions. When processing the data, rural samples were excluded to ensure uniformity in the definition of variables and to avoid a large number of missing sample sizes.

1.2.3. Control Variable

With reference to previous literature, the control variables selected in this paper include: household income asset characteristic variables (total household assets, whether they own housing assets, whether they have transfer expenditures, whether they are engaged in self-employment business and the number of labourers in the household), head of household characteristic variables (including age, gender, years of schooling, marital status, unemployment and risk attitudes), and locality characteristic variable GDP. The data are processed by logarithmic processing of household total assets and location GDP are logged and samples with missing values in the remaining control variables are excluded. Descriptive statistics of the variables are given in Table 1.

Table 1: Summary statistics.

VARIABLES	N	mean	sd	min	max
house	16,212.000	0.820	0.384	0.000	1.000
transe	16,212.000	0.727	0.445	0.000	1.000
aic	16,212.000	0.150	0.357	0.000	1.000
riskadverse	16,212.000	0.730	0.444	0.000	1.000
age	16,212.000	53.674	14.060	18.000	96.000
male	16,212.000	0.725	0.446	0.000	1.000
edu	16,212.000	10.719	3.981	0.000	22.000
marriage	16,212.000	0.859	0.348	0.000	1.000
unwork	16,212.000	0.363	0.481	0.000	1.000
family_size	16,212.000	3.100	1.442	1.000	15.000
la_size	16,212.000	1.470	1.078	0.000	7.000
ln_totalasset	16,212.000	13.394	1.491	5.521	20.414
ln_GDP	16,212.000	10.147	0.819	7.873	11.404
knowledge	16,212.000	0.178	0.226	0.000	1.000
high_risk	16,068.000	0.084	0.225	0.000	0.995
stocks	16,212.000	0.018	0.086	0.000	0.800

1.3. Empirical Models

In analysing the impact of financial literacy on household financial asset allocation, the regression model constructed in this paper is:

$$High\_risk_i = \alpha + \beta knowledge_i + X_i\gamma + \mu_i \quad (1)$$

$$Stocks_i = \alpha + \beta knowledge_i + X_i\gamma + \mu_i \quad (2)$$

Where $High\_risk_i$ denotes the allocation of high-risk financial assets of household i, $Stocks_i$ denotes the allocation of stock assets of household i, $knowledge_i$ denotes the level of financial literacy of i, X_i is the control variable, and μ_i is the residual term. If β is significantly positive, it indicates that financial literacy can increase the allocation of household's high-risk financial assets and stock assets.

2. Empirical Results

Table 2 presents the empirical results on the impact of financial literacy on households' risky asset choice and stock assets choice. From row (1), the estimated coefficients of financial knowledge on household's share of risky assets and share of stock assets obtained using OLS estimation are 0.169 and 0.064 respectively, which are both significant at 1% significance level and both have significant positive impacts. This suggests that an increase in household financial literacy increases household allocation to risky assets and stock assets.

In addition, I include the GDP of the region where the household lives in the estimation to control for regional economic externalities that affect the allocation of the household's financial assets. The estimation results show that households residing in regions with better economic and financial environments are more likely to invest in risky financial assets, with the estimated coefficients on GDP of 0.006 and 0.003, respectively, which are significantly positive at the 1 per cent level. Regional economic development and financial development can provide households with a favourable investment environment and services, enhancing the likelihood of residents' participation in risky financial asset allocation.

Table 2: Benchmark regression results.

VARIABLES	high_risk	stocks	VARIABLES	high_risk	stocks
knowledge	0.169***	0.064***	marriage	0.013**	-0.000
	(0.008)	(0.003)		(0.005)	(0.002)
house	-0.032***	-0.007***	unwork	0.001	0.001
	(0.005)	(0.002)		(0.006)	(0.002)
transe	0.015***	0.003*	family_size	-0.003**	-0.001
	(0.004)	(0.001)		(0.002)	(0.001)
aic	-0.024***	-0.006***	la_size	-0.007***	-0.001
	(0.005)	(0.002)		(0.003)	(0.001)
riskadverse	-0.049***	-0.014***	ln_totalasset	0.036***	0.007***
	(0.004)	(0.002)		(0.001)	(0.001)
age	0.002***	0.000***	ln_GDP	0.006***	0.003***
	(0.000)	(0.000)		(0.002)	(0.001)
male	-0.025***	0.000	Constant	-0.555***	-0.132***
	(0.004)	(0.002)		(0.025)	(0.010)
edu	0.005***	0.001***	Observations	16,068	16,212
	(0.000)	(0.000)	R-squared	0.165	0.078

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3. Mechanism Validation

In order to test household financial asset allocation more comprehensively, this section explores the relationship between financial literacy and household financial market participation. A household's financial market participation indicates whether the household owns risky assets in formal financial markets[3]. From the data in Table 3, the estimated coefficient of financial literacy on household financial market participation using the OLS model is 0.048, which is significant at the 1% significance level. This indicates that increased financial literacy has a similarly positive effect on household participation in financial markets.

Table 3: The impact of financial literacy on household financial market participation.

VARIABLES	participation	VARIABLES	participation
knowledge	0.048***	marriage	-0.003***
	(0.002)		(0.001)
house	-0.016***	unwork	0.003**
	(0.001)		(0.001)
transe	0.009***	family_size	0.003***
	(0.001)		(0.000)
aic	0.004***	la_size	0.003***
	(0.001)		(0.001)
riskadverse	-0.016***	ln_totalasset	0.011***
	(0.001)		(0.000)
age	-0.001***	ln_GDP	0.001***
	(0.000)		(0.000)
male	-0.005***	Constant	-0.071***
	(0.001)		(0.006)
edu	0.002***	Observations	16,079
	(0.000)	R-squared	0.329

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4. Robustness Checks

Table 4: Robustness Checks.

VARIABLES	high_risk	stocks	VARIABLES	high_risk	stocks
attentionx	0.037***	0.012***	marriage	0.011**	-0.001
	(0.002)	(0.001)		(0.005)	(0.002)
house	-0.035***	-0.008***	unwork	0.000	0.001
	(0.005)	(0.002)		(0.006)	(0.002)
transe	0.017***	0.003**	family_size	-0.003*	-0.001
	(0.004)	(0.001)		(0.002)	(0.001)
aic	-0.028***	-0.007***	la_size	-0.008***	-0.001
	(0.005)	(0.002)		(0.003)	(0.001)
riskadverse	-0.044***	-0.014***	ln_totalasset	0.037***	0.007***
	(0.004)	(0.002)		(0.001)	(0.001)
age	0.001***	0.000***	ln_GDP	0.009***	0.004***
	(0.000)	(0.000)		(0.002)	(0.001)
male	-0.026***	-0.000	Constant	-0.574***	-0.140***
	(0.004)	(0.002)		(0.025)	(0.010)
edu	0.005***	0.001***	Observations	16,055	16,199
	(0.001)	(0.000)	R-squared	0.164	0.070

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In order to test the robustness of the above results, this paper replaces the explanatory variable financial literacy with variable definitions, and adopts households' attention to economic and

financial information as a proxy variable to measure the level of households' financial literacy[4].

The regression results, as shown in Table 4, show that financial literacy after the replacement of definitions still has a significant positive relationship on the proportion of households' risky asset allocation, i.e., it still significantly increases the proportion of households' risky assets.

5. Conclusions

Household finance has become an increasing focus of attention (Campbell, 2006)[5]. Based on data from the CHFS, this paper examines the relationship between household financial literacy and household financial market participation and household asset allocation. The results show that lack of financial literacy limits household risky asset allocation. In addition, further analyses show that the degree of financial market participation is an important mechanism variable that affects household asset allocation decisions. By conducting robustness tests on households' attention to financial information, we further confirm the importance of financial literacy in facilitating households' investment decisions, confirming that the causal relationship between these variables is not accidental but a core driver of households' financial behaviour.

Financial literacy plays an important role in household financial asset allocation. This paper highlights the central role of financial literacy in enhancing household financial well-being, not only by helping households make more informed investment choices, but also by contributing to the healthy development of the overall financial market. Understanding the influencing factors and mechanisms can help households achieve better financial management and asset growth. As households may face greater welfare losses if they do not participate in the stock market (Cocco et al. ,2005)[6], in order to further enhance the financial literacy of the public, relevant policymakers should consider implementing more targeted education programmes and outreach activities, especially in more economically disadvantaged areas. This will not only help to narrow regional development gaps, but also promote sound economic growth and financial market stability at the broader societal level, with a view to achieving common prosperity.

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