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The Impact of Financial Literacy on Financial Fraud: Evidence from China

Huixin Gong and Xiaobing Huang

School of business, Gannan Normal University, Ganzhou, Jiangxi 341000, China

Abstract

using the data of China Household Financial Survey (CHFS) data in 2015, this paper empirically analyzes the impact of financial literacy on financial fraud. The results show that householders with higher financial literacy are more likely to be the victims of financial fraud, suffer more kinds of financial frauds, and have higher losses caused by financial fraud.

Keywords

Financial literacy; Risk preference; Financial fraud.

1. Introduction

Nowadays, the financial industry has become an indispensable part of people's life. Financial industry plays a vital role in the development of the economy, due to the existence of information asymmetry and the financial operation, there are a large number of different forms of financial fraud in the economic and social sectors. (Wang and Li, 2016). According to an online survey released by an online financial platform in 2015, the proportion of fraudulent messages has been up to 70% among the surveyed netizens. After experiencing various financial frauds, more than 50% of users choose to "silently accept". Only less than 50% of netizens want to protect their rights through related channels. However, only 60% of 7% users can think of their rights awareness in concrete actions.

Financial fraud not only caused economic and spiritual losses to the deception individuals and families, but also seriously damaged the national financial order and social order, and directly harms the healthy development of society and economy (Calcagno and Monticone, 2015; Aprea et al., 2016). Based on this, financial fraud has become an important issue worth studying in the financial field. It is of great theoretical and practical significance to conduct an in-depth research on the influencing factors of financial fraud.

There are many factors which can affect financial fraud (Calvet et al., 2009; Landerretche and Martinez, 2013), one of which is financial literacy. However, there is few studies on the relationship between financial literacy and financial fraud. In order to make a contribution to the existing research, this paper empirically analyzes the impact of financial literacy on financial fraud using the 2015 CHFS data.

2. Data, Specification and Variables

2.1. Data

The data used in this paper are from the China Family Financial Survey (CHFS) project carried out by the China family financial investigation and research center of Southwestern University of Finance and Economics in June 2015. The survey covers 29 provinces in China, and the micro level data of more than 37000 households are counted.

2.2. Specification

The basic specification is constructed as follows:

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$$Y = \alpha_0 + \alpha_1 X + \alpha_2 Z + \varepsilon$$

Among them, Y is the explanatory variable of financial fraud, including the continuous variable "fraud loss" and "fraud type" and the dummy variable "whether it is subjected to fraud". In this paper, whether the family "is subjected to fraud" means whether it has encountered financial fraud, "fraud loss" refers to the amount of money lost due to fraud, and "fraud category" means that there have been several fraudulent practices.

X is the core explanatory variable financial literacy. According to the information provided by the questionnaire, this article adopts three indicators to measure the level of the residents' financial literacy quantitatively. The first index is the degree of concern about the financial information (information); and whether the second indicators are related to the financial related courses (course); The third index is financial knowledge (knowledge), which is judged by the respondents' answers to the four financial questions correctly. The specific calculation is simply to sum up the scores of each item. Specifically, the construction of the index system of financial literacy is shown in table 1.

Table 1: Construction of financial literacy indicators

		Index construction	assignment
Financial literacy	Financial knowledge	Focus on economic and financial information	Pay close attention to =5, focus on =4, general =3, pay little attention to =2, and never pay attention to =1.
		Have you attended any professional courses?	yes =1, no =0
	Financial capability	Calculated interest rate	Answer =1, wrong =0.
		Calculate inflation rate	Answer =1, wrong =0.
		Judging stock and fund risk size	Answer =1, wrong =0.
		Determining the size of two lottery tickets	Answer =1, wrong =0.

Z is the control variables. This paper selects control variables from three aspects of family demographic characteristics, family characteristics and regional characteristics.

2.3. Variables

Table 2 provides the definition of variables and descriptive statistics of variables. The results show that every family has encountered 1.14 kinds of fraud from the perspective of family financial fraud. In terms of financial literacy, the average level of financial information attention is 2.09, and the average level of financial capability is 0.68, indicating that the financial literacy level of families is generally low. And the difference between different families is also relatively large. From the control variables, most of the households are married men, the average age is 55 years old, the level of education is low, the average education level is 3.42, the family risk attitude is evenly divided into 2.34, which indicates that most families do not like risky behavior.

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Table 2: Variable definition

Variable	Variable name	Variable definition
fraud	Are you being swindled?	yes =1, no =0
number	Types of fraud	The sum of the number of different types of fraud.
lost	Fraud loss amount	The amount of fraud loss is calculated.
information	Attention to financial information	Never pay attention to =1; pay little attention to =2; general =3; pay close attention to =4; pay close attention to =5.
course	Have you attended a financial course?	yes =1, no =0
knowledge	Financial capability	Addition of financial related topics
age	Age	Age of household head
marriage	Marital status	Married =1, other =0
gender	Gender	Male =1, female =0
rural	Household register	Rural =1, city =0
risk	Risk preference	Do not know =1; unwilling to take any risks =2; slightly low risk, slightly low return project =3; average risk average return project =4; slightly high risk, slightly higher return project =5; high return, high-risk project =6
capital	total assets	household total assets
education	Degree of Education	Did not go to school =1; primary school =2; junior high school =3; high school =4; secondary school / vocational high school =5; tertiary / Higher Vocational =6; undergraduate =7; master degree =8; doctoral student =9

3. Empirical Results

3.1. The Impact of Financial Literacy on Financial Fraud

Table 3 shows the empirical regression results of the financial literacy impact on family fraud by using the Logit model, column 2, 4 and 6 respectively reports their respective marginal effects. The results of column 1 and column 2 show that the higher the degree of concern for financial knowledge, the more vulnerable to fraud. And the degree of concern about financial knowledge increases by one unit per unit, and the likelihood of fraud is increased by 2.5%.

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column 3 and column 4 indicate that the stronger the financial ability, the higher the probability of experiencing financial fraud, and the possibility that the financial ability will increase by 3.4% per unit of increase in financial capacity; 5 and 6, respectively, show that people who have participated in financial courses are more likely to be subjected to financial fraud. And the probability of financial fraud will increase if each unit is added to the financial courses. The results show that the three core explanatory variables have a significant level of 1% and the estimated coefficient is positive. This shows that the higher the financial literacy of the family is, the more likely it is to be subjected to financial fraud. 4.2%.

Table 3: Effect of financial literacy on financial fraud in families

	(1)	(2)	(3)	(4)	(5)	(6)
information	0.115***	0.025***				
	(0.0115)	(0.0024)				
knowledge			0.159***	0.034***		
			(0.0203)	(0.0043)		
course					0.194***	0.042***
					(0.0553)	(0.0118)
gender	-0.0206	-0.0044	0.00130	0.00028	0.00560	0.00120
	(0.0234)	(0.0050)	(0.0243)	(0.0052)	(0.0232)	(0.0050)
age	0.000929	0.000199	0.0025***	0.0005***	0.000586	0.000126
	(0.00086)	(0.00018)	(0.00091)	(0.00019)	(0.00086)	(0.00018)
rural	-0.547***	-0.117***	-0.537***	-0.115***	-0.546***	-0.117***
	(0.0275)	(0.0057)	(0.0289)	(0.0060)	(0.0274)	(0.0057)
marriage	0.0202	0.0043	0.0276	0.0059	0.0329	0.0070
	(0.0327)	(0.0069)	(0.0345)	(0.0074)	(0.0327)	(0.0070)
education	0.163***	0.035***	0.164***	0.035***	0.176***	0.038***
	(0.00890)	(0.00188)	(0.00928)	(0.00195)	(0.00892)	(0.00188)
capital	0.213***	0.046***	0.208***	0.044***	0.221***	0.047***
	(0.00870)	(0.00180)	(0.00919)	(0.00191)	(0.00865)	(0.00179)
Observations	36,357	36,357	33,412	33,412	36,398	36,398

Note: * * * p<0.01, * * p<0.05, * p<0.1, data in brackets denote standard error.

3.2. The Impact of Financial Literacy on Financial Fraud

Table 4 shows the empirical regression results of financial literacy for families suffering from financial fraud by using OLS regression model. Among them, column 1 shows that the degree of concern about financial knowledge increases by 7.57% units per unit of increase in fraud, 2 and 3 respectively. The estimated coefficients of these three core explanatory variables are significantly positive at the level of 1%. The regression results show that the higher the financial literacy of a family, the more types of financial fraud it will suffer.

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Table 4: Influence of financial literacy on family financial fraud types

	(1)	(2)	(3)
information	0.0757***		
	(0.00559)		
knowledge		0.0971***	
		(0.0101)	
course			0.208***
			(0.0239)
gender	0.0379***	0.0559***	0.0556***
	(0.0115)	(0.0120)	(0.0114)
age	-0.00447***	-0.00378***	-0.00466***
	(0.000418)	(0.000451)	(0.000418)
rural	-0.285***	-0.281***	-0.287***
	(0.0141)	(0.0150)	(0.0141)
marriage	-0.0389**	-0.0329*	-0.0275*
	(0.0159)	(0.0169)	(0.0159)
education	0.0990***	0.101***	0.104***
	(0.00417)	(0.00438)	(0.00418)
capital	0.111***	0.112***	0.115***
	(0.00420)	(0.00449)	(0.00418)
Observations	36,325	33,389	36,365
R-squared	0.161	0.155	0.159

Note: * * * p<0.01, * * p<0.05, * p<0.1, data in brackets denote standard error.

3.3. The Impact of Financial Literacy on the Amount of Fraud Losses

Table 5 shows the empirical regression results of financial literacy for family financial fraud losses by using OLS regression model. Among them, column 1 shows that the increase in the degree of concern about financial knowledge adds 2.22% units to each unit of financial fraud, and 2 and 3 of financial fraud shows that, in comparison, the stronger financial ability is, the greater the loss of financial fraud will be for those who have attended financial courses. Moreover, the estimated coefficients of these three core explanatory variables are significantly positive at 1% level. The regression results show that the higher the financial literacy of a family, the more losses it will suffer from financial fraud.

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Table 5: Influence of financial literacy on financial fraud losses

	(1)	(2)	(3)
information	0.0222***		
	(0.00718)		
knowledge		0.0330**	
		(0.0128)	
course			0.131***
			(0.0306)
gender	-0.00830	-0.00689	-0.00365
	(0.0147)	(0.0153)	(0.0146)
age	0.00218***	0.00199***	0.00210***
	(0.000536)	(0.000575)	(0.000536)
rural	-0.0137	-0.0155	-0.0153
	(0.0181)	(0.0191)	(0.0181)
marriage	-0.0468**	-0.0503**	-0.0401**
	(0.0204)	(0.0216)	(0.0204)
education	-0.00209	-0.00439	-0.00372
	(0.00536)	(0.00559)	(0.00537)
capital	0.0214***	0.0219***	0.0225***
	(0.00540)	(0.00573)	(0.00537)
Observations	36,357	33,412	36,398
R-squared	0.003	0.003	0.003

Note: * * * p<0.01, * * p<0.05, * p<0.1, data in brackets denote standard error.

4. Conclusion

In this paper, we empirically study the impact of financial literacy on financial fraud using the data of China Household Financial Survey in 2015. The empirical results show that the improvement of financial literacy has a significant positive impact on financial fraud in families. The improvement of financial literacy can increase family preference for risk and increase the probability of financial fraud.

According to the results, we puts forward the following policy recommendations: for people with relatively high level of financial literacy, it is necessary to enhance their awareness of financial fraud, enhance their awareness of prevention, and appropriately reduce risk preferences, focusing on increasing personal information protection and risk prevention in daily life, so as to promote a series of financial activities under the premise of ensuring asset safety. At the same time, we must establish a multi-level supervision system in the financial market. We must firmly safeguard the property safety of the masses, maintain the stable operation of the financial market, ensure the rational and efficient economic order, strengthen the crackdown on financial fraud, and deal with fraudsters quickly and strictly.

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