Proceedings of the 2nd International Conference on Business and Policy Studies
DOI: 10.54254/2754-1169/8/20230339

The Relationship Between Prosocial Preference and Household Risk Financial Asset Allocation

Xiao Yu[1,a,*]

[1]*The Chinese university of Hong Kong*
a. yuxiao20001018@163.com
**corresponding author*

Abstract: Household financial asset allocation and investors' propensity to invest in venture capital are popular research areas. Many papers have studied the impact of income level, health status, risk attitude, etc. on household financial asset allocation. However, for the social behavior indicator of prosocial preference, there are not many papers exploring its impact on household financial asset allocation. Therefore, this paper finds an indicator to measure investors' pro-social preference, and then explores its impact on household financial asset allocation and investors' venture capital behavior. This paper selects the CHFS questionnaire data in 2017 and 2019, and conducts regression analysis through stata. The analysis results show that pro-social preference has a positive impact on venture capital behavior, and a higher level of pro-social preference will also lead to higher investor family holdings. ratio of risky financial assets.

Keywords: prosocial preference, venture capital, stock, household financial asset allocation

1. Introduction

On the issue of household financial asset allocation, many papers have studied the impact of factors such as economic income level, risk appetite, and family members' health status on it. The influence of household financial asset on prosocial preference has been researched in [1]. However, considering that this factor is largely influenced by investors' subjective values, which may also change over time. Therefore, it is worthwhile to explore from the perspectives of changing data sources and selecting relatively new data to observe whether there are similar conclusions.

The research theme of this paper is the impact of prosocial preferences on household financial asset allocation. Specifically, this paper aimed to explore the relationship between measures used to measure prosocial preferences and measures of household risky financial assets.

This paper uses stata to perform regression analysis on the data extracted from the CHFS2019 and CHFS2017 questionnaires. This paper considers the influence of investors' behavior in social activities on their investment behavior. The conclusions obtained from this relatively unique perspective will also provide reference for the government or relevant departments to formulate relevant policies in the future.

DOI: 10.54254/2754-1169/8/20230339

2. Data Samples and Variable Construction

2.1. Data Samples

The data sample comes from the survey results of the China Household Finance Survey (CHFS) in 2017 and 2019.Among them, data on prosocial preferences, family venture capital, and other family characteristics come from family questionnaires. In addition, factors such as age, gender, educational level, household registration type, household head, and the respondent's physical condition that may have an impact on the dependent variable were extracted from the adult questionnaire. In addition, this paper also matches the adult and family questionnaire data according to the family code of the corresponding year, and removes samples with missing values.

2.2. Variable Construction

2.2.1. Independent Variable

This paper studies the investment of household risk financial assets from two aspects of investment breadth and investment depth. In terms of investment breadth, the researcher selected a number of binary variables as measures. Including whether you have a stock account(d3101), whether you hold funds(d5102), and whether you hold wealth management products(d7109). Taking stock ownership as an example, the value is 1 if the respondent holds it, and 2 if the respondent does not hold it. In terms of investment depth, we need to find variables to measure the ratio of risky financial assets to total assets. Risky financial assets include: stocks, bonds, funds, derivatives, financial wealth management products, non-RMB assets and gold. Risk-free financial assets consist of cash on hand, stock account balances, demand deposits and time deposits. Due to the limitation of existing data, it is difficult for us to introduce all the above variables to get the real Risk ratio for regression analysis. Therefore, we selected the stock account market value (S), demand deposit balance (H), time deposit balance (D) and cash (C) with relatively complete data. We make Risk ratio=S/(S+H+D).

2.2.2. Dependent Variable

Since the CHFS questionnaire does not have the item of human kindness and propriety, this paper only selects the indicator of donation or funding, and considers two independent variables. The first is whether there is a transfer expenditure of donation or funding (DONATION). Take 1 if the respondent has donated or funded expenditure, and take 0 if the respondent has not donated or funded. The second is the amount of donation or funding. Select the logarithm of the amount + 1 as a variable for regression (Donation amount).

2.2.3. Control Variable

According to the data obtained from the questionnaire survey and the conclusions of existing papers, this paper selects age(age), gender(a2003), education level(edu), household registration type(a2022), and physical condition(a2025b) as control variables. The variable a2003 value 1 when the respondent is male while the variable value 2 when the respondent is female. It is also worth mentioning that, according to the CHFS 2017 questionnaire, the education level is no school, primary school, junior high school, high school, technical secondary school/vocational high school, college/higher vocational school, undergraduate, postgraduate, and doctoral students. The corresponding value of edu is 1 ~9.The household registration type(a2022) value 1 when the respondent has an agriculture account; value 2 when the respondent has a non-agriculture account; value 3 when the respondent has Unified Resident Account(It refers to the fact that after the reform of the household registration

DOI: 10.54254/2754-1169/8/20230339

system in some places, agricultural and non-agricultural household registrations are no longer distinguished, but are unified into "resident registration".)

2.3. Model Settings

In this paper, the least squares method is used to regress the above variables. The specific model is as follows.

$$Y = \alpha + \beta X + \gamma_i \sum control_i + \varepsilon$$

Y includes whether there is a stock account (d3101), the market value of the stock account (S) and the ratio of risky financial assets to total assets (Risk ratio)。X includes whether there is a donation or funding expenditure (DONATION), the logarithm of the amount of donation or expenditure (Donation). $control_i$ includes age(age), gender(a2003), education level(edu), household registration type(a2022), and physical condition(a2025b).

2.4. Descriptive Statistics

Table 1: Descriptive statistics.

Variable	Obs	Mean	Std.dev	Min	Max
d3101	138	1.471014	.5009776	1	2
d3104	71	3.140845	2.480183	1	15
d5102	138	1.876812	.3298506	1	2
d7109	137	1.737226	.4417557	1	2
S	64	198766.3	403944.6	3	2000000
H	113	52356.83	125094.3	0	1000000
D	29	172069	179982.7	0	500000
X	65	111427.8	318853.7	0	2000000
C	128	9722.422	23642.36	0	150000
donation	137	1328.934	3606.15	0	30000
DONATION	138	.4492754	.4992325	0	1
age	138	52.6087	17.35353	11	93
a2003	138	1.376812	.4863524	1	2
edu	138	4.608696	1.986946	1	8
a2022	137	1.905109	.6953968	1	3
a2025b	138	2.471014	1.047709	1	5

DOI: 10.54254/2754-1169/8/20230339

3. Empirical Analysis

3.1. Regression Analysis

3.1.1. The Relationship Between Stock Holdings and Donations or Funding

Table 2: Stock holdings and donations or funding.

reg d3101 DONATION age a2003 edu a2022 a2025b

Source	SS	df	MS
Model	22.248663	6	3.7081105
Residual	11.8535268	130	.091180975
Total	34.1021898	136	.250751395

Number of obs：137
F(6,130)：40.67
Prob>F：0.0000
R-squared：0.6524
Adj R-squared：0.6364
Root MSE：.30196

d3101	Coefficient	Std.err		P>|t|	[95% conf.interval]	
DONATION	-.6416923	.0573548	-11.19	0.000	-.7551619	-.528226
age	-.0019896	.0016948	-1.17	0.243	-.0414032	.0013634
a2003	.0674801	.0550366	1.23	0.222	-.0414032	.1763633
edu	-.0256273	0.160229	-1.60	0.112	-.0573267	.0060721
a2022	-.1360599	0.448815	-3.03	0.003	-.2248527	-.0472672
a2025b	.0329836	.0279857	1.18	0.241	-.0223827	.0883499
cons	2.066391	.1525862	13.54	0.000	1.764517	2.368264

According to the above regression analysis results, it can be seen that there is a negative correlation between the two variables. That is, as the indicator of donation or funding increases, the indicator of stock holdings shows a downward trend. According to the definition of the variable, we can know that the greater the tendency of respondents to have donations or spending, the more likely they are to hold a stock account. Having established that donations or grants are associated with stock holdings, this article examines further the link between the amount of donations or grants and the market value of stock holdings.

3.1.2. The Relationship Between Stock Holdings and the Amount of Donations or Funding

Table 3: Stock holdings and the amount of donations or funding.

Source	SS	df	MS	Number of obs	132
Model	10.4853493	6	1.74755822	F(6,125)	9.75
				Prob>F	0.0000
Residual	22.3934386	125	.179147509	R-squared	0.3198
				Adj R-squared	0.2862
Total	32.8787879	131	.250983114	Root MSE	.42326

d3101	Coefficient	Std.err.	t	P>|t|	[95% conf.interval]	
Donation	-.0126773	.0261765	-0.48	0.629	-0.0644839	0.0391292

It can be seen that the obtained results are similar to 3.1.1. It means that as the amount of donations or spending increases, respondents are also more likely to hold stocks.

DOI: 10.54254/2754-1169/8/20230339

3.1.3. The Relationship Between Stock Account Market Value and the Amount of Donations or Funding

Table 4: Stock account market value and the amount of donations or funding.

Source	SS	df	MS	Number of obs	64
Model	1.4698e+12	6	2.4482e+11	F(6,57)	1.58
				Prob>F	0.1686
Residual	8.8109e+12	57	1.5458e+11	R-squared	0.1429
				Adj R-squared	0.0527
Total	1.0280e+13	63	1.6317e+11	Root MSE	3.9e+05

S	Coefficient	Std.err.	t	P>|t|	[95% conf.interval]	
donation	39.34509	18.45317	2.13	0.037	2.393252	76.29692
age	-3565.298	3895.221	-0.92	0.364	-11365.34	4234.747
a2003	8421.908	124840.5	0.07	0.946	-241566.9	258410.7
edu	-39602.29	35263.5	-1.12	0.266	-110216.2	31011.64
a2022	100310.0	86826.49	1.16	0.253	-73556.18	274177.9
a2025b	-97256.06	58206.88	-1.67	0.100	-213813.3	19301.2
_cons	538996.1	399555.2	1.35	0.183	-261099.5	1339092

From the regression results, it can be seen that there is a positive relationship between the two. That is, the more donations or grants the respondent spends, the more likely he is to hold stocks with more market capitalization.

3.2. The Relationship Between Proportion of Risky Financial Assets and Donations or Funding

Table 5: Proportion of risky financial assets and donations or funding.

Source	SS	df	MS	Number of obs	20
Model	.040476926	6	.006746154	F(6,13)	0.10
				Prob>F	0.9950
Residual	.872642868	13	.067126374	R-squared	0.0443
				Adj R-squared	-0.3968
Total	.913119794	19	.048058937	Root MSE	.25909

Risk_ratio	Coefficient	Std.err.	t	P>|t|	[95% conf.interval]	
DONATION	.0255658	.1363661	0.19	0.854	-.2690352	.3201668
age	-.0011107	.0048205	-0.23	0.821	-.0115247	0.0093034
a2003	.0861689	.1781586	0.48	0.637	-.2987193	.4710571
edu	.0195939	.048936	0.40	0.695	-.0861259	.1253136
a2022	.0098929	.099423	0.10	0.922	-.2048975	.2246834
a2025b	.0076708	.0727758	0.11	0.918	-.1495517	.1648934
_cons	.0843033	.4291862	0.20	0.847	-.8428971	1.011504

According to the regression results, it can be seen that there is a positive correlation between the two variables, that is, the more the respondent is inclined to generate donations or funding expenditures, the more likely he is to allocate more risky financial assets in the allocation of household financial assets.

DOI: 10.54254/2754-1169/8/20230339

Next, this paper will theoretically analyze the reasons why prosocial preference will promote family venture capital investment. The viewpoints in this part mainly refer to the paper. The core of prosocial preference theory is that people not only care about their own material benefits, but also care about the interests of others, which generally refers to all behaviors that meet social expectations and are beneficial to others, groups and society.[2].Specifically, it can be divided into three dimensions: personal, interpersonal and social. At the individual level, prosocial preference has a positive effect on developing a sense of self-worth. People with higher prosocial behavior tend to gain satisfaction and increase self-esteem in positive activities [3]. And this is a cyclical process: people with high self-esteem will pay more attention to other people in need in society because their own needs are met [4];As far as interpersonal relationships are concerned, prosocial behavior helps to enhance interpersonal communication, promote interpersonal adaptation and interpersonal harmony[5];From a social perspective, prosocial behavior is a symbol of social public welfare and social responsibility, and it is also the basis for the harmonious development and construction of society [6]. Sobel calls social preference "interaction preference", which can better emphasize that social preference reflects the characteristics of participants' interactions with others and society. Berg studied trust and reciprocity in the investment environment and found that trust is the basis of human social behavior. This is also the rationale for choosing donations or funding expenditures as a measure of prosocial preference.

The promotion effect of prosocial preference on venture capital can also be explained from the above three dimensions. According to the theory of social interaction effect, people's pro-social preference affects their venture capital mainly in the following three aspects. From the perspective of social interaction, first of all, individuals can obtain effective information when interacting with other group members, and can also infer from the behavior of other members in the interaction to obtain more effective information, which will effectively affect individual investment strategies. choice [7]. Secondly, when individuals communicate and interact with other group members in joint investment decision-making, this exchange of investment experience and experience will bring happiness to investors and change the individual's investment preferences to a certain extent, such as making and referring to the group. investment decisions with similar average members [8]. At the same time, the exchange of feelings through social interaction will prompt individuals to make more venture capital [9]. Finally, individual investment decisions are influenced by social norms [10]. On the one hand, individuals tend to choose investment ideas and investment methods that are in line with the social norms followed by other group members; on the other hand, if individuals do not follow such norms, they may be punished by other group members and lead to changes in social reputation. Therefore, positive social interaction can effectively promote venture capital. From the perspective of social concern, investors' focus on a certain stock information will make them frequently buy and sell in the stock market. Psychological research also provides theoretical support for this, that is, the higher the individual's attention to information, the higher the frequency of information processing, the more stimulation the brain obtains, and the greater the probability that the individual will make reflex behaviors accordingly. From the perspective of social trust, when the family’s social trust level is high, the family has more trust in the operation and management of listed companies, more trust in securities regulators, and more confidence that securities regulators can effectively protect investors’ rights and interests, and the media and government will fully Therefore, it is more confident that the future investment returns of risky financial assets can be realized as expected, thus prompting them to participate in the financial market. Thus, people's prosocial preferences encourage their families to make venture capital investments.

DOI: 10.54254/2754-1169/8/20230339

3.3. Robustness Check

In order to test whether the above conclusions are robust, this paper decides to select other explained variables, change the definition of the proportion of risky financial assets, and then conduct regression analysis to check whether similar conclusions can be obtained.

3.3.1. Change the Dependent Variable

In the data obtained from the questionnaire, in addition to the holdings of stocks and the market value of the stocks held, the number of stocks held(d3104) can also be used as a standard to measure the respondents' tendency to hold stocks to a certain extent. Therefore, the number of stock holdings is defined as a new dependent variable, and the independent and control variables remain unchanged for regression analysis.

According to the result of regression, the coefficient of DONATION is 1.4211, so there is a positive between these two variables. Therefore, it can be seen that the more likely the respondents are to generate donations or funding expenditures, the more likely they are to hold a larger number of stocks. This is similar to the conclusion in 3.1.1, from this point of view the conclusions of 3.1.1 and 3.1.2 are robust.

3.3.2. Change the Defination Form of Dependent Variable

In the above analysis of risky financial asset allocation, this paper defines the dependent variable as S/(S+H). The disadvantage of this method is that it introduces fewer variables. Therefore, in the robustness test, the fixed deposit balance (D), the stock account cash balance (X) and the cash held (C) are additionally introduced. Redefine the measurement index of risk financial asset allocation as S/(S+H+D+X).

The regression result shows that the coefficient of newly defined variables is 0.04, which is very similar to those in 3.2. So the result of 3.2 is also robust from this point of view.

3.4. Heterogeneity Analysis

Since the influence of pro-social preference on risky financial assets is greatly influenced by personal values, this paper divides the obtained samples into two groups: gender and years of education. Then, the correlation between variables in samples of different groups can be analyzed and compared.

3.4.1. Group by Gender

Table 6: The regression results of gender.

Gendar	a2003=1	a2003=2
Coefficent	-0.6597361	-0.640312
Std.err	0.074907	0.0993046

According to the regression results above, the relationship between endowment or grant spending and risk financial asset allocation is not significantly different in terms of gender factors.

3.4.2. Grouped by Years of Education

Table 7: The regression results of education.

EDU	edu=1~4	edu=5~8
Coefficient	-0.5625706	-0.7303554
Std.err	0.0886165	0.0747438

DOI: 10.54254/2754-1169/8/20230339

According to the regression results above, the relationship between endowment or grant spending and risk financial asset allocation is not significantly different in terms of education.

4. Conclusion

Based on data from the 2017 and 2019 CHFS questionnaires, this paper examines the impact of investors' prosocial preferences on household venture capital behavior. Empirical analysis shows that investors' pro-social preference has a positive impact on investors' venture capital investment propensity. Specifically, the higher the pro-social preference level of investors, the more inclined they are to hold risky financial assets such as stocks, and the more inclined they are to allocate a higher proportion of risky financial assets in household financial assets. In grouped regressions, the results were not significantly different for the two factors, gender and education. The disadvantage of this paper is that limited by the data obtained from the questionnaire survey, after excluding the samples with invalid values of key variables, the remaining sample size is small, which may also lead to certain errors in the regression results.

References

[1] *Tang Di, Jin Xingye. Investors' Prosocial Preference and Venture Capital [J]. Financial Research, 2022, (05): 114-132.*

[2] *Eisenberg N. , Fabes R. A. and Spinrad T. L. 2007. "Prosocial Development", American Cancer Society.*

[3] *Laibo D.J.,Carlo G.and Roesch S.C.2004. "Pathways to self-esteem in Late Adolescence; The Role of Parent and Peer Attachment,Empathy,and social behaviors"Journal of Adolescence,27(6):703~716*

[4] *Holmgren R.A., EisenbergN.and FabesR.A.1998. "The Relations of Children's Situational Empathy-related Emotions to Dispositional Prosocial Behaviour",International Journal of Behavioral Development,22(1):169~193*

[5] *Campbell L.,Gulas C.S.and Gruca T.S.1999. "Corporate Giving Behavior and Decision-maker Social Consciousness",Journal of Business Ethics,19(4):375~383*

[6] *Penner L. A. , Dovidio J. F. , Piliavin. J. A. and Schroeder David. A. 2005. " Prosocial Behavior: Multilevel Perspectives", Annual Review of Psychology, 56(1):365 ~ 392.*

[7] *Hong, H. , Kubik J. D. and Stein J. C. 2005. "Thy Neighbor's Portfolio: Word - of - mouth Effects in the Holdings and Trades of Money Managers", Journal of Finance, 60(6):2801 ~ 2824.*

[8] *Becker, G. S. 1991. "A Note on Restaurant Pricing and Other Examples of Social Influences on Price", Journal of Political Economy, 99(5):1109 ~ 1116.*

[9] *Brown, J. R. , Z. Ivkovich, P. A. Smith and S. J. Weisbenner. 2004. "The Geography of Stock Market Participation: The Influence of Communities and Local Firms", Nber Working Papers, 4(3):314 ~ 314.*

[10] *Guiso L. , Sapienza P. and Zingales L. 2006. " Does Culture Affect Economic Outcomes?", Journal of Economic Perspectives, forthcoming.*