

“The impact of the investment expectation gap on households’ risky financial asset investment”

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THE IMPACT OF THE INVESTMENT EXPECTATION GAP ON HOUSEHOLDS' RISKY FINANCIAL ASSET INVESTMENT

Abstract

Rational household asset allocation is crucial for the accumulation of household wealth. However, there is still a widespread phenomenon of limited participation among households. This paper aims to explore the impact of the investment expectation gap on households' risky financial asset investment. Utilizing data from the China Household Finance Survey 2019, this paper systematically investigates the role of the investment expectation gap in risky financial asset investment through the Probit and Tobit models. The study reveals that the investment expectation gap has a significant negative impact on the investment probability (Average Marginal Effect, -0.118 , $p < 0.01$) and holding proportion (β , -0.082 , $p < 0.01$) of household investment in risky financial assets. This conclusion remains robust after conducting robustness tests by replacing the explanatory variable and performing subsample tests and endogenous treatment. The analysis of transmission mechanisms revealed that an expanding of the investment expectation gap would concurrently result in a decline in households' assessment of stock's profitability (Average Marginal Effect, -0.080 , $p < 0.01$), the satisfaction with current asset allocation (β , -0.167 , $p < 0.05$), and the subjective well-being of household members (β , -0.289 , $p < 0.01$). Furthermore, the investment expectation gap not only hampers household investment in risky financial asset, but also diminish the household savings rate (β , -0.055 , $p < 0.01$). This study demonstrates that helping households form reasonable expectations for risky financial assets investment returns will contribute to diversifying household asset allocation and enhancing satisfaction with investment decisions.

Keywords

household finance, asset allocation, household decision, financial market participation, portfolio choice, China, risk asset

JEL Classification

G51, G11, D14

INTRODUCTION

Reasonable asset allocation is a key link in achieving household wealth accumulation. The classical portfolio theory suggests that regardless of investors' risk aversion, they should participate in the risky financial market and form portfolios to maximize utility. The role of risk attitudes will be reflected in the proportion of risky financial assets in the final investment portfolio of households. Risk-seeking households are willing to take on a higher risk to pursue higher investment returns, resulting in a higher proportion of risky financial assets in their portfolios. However, deviating from classical theory, there is a widespread phenomenon of limited participation in households. Most households hold low-risky financial assets, leading to a highly concentrated asset structure. Studies have explored this phenomenon, highlighting participation costs, subjective attitudes, and background risks, but it remains incompletely explained. On the other hand, despite displaying a tendency to avoid investing in risky financial assets, many households express dissatisfaction with their current asset allo-



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cation and seek higher returns (approximately 32.4% of respondents expect an annualized investment return exceeding 10% in the China Household Finance Survey 2019). This phenomenon is challenging to explain solely based on differences in risk preferences.

Since the beginning of the 21st century, risky financial assets represented by the stock have experienced significant price fluctuations multiple times. Under the influence of traditional social interactions and internet information, some households develop cognitive biases regarding the profitability and risk of risky financial assets (Hong et al., 2004; Liang & Guo, 2015). This leads them to have overly high expectations for the performance of their investment portfolios and excessive participation in risky financial asset investments. Due to the dual constraints of investment capability and market volatility, some households may withdraw from the market due to the difficulty in accepting investment losses. However, due to a self-interest bias, the gap between expected and actual investment returns (investment expectation gap) is more likely to be attributed to external factors, such as risk in financial assets, as opposed to internal factors (Wolosin et al., 1973). This ultimately gives rise to the phenomenon that households tend to avoid risky financial asset investments while still desiring higher investment returns.

1. LITERATURE REVIEW AND HYPOTHESES

In 2006, Campbell's speech about household finance ignited a research trend in household investment decisions. Explorations focused on explaining the phenomenon of "limited participation" and sought ways to correct household asset allocation behavior. Emphasis was placed on explaining the mechanisms behind participation costs, subjective attitudes, and background risks. Some studies suggested that transaction costs exist in the investment activities of households participating in the risk asset market, including the time costs incurred by households in searching for information, learning knowledge, and making decisions, as well as the transaction fees paid when actually participating in the risky financial market (Heaton & Lucas, 1997; Peress, 2005; Shum & Faig, 2006). Due to differences in financial knowledge, education level, income, and wealth among household investors, their abilities to participate in risky financial market investment activities vary. Financial knowledge and education can assist households in learning the necessary investment knowledge for risk investment activities and collecting relevant information for investment decisions, thereby reducing their time costs in participating in the risky financial market (Van Rooij et al., 2011; Lu et al., 2021). Household members with high cognitive and non-cognitive abilities have an advantage in asset information gathering and investment experience learning, leading to changes in the household's investment strat-

egy and promoting household participation in the risky financial market (Christelis et al., 2010; Grinblatt et al., 2011). The widespread income and wealth disparities among households result in varying abilities to bear investment losses and pay investment costs (Lu et al., 2020). Households that recognize their lack of ability to participate in the risky financial market selectively avoid investment activities beyond their capabilities, leading to differences in the final decision to participate in the risky financial market among households (Campbell, 2006).

Household decisions in risky financial market participation are subjective decisions made by household members based on individual and household characteristics. Therefore, the question of whether the subjective attitudes of household members can exert a certain degree of influence on decision-making in the risky financial market has sparked discussions in academia. Guiso and Paiella (2008) directly address the factor of risk attitude, arguing that risk aversion will inhibit investors from engaging in risk investment. Hong et al. (2004) and Liang and Guo (2015) analyze the impact of social interaction on household risk perception, suggesting that social interaction may promote household participation in risk asset activities through information effects and the attenuation of subjective risk perception. Guiso et al. (2008) and Cui and Zhang (2021) explore the impact of trust levels on participation in the risky financial market, proposing that households with high levels of trust will hold more risk assets. Furthermore, overcon-

confidence is also a vital perspective in the discussion of how subjective attitudes affect household participation in the risky financial market. Chu (2017) suggests that investors who are overly confident in their financial knowledge are more likely to participate in investment themselves, less likely to delegate investment decisions to financial institutions, and tend to hold stocks.

The risks households face in economic activities are not only related to investment risks. Factors such as macroeconomic conditions, the health status of household members, and the stability of household income are also crucial. Therefore, the impact of background risks on household investment decisions has attracted increasing attention from scholars. Cardak and Wilkins (2009) and Yue et al. (2020) approach this from the perspective of income risk, proposing that changes in income risk and liquidity constraints will affect residents' degree of risk aversion. The health status of household members is also a critical perspective in the discussion of the impact of background risks on household participation in risky financial market. Health risks faced by household members may crowd out household risky financial market participation (Rosen & Wu, 2004; Berkowitz & Qiu, 2006). Scholars have also focused on the impact of the background economic environment stability on household investment decisions, suggesting that economic background risks force households to reduce portfolio risk to maintain overall risk under control (Christelis et al., 2013; Brown et al., 2021). From the perspective of risk-controlling, some scholars have explored the impact of insurance on household risky financial market participation, suggesting that insured households prefer to hold risk assets (Christelis et al., 2020; Shi et al., 2021). As a safety asset, marriage can also increase the preference of married members for risk assets, which is more significant for female residents (Bertocchi et al., 2011; Mandal & Brady, 2020).

Currently, studies investigating the investment expectation gap primarily focus on corporate behavior, asserting that due to the existence of bounded rationality, it is challenging for companies to utilize all available information during performance evaluations. Therefore, a simplified method of assessing corporate performance by comparing actual performance with set target reference points

is widely used. The gap between expected performance and actual performance, which is known as the performance investment expectation gap, will determine the subsequent behavior of corporate decision-makers (Fiegenbaum et al., 1996; Lu & Wong, 2019; Diwei Lv et al., 2022). Within this body of research, certain studies have examined the investment expectation gap and the common phenomenon of self-attribution bias in the market. These studies categorize the bias into two main types: "self-enhancing attribution" and "self-protecting attribution" (Wolosin et al., 1973). On the one hand, when companies experience profit growth, they are more inclined toward "self-enhancing attribution," downplaying the contribution of external economic factors and attributing success to internal management reasons. On the other hand, when companies face declining profits, they may emphasize the influence of external factors and avoid attributing profit decline to management for self-protective reasons (Clatworthy & Jones, 2006; Aerts & Tarca, 2010; Huang et al., 2021).

Reviewing existing research, there is currently a paucity of literature directly investigating the influence of investment expectation gaps on household investment decisions. Due to decision-making disparities between households and corporates, studies concerning investment expectation gaps and corporate behavior often struggle to elucidate household investment behavior. However, it still inspires the research in this paper.

On the one hand, the paper acknowledges the widespread nature of self-attribution bias. For household investors, when the actual returns of their investment portfolios fall far below their expected returns, they are more likely to attribute the failure to external factors, such as macroeconomic conditions and poor profitability of investment targets, rather than internal reasons, such as errors in their investment decisions and excessively high-expected returns. This results in a phenomenon where they express dissatisfaction with the performance of risky financial assets and avoid investing in them.

On the other hand, the investment expectation gap reflects the difficulty for households' actual investment returns to meet their expected investment

returns. This will lead to negative emotions, such as dissatisfaction with existing investment portfolios and a decline in subjective well-being among household investors. These negative emotions affect household decisions regarding investment in risky financial assets through two channels: risk estimation and trust level (Rao et al., 2016). Under conditions of bounded rationality, emotions become guiding factors for decision-maker's behavior, resulting in biased risk judgments under emotional influence (Loewenstein, 2000; Hanoch, 2002). Individuals with negative emotions tend to overestimate the risk of unrelated activities, while those with positive emotions make more positive evaluations of investments (Johnson & Tversky, 1983; Bagozzi et al., 1999). Therefore, the negative emotions brought about by the investment expectation gap will cause household investors to overestimate the likelihood of investment failure and exhibit a tendency to avoid investing in risky financial assets. Additionally, emotions significantly affect the level of trust in others, with negative emotions leading to a decrease in trust (Dunn & Schweitzer, 2005). Investors assessing the likelihood of deception will pay attention to objective asset characteristics and subjective investor characteristics. Households with lower trust levels will hold fewer stocks (Guiso et al., 2008; Cui & Zhang, 2021). The negative emotions resulting from the investment expectation gap will lead household investors to a decreased level of trust and lower participation in risky financial investment activities.

Based on the literature review, this paper aims to investigate the impact of the investment expectation gap on household investment and conduct a deeper analysis of the potential transmission mechanisms. Hence, the following hypotheses are formulated:

- H1: *Investment expectation gap has a significant negative impact on household investment in risky financial assets.*
- H2: *The expansion of the investment expectation gap will lead households to lower their assessment of stock profitability.*
- H3: *Investment expectation gap has a negative effect on household asset allocation satisfaction.*

- H4: *Investment expectation gap has a negative impact on the subjective well-being of household members.*

2. METHOD

This paper utilizes data from the China Household Finance Survey 2019 (CHFS), conducted in 2019 by the Chinese Household Finance Survey and Research Center of Southwestern University of Finance and Economics. The survey covered 29 provinces, 367 counties, and 1,481 communities, collecting information on demographic characteristics, assets and liabilities, insurance and security, expenditures and income.

Given that the core explanatory variable in this paper is limited to surveys conducted exclusively among urban households and there is a prevalent risk aversion to financial asset investments in rural areas due to limited financial accessibility, this paper focuses on urban households. After excluding samples with missing key variables and winsorizing the continuous variables, a total of 11,139 valid samples were obtained.

Referring to the questionnaire design of CHFS 2019 and relevant literature, this paper selects the "Risk" (holding of risky financial assets) and "Risk_p" (the proportion of risky financial assets) as dependent variables to explore the impact of investment expectation gap on the household risky financial asset investment. Risky financial assets primarily include stocks, funds, financial products, non-government bonds, derivatives, gold, and foreign currency assets. Following Rao et al. (2016), this study also examines the case where risky financial assets consist solely of stocks for robustness test.

As the core explanatory variable, the investment expectation gap is calculated as the difference between the household's acceptable annualized investment return rate (based on the response to the question "What is the acceptable annualized return rate for your investments?") and the actual investment return rate (investment income from financial assets/total household financial assets, in 2018).

For control variable selection, this paper includes investor characteristics (such as gender, health status, marital status, education level, financial information, and risk aversion), household characteristics (family size, housing quantity, wealth, and income), and provincial dummy variables. Table 1 outlines the variable description and descriptive statistics of the variables used in this paper.

This paper employs Stata17 for conducting research. The dependent variable “Risk” is a binary variable. To address estimation issues arising from variable characteristics, this paper utilizes the Logit model in the baseline regression to analyze the probability of households hold-

ing risky financial assets. The specific model is shown as follows:

$$\Pr(Risk_i = 1) = \frac{\exp(\beta_0 + \beta_1 Exp_g_i + \beta_2 X_i)}{1 + \exp(\beta_0 + \beta_1 Exp_g_i + \beta_2 X_i)} \quad (1)$$

where $Risk = 1$ indicates that a household holds risky financial assets and Exp_g is the core explanatory variable “investment expectation gap.” The control variable set X_i includes “Gender,” “Health,” “Age,” “Age²,” “Edu,” “Marriage,” “Size,” “Financial information,” “Risk aversion,” “Wealth,” “Income,” “Lr,” “Att,” and “House” and province dummy variables.

Table 1. Variable description and descriptive statistics

| Variables | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------|--------|---------|--------|---------|-------|--|
| | N | Mean | SD | Min | Max | Variable Description |
| Risk | 11,139 | 0.230 | 0.421 | 0 | 1 | If a household holds any of the following financial assets: stocks, funds, financial management products, non-government bonds, financial derivatives, gold, or foreign currency assets, assign a value of 1; otherwise, assign a value of 0 |
| Risk_p | 11,139 | 0.113 | 0.316 | 0 | 1 | The proportion of stocks, funds, financial investment products, non-government bonds, financial derivatives, gold, and foreign currency assets in total financial assets |
| Exp_g | 11,139 | 0.208 | 0.293 | -0.0414 | 1 | The core explanation variable is the “Investment expectation gap.” The difference between the annualized investment return rate desired by the household and the actual investment return rate on the household’s financial assets |
| Marriage | 11,139 | 0.863 | 0.344 | 0 | 1 | If the householder is married, assign a value of 1; otherwise, assign a value of 0 |
| Edu | 11,139 | 11.36 | 3.639 | 1 | 22 | Householder’s years of education |
| Age | 11,139 | 51.24 | 13.90 | 18 | 95 | Householder’s age |
| Age ² | 11,139 | 2.818 | 1.478 | 324 | 9.025 | The square term of the householder’s age |
| Gender | 11,139 | 0.716 | 0.451 | 0 | 1 | Householder’s gender |
| Health | 11,139 | 2.470 | 0.904 | 1 | 5 | The self-assessment of the householder’s health status, from “very good” to “very poor,” assign values of 1 to 5 |
| Size | 11,139 | 3.123 | 1.395 | 1 | 15 | The total number of household members |
| Wealth | 11,139 | 172.8 | 224.5 | -13.05 | 1.140 | Household net assets/10,000 |
| Income | 11,139 | 12.21 | 13.71 | 0 | 87.86 | Total household income/10,000 |
| Lr | 11,139 | 0.0862 | 0.145 | 0 | 0.500 | The annualized loss rate tolerance for the household |
| Fin | 11,139 | 2.164 | 1.045 | 1 | 5 | The degree of attention to financial information, from “Never concerned” to “Highly concerned,” assign values of 1 to 5 |
| House | 11,139 | 1.177 | 0.713 | 0 | 10 | Number of houses owned by the household |
| Att | 11,139 | 4.012 | 1.128 | 1 | 5 | Risk aversion, from preferring “high risk, high return” to “unwilling to take any risk,” assign values of 1 to 5 |
| Stock | 11,139 | 0.0235 | 0.0782 | 0 | 0.993 | If the household holds stocks, assign a value of 1; otherwise, assign a value of 0 |
| Stock_p | 11,139 | 0.00756 | 0.0417 | 0 | 0.905 | The proportion of stocks in total financial assets |
| Assessment | 11,139 | 0.277 | 0.448 | 0 | 1 | Assign values based on the householder’s answers to the question about the profitability of stocks. If the householder’s answer is “high yield,” assign a value of 1; otherwise, assign a value of 0 |
| Happiness | 11,133 | 3.793 | 0.819 | 1 | 5 | Self-assessment of happiness, from “very unhappy” to “very happy,” assign values of 1 to 5 |
| Satisfaction | 11,138 | 3.408 | 0.856 | 1 | 5 | The satisfaction level of households with their asset allocation portfolios, from “very dissatisfied” to “very satisfied,” assign values of 1 to 5 |
| Saving | 11,139 | 0.225 | 0.262 | 0 | 0.982 | Household savings rate |

Since the proportion of risky financial assets in total financial assets is censored, this paper uses Tobit model to conduct regression analysis on the impact of investment expectation gap on the proportion of household owing in risky financial assets. The specific models are as follows:

$$risk_p_i^* = \beta_0 + \beta_1 Exp_g_i + \beta_2 X_i + \varepsilon_i, \quad (2)$$

$$Risk_p_i = \max(0, risk_p_i^*). \quad (3)$$

where $risk_p^*$ represents the latent variable indicating the true value of the proportion of risky financial assets in total financial assets, $Risk_p$ represents the observed value of the proportion of risky financial assets in total financial assets, and ε_i represents the error term. Other variables are set as mentioned earlier.

3. RESULTS

Table 2 reports the empirical results of the relationship between the investment expectation gap and household decisions in risky financial asset investment. In the first and second columns, Logit models were used to investigate the effect of the investment expectation gap on the probability of households holding risky financial assets. The third and fourth columns focus on the impact of the investment expectation gap on the proportion of households holding risky financial assets in total financial assets, analyzed using the Tobit model.

From the regression results in Table 2, the average marginal effect (regression coefficient) of the Exp_g (investment expectation gap) variable is significantly less than zero at the 1% level in all columns. Taking the results in the second and fourth columns as examples, holding other conditions constant, a one-unit increase in the Exp_g variable corresponds to an 11.8% decrease in the probability of households holding risky financial assets and an 8.2% decrease in the real value of the proportion of risky financial assets to total financial assets. This result indicates that the expansion of the investment expectation gap significantly inhibits household participation in risky financial asset investment activities, providing preliminary support for H1.

Regarding other traditional explanatory factors, there is a hump-shaped relationship between age

and the probability of households holding risky financial assets. The probability of households holding risky financial assets increases with higher levels of education and financial information. The expansion of household size has a restraining effect on households' investment in risky financial assets. Households with higher wealth levels tend to invest in risky financial assets. The number of houses has a crowding-out effect on the proportion of risky financial assets. An aversion to risk leads households to avoid investment in risky financial assets. Overall, the regression results of most control variables are consistent with the conclusions of existing studies, which supports the validity of the study's findings.

Table 2. The impact of the investment expectation gap on the households holding risky financial asset investment

| Variables | (1) | (2) | (3) | (4) |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Risk | | Risk_p | |
| Exp_g | -0.271*** (-14.53) | -0.118*** (-7.00) | -0.167*** (-12.97) | -0.082*** (-6.32) |
| Age | | 0.011*** (5.91) | | 0.006*** (4.12) |
| Age ² | | -0.000*** (-4.11) | | -0.000** (-2.10) |
| Edu | | 0.017*** (14.29) | | 0.012*** (12.18) |
| Gender | | -0.045*** (-5.86) | | -0.029*** (-4.83) |
| Marriage | | 0.027** (2.37) | | 0.012 (1.34) |
| Health | | 0.007* (1.76) | | 0.004 (1.19) |
| Size | | -0.018*** (-5.89) | | -0.015*** (-6.69) |
| Lr | | 0.048* (1.70) | | 0.036* (1.65) |
| Att | | -0.037*** (-11.93) | | -0.028*** (-10.74) |
| Fin | | 0.063*** (19.02) | | 0.047*** (16.32) |
| House | | 0.004 (0.80) | | -0.016*** (-3.53) |
| Income | | 0.001*** (3.57) | | 0.001*** (5.82) |
| Wealth | | 0.000*** (12.36) | | 0.000*** (7.20) |
| Province | | Yes | | Yes |
| N | 11,139 | 11,139 | 11,139 | 11,139 |
| Pseudo R2 | 0.023 | 0.242 | 0.0395 | 0.375 |

Note: The Logit model reports average marginal effects with the z-value in parentheses. The Tobit model reports regression coefficients with the t-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

To further test the impact of the broader definition of risky financial assets, the study checks the robustness of research conclusions. Referring to Rao et al. (2016), this paper narrows the definition of risky financial assets to exclusively include stocks and examine the role of the investment expectation gap in risky financial asset investments. Table 3 presents the corresponding results. Apart from the dependent variable, the model settings in each column remain consistent with the corresponding columns in Table 2. The regression results indicate that, except for the fourth column, the average marginal effects (regression coefficients) of the *Exp_g* (investment expectation gap) variable in each column are significantly less than zero at the 1% significance level.

Taking the results of the second and fourth columns as examples, under the condition of other variables held constant, an increase of one unit in the *Exp_g* variable leads to a 4.7% decrease in the probability of households investing in stock assets. The real value of the proportion of stock assets in total financial assets will correspondingly decrease by 0.032 units. The conclusion that the investment expectation gap has an inhibitory effect on households holding risky financial asset investments remains robust after the change in the definition of risky financial assets.

Table 3. Regression results of robustness test – The substitution of explained variable

| Variables | (1) | (2) | (3) | (4) |
|-----------|----------------------|----------------------|----------------------|---------------------|
| | Stock | | Stock_p | |
| Exp_g | -0.104*** (-8.28) | -0.047*** (-3.54) | -0.079*** (-7.12) | -0.032** (-2.56) |
| Controls | | Yes | | Yes |
| Province | | Yes | | Yes |
| N | 11,139 | 11,139 | 11,139 | 11,139 |
| Pseudo R2 | 0.010 | 0.248 | 0.014 | 0.421 |

Note: The Logit model reports average marginal effects with the z-value in parentheses. The Tobit model reports regression coefficients with the t-value in parentheses. *** represents significance level at 1%; ** represents significance level at 5%, and * represents significance level at 10%.

Table 4 presents the regression results of the subsample tests, in which the samples with an investment expectation gap exceeding 50% are excluded. Aside from the change in the sample size, the variable settings for each column remain consistent with those in Table 2. Consistently across all columns, the average marginal effects (regression

coefficients) of the *Exp_g* (investment expectation gap) variable are significantly less than zero at a 1% significance level. This result confirms the robustness of the conclusion that the investment expectation gap negatively affects risky financial assets investments.

Table 4. Regression results of robustness test – Subsample

| Variables | (1) | (2) | (3) | (4) |
|-----------|-----------------------|----------------------|-----------------------|----------------------|
| | Risk | | Risk_p | |
| Exp_g | -0.419*** (-11.47) | -0.229*** (-5.94) | -0.265*** (-10.89) | -0.160*** (-5.96) |
| Controls | | Yes | | Yes |
| Province | | Yes | | Yes |
| N | 9,887 | 9,887 | 9,887 | 9,887 |
| Pseudo R2 | 0.011 | 0.239 | 0.021 | 0.373 |

Note: The Logit model reports average marginal effects with the z-value in parentheses. The Tobit model reports regression coefficients with the t-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

Although the control variable set commonly used in existing research has been controlled in this paper, there may still be unsolved endogeneity problems, and this paper tries to use the instrumental variable group and the two-stage IVProbit model and two-stage IVTobit model to explore the possible endogeneity problems in the study. The study uses Windfall (household experienced events such as winning the lottery or inheriting unexpected inheritance) and Avg_r (the average annualized investment return rate desired by households in the counties where the household lives) as the instrumental variable group. The reason for this setting is as follows. On the one hand, other households' views on investment return rate will influence the annualized investment return rate desired by the household through social interaction, and it does not directly affect households' decisions regarding risky financial asset investment. On the other hand, unexpected windfall events may change the annualized investment return rate desired by the household and do not directly participate in the asset allocation decisions.

Table 5 reports the corresponding regression results and all control variables are controlled in each column. The first and second columns report the regression results of the two-stage IVProbit model, and the third and fourth col-

umns report the regression results of the two-stage IVTobit model. From the regression results of each column of the models, after using the instrumental variable group, the regression coefficient of the *Exp_g* variable is still significantly less than zero at the 1% significance level. The conclusion that the investment expectation gap negatively affects households' decision to invest in risky financial assets remains stable. In the test of the validity of instrumental variables, the over-identification test does not reject that all instrumental variables are exogenous. In comparison, the weak instrumental variable test rejected the possibility that the instrumental variables were weak instrumental variables.

Table 5. Regression results of endogenous treatment

| Variables | (1) | (2) | (3) | (4) |
|-------------|----------------------|----------------------|----------------------|----------------------|
| | Risk | Stock | Risk_p | Stock_p |
| Exp_g | -1.894*** (-5.63) | -2.913*** (-6.25) | -0.356*** (-5.90) | -0.439*** (-6.33) |
| Ovleid test | 0.778 | 0.543 | 0.799 | 0.756 |
| Ar test | 0.000 | 0.000 | 0.000 | 0.000 |
| Controls | Yes | Yes | Yes | Yes |
| Province | Yes | Yes | Yes | Yes |
| N | 11,139 | 11,139 | 11,139 | 11,139 |

Note: The IVProbit model and IVTobit model report regression coefficients with the z-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

To examine H2, this paper analyzes the impact of the investment expectation gap on the household's perception of stock asset profitability. Table 6 reports the corresponding results. The regression results indicate that the average marginal effect of the *Exp_g* (investment expectation gap) variable is significantly less than zero at the 1% significance level. Taking the results in the second column as an example, holding other conditions constant, for every one-unit increase in the investment expectation gap, the probability of households having a negative perception of stock asset profitability decreases by 8%. The investment expectation gap leads households to form a negative perception of stock asset profitability, thus verifying H2.

Table 6. Investment expectation gap and household perception of stock asset profitability

| Variables | (1) | (2) |
|-----------|-----------------------|----------------------|
| | Assessment | |
| Exp_g | -0.166*** (-10.20) | -0.080*** (-4.90) |
| Controls | | Yes |
| Province | | Yes |
| N | 11,139 | 11,139 |
| Pseudo R2 | 0.0085 | 0.1625 |

Note: The Logit model reports average marginal effects with the z-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

To examine H3 and H4, this paper introduces variables for "Happiness" and "Satisfaction" to investigate the impact of the investment expectation gap. Table 7 reports corresponding regression results. Since both the "Happiness" and "Satisfaction" variables are ordinal variables, order-Logit models are used for estimation in each column. The regression results show that, except for the second column, the regression coefficients of the *Exp_g* (investment expectation gap) variable are significantly less than zero at a 1% significance level in each column. The expansion of the investment expectation gap significantly decreases the satisfaction with the current asset allocation and household happiness. By combining the findings with the conclusion from existing literature that negative emotions will make households overestimate the risk and reduce their trust levels, H3 and H4 have been tested.

Table 7. The impact of investment expectation gap on happiness/satisfaction with asset allocation

| Variables | (1) | (2) | (3) | (4) |
|-----------|----------------------|---------------------|----------------------|----------------------|
| | Happiness | | Satisfaction | |
| Exp_g | -0.191*** (-3.00) | -0.167** (-2.29) | -0.368*** (-5.84) | -0.289*** (-4.00) |
| Controls | | Yes | | Yes |
| Province | | Yes | | Yes |
| N | 11,133 | 11,133 | 11,138 | 11,138 |
| Pseudo R2 | 0.00037 | 0.0343 | 0.00133 | 0.0371 |

Note: The OLogit model reports regression coefficients with the z-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

Table 8 presents the findings regarding the influence of the investment expectation gap on the household savings rate. Except for replacing the dependent variable with the “Saving” variable, the model settings in the first and second columns align with those in the third and fourth columns of Table 2. In the regression results, the coefficient of the *Exp_g* (investment expectation gap) variable is significantly less than zero at the 1% significance level. Taking the results in the second column as an example, an increase of one unit in the *Exp_g* variable corresponds to a 5.5 percentage point decrease in the true value of the household savings rate. This finding indicates that the investment expectation gap not only suppresses investments in risky financial assets, but also significantly reduces the willingness of households to save, and finally resulting in a further reduction in the level of risky financial assets held by households.

Table 8. The impact of investment expectation gap on household savings rate

| Variables | (1) | (2) |
|--------------|-----------------------|----------------------|
| | Saving | |
| <i>Exp_g</i> | -0.161*** (-10.14) | -0.055*** (-3.85) |
| Controls | | Yes |
| Province | | Yes |
| N | 11,139 | 11,139 |
| Pseudo R2 | 0.00784 | 0.250 |

Note: The Tobit model reports regression coefficients with the *t*-value in parentheses. *** represents significance level at 1%, ** represents significance level at 5%, and * represents significance level at 10%.

4. DISCUSSION

This paper aims to explore the role of the investment expectation gap in household financial asset investment decisions. The research findings suggest that these gaps significantly affect both the likelihood and depth of household investments in risky financial assets. Previous research has consistently emphasized the explanatory power of expectations for household investment behavior, which aligns with the results of this paper (Dusansky & Koç, 2007; Armona et al., 2019). Two main factors contribute to this conclusion. On the one hand, under the influence of self-interest tendency, households are more inclined to attribute

the disparity between ideal and actual investment returns rate to external factors, such as the lower profitability of available risky financial assets in the market, rather than internal factors, like investor characteristics and unrealistically high-profit expectations (Wolosin et al., 1973). Due to the inability of risky financial assets in the market to meet the excessive profit expectations of households, households tend to avoid investing in these assets identified as insufficient profitability, leading to dissatisfaction with the current asset allocation situation and the desire to avoid risky financial asset investments. On the other hand, an excessive investment expectation gap will lead to dissatisfaction with the current asset allocation situation within households and reduce the happiness of household members. Under the influence of this negative emotion, households tend to overestimate the likelihood of negative events (Johnson & Tversky, 1983; Cao & Wei, 2005), exhibit lower levels of trust, and ultimately lead to avoidance of investing in risky financial assets (Guiso et al., 2008; Cui & Zhang, 2021).

However, what differs from the conclusions of this study is that in some literature examining corporate investment behavior, when actual business performance fails to meet targets, management may be compelled by operational pressures to increase their motivation for risk-taking decisions and information manipulation (Harris & Bromiley, 2007; Chen, 2008). This disparity may stem from differences in the backgrounds of household investors and corporate management when facing an expectation gap. The widening of the performance expectation gap will subject corporate management to significant pressure from stakeholders. Consequently, they will be more driven to improve performance through high-risk decisions, aiming to uphold their own managerial reputation. However, the situation is different for household investors. As most households tend to avoid risky investment activities when there is a high investment expectation gap, external advice received by households will tend to advise reducing investments in risky financial assets. This has led to differences in investment behavior between corporate management and household investors.

The study offers some policy implications. On the one hand, this paper finds that an expanded in-

vestment expectation gap significantly restrains household's participation in risky financial investments. When the actual investment return rate fails to meet their targets, households significantly reduce their holdings of risky financial assets. In periods of economic downturns and financial market volatility, an enlarged investment expectation gap leads households to decrease their holdings of risky financial assets, which may amplify financial asset price fluctuations causing a decline in investment returns. Therefore, promoting financial literacy and helping households form rational investment performance goals can encourage diversified asset allocation and mitigate herd behavior among household investors in financial markets. On the other hand, this paper reveals that the investment expectation gap significantly lowers households' perception of risky financial asset profitability. This may lead households to underestimate the

returns of risky financial assets and avoid engaging in such investment activities for an extended period. Thus, emphasis should be placed on promoting a rational investment mindset to prevent households from forming a long-term aversion to investing in risky financial assets due to single investment failures.

Future research could be pursued from two perspectives. On the one hand, studies should conduct a deeper analysis of the determinants of household investment expectations, considering factors such as socioeconomic background, cognitive biases, and financial education. On the other hand, the effectiveness of various intervention measures could be investigated, spanning from financial literacy education to the application of digital technologies to optimize household asset allocation structures and foster greater investment confidence among households.

CONCLUSION

This paper explores the role of the investment expectation gap in household decisions to invest in risky financial assets. This study utilizes data from the China Household Finance Survey 2019 to investigate the significant negative impact of the investment expectation gap on the probability and intensity of household investments in risky financial assets. These conclusions remain robust after subsample tests, redefining the dependent variables, and addressing endogeneity treatment.

Examining the potential mechanisms underlying the impact of the investment expectation gap on household investment behavior, this paper finds that the investment expectation gap leads to a decrease in the perceived profitability of stocks and dissatisfaction with current asset allocation and the household members' subjective well-being. Significantly, investment expectation gaps not only dampen the intensity of household investments in risky financial assets but also result in a decline in savings rates, further encouraging households to avoid investing in risky financial assets.

Based on the research findings, policymakers should focus on enhancing financial literacy among households to facilitate the formation of rational investment goals for households. Additionally, attention should be paid to residents' cognitive biases regarding asset returns to prevent investment failures from leading to long-term underestimation of asset profitability.

AUTHOR CONTRIBUTIONS

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Investigation: Xinzhe Xu.

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REFERENCES

- Aerts, W., & Tarca, A. (2010). Financial performance explanations and institutional setting. *Accounting and Business Research*, 40(5), 421-450. <https://doi.org/10.1080/0014788.2010.9995322>
- Armona, L., Fuster, A., & Zafar, B. (2019). Home price expectations and behaviour: Evidence from a randomized information experiment. *The Review of Economic Studies*, 86(4), 1371-1410. <https://doi.org/10.1093/restud/rdy038>
- Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, 27(2), 184-206. <https://doi.org/10.1177/0092070399272005>
- Berkowitz, M. K., & Qiu, J. (2006). A further look at household portfolio choice and health status. *Journal of Banking & Finance*, 30(4), 1201-1217. <https://doi.org/10.1016/j.jbankfin.2005.05.006>
- Bertocchi, G., Brunetti, M., & Torricelli, C. (2011). Marriage and other risky assets: A portfolio approach. *Journal of Banking & Finance*, 35(11), 2902-2915. <https://doi.org/10.1016/j.jbankfin.2011.03.019>
- Brown, S., Gray, D., Harris, M. N., & Spencer, C. (2021). Household portfolio allocation, uncertainty, and risk. *Journal of Empirical Finance*, 63, 96-117. <https://doi.org/10.1016/j.jempfin.2021.05.004>
- Campbell, J. Y. (2006). Household finance. *The Journal of Finance*, 61(4), 1553-1604. <https://doi.org/10.1111/j.1540-6261.2006.00883.x>
- Cao, M., & Wei, J. (2005). Stock market returns: A note on temperature anomaly. *Journal of Banking & Finance*, 29(6), 1559-1573. <https://doi.org/10.1016/j.jbankfin.2004.06.028>
- Cardak, B. A., & Wilkins, R. (2009). The determinants of household risky asset holdings: Australian evidence on background risk and other factors. *Journal of Banking & Finance*, 33(5), 850-860. <https://doi.org/10.1016/j.jbankfin.2008.09.021>
- Chen, W. R. (2008). Determinants of firms' backward-and forward-looking R&D search behavior. *Organization Science*, 19(4), 609-622. <https://doi.org/10.1287/orsc.1070.0320>
- Christelis, D., Georgarakos, D., & Haliassos, M. (2013). Differences in portfolios across countries: Economic environment versus household characteristics. *The Review of Economics and Statistics*, 95(1), 220-236. https://doi.org/10.1162/REST_a_00260
- Christelis, D., Georgarakos, D., & Sanz-de-Galdeano, A. (2020). The impact of health insurance on stockholding: A regression discontinuity approach. *Journal of Health Economics*, 69, 102246. <https://doi.org/10.1016/j.jhealeco.2019.102246>
- Christelis, D., Jappelli, T., & Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54(1), 18-38. <https://doi.org/10.1016/j.eurocorev.2009.04.001>
- Chu, Z., Wang, Z., Xiao, J. J., & Zhang, W. (2017). Financial literacy, portfolio choice and financial well-being. *Social Indicators Research*, 132, 799-820. <https://doi.org/10.1007/s11205-016-1309-2>
- Clatworthy, M. A., & Jones, M. J. (2006). Differential patterns of textual characteristics and company performance in the chairman's statement. *Accounting, Auditing & Accountability Journal*, 19(4), 493-511. <https://doi.org/10.1108/09513570610679100>
- Cui, W., & Zhang, Y. (2021). Effect of trust on financial market participation: Evidence from China. *Journal of the Asia Pacific Economy*, 26(3), 442-461. <https://doi.org/10.1080/13547860.2020.1744924>
- Diwei Lv, D., Chen, W., & Lan, H. (2022). Multiple performance pressure inconsistency, resource slack, and the firm's R&D investment: A behavioral agency theory perspective. *BRQ Business Research Quarterly*, 25(2), 100-121. <https://doi.org/10.1177/2340944420916097>
- Dunn, J. R., & Schweitzer, M. E. (2005). Feeling and believing: The influence of emotion on trust. *Journal of Personality and Social Psychology*, 88(5), 736-748. <https://doi.org/10.1037/0022-3514.88.5.736>
- Dusansky, R., & Koç, Ç. (2007). The capital gains effect in the demand for housing. *Journal of Urban Economics*, 61(2), 287-298. <https://doi.org/10.1016/j.jue.2006.07.008>
- Fiegenbaum, A., Hart, S., & Schendel, D. (1996). Strategic

- gic reference point theory. *Strategic Management Journal*, 17(3), 219-235. [https://doi.org/10.1002/\(SICI\)1097-0266\(199603\)17:3%3C219::AID-SMJ806%3E3.0.CO;2-N](https://doi.org/10.1002/(SICI)1097-0266(199603)17:3%3C219::AID-SMJ806%3E3.0.CO;2-N)
21. Grinblatt, M., Keloharju, M., & Linnainmaa, J. (2011). IQ and stock market participation. *The Journal of Finance*, 66(6), 2121-2164. <https://doi.org/10.1111/j.1540-6261.2011.01701.x>
 22. Guiso, L., & Paiella, M. (2008). Risk aversion, wealth, and background risk. *Journal of the European Economic Association*, 6(6), 1109-1150. <https://doi.org/10.1162/JEEA.2008.6.6.1109>
 23. Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. *The Journal of Finance*, 63(6), 2557-2600. <https://doi.org/10.1111/j.1540-6261.2008.01408.x>
 24. Hanoch, Y. (2002). "Neither an angel nor an ant": Emotion as an aid to bounded rationality. *Journal of Economic Psychology*, 23(1), 1-25. [https://doi.org/10.1016/S0167-4870\(01\)00065-4](https://doi.org/10.1016/S0167-4870(01)00065-4)
 25. Harris, J., & Bromiley, P. (2007). Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organization Science*, 18(3), 350-367. <https://doi.org/10.1287/orsc.1060.0241>
 26. Heaton, J., & Lucas, D. (1997). Market frictions, savings behavior, and portfolio choice. *Macroeconomic Dynamics*, 1(1), 76-101. <https://doi.org/10.1017/S1365100597002034>
 27. Hong, H., Kubik, J. D., & Stein, J. C. (2004). Social interaction and stock-market participation. *The Journal of Finance*, 59(1), 137-163. <https://doi.org/10.1111/j.1540-6261.2004.00629.x>
 28. Huang, L., He, L., & Yang, G. (2021). Performance shortfalls and R&D investment change: Aspirations, actions, and expectations. *Sustainability*, 13(6), 3006. <https://doi.org/10.3390/su13063006>
 29. Johnson, E. J., & Tversky, A. (1983). Affect, generalization, and the perception of risk. *Journal of Personality and Social Psychology*, 45(1), 20-31. <https://doi.org/10.1037/0022-3514.45.1.20>
 30. Liang, P., & Guo, S. (2015). Social interaction, Internet access and stock market participation – An empirical study in China. *Journal of Comparative Economics*, 43(4), 883-901. <https://doi.org/10.1016/j.jce.2015.02.003>
 31. Loewenstein, G. (2000). Emotions in economic theory and economic behavior. *American Economic Review*, 90(2), 426-432. <https://doi.org/10.1257/aer.90.2.426>
 32. Lu, L. H., & Wong, P. K. (2019). Performance feedback, financial slack and the innovation behavior of firms. *Asia Pacific Journal of Management*, 36, 1079-1109. <https://doi.org/10.1007/s10490-018-9634-4>
 33. Lu, X., Xiao, J., & Wu, Y. (2021). Financial literacy and household asset allocation: Evidence from micro-data in China. *Journal of Consumer Affairs*, 55(4), 1464-1488. <https://doi.org/10.1111/joca.12406>
 34. Mandal, B., & Brady, M. P. (2020). The roles of gender and marital status on risky asset allocation decisions. *Journal of Consumer Affairs*, 54(1), 177-197. <https://doi.org/10.1111/joca.12261>
 35. Peress, J. (2005). Information vs. entry costs: What explains U.S. stock market evolution? *Journal of Financial and Quantitative Analysis*, 40(3), 563-594. <https://doi.org/10.1017/S0022109000001873>
 36. Rao, Y., Mei, L., & Zhu, R. (2016). Happiness and stock-market participation: Empirical evidence from China. *Journal of Happiness Studies*, 17(1), 271-293. <https://doi.org/10.1007/s10902-014-9594-4>
 37. Rosen, H. S., & Wu, S. (2004). Portfolio choice and health status. *Journal of Financial Economics*, 72(3), 457-484. [https://doi.org/10.1016/S0304-405X\(03\)00178-8](https://doi.org/10.1016/S0304-405X(03)00178-8)
 38. Shi, G. F., Li, M., Shen, T. T., & Ma, Y. (2021). The impact of medical insurance on household stock market participation: Evidence from China household finance survey. *Frontiers in Public Health*, 9, 710896. <https://doi.org/10.3389/fpubh.2021.710896>
 39. Shum, P., & Faig, M. (2006). What explains household stock holdings? *Journal of Banking & Finance*, 30(9), 2579-2597. <https://doi.org/10.1016/j.jbankfin.2005.11.006>
 40. Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), 449-472. <https://doi.org/10.1016/j.jfineco.2011.03.006>
 41. Wolosin, R. J., Sherman, S. J., & Till, A. (1973). Effects of cooperation and competition on responsibility attribution after success and failure. *Journal of Experimental Social Psychology*, 9(3), 220-235. [https://doi.org/10.1016/0022-1031\(73\)90011-5](https://doi.org/10.1016/0022-1031(73)90011-5)
 42. Yue, P., Gizem Korkmaz, A., & Zhou, H. (2020). Household financial decision making amidst the COVID-19 pandemic. *Emerging Markets Finance and Trade*, 56(10), 2363-2377. <https://doi.org/10.1080/1540496X.2020.1784717>