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Crazy Gamblers or Cautious Investors? Evidence from a Peer-to-Peer Market in China

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Abstract

By using data of 10,357 individual investors from Renrendai.com, an established peer-to-peer (P2P) lending platform in China over the period of 2011-2014, we examine whether investors' prior investment outcomes influence their subsequent risk-taking behavior in the credit market. We find strong evidence that a prior trading loss induces greater subsequent risk-taking. Specifically, investors decrease their number of bids and the bidding amount; and choose listings with a lower interest rate and higher credit grade. The investors who obtain more prior gains become more cautious and take on less posterior risk. Overall, our results are consistent with the loss aversion of investors proposed by Kahneman and Tversky (1979).

Keywords: Peer-to-peer lending; loss aversion; investor behaviour; prior return; risk-taking

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1. Introduction

With the growing use of the Internet, the online peer-to-peer (P2P) lending market has emerged as an exotic and low-threshold investment channel that attracts a significant number of participants. Without the layers of costly traditional banking intermediation, the P2P platform provides funding access to individuals and businesses that fail to satisfy conventional banking criteria. Since the first P2P lending platform Paipaidai.com was established in 2007, the number of platforms has increased significantly to a peak of more than 6,000 operating P2P platforms in 2015. However, as the old saying goes, 'too much water will drown the miller'. Chaos ensued in China's online P2P market, and unfortunately, we have seen a major crackdown in the market in recent years. The developments have highlighted the need to understand individuals' investment behaviour on the P2P platforms. While P2P platforms continue to operate in developed economies and a few in China, it is important to understand what makes them more sustainable in the long run from the market participants' perspective and whether market participants behave like gamblers with a Gold Rush-like fever as generally perceived by the public.

Going through the literature, we find some interesting works with different views and findings related to investor's behaviours. On the one hand, using a gambling simulation experiment, Thaler and Johnson (1990) find that the subjects will take on more subsequent risks if they gain more in the previous round of a game. This phenomenon is called the 'house money effect'. On the other hand, the loss aversion derived from the prospective theory (Kahneman and Tversky, 1979) posits that

greater prior gains will make people more cautious, and thus, they will take the less posterior risk. These studies uncover the different relationships between what investors gain previously and what they may do next. Therefore, it is important to understand whether investors behave like gamblers, or they are cautious on the P2P platforms. By using data from Renrendai.com, one of the most influential and most studied Chinese companies in this industry, this study attempts to explore how prior investment outcomes influence subsequent investor behaviour in the credit market, which is under-researched in the literature.

Renrendai.com provides a unique opportunity to examine individual investor's behaviours, as it includes complete investors and borrowers' information from 2011 to 2014. We find strong evidence that a prior trading loss induces greater subsequent risk-taking. Specifically, these investors decrease their number of bids and the bidding amount; and choose listings with a lower interest rate and higher credit grade. Controlling for other factors, such as borrowers' loan duration, loan amount, age, income, and investors' age and education level, the result shows that higher prior return leads to significantly less subsequent risk-taking. Our results are robust to different risk-taking measures.

Our study contributes to the literature in two ways. First, while previous research (e.g., Coval and Shumway, 2005; Liu et al., 2010) on investor's trading behaviour is mainly in the area of derivatives and stock markets, we provide new empirical evidence for loss aversion of individual investors in the credit market. From an investor's point of view, the P2P lending market, as a credit market, shares some

similarities with the derivatives market. Once the derivative (loan) has been issued, investors can transfer and trade their own rights (claims) on the derivative (P2P lending) market. The end of maturity for a derivative security (loan) is the reference point for the investors to judge their gains or losses. Therefore, the previous performance up to the reference point can have a great impact on subsequent investment behaviour. Second, while previous studies focus mainly on institutional investors (e.g., Coval and Shumway, 2005; Haigh and List, 2005), this study demonstrates that individual investors are cautious on Renrendai.com, which is consistent with the behavioural preference of institutional investors observed in other markets. Our findings highlight the complexity of individual risk-taking behaviours, which are consistent with theoretical and experimental studies showing that the relationship between prior outcomes and subsequent risk-taking depends on an individual's role, the purpose of the transaction, and preference bias. Our findings provide some important implications to the regulators. Although the Chinese P2P lending industry has recently been experiencing a crisis, not all of them are in chaos, as some platforms like *Renrendai* with cautious investors act effectively as a funding channel between borrowers and lenders.

The remainder of this paper is organized as follows. Section 2 reviews the related literature. Section 3 discusses the data and methodology. Sections 4 and 5 present and discuss our empirical results and robustness test. Finally, Section 6 concludes this paper.

2. Literature review

Individuals are not always strictly rational and will often use intuition in decision-making (Simon, 1955). Therefore, investors can exhibit behavioural biases (Barbers and Thaler, 2003; Hirshleifer, 2002). Behavioural biases can be categorized as biases in beliefs and biases in preferences (Barbers and Thaler, 2003). Biased beliefs may lead to the house money effect, whereas biases preferences may lead to the house money effect or loss aversion (Coval and Shumway, 2005).

On the loss aversion, Coval and Shumway (2005) study proprietary traders' behavioural biases using data from the Chicago Board of Trade and verify that institutional investors are loss averse and are likely to exhibit preference bias. Meanwhile, Haigh and List (2005) find that professional traders exhibit loss aversion on simulated futures markets, and Weber and Zuchel (2005) document an exhibition of loss aversion in regular investment markets based on an experiment. Related to this, Kahneman and Tversky (1979) demonstrate that individuals decrease their risk tolerance when their wealth exceeds a specific reference point while Gneezy and Potters (1997) and Locke and Mann (2007) also find that investors are loss averse in the stock market.

Liu et al. (2010) show that traders exhibit the house money effect in the TAIEX options market. Hsu and Chow (2013) also find that individual investors display the house money effect in the stock market. Keasey and Moon (1996), Weber and Zuchel (2005), Ackert et al. (2006), and Maximilian et al. (2017) demonstrate that subjects display the house money effect in the lottery setting. Notably, these studies focus on

the futures market, stock market, and lottery. Lippi (2018) shows that the clients become more risk-averse after suffering losses and seek more risk after experiencing gains based on 62 clients of a private bank in Northern Italy. However, there is limited study on how prior investment outcomes influence subsequent investor behaviour in the credit market. With the development of the Internet and emergence of the P2P lending platform, we provide an out-of-sample test using the data from Renrendai.com to examine how investors' prior returns influence their subsequent risk-taking to fill in the gap on behaviour biases.

3. Data and Methodology

3.1 Data

To study the behavioural bias of individual investors in the credit market, we obtain data from Renrendai.com, one of the biggest P2P lending platforms in China. *Renrendai* was found in October 2010 and has the largest number of registered members for P2P lending in China. After years of steady development, *Renrendai* has become a leader in the industry. As of the end of 2019, it had about five million confirmed loans with a total lending amount of 50 billion RMB and a total of 200 million registered lenders to invest in loans. *Renrendai* was rated as an AAA (the highest level) online lending platform by the Chinese Academy of Social Science and the Chinese Fintech Association in 2014 and 2015.

To request a loan on *Renrendai*, a borrower needs to create a loan listing ranging from 3,000RMB to 500,000RMB. The listing is then posted on the bidding system.

The borrower is to submit a statement detailing the use of the fund and provides employment information, annual income, and liabilities. The platform categorizes borrowers into seven credit grades, ranging from AA, A, B, C, D, F to HR, where AA reflects the most recommended ranking, and HR stands for "highest risk". The credit ratings are linked to the information provided by borrowers (e.g., personal identity, education, employment, salary, criminal records, property, vehicle, social media certification). After the listing is posted on the bidding system, the investors have access to the relevant information about the listing and the borrower, including the borrower's credit ranking assigned by the platform. Compared to the traditional credit market, the P2P lending platform offers greater informational transparency, no restrictions on bidding time, less stringent equity constraints, and lower transaction costs.

Our data are collected from Renrendai.com for the period from January 2011 and June 2014[1]. We identify 10,357 investors, who had at least three bids on Renrendai.com during the sample period, and 824 investors with borrowing experience. The data include the loan information (i.e., loan amount, listing time, maturity, and interest rate), borrower information (i.e., age, gender, education, income, employment, residence, property ownership) and investor information (i.e., ID, age, education, gender, married, and credit). If the investors previously invested in

[1] Since 2015, the pricing mechanism on Renreidai.com has changed; the listings with credit certifications have gradually disappeared and machine bidding has become prevalent in the bidding process. To exclude the confounding effect due to institutional changes and to focus on individual investors' lending behaviour, we chose to end the study period to 2014.

Renrendai, their previous bidding history (e.g., bidding amount, number of bids, bidding timing and chosen interest rate) is also traced using the same investor ID.

3.2 Main variables

Following previous studies (e.g., Coval and Shumway, 2005; Liu et al., 2010; Weber et al., 2013; Lippi, 2018; Camerer, 1989; Hey and Orme, 1994) that used past performance (gains/losses) to study future risk-taking behaviour, we measure the past performance as the sum of realized and paper gain/loss on interest in the past three months, given that the minimum loan maturity is three months on *Renrendai*.[2]

Previous studies (e.g., Fisher and Guimaraes, 2013; Noussair et al., 2014) find that interest rates have a key impact on default risk and portfolio performance. Dorn and Huberman (2010) find that the composition of investors' portfolios (e.g., type, amount) reflects an individual's risk preference. For example, more risk-averse customers hold fewer volatile stocks. Emekter et al. (2015) find that the borrower's credit score affects the default risk in P2P lending. Duarte et al. (2012) report that borrowers with better credit scores will have a lower probability of default. Following these previous studies, we use the investors' number of bids, bidding amount, loan credit, and loan interest rate to capture investors' risk-taking. To measure the change in risk-taking, we calculate the difference in bidding volume at *t-3* and *t* (denoted as *Diff_bidnum*), the difference in interest rate at *t-3* and *t* (denoted as *Diff_rate*), the difference in credit at *t-3* and *t* (denoted as *Diff_credit*), and the difference in bidding

[2] As the platform pays certain principal according to the contract, the gains/losses are calculated as the sum of the realized and paper gains/losses on interest.

amount at *t-3* and *t* (denoted as *Diff_bidamount*)). Furthermore, we add the cross-term of the differences in the interest rate and the number of bids, and the cross-term of the differences in interest rate and bidding amount as alternative measures for current risk-taking (denoted as *Diff_cross1 and Diff_cross2,* respectively).

In our study, the main independent variable is profit/loss in the past three months. As investors often choose a reference point when judging their own gains and losses (Kahneman and Tversky, 1979), the difference between investment income in the P2P lending market and risk-free income[3] is defined as past performance.

<Insert Table 1 about here>

We use the other information such as listings' credit grade, loan duration; and borrower's age, education, and gender as control variables. Table 1 lists all the variables in our analysis and their definitions. Table 2 provides descriptive statistics for the variables.

<Insert Table 2 about here>

3.3 Methodology

Following Coval and Shumway (2005) and Liu et al. (2010), we examine whether prior investment outcomes influence subsequent investment behaviour in the credit market. We first calculate whether an investor makes a profit or a loss in the past three months (*t-3*), as the prior return (*Pre_re*). Hence, the prior profit/loss is calculated by the following equations (1)-(4):

[3] The Chinese Treasury bond yield indices are used as the risk-free rate. Thanks to the anonymous reviewer's comments, we have matched the term of loan listings with the corresponding Treasury bond.

$$Pre\_re = pre_{matured}income + pre_{ummatured}income - r_{free} \quad (1)$$

$$pre_{matured}income = \sum_{i=1}^{n} d_i * \mathrm{Pre}\_rate_i * Pre\_bidamount_i * T_i \quad (2)$$

$$pre_{ummatured}income = \sum_{j=1}^{m} d_j * \mathrm{Pre}\_rate_j * Pre\_bidamount_j * T_j \quad (3)$$

$$r_{free} = rate_{free} * (\sum_{i=1}^{n} Pre\_bidamount_i + \sum_{j=1}^{m} Pre\_bidamount_j) \quad (4)$$

$$d_j, d_i = \begin{cases} 1, & \text{not default} \\ -1, & \text{default} \end{cases}$$

where Pre_re is risk-free adjusted investment income, $pre_{matured}income$ is income from matured listings in the past three months, $pre_{ummatured}income$ is the income from unmatured listings in the past three months. r_{free} is the risk free income, and $rate_{free}$ is the risk-free interest rate. Pre_rate_i is the interest rate that is adjusted to a monthly rate for matured listings i, and Pre_rate_j is the interest rate that is adjusted to a monthly rate for unmatured listings j. $Pre\_bidamount_i$ is the bidding amount for matured listings i, and $Pre\_bidamount_j$ is the bidding amount for unmatured listings j. T_i is the loan duration (in month) for matured listings i, and T_j is the loan duration (in month) for unmatured listings j. If the borrower does not default, $d_j = d_i = 1$, otherwise $d_j = d_i = -1$. The annualized interest rate has been provided by the P2P lending platform.

To examine how prior profits and gains affect subsequent risk-taking, we conduct regression analyses to gain additional insights into the magnitude and robustness of the results while controlling for other variables.

The first regression model is considered as follows:

$$Risk_t = a + b_1 Pre\_re + b_2 X + e_i \quad (5)$$

where Risk_t is risk-taking in the current month t. The following proxies are used: the difference between the current interest rate and the prior interest rate (denoted as *Diff_rate*); the difference between the current number of bids and the prior number of bids (denoted as *Diff_bidnum*); the difference between the current bidding amount and the prior bidding amount (denoted as *Diff_bidamount*); the difference between the current credit grade and the prior credit grade (denoted as *Diff_credit*); and the cross-term of the two differences (denoted as *Diff_cross1 and Diff_cross2*). [4] X denotes a set of control variables including the borrower, investor and loan characteristics. We also control for fixed effects ω_i in Equation (5) to control individual heterogeneity. Therefore, Equation (5) can be rewritten as:

$$Risk_t = a + b_1 Pre\_re + b_2 X + \omega_i + e_i \quad (6)$$

Since prior outcomes may influence not only the magnitude of subsequent risk-taking but also whether investors take above-average or below-average risks, we perform the following logistic regression：

$$I\left(Risk_t > Risk_{t-3}\right) = \Lambda(a + b_1 Pre\_re + b_2 X) \quad (7)$$

Here, the dependent variable takes the value of 1 if an investor takes on above-average risk in the current month and 0 otherwise, while independent variables are the same as those defined in Equation (5).

4. Empirical results

4.1. Regression analyses

[4] *Diff_bidamount, Diff_credit, and Diff_Cross2* are used for the robustness test.

Table 3 shows the summary statistics of the different risk measures for investors with prior gains/losses. We report the mean, median and standard deviation of the prior and current interest rate and the number of bids. Panel A shows that, on average, all investors present a lower level of risk-taking in the current month than in the past three months. Specifically, the average interest rate for listing bid by investors in the past three months is 0.138 and the average interest rate of listings bid by investors in the current month is 0.133; the average number of bids for the past three months is 121.382 and the average number of bids in the current month is 115. 822.

Panels B and C report the investors with prior profit and loss, respectively. Investors with prior losses in the past three months place more bids (98.716 in the past 3 months versus 107.042 in the current month). The difference is significant at the 1% level, with a t-value of -5.299. They also bid for listings with a higher interest rate (0.134 in the past 3 months versus 0.135 in the current month), and the difference is significant at the 10% level with a t-value of -1.773. However, investors with prior profits bid less (126.07 in the past 3 months versus 117.639 in the current month) and bid for listings with a lower interest rate (0.139 in the past 3 months versus 0.133 in the current month). The differences are significant at the 1% level. The univariate test results indicate that investors are loss averse in the P2P lending market.

<Insert Table 3 about here>

Next, we run pooled OLS regression, panel regression with fixed effects and logistic regression for subsequent risk-taking indicators (*Diff_rate, Diff_bidnum* and *Diff_cross1*), when we include a set of control variables (e.g., information of the loan,

borrower and investors). The multivariate regression results of subsequent risk-taking based on prior profit/loss are reported in Table 4. All of the models demonstrate a strong negative relationship between prior investment outcomes and subsequent investor behaviour; that is, individual investors become more risk averse after earning higher returns in the past three months. After controlling borrowers' information (e.g, wealth, gender,), the influence of prior return on subsequent risk-taking (i.e., *Diff_rate, Diff_bidnum* and *Diff_cross1*) is still significant at the 1% level in columns (1), (2) and (3) of Table 4. We find similar results in columns (4), (5) and (6) of Table 4. While the loan amount, loan duration, and borrower's education level affect investors' risk-taking behaviour, the relationship between their prior returns and subsequent risk-taking remains significant. In addition, considering the investors who submit a lower number of bids but choose listings at a higher interest rate at the same time, we verify the relationship using the crossing term (*Diff_cross1*), and the result is still negatively significant in columns (7), (8) and (9). In sum, the investors with higher prior returns will tolerate lower risks, which is consistent with univariate test results in Table 3.

<Insert Table 4 about here>

Furthermore, previous studies have attempted to connect risk preferences with investor's demographic characteristics, such as age, gender and education (e.g., Halek and Eisenhauer, 2001; Dwyer et al., 2002). Women are found to be more risk-averse (e.g., Eckel and Grossman, 2008; Lusardi and Mitchell, 2008), while men tend to be more confident (e.g., Croson and Gneezy, 2009; Eckel and Grossman, 2008).

Oechssler et al. (2009) also indicate that cognitive ability is positively correlated with educational background. Therefore, to study the relationship between prior profit and subsequent risk-taking, we control for both listings information (e.g., loan amount, loan duration) and investors information based on the data about investors with borrowing experience on *Renendai* (e.g., gender, age, marriage status, income, lending experience and their credit grade). The results are presented in Table 5.Again，we find a strong negative relationship between prior trading outcomes and subsequent risk-taking using three regression models based on three different risk indicators. Although the investors' credit grade promotes their subsequent risk-taking behaviour, the influence of prior return is significant at the 1% level. In sum, the additional analyses confirm the negative relationship between prior outcomes and subsequent risk-taking.

<Insert Table 5 about here>

4.2 Discussion

To date, the relationship between prior investment outcomes and subsequent risk-taking is not conclusive in the literature. Liu et al. (2010) show extant studies, availing data on various types of investors and markets, and adopting different methods to measure prior outcomes and subsequent risk-taking that generate different results.

In addition to the reasons listed above, we suggest that several other factors contribute to different results in the literature. Clients in Lippi's (2018) study chose portfolios created by professionals according to a certain proportion of risk, including

mutual funds, managed portfolios, insurance and pension funds. However, the individual investors in our study chose listings by judging the risk based mainly on the information provided by the platform (e.g., loan amount, loan duration, and other soft information). Comparing our study with Lippi's research, investors and clients exhibit different investment behaviours when they face different risks. Since the clients in Lippi's study chose portfolios combined by professionals, their risks are lower. Therefore, sensitivity to gains and losses is likely to differ.

The other analysis is based on the psychology literature. Langer and Roth (1975) and Miller and Ross (1975) show that humans take full credit for their past successes but attribute past failures to bad luck. Kruger and Dunning (1999) shows the Dunning-Kruger effect[5], wherein success builds confidence and failure undermines it. Intuitively, self-efficacy (Bandura, 1982) refers to human confidence in their ability to complete a task. Lippi's (2018) analysis agrees with the Dunning-Kruger effect that clients build confidence when their investment is successful. Moreover, they find it easier to attribute the transaction profit to self-efficacy and the loss to the influence of luck. Therefore, they find that the subjects become more risk averse after suffering losses and become more risk-seeking after experiencing gains. However, Benartzi and Thaler (1995) and Barberis et al. (2001) build a model where investors with such preferences consider a kink at zero, implying that profits near zero will lead to extremely high subsequent risk aversion. Kahneman and Tversky (1979) show that

[5] Kruger (1999) proposes the Dunning-Kruger effect, which implies that people tend to hold overly favorable views of their abilities in many social and intellectual domains.

the negative utility of loss is 2 to 2.5 times the positive utility of income when it comes to earnings, people are risk averse; when it comes to losses, people are risk-seeking. We demonstrate a strong negative relationship between the investors' prior trading outcomes and subsequent risk-taking, which is consistent with the prospect theory of Kahneman and Tversky (1979).

5. Robustness Tests

5.1 Alternative risk-taking measures

For robustness, we consider the difference in investors' bidding amount and the difference in the credit rating of listings as alternative risk-taking measures. First, we rerun the regressions controlling the borrower's information based on the full sample. The results in Table 6 indicate that the relationship between prior investment outcomes and subsequent investor behaviour stays significant and negative. The impact on the bidding amount is similar to that on the bidding volume, and investors with higher prior returns will choose the borrowers with a higher credit rating in the later period.

<Insert Table 6 about here>

Next, we control for the information of both the borrowers and investors simultaneously using a smaller sample. The results in Table 7 remain qualitatively the same. Overall, we find strong evidence that investors are loss averse in the credit market.

<Insert Table 7 about here>

5.2. Small vs. large investors

In our main results, on average, all investors exhibit loss aversion, which has been documented in the literature only for institutional investors (e.g., Coval and Shumway, 2005; Haigh and List, 2005). To further investigate whether individual retail investors are cautious investors, we divide investors into two groups according to their number of bids and bidding amounts, respectively. We then sort the data by the number of bids and bid amounts and consider the bottom 20% as small investors and the top 20% as institutional investors.[6] We conduct pooled-OLS regression and panel regression with fixed effects. We find that institutional investors exhibit larger loss aversion compared to small investors (see Tables 8). In particular, we find a significant difference when comparing columns (1) and (9), columns (2) and (10), columns (3) and (11), columns (4) and (12), columns (6) and (14) and columns (8) and (16) in Table 8. Although the coefficients of prior gain/loss in columns (5), (7), (13), and (15) in Table 8 are all significant at the 1% level, the magnitude of coefficients in columns (13) and (15) are much larger than those in columns (5) and (7). In sum, we find that institutional investors exhibit larger loss aversion compared to small investors, but individual small investors are also cautious investors.

<Insert Table 8 about here>

[6] Hanley and Wilhelm (1995) verify that institutional investors allocate approximately 70% of their shares to underpriced offerings. Krigman et al. (1999) show that institutional investors engage in a block trade.

6. Conclusion

Although the prospect theory describes risk-taking behaviour in relatively static terms, more effort needs to be devoted to understanding how people make decisions when they face a sequence of tasks. The P2P lending platform, such as Renrendai.com, provides a good opportunity to understand the behaviour of individual investors within a dynamic context and to study the behaviour of individual investors.

This study shows that individual investors exhibit less risk-taking after gaining prior profits in the credit market. Further, by controlling the information of borrowers and investors, we find that the significant results remain unchanged, which means that individual investors are loss averse regardless of their social attributes (e.g., age, gender, and education), especially in the credit market. These results are consistent with institutional investors' behavioural bias, which indicates that investors in Renrendai.com are not crazy gamblers. Thus, this study complements the lack of relevant research in the credit market and provides some reference for policymakers and regulators to take measures to promote the stable development of information intermediary platforms.

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Table1 Definition of variables

Main variables	Description
P_rate	Interest rate of listings selected by investors in the current month.
P_num	The average number of bids by investors in the current month.
P_ bidamount	The average value of bidding amount by investors in the current month.
P_ credit	The average credit grade of listings selected by investors in the current month.
Pre_rate	The average interest rate of listings selected by investors in the past three months.
Pre_num	The average number of bids by investors in the past three months.
Pre_ bidamount	The average value of bidding amount by investors in the past three months.
Pre_ credit	The average credit grade of listings selected by investors in the past three months.
Diff_rate	The difference in interest rate in t-3 and t; *Diff_rate= P_rate- Pre_rate.*
Diff_bidnum	The difference in bidding volume in t-3 and t; *Diff_bidnum= P_num- Pre_num.*
Diff_credit	The difference in credit grade in t-3 and t; *Diff_credit= P_credit- Pre_ credit.*
Diff_bidamount	The difference in bidding amount in t-3 and t; *Diff_bidamount = P_ bidamount - Pre_ bidamount.*
Diff_cross1	The cross term is *Diff_ cross1= P_rate* P_num- Pre_rate* Pre_num.*
Diff_ cross2	The cross term is *Diff_ cross2= P_rate* P_bidamount- Pre_rate* Pre_bidamount.*
Pre_re	Investor's risk-free adjusted investment income (profit/loss) in the past three months.
Control variables	**Description**
Amount	The amount of capital required by the borrower.
Duration	The term of the loan set by the borrower.
L_age	The age of investor: 1 for the age below 48 and 0 otherwise.
L_gender / B_gender	The gender of investor (borrower): 1 for males and 0 for females.
L_maritual	The marital status of investor: 1 if he/she is married and 0 if divorced or single.
L_education/ B_education	The education level of investor (borrower): 0 for high school and below; 1 for undergraduate and above.
L_income/B_income	The salary income of investor (borrower): the value below 1,000 RMB is 1; the value 1,001-2,000 RMB is 2; the value 2,001 and 5,000 RMB is 3; the value 5,001-10,000 RMB is 4; the value 10,001-20,000 RMB is 5; the value 20,001-50,000 RMB is 6; the
L_creidit	The credit grade of the investors with borrowing experience.
L_success	The number of successful loans by investors with previous borrowing experience.
B_house/B_car	The wealth level of the borrower: 1 if they have car property or real estate and 0 otherwise.

Table 2 Summary statistics

Variables	Mean	Std. Dev.	Median	P10	P90
Pre_re	23723	368388	6514.65	129.66	106137.5
Diff_rate	-0.047	0.163	-0.047	-0.048	-0.045
Diff_bidnum	121.382	98.561	93.335	16.667	208.395
Diff_credit	0.256	1.513	0	-1.651	2.223
Diff_bidamount	561.388	1631.891	67.138	-413.085	3171.430
Diff_cross1	0.133	0.018	0.13	0.115	0.164
Diff_ cross2	67.978	221.600	3.787	-64.744	350.883
Amount	100924	96455.38	66000	4000	500000
Duration	11.095	6.425	10.2	3.3	12
B_gender	0.86	0.347	1	0	1
B_income	1.884	1.031	2	0	3
B_education	0.935	0.859	1	0	2
B_house	0.554	0.497	1	0	1
B_car	0.517	0.499	1	0	1
L_gender	1.683	0.603	2	1	2
L_age	1.798	0.603	1	1	3
L_maritual	1.653	0.494	2	1	2
L_income	3.896	1.236	4	3	6
L_education	2.648	0.849	3	1	4
L_credit	1.934	1.820	1	1	5
L_success	1.888	8.824	0	0	4

Note: We identify 10,357 individual investors between January 2011 and June 2014 on Renrendai.com. There are 824 individual investors with previous borrowing experience on *Renrendai* including their age, gender, marital status, income, education, credit grade for loan listings, and successful borrowing experience.

Table 3 Summary statistics of subsequent risk-taking and prior return

	Past 3-month (t-3)			Current month (t)			Diff
	Mean	Median	Std.dev	Mean	Median	Std.dev	t-stats
Panel A. All investors (10,357)							
Number of bids	121.382	93.335	98.56	115.821	58	124.434	9.073***
Interest rate	0.138	0.137	1.672	0.133	0.13	1.754	54.911***
Panel B. Investors with prior loss (1,876)							
Number of bids	98.716	46	111.841	107.042	44	126.102	-5.299***
Interest rate	0.134	0.13	2.006	0.135	0.13	2.057	-1.773*
Panel C. Investors with prior gain (8,481)							
Number of bids	126.070	104.877	94.904	117.639	61.5	124.011	12.731***
Interest rate	0.139	0.138	1.568	0.133	0.13	1.685	61.344***

Note: We identify 10,357 individual investors between January 2011 and June 2014 on Renrendai.com. *The number of bids* is the number of bids by investors in the current month and in the past three months, respectively; Interest rate is the average interest rate of listings bid by investors in the current month and in the past three months, respectively. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4 Prior return and subsequent risk-taking

	Diff_rate			*Diff_bidnum*			*Diff_cross1*		
	Pooled	Panel	Logistic	Pooled	Panel	Logistic	Pooled	Panel	Pooled
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(7)
Pre_re	-0.029***	-0.025***	-1.379***	-0.114***	-0.117***	-0.126***	-1.069***	-1.060***	-1.069***
	(-7.95)	(-59.06)	(-48.63)	(-4.43)	(-36.45)	(-10.49)	(-2.71)	(-19.67)	(-2.71)
Amount	0.003	0.002***	-0.145***	0.047	-0.069***	0.267***	-2.994***	-3.122***	-2.994***
	(0.83)	(3.86)	(-11.67)	(1.3)	(-15.84)	(23.01)	(-6.72)	(-5.74)	(-6.72)
Duration	0.000	0.003**	0.141***	0.015*	0.204***	-0.297***	9.715***	9.697***	9.715***
	(0.15)	(2.39)	(12.46)	(1.74)	(18.52)	(-26.18)	(10.52)	(8.035)	(10.52)
B_income	0.000	0.000	0.034***	0.000	-0.000	0.133***	-0.253	-0.348***	-0.253
	(1.07)	(0.58)	(3.06)	(0.24)	(-0.27)	(13.07)	(-0.45)	(-4.89)	(-0.45)
B_house	0.000	0.000	0.036	0.000	0.000	0.075***	0.265**	0.307***	0.265**
	(0.95)	(1.13)	(1.53)	(0.19)	(0.21)	(3.42)	(2.05)	(14.62)	(2.05)
B_car	-0.001**	-0.001**	0.085***	0.001	0.000	0.172***	0.008	0.009	0.008
	(-2.17)	(-2.2)	(3.57)	(0.29)	(0.25)	(7.88)	(0.4)	(0.4)	(0.4)
B_gender	0.001**	0.001**	0.018	-0.001	-0.001	0.016	0.002	0.004	0.002
	(2.21)	(2.05)	(0.61)	(-0.32)	(-0.31)	(1.39)	(0.04)	(0.08)	(0.04)
B_educationn	-0.000	-0.000	0.017	-0.003**	-0.003**	0.016	0.001	0.001	0.001
	(-1.08)	(-1.07)	(1.37)	(-2.12)	(-2.13)	(1.39)	(0.02)	(0.02)	(0.02)
Con	-3.032***	-4.543***	-1.911***	2.813***	3.415***	-0.227***	-0.023	-0.023	-0.023
	(-5.26)	(9.145)	(9.33)	(5.69)	(8.48)	(1.39)	(-0.41)	(-0.41)	(-0.41)
N	63,087	63,087	63,987	63,087	63,087	63,087	63,087	63,087	63,087
R^2	0.053	0.040	0.100	0.098	0.085	0.041	0.064	0.045	0.029

Note: We identify 10,357 individual investors between January 2011 and June 2014 on Renrendai.com. *Diff_rate* is the difference between the listing interest rate in the current month and the past three months; *Diff_bidnum* is the difference between the number of bids in the current month and the past three months. *Pre_re* is investor's risk-adjusted investment income in the prior period. *Diff_cross1* is the cross-term of the two differences as an alternative measure for risk-taking. *p<0.1, **p<0.05, and ***p<0.01. t-statistics are in parentheses.

Table 5 Prior return and subsequent risk-taking based on information of borrowers and lenders

	Diff rate			*Diff bidnum*			*Diff cross1*		
	Pooled	Panel	Logistic	Pooled	Panel	Logistic	Pooled	Panel	Logistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pre_re	-0.188***	-0.223***	-1.088***	-0.197****	-0.286***	-0.365***	-0.229***	-1.949***	-0.258***
	(-5.85)	(-9.42)	(-13.59)	(-6.70)	(-11.02)	(-10.57)	(-6.34)	(-12.20)	(-7.57)
Amount	0.043**	0.058***	2.512***	0.747***	0.788***	2.909***	2.116***	2.471***	4.935***
	(2.5)	(4.13)	(23.08)	(8.06)	(2.66)	(4.88)	(7.13)	(4.69)	(4.36)
Duration	0.242***	0.260***	0.308***	0.039***	0.034	0.129*	-1.023**	-0.847*	-0.254*
	(11.91)	(16.28)	(5.07)	(3.41)	(2.73)	(1.86)	(-2.28)	(-1.82)	(-1.78)
B_income	-0.004	-0.008	-0.105***	-0.045***	-0.023	-0.115***	-0.009	0.039	-0.262***
	(-0.22)	(-0.51)	(-2.89)	(-2.85)	(-1.33)	(-3.12)	(-0.85)	(0.89)	(-7.01)
B_house	0.021	0.017	-0.044	-0.022	-0.007	-0.062*	0.001	-0.003	0.021
	(1.49)	(1.08)	(-1.23)	(-1.47)	(-0.40)	(-1.72)	(0.07)	(-0.08)	(0.56)
B_car	0.003	-0.008	-0.078**	-0.026	-0.013	-0.088**	-0.024**	-0.028	-0.252***
	(0.23)	(-0.56)	(-2.18)	(-1.58)	(-0.75)	(-2.44)	(-2.35)	(-0.67)	(-6.81)
B_gender	0.022	0.024*	-0.026	0.004	0.003	-0.026	0.004	0.017	0.031
	(1.62)	(1.70)	(-0.79)	(0.27)	(0.22)	(-0.79)	(0.40)	(0.45)	(0.89)
B_educationn	-0.002	-0.001	-0.016	0.005	0.003	-0.026	0.015*	0.046	0.139***
	(-0.07)	(-0.10)	(-0.50)	(0.31)	(0.20)	(-0.82)	(1.73)	(1.24)	(4.20)
L_gender	0.009	0.041	-0.240**	0.005	0.044	-0.142	9.180***	10.19***	2.300***
	(0.35)	(0.07)	(-2.47)	(0.31)	(0.09)	(-1.51)	(3.192)	(4.671)	(15.80)
L_age	-0.008	0	0.062	0.029	0	0.138	0.166***	0.150***	0.057***
	(-0.3)	(.)	(0.56)	(1.14)	(.)	(1.32)	(4.21)	(3.16)	(4.37)
L_maritual	0.007	0	-0.182*	-0.022	0	-0.107	-1.262*	-0.523	-0.637***
	(0.2)	(.)	(-1.68)	(-0.90)	(.)	(-1.04)	(-1.21)	(.)	（-1.66）
L_education	-0.001	0	-0.058	-8.783	0	-0.223	-1.115	0	-0.435*
	(-0.51)	(.)	(-0.45)	(-1.350)	(.)	(-0.84)	(-1.21)	(.)	（-1.66）
L_income	0.035	0	0.105	0.011	0	0.007	0.500	0	0.166
	(1.21)	(.)	(1.00)	(0.43)	(.)	(0.07)	(1.29)	(.)	（1.60）
L_success	0.008***	0	0.162	0.005***	0	0.102	0.046	0	0.049
	(2.79)	(.)	(1.29)	（2.78）	(.)	(0.91)	(1.56)	(.)	(1.04)
L_credit	0.054	0	0.743***	0.183***	0	0.802***	1.239***	0	0.467***
	(1.47)	(.)	(5.75)	(6.43)	(.)	(6.82)	(4.88)	(.)	(5.95)
Con	-0.080***	-0.068***	-0.323***	-0.004	-0.027	-1.0092***	-1.373***	-1.557***	-3.193***
	(-2.69)	(-3.02)	(-3.08)	(-0.14)	(-1.57)	(-9.74)	(-5.61)	(-4.87)	(-9.09)
N	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261
R^2	0.025	0.092	0.047	0.083	0.494	0.050	0.29	0.27	0.060

Note: We have identified 824 individual investors with previous borrowing experience on Renrendai between January 2011 and June 2014. We present parameter estimates based on pooled OLS regression, panel regression, and logistic regression, respectively. *Diff_rate* is the difference between the listing interest rate in the current month and past three months; *Diff_bidnum* is the difference between the number of bids in the current month and past three months; *Diff_Cross1* is the cross-term of the two differences as an alternative measure for risk-taking; *Pre_re* is investor's risk-adjusted investment income in the prior period. *p<0.1, **p<0.05, and ***p<0.01. t-statistics are in parentheses.

Table 6 Prior return and subsequent risk-taking using alternative risk-taking measures

	Diff_bidamount			*Diff_credit*			*Diff_ cross2*		
	Pooled	Panel	Logistic	Pooled	Panel	Logistic	Pooled	Panel	Logistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pre_re	-0.058*	-0.071***	-0.879*	0.035**	0.107***	0.783**	-0.064**	-0.064***	-0.885***
	(-1.95)	(-2.95)	(-1.86)	(2.05)	(2.85)	(2.41)	(-2.36)	(-6.06)	(-6.49)
Amount	-0.008	-0.005	-0.335***	-0.056	-0.029	-0.256	0.008	0.006	0.333***
	(-0.30)	(-0.89)	(-5.50)	(-1.06)	(-1.42)	（-0.54）	(0.30)	(0.98)	(5.27)
Duration	-0.074***	-0.086***	-0.827***	-0.034	0.011	1.154*	0.074***	0.075***	0.822***
	(-2.63)	(-7.16)	(-5.19)	(-0.94)	(0.64)	（1.71）	(2.64)	(6.20)	(5.16)
B_income	0.001	0.001	0.063***	0.003*	-0.002	-0.182	-0.001	-0.001	-0.065***
	(0.76)	(0.74)	(5.24)	(1.86)	(-0.55)	（-0.39）	(-0.68)	(-0.59)	(-5.39)
B_house	-0.001	-0.001	0.010	-0.004**	0.008*	-0.040	0.001	0.001	-0.008
	(-0.49)	(-0.68)	(0.77)	(-2.39)	(1.88)	（-0.08）	(0.51)	(0.44)	(-0.63)
B_car	-0.000	-0.000	0.050***	-0.001	-0.005	-0.180	0.000	0.000	-0.055***
	(-0.31)	(-0.18)	(4.00)	(-0.85)	(1.06)	（-0.37）	(0.24)	(0.28)	(-4.37)
B_gender	0.001	0.001	-0.021*	0.003**	-0.003	0.074	-0.001	-0.001	0.021*
	(0.81)	(1.22)	(-1.90)	(2.41)	(-0.68)	（0.19）	(-0.77)	(-0.79)	(1.93)
B_education	0.001	0.001	-0.036***	0.002	0.002	-0.236	-0.001	-0.001	0.036***
	(0.49)	(0.70)	(-3.17)	(1.44)	(0.49)	（-0.59）	(-0.47)	(-0.53)	(3.23)
Con	-0.319***	0.033***	-1.618***	-0.276***	0.004	0.008**	0.317***	-0.012***	1.623***
	(-2.90)	(3.41)	(4.03)	(-2.59)	(0.98)	（4.84）	(2.87)	(3.03)	(4.23)
N	65,917	65,917	65,917	65,917	65,917	65,917	65,917	65,917	65,917
R^2	0.290	0.220	0.182	0.013	0.008	0.003	0.303	0.300	0.183

Note: We have identified 10,357 individual investors and more than 60,000 bidding records between January 2011 and June 2014. *Diff_bidamount* is the difference between the bidding amount in the current month and past three months; *Diff_credit* is the difference between the listing credit rating in the current month and past three months; *Diff_ cross2* is the cross-term of the two differences as an alternative measure for risk-taking; *Pre_re* is investor's risk-adjusted investment income in the prior period. *p<0.1, **p<0.05, ***p<0.01. t-statistics are in parentheses.

Table 7 Prior return and subsequent risk-taking based information of borrowers and lenders

	Diff_bidamount			*Diff_credit*			*Diff_ cross2*		
	Pooled	Panel	Logistic	Pooled	Panel	Logistic	Pooled	Panel	Logistic
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Pre_re	-0.247***	-0.177***	-1.162***	0.018*	0.045*	0.054	-0.272***	-0.190***	-1.242***
	(-7.69)	(-7.91)	(-3.89)	(1.71)	(1.83)	(1.34)	(-7.56)	(-7.98)	(-3.96)
Amount	0.032	0.064***	-0.096**	0.316***	0.345***	0.705***	-0.310	-0.064***	0.097**
	(1.23)	(4.40)	(-2.35)	(7.22)	(3.16)	(7.47)	(-1.20)	(-4.34)	(2.37)
Duration	-0.009	-0.014	-0.042	-0.123***	-0.150***	-0.310***	0.012	0.017	0.049
	(-0.54)	(-0.84)	(0.99)	(7.72)	(-8.26)	(-7.27)	(0.74)	(1.03)	(1.16)
B_income	-0.022*	-0.010	-0.039	0.005	0.010	-0.061*	0.023**	0.010	0.036
	(-1.92)	(-0.61)	(-0.85)	(0.26)	(0.56)	（-1.70）	(2.01)	(0.64)	(0.76)
B_house	-0.006	-0.006	-0.001	-0.034**	-0.030*	-0.043	0.007	0.006	0.001
	(-0.40)	(-0.37)	(-0.01)	(-2.15)	(-1.73)	(-1.21)	(0.46)	(0.41)	(0.01)
B_car	-0.005	0.001	0.008	-0.034**	-0.023	-0.024	0.004	-0.002	-0.024
	(-0.40)	(0.08)	(0.18)	(-2.16)	(-1.36)	(-0.69)	(0.33)	(-0.14)	(-0.53)
B_gender	-0.000	-0.004	-0.020	-0.014	-0.014	-0.0313	0.001	0.005	0.013
	(-0.01)	(-0.27)	(-0.47)	(-0.92)	(-0.90)	(-0.97)	(0.07)	(0.32)	(0.29)
B_education	0.008	-0.000	0.022	-0.005	-0.004	-0.060*	-0.008	0.001	-0.023
	(0.66)	(-0.01)	(0.53)	(-0.39)	(-0.29)	(-1.94)	(-0.64)	(0.04)	(-0.57)
L_gender	-0.063**	0.187	-0.186***	-0.056***	0.278	-0.065	0.061**	-0.181	0.179***
	(-2.32)	(0.29)	(-4.83)	(-2.67)	(0.39)	（-1.47）	(2.30)	(-0.28)	(4.64)
L_age	0.026	0	0.107**	-0.026	0	0.089*	-0.026	0	-0.101**
	(1.30)	(.)	(0.50)	(-1.05)	(.)	（1.86）	(-1.30)	(.)	(-2.37)
L_maritual	-0.030	0	-0.054	-0.029	0	-0.114*	0.030	0	0.051
	(-1.35)	(.)	(-1.24)	(-1.17)	(.)	（-2.44）	(1.36)	(.)	(1.18)
L_income	0.102***	0	0.119***	0.005	0	-0.011	-0.103***	0	-0.125***
	(2.77)	(.)	(3.16)	(-0.20)	(.)	（-0.23）	(-2.77)	(.)	(-3.31)
L_success	0.039**	0	0.108**	0.046	0	0.049	-0.038*	0	-0.109**
	(1.98)	(.)	(2.56)	(1.56)	(.)	(1.04)	（-1.89）	(.)	(-2.56)
L_credit	0.054	0	0.071*	0.027	0	0.121***	0.001	0	-0.078*
	(1.47)	(.)	(1.74)	(1.13)	(.)	(2.37)	(0.02)	(.)	(-1.93)
Con	-0.003	-0.014	-1.443***	0.012	-0.016	-0.154***	-0.028	0.013	1.442***
	(-0.099)	(-0.61)	(-2.70)	(0.56)	(-0.64)	(-3.51)	(-0.94)	(0.55)	(2.65
N	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261
R^2	0.200	0.022	0.200	0.016	0.059	0.010	0.199	0. 165	0.060

Note: We have identified 824 individual investors with previous borrowing experience on Renrendai between January 2011 and June 2014. *Diff_bidamount* is the difference between the bidding amount in the current month and past three months; *Diff_credit* is the difference between the listing credit in the current month and past three months; *Diff_ cross2* is the cross-term of the two differences as an alternative measure for subsequent risk-taking; *Pre_re* is investor's risk-adjusted investment income in the prior period. *p<0.1, **p<0.05, ***p<0.01. t-statistics are in parentheses.

Table 8 Comparing investors at the top 20% and bottom 20%

	Bottom 20% (small)								Top 20% (large)							
	Pooled				Panel				Pooled				Panel			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Diff_bidnu	*Diff_bidamount*	*Diff_cross1*	*Diff_ Cross2*	*Diff_bidnu*	*Diff_bidamoun*	*Diff_cross1*	*Diff_cross2*	*Diff_bidn*	*Diff_bidam*	*Diff_cross*	*Diff_cross*	*Diff_bidnu*	*Diff_bidam*	*Diff_cross1*	*Diff_cross2*
Pre_re	-0.06	-0.267	-0.15**	-0.075	-0.12***	-0.043	-0.060***	-0.091**	-0.76***	-0.084*	-0.89***	-0.268*	-0.84***	-0.222***	-0.404***	-0.279***
	(-1.6)	(-1.03)	(-2.5)	(0.27)	(-16.8)	(-1.60)	(-2.70)	(2.33)	(-4.65)	(-1.82)	(-4.9)	(-1.85)	(-27.6)	(-4.42)	(-25.64)	(-9.12)
Amount	-0.11**	-0.047	-0.11**	0.260	-0.10***	-0.100***	-0.031***	0.271***	-0.06*	-0.266	-0.04	-0.048	-0.06***	-0.077***	-0.060***	-0.053***
	(-2.14)	(0.77)	(-2.08)	(1.00)	(-15.08)	(-2.78)	(-5.72)	(7.38)	(-1.80)	(-1.03)	(-0.78)	(0.79)	(-9.52)	(-3.01)	(-4.22)	(-3.76)
Duration	0.06	0.012	0.10***	-0.063	0.05***	0.034***	-0.000	-0.084***	-0.00	0.067	-0.02	-0.013	0.00	0.108***	0.015***	-0.015*
	(1.52)	(0.27)	(3.10)	(-0.35)	(8.00)	(4.74)	(0.03)	(-4.10)	(-0.02)	(0.36)	(-0.95)	(-0.30)	(0.16)	(5.20)	(4.78)	(-1.87)
B_incom	0.00	0.005	-0.00	-0.000	0.00	-0.000	-0.001	-0.000	-0.00	0.001	0.00	-0.005	-0.00	-0.000	-0.001	-0.005**
	(0.02)	(1.55)	(-0.89)	(-0.10)	(0.12)	(-0.06)	(-0.67)	(-0.13)	(-0.48)	(0.16)	(0.43)	(-1.53)	(-0.38)	(-0.15)	(-0.70)	(-2.29)
B_house	-0.00	-0.003	0.00	0.002	-0.00	-0.001	0.00	0.002	0.00	-0.001	0.00	0.003	0.00	-0.000	0.002	0.003
	(-0.40)	(-1.49)	(0.49)	(0.37)	(-0.38)	(-0.47)	(0.45)	(0.54)	(0.43)	(-0.32)	(0.04)	(1.27)	(0.34)	(-0.12)	(1.47)	(1.25)
B_car	-0.00	0.000	0.00	0.001	-0.00	-0.001	0.00	0.002	0.00	-0.001	0.00	-0.000	0.00	-0.001	-0.002**	-0.000
	(-0.33)	(0.05)	(0.65)	(0.48)	(-0.17)	(-0.56)	(0.85)	(0.42)	(0.25)	(-0.58)	(0.39)	(-0.08)	(0.30)	(-0.48)	(-2.08)	(-0.08)
B_gende	-0.001	0.002	-0.000	-0.001	-0.001	-0.002*	-0.00	-0.000	-0.000	0.001	0.000	-0.002	-0.000	0.001	-0.000	-0.002
	(-1.20)	(0.98)	(-0.58)	(-0.26)	(-1.02)	(-1.86)	(-0.46)	(-0.20)	(-0.68)	(0.33)	(0.22)	(-0.95)	(-0.66)	(0.49)	(0.18)	(-1.04)
B_educa	-0.001	-0.003	0.000	0.001	-0.001	0.001	0.00	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.003
	(-1.14)	(-1.45)	(0.27)	(0.05)	(-1.19)	(0.75)	(0.19)	(0.05)	(0.52)	(0.02)	(0.21)	(1.48)	(0.47)	(0.17)	(0.12)	(1.49)
Con	0.49***	-0.751***	0.44***	-1.008***	-0.11***	-0.159***	-0.08***	-1.602***	-1.42***	1.008***	-1.71***	0.764***	0.002***	1.555***	0.002***	0.726***
	(7.68)	(-5.37)	(6.95)	(-4.89)	(6.213)	(6.213)	(2.91)	(-8.75)	(-8.01)	(4.89)	(-8.08)	(5.52)	(3.51)	(5.79)	(3.79)	(3.44)
N	12,997	11,710	11,497	12,932	12,997	11,710	13648	12,932	13,662	12,865	13,693	12,097	13,662	12,865	11,567	12,097
R^2	0.083	0.107	0.078	0.006	0.097	0.006	0.150	0.03	0.190	0.006	0.052	0.108	0.104	0.117	0.065	0.108

Notes. We have identified 10,357 individual investors between January 2011 and June 2014. We present parameter estimates by using pooled OLS and the panel regression with fixed effect, respectively. We sort the data by the number of bids and consider the bottom 20% as small investors and top 20% as large investors. *p<0.1, **p<0.05, and ***p<0.01.