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Full Research Paper

Do Online Platforms Provide Valuable Information for Individual Investors? An Examination of Platform Recommendations

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Abstract: While more mutual funds are traded via online platforms, it is yet to be known whether those platform recommendations play a salient role in affecting investors' decisions. Based on an examination of 1,295 mutual funds traded on online platform, the study finds that funds recommended by the platform receive a higher fund flow than those are not. However, choosing to invest in those recommended funds does not guarantee higher returns than investing in those without recommendations. Results revealed that the average investor values the platform recommendations when allocating individuals' wealth, but it could not help investors make better investment decisions. The findings make contributions to the business activity of fund transactions and buyer behavior research by investigating the effect of platform recommendations on fund flow and performance.

Keywords: Mutual funds, Platform recommendations, Fund flows, Fund performance, Online platform

1. INTRODUCTION

Fund rating, such as Star Ratings and Analyst Ratings, etc., has always been an important reference for investors during the process of investment allocation. These rating results are usually launched by third-party professional institutions that are independent of fund firms. Academic research largely shows that funds with higher ratings generally have higher flows, and investors will also get a higher return by investing in those funds [4]. Andreas et al.(2018) have also argued that the popular star ratings have important reference value for investors' investment allocation decisions.

Although these advances in fund ratings, the existing research mainly focuses on the rating methods launched by third-party institutions such as Morningstar and brokerage firms. However, a new trend of trading behavior has emerged due to the advancements in Internet-based technologies. Retail investors increasingly choose to purchase mutual funds online, because it is more convenient than traditional offline channels. As a result, a new kind of fund rating system is introduced, that is online platform recommendation. It is distinct from a traditional five-star rating system mainly in the following two aspects. The first thing is that the platform recommendation rating divides all funds traded on the online platform into two types: platform-recommended funds and non-platform-recommended funds, while a typical star rating system classifies funds into more categories, for example, MorningStar introduces a five-stars rating system. Second, as far as rating issuing agencies, the online platforms play two roles, agency for fund sales and fund ratings, while the traditional five-star rating agencies, such as Morningstar, are independent third-party agencies. In sum, we find that platform recommendation is largely different from traditional star ratings.

Regarding the new fund rating method of platform recommendation, investors may instinctively believe that platform recommendation can be used as a reference indicator for an investor to make investment allocation choices. What's more, some individuals may consider that recommended funds will bring higher investment returns-than non-recommended funds based on past investment experience. However, few studies address the

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issue of platform recommendations. The purpose of this study is to bridge the gap between research and practice by exploring the effect of platform recommendations. In this paper, we study investors' behavior by mutual fund flows that occur subsequent to the introduction of the platform recommendation funds in July 2020 and further investigate the research questions of valuable information of online platform recommendations.

Specifically, in this paper, we mainly focus on two issues. First, we investigate whether platform recommendations would affect individuals' investment behavior and lead to higher investment allocations in -recommended funds. Second, we examine whether recommended funds can provide investors with a higher return on investment than those are not recommended).The fund flow test results incorporating both fund characteristics and star ratings as control variables show that the recommended funds have received higher flows than not recommended funds by exploiting the difference-in-difference (DID) methods. We consider that individual investors are more likely to buy recommended funds rather than not recommended funds once the platform recommendations are introduced. However, we find that investing in recommended funds cannot bring more significant positive returns to investors than those are not. This result shows that platform recommendations attract investors' large investment after its introduction and individuals are more likely invest those platform-recommended funds.

In sum, we provide new insights into the decision-making of investors and contribute to the existing mutual fund literature in four ways. First, by extending prior research that examines the impact of star ratings on fund flow and performance^[11], this paper introduces the platform recommendations and investigates the effect of this new rating system on fund flow and performance, and thereby we contribute to the research realm of fund rating. Second, we analyzed the impact of fund investment on investors' investment behavior and proposed hypotheses based on the theoretical perspective of management, different from the previous research of fund ratings employing the paradigm in the field of economics. Third, we empirically examine and confirm that investors will refer to platform recommendations when they allocate wealth across a set of mutual funds, which expands the research of investment behavior.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1 Fund ratings, fund recommendations, and platform recommendation

In the market for mutual funds, the choice set is large and the set of relevant attributes that translate into quality creates a lot of confusion and makes a fund selection difficult. In addition, most investors appear to be naive, having little knowledge of the investment strategies or financial details of their investments. Fund ratings or fund recommendations provide a useful approach to help investors for making investment decisions^[4].

Traditionally, information intermediaries, such as Morningstar, employ teams of professional analysts to aggregate low-cost summary product quality information relating to managed funds from a reputable and unbiased source. This information is typically conveyed to investors in the form of a simple one- to five-star rating. Evidence suggests that these ratings enjoy great popularity because of their usefulness in helping retail investors choose funds suitable for investment^[9]. Currently, individuals are most likely to view star ratings as an attribute of a fund product and use ratings in conjunction with other fund attributes to make investment decisions. Except for fund ratings, analyst recommendation is another effective method to select funds, but it is mainly for institutional investors and requires high fees^[14]. Fund ratings and fund recommendations are two tools for investors for making better investment decisions, but there are some differences between them, the former is freely provided and openly available, the latter usually is active behavior and not publicly available.

However, with the advent of the fintech platform, an increasing number of individual investors choose to manage their financial wealth online and buy mutual funds through online platforms. Investors are able to invest almost all mutual funds on the platforms via mobile apps, making it easier for investors to conduct mutual fund

transactions online. As a result, platform recommendation has been developed as a new kind of fund rating system, which is introduced by third-party fund distributor platforms.

As stated above, several studies have analyzed the effects of fund ratings and recommendations, such as popular Morningstar star ratings and Morningstar analyst ratings issued by third-party agencies^[11], there are few studies paying attention to the fund rating conducted by the online platform where retail investors now mainly buy funds. This paper focuses on this emerging recommendation approach and investigates the influence of platform recommendations on investors' behaviors.

2.2 Platform recommended funds and fund flows

Fund flows are a measure to investigate the investors' behavior and have been widely used in mutual funds research. Studies have been demonstrated a striking performance-flow relationship^[12]. Fund flows rationally respond to past performance, fund performance is positively related to flows in subsequent periods. Understandably, mutual fund investors expect high returns, flocking to funds with the highest recent returns. Furthermore, studies show that fund flows are fee-sensitive and are affected by factors related to the search costs that investors must bear^[8]. Retail investors shift money away from low-rated and into high-rated funds, which shows that star rating affects mutual fund flows^[2]. On the other hand, the study also came to the opposite conclusion a fund with a five-star Morningstar rating does not have any significant effect on the fund's flows.

The existing research suggests that ratings play a role in influencing the fund flow. The reason behind this is that the rating results provide valuable information for individuals' investments and induce investors to flock into relevant funds^[3]. There are a few studies that confirm that highly rated funds experience cash inflows that are far greater in size than the outflows experienced by low-rated funds^[16]. Although these advances, little research has studied the influences of platform recommendations on funds flow. In this paper, we conjecture that platform recommendations as an emerging kind of funds rating have an impact on fund flows by considering two possible reasons: positive signal and expectancy theory.

Funds with a higher rating level indicate that it receives an evaluation score accessed by third-party agencies^[13]. According to the signal theory^[7], we assume that retail investors consider fund ratings as an important indicator when investing in mutual funds, the higher rating, the more positive signals it can release to individual investors. Retail investors will consider that platform-recommended funds release a more positive signal than those are not, as a result, they are more likely to choose funds recommended by online platforms. On the other hand, researches confirm that investing funds with higher rating stars usually brings more return for investors^[4]. Now, with the popularity of Internet finance, retailer investors frequently tend to buy funds via online platforms. Therefore, according to the expectancy theory, individual investors tend to buy recommended funds when facing platform recommendations based on investment experiences of referring star ratings.

Overall, we conclude that investors view platform recommendations as informative quality measures and expect individual investors to react to the publication of the platform recommendations, triggering observable money flows in response to the recommendation. As a result, we propose that recommended funds receive cash inflows that are much greater in size than outflows experienced by not recommended funds.

H1: Platform recommended funds receive a higher flow than those are not.

2.3 Fund performance

Fund performance is the most concerning indicator for individual investors to participate in investment because fund performance is directly proportional to investment return. Investors can refer to a variety of performance indicators when making fund selections, but fund performance will be affected by many factors, which makes it difficult for investors to select funds with persistent and high returns. Studies on mutual funds performance provide evidence of the links between performance and fund characteristics such as fund size, fund age, and trade fees^[5]. The literature also considers relationships between fund manager characteristics and fund

performance, such as manager tenure, degree, and gender^[10]. In addition, academic research suggests that mutual fund investors depend largely on basis of performance track records when making investments^[6]. The indicators mentioned above are all directly related to the fund, including fund characteristics and manager characteristics, individuals may get positive feedback due to referring to those measures when making investments.

Apart from fund characteristics, performance information is synthesized and conveyed to investors in the form of star ratings, which are helpful for investors to make allocation decisions. Ratings contain fund quality information in the form of a simple one- to five-star rating^[6], which not only reduce the time and effort needed to search for information that is relative to fund performance but allows retail investors to make better informed managed-fund investment decisions^[9]. Studies also show that the ratings can also be regarded as a predictor of mutual fund performance, and they are a more convenient information source for investors to evaluate. Therefore, investors' opinion, ratings contain information of fund future performance and are a reliable and useful indicator to assist them in selecting high-performance funds.

As a new type of rating, compared with a five-star Morningstar rating, the platform recommended rating is established based on a more comprehensive data rating system because of the differences in the fund rating issuing agencies. Specifically, compared to third-party investment research institutions such as Morningstar, the online platform also plays the role of fund sales, which enables it to directly obtain real-time data compared to Morningstar. At the same time, the online platform is also a social media, which makes it can obtain user data about fund evaluations, such as fund reviews and investor transaction data, etc. Consequently, it is trustworthy for retail investors to consider platform recommendations as a valuable information source to help choose funds. On the other hand, the online platforms served as service providers also have motivations to provide useful information for platform users so that investors are more likely to buy mutual funds by their platform. Therefore, according to expectation theory^[15], we infer that investors choose to invest in platform-recommended funds because platform-recommended funds are more likely to help them achieve high investment returns than non-platform-recommended funds.

In general, we believe that platform recommendation, as a rating indicator of funds, could deliver -valid information about fund performance to investors. Just as other types of ratings, our hypothesis is based on the idea that platform recommendations contain information that is helpful for individual investors to make better investment decisions.

H2: Individual investors may get a higher return by investing recommended funds than not recommended funds

3. RESEARCH METHODOLOGY

3.1 Background on platform recommendations

Alipay is the Chinese largest online fund distribution platform, and the number of funds sold on Alipay exceeds 6,000. In July 2020, Alipay introduced the platform recommendations systems, which classify all funds sold on the platform into two kinds: recommended funds and not recommendation funds. Figure 1 shows a screenshot of the fund list on AliPay.

As we can see, recommended funds have a distinctive golden logo with Alipay words to distinguish them from not-recommended funds without any logo. The fund list also displays the fund name, fund code, and other basic information about funds. Potential investors click on the fund that are interested, the page of fund list jumps to the fund transaction page, where you will find some more detailed information about the fund. Figure 2 offers an example of a fund transaction page, we can discover fund rating information from both Morningstar rating and the platform recommendations at the same time.

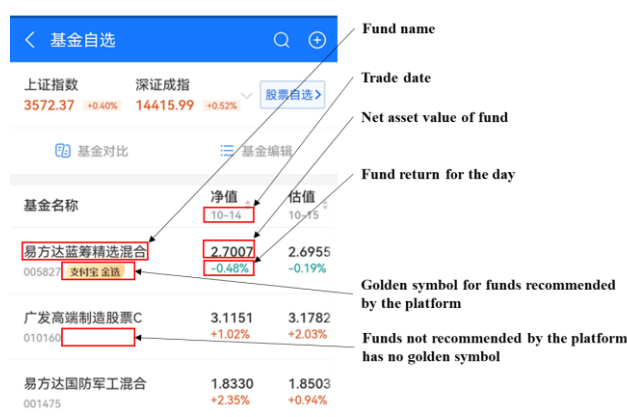


Figure 1. List of funds sold on the online platform

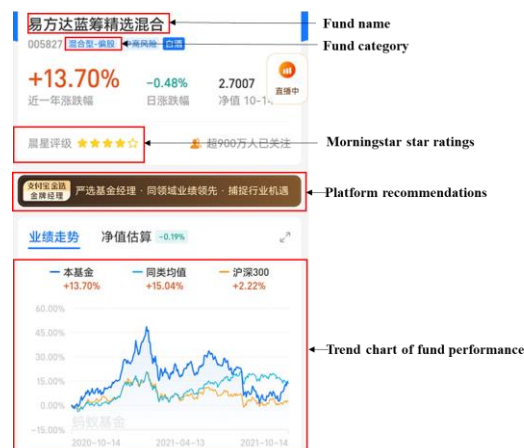


Figure 2. Page information of fund purchasing

3.2 Data and sample

We focus on the Chinese fund trading market and get a sample of the fund list provided by the Alipay platform. Alipay platform recommendation fund, also known as Alipay Gold Selection, was launched on July 19, 2020. Alipay sells a total of 5,872 funds, accounting for 98% of the funds sold on the market. We obtain the list of funds sold on the Alipay platform, according to the logo provided by the platform, and then we manually divide all samples into recommended funds and not recommended funds, including 98 and 5774 respectively. We limit the time range of the sample to June 2018 to December 2021 since Alipay launched the platform recommendations on July 19, 2020.

After that, we collected other basic data from several reliable sources. First of all, we obtain basic information such as fund age, fund expenses, net asset value (NAV), total net assets (TNA), and star rank from the CSMAR database. Furthermore, we launched a crawler project to obtain the quarterly fund size data from the Eastmoney website, a well-known online financial website in China (<http://www.eastmoney.com/>). We focus on actively managed, equity funds and exclude bond, money market, and index funds. We also screen the fund samples in terms of fund age and fund size. Thus, we exclude funds that have been established for less than three years and also exclude funds with a size less than 100 million RMB. Our final sample contains 1296 mutual funds from June 2018 to December 2021, including 39 Recommend funds and 1257 Not Recommended funds respectively.

3.3 Variables

3.3.1 Fund flows

To quantify the investment behavior of investors, we follow the standard definition and use the net flow to measure the fund flows.

$$Flow_{i,t} = \frac{TNA_{i,t} - (1 + R_{i,t}) * TNA_{i,t-1}}{TNA_{i,t-1}} \quad (1)$$

We use quarterly data instead of monthly data to measure fund flow because the Chinese fund market only publishes quarterly data on fund size. where $TNA_{i,t}$ indicates the total net assets of fund i at the end of the quarter t , and $R_{i,t}$ represents the quarter return for fund i in quarter t . This definition reflects the growth ratio of a fund by the reason of new investments and supposes that all new investments occur at the end of a quarter and dividends are reinvested.

3.3.2 Fund performance

As discussed above in the section of fund performance, the index of adjusted net-asset-value return is often used to measure the fund performance on China's fund market, so we use monthly Net Assets Value returns

(dividends are considered) to account for fund performance.

$$Return_{i,t} = \frac{NAV_{p,t} - NAV_{p,t-1}}{NAV_{p,t-1}} \quad (2)$$

Where $NAV_{i,t}$ represents the monthly net assets value of fund i at the end of month t , and $NAV_{i,t-1}$ represents the monthly net assets value of fund i at the end of month $t-1$. This definition reflects the monthly net return of the fund.

3.3.3 Controls

We included a range of controls in our models. At the fund level, we controlled fund size measured by the logarithm, fund fee, fund age measured as the number of years since founding, and we also controlled for Morningstar ratings. Taking into account the possible outlier in the data distribution, we winsorize the top and bottom 1% of the flow distribution. Table 1 reports descriptive statistics for main variables and summarizes the characteristic of the Recommended funds and Not Recommended funds.

Table 1. Descriptive statistics

	1	2	3	4	5	6	7
1.Recommend	1						
2.Fund flow	0.004	1					
3.Fund return	0.007	0.001	1				
4.Rank star	0.078***	0.024***	-0.063***	1			
5.Fund size	0.011**	-0.025***	0.010*	-0.195***	1		
6.Fund fee	0.016**	-0.023***	0.041***	-0.163***	0.113***	1	
7.Fund age	0.107***	-0.023***	0.004	-0.417***	0.303***	0.168***	1.000
Mean	0.030	0.346	0.048	3.866	9.054	0.240	7.848
Std.	0.171	10.440	0.119	1.287	0.491	0.060	3.684

Note: *, **, and *** indicates a significance level at 10%, 5%, and 1%, respectively.

The table presents descriptive statistics for sample funds traded on the online platform. This sample contains 19485 quarterly observations on 1296 mutual funds from June 2018 to December 2021, including 39 for Recommended funds and 1257 for Not recommended funds respectively. Fund size is the scale of a fund, fund age is the established time measure. Fund flow is quarterly, fund fee is transaction expense ratio of funds. Star rank represents the rating result of Morningstar and is a dummy variable. As shown in Table 1, the results show that fund flow is negatively and significantly correlated with fund size, fund fee and fund age, but have a positive correlation with Morningstar. This suggests that individuals are more likely to purchase funds with higher Morningstar. The results on all of the control variables show they are correlated with the dependent variable at different levels of significance, and thus indicate the appropriateness to include those controls into our analyses based on the previous studies. However, the results do not support baseline hypothesis in which the relationship between fund flow and fund income and fund recommendation is positive and significant ($\rho = 0.004$, $p > 0.1$; $\rho = 0.007$, $p > 0.1$).

3.4 Models

3.4.1 Model 1

We implement a quasi-experimental design by exploiting the difference-in-differences methods coupled with propensity score-based matching for testing hypothesis 1:

$$Flow_{i,t} = \alpha_0 + \alpha_1 D_i \times T_t + \alpha_2 D_i + \alpha_3 T_t + \beta_1 Control_{i,t} + \mu_i + \varepsilon_{i,t} \quad (3)$$

The dependent variable is $Flow_{i,t}$, which represents the fund flow of fund i at t quarter; D_i is an indicator variable, and equals 1 for Recommended funds or 0 for Not Recommended funds. T_t is 0 for $t = 1$ (before the introduction of the platform recommendations) and 1 for $t = 2$ (after the introduction of the platform

recommendation). $D_i \times T_t$ is the independent variable. Coefficient α_2 indicates whether the fund will receive more fund flows after funds are recommended by the platform. Especially, we take a wide range of fund characteristics as controls variables: First, we add the logarithm of fund size, the fund age, and fund fee^[1]. Second, we take into account those fund star ratings. Del Guercio and Tkac (2008) consider that these variables will affect future fund flows. Additionally, to control for any unobservable individual effects, we include the individual fixed effects u_i . $\varepsilon_{i,t}$ is the error term. we compute t-statistics using Driscoll and Kraay (1998) standard errors, which are robust to very general forms of cross-sectional dependence.

3.4.2 Model 2

To examine whether recommendation funds differ from not recommendation funds concerning returns, we regress the recommended indicator variables on the fund performance. Our treatment group is the platform recommended funds, our control group is the set of non-platform recommended funds that are in our sample, we regress returns on recommended indicator variables according to the following specification:

$$Return_{i,t} = \alpha + \beta_i Recommend_{i,t} + FundSize_{i,t} + FundAge_{i,t} + FundTrade_{i,t} + StarRank_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where $Return_{i,t}$ presents the monthly performance of the fund i at month t . $Recommend_{i,t}$ is a dummy variable that equals one if a fund i at t month is recommended by platform and zero otherwise. We can interpret the coefficient β_i as the difference in fund performance between recommended funds and not recommended funds. If recommended funds outperform not-recommended funds, then the coefficient β_i is significantly greater than zero. $FundSize_{i,t}$ indicates the fund size of fund i at t month, measured by the natural log of the initial value. $FundAge_{i,t}$ presents the time since fund i was established in month t (years). $Fundfee_{p,t}$ represents the trade expense ratio of fund i at month t . $Starrank_{i,t}$ suggests the Morningstar ratings.

4. ANALYSIS AND RESULTS

4.1 Fund flow reaction to platforms' recommendation

In this section, we examine investor reactions to the platforms' recommendations of mutual funds. We exploit the difference-in-difference (DID) methods to estimate the flow effect of platforms' recommendations. Table 3 shows the estimation results, which test the hypothesis. Model 2 reports the results of the DID analysis based on the full sample of 19485 observations, While Model 3 reports the results of the DID analysis based on the matched sample of 1111 observations.

Table 3. Test results

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
<i>Rank star</i>	0.075 (0.061)	0.113*** (0.288)	0.014** (0.048)	0.242*** (0.029)	0.249*** (0.032)
<i>Fund size</i>	-0.336** (0.151)	-0.394** (0.067)	-0.086* (0.067)	0.076 (0.097)	0.077 (0.093)
<i>Fund fee</i>	-2.427** (1.118)	-2.597*** (0.357)	-0.116** (0.043)	1.590*** (0.125)	1.574*** (0.007)
<i>Fund Age</i>	-0.036 (0.023)	-0.037*** (1.335)	-0.012* (1.007)	-0.000*** (0.000)	-0.001*** (0.000)
<i>D*T</i>		0.221*** (0.489)	0.026** (0.039)		
Recommend					0.314 (0.205)
_cons	3.916** (1.977)	3.917*** (1.432)	1.104*** (0.520)	0.386 (1.103)	0.397 (1.072)
N	19485	19485	1111	32391	32391
R ²	0.002	0.002	0.002	0.003	0.004

Note: ***, ** and * indicated significant at the 0.01, 0.05 and 0.1 levels, respectively

The coefficient estimate on $D_t \times T_t$ in Model (2) is 0.221 and statistically significant at the 1 percent level, suggesting that the fund flow of Recommendation fund compared with Not Recommended funds, on average, increased by 22.1 percent after platform recommendations were provided for fund sold on the market. The result for the matched sample also makes a positive effect of platforms recommendation, but the effect size decreases to 0.026 in Model (3), informing that the size of fund flow of recommended fund, on average, increased by 2.6% after being recommended by the platform, supporting hypothesis H1. These results suggest that individual investors usually consider platform recommendations as valuable information when making investments, they are more likely to buy Recommended funds when other conditions are the same. According to the expectancy theory, the reason behind this phenomenon is that investors chase high performance, and they deem that recommended funds offer them more opportunities to achieve it based on experience. –

4.2 Fund performance test

As to the question about whether platform recommendations could provide valuable information for individual investors. In this section, the analysis examines whether the observed differences in fund flow also show up in the fund return. Therefore, we investigate that retail investors could make more profits by making investments in recommended funds rather than those are not. We regress the performance measures on the recommend dummy and the control variables as in the previous section. As shown in Table 3, the results show that there is no difference in average performance between recommended funds and not-recommended funds. The coefficient estimate on *recommend* in Model (5) is 0.314 but not statistically significant, suggesting that the fund performance of platforms' recommendation fund does not outperform that of non-platform recommended funds. Hypothesis 2 is not empirically supported.

5. ROBUST TEST

We conducted several robustness tests to validate our findings. First, we conducted a placebo test based on the method of constructing a pseudo-experimental group by sampling the total sample 500 times and performing regression. Results shows that the p-value points of most of the regression coefficients are greater than 0.1 which confirms that the platform-recommended funds receive higher fund flow is not obtained by accident, and the result is robust. Second, we run a PSM+DID in order to prevent endogeneity problems caused by sample self-selection, the results show that recommended funds could received significantly higher fund flows than non-recommended funds. Finally, we use another two different measures for a funds' average monthly performance (*risk-adjusted return*) to replace the return as an independent variable: Fama and French's three-factor alpha and five-factor alpha. We obtained consistent results and there is no significant difference between platform-recommended funds and non-recommended funds.

6. DISCUSSION

6.1 Theoretical implications

Firstly, this paper introduces the platform rating system and further provides insight into the platform recommendations on how to influence the investors' investment decisions. Second, according to our empirical results, we find that the fund recommended by the platform receive significantly greater fund flow than those are not recommended, and this finding indicates that investors tend to buy funds recognized by the platform. The result extends the research of Armstrong et al.(2019) and constitutes an enormous contribution concerning the business activity of fund transactions and buyer behavior. Furthermore, in contrast to prior investigations using a regression model to examine the flow effects, this study adapt the difference-in-differences to construct a quasi-experiment to examine the flow effect, which makes a dynamic comparison about fund flows between platform recommended funds and not recommended funds. Third, we examine the performance effect of

Recommended funds and find that the platform recommendations are not helpful for individual investors to choose funds with investment value.

6.2 Practical implications

The present study offers clear practical implications for both fund managers, investors, and platforms. First, our results indicate that the platform recommendations introduced by the third-party commission platform bring a lot of flows to the funds by the platform than those are not. Thus, it's a good chance for fund managers to meet the criterion of platform recommendations to attract more individual investors. Second, the results show that recommended funds do not outperform the not-recommended funds, that is to say, investors are not necessary to value the platform recommendations when allocating their wealth and they should also recognize those fund ratings are not always instructive. As for platforms, it's racial for them to take the platform recommendations seriously, and try to make high-quality platform recommendation systems as much as possible so that valuable information can be provided for the platform's investors. Otherwise, investors of the platform will lose their confidence in the platform. In the worst-case scenario, the credibility of platform will be highly affected. Eventually, investors will flow to competitor's platform.

6.3 Limitations and future research directions

This study has some limitations that should be addressed in the future. First, we use quarterly data to measure fund flow rather than monthly due to the particularity of China's fund market, and this indicate that the flow of funds could not be observed in a more granular manner. Second, in addition to platform recommendations developed by Alipay, there may be other platform recommendations developed by other online platforms. Thus, a future study could do the same research and make a comparison about performance test results between different platform recommendation systems to make a general conclusion

7. CONCLUSION

In 2020, Alipay, the largest fund commission sales internet platform in China, introduced platforms' recommendation ratings, which dividing the funds sold on the Alipay into recommended funds and not recommended funds, reflects the subjective evaluation of a fund's ability to provide superior returns in the future. In this paper, we study investors' behavior by fund flows that happen subsequent to the introduction of online platform recommendations in July 2020 and further investigate the value of platforms' recommendations as a reasonable criterion to investors' investment decisions. Our results show that investors react positively to platforms' recommendation funds compared to funds not recommended by the platform, indicating that investors will regard the platforms' recommendation as an index when investing. Nevertheless, we find no evidence that platforms' rating systems can identify funds that outperform Not Recommended funds which means it is meaningless for investors to consider platforms' recommendations as a reference indicator.

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REFERENCE

- [1] Alexander K and Stefan R (2004) Family Matters: The Performance Flow Relationship in the Mutual Fund Industry. University Library of Munich, Germany.
- [2] Ammann M, Bauer C, Fischer S, et al. (2019) The impact of the Morningstar Sustainability Rating on mutual fund flows. *European Financial Management* 25(3): 520-553.
- [3] Andreas O, Andreas H, Matthias H, et al. (2018) Do mutual fund ratings provide valuable information for retail investors?

- Studies in Economics and Finance* 35(1): 137-152.
- [4] Armstrong WJ, Genc E and Verbeek M (2019) Going for Gold: An Analysis of Morningstar Analyst Ratings. *Management Science* 65(5): 2310-2327.
- [5] Daniel K, Grinblatt M, Titman S, et al. (1997) Measuring mutual fund performance with characteristic-based benchmarks. *Journal of Finance* 52(3): 1035-1058.
- [6] Diane Del G and Paula AT (2008) Star Power: The Effect of Morningstar Ratings on Mutual Fund Flow. *The Journal of Financial and Quantitative Analysis* 43(4): 907-936.
- [7] Erevelles S, Roy A and Yip LS (2001) The universality of the signal theory for products and services. *Journal of Business Research* 52(2): 175-187.
- [8] Erik RS, Peter T, Erik RS, et al. (1998) Costly Search and Mutual Fund Flows. *The Journal of Finance* 53(5): 1589-1622.
- [9] Faff RW, Parwada JT and Poh HL (2007) The information content of Australian managed fund ratings. *Journal of Business Finance & Accounting* 34(9-10): 1528-1547.
- [10] Golec JH (1996) The effects of mutual fund managers' characteristics on their portfolio performance, risk and fees. *Financial Services Review* 5(2): 133.
- [11] Graham JE, Lassala C and Ribeiro-Navarrete B (2019) A fuzzy-set analysis of conditions influencing mutual fund performance. *International Review of Economics and Finance* 61: 324-336.
- [12] Ivkovic Z and Weisbenner S (2009) Individual investor mutual fund flows. *Journal of Financial Economics* 92(2): 223-237.
- [13] Michael S (2002) Signaling in Retrospect and the Informational Structure of Markets. *The American Economic Review* 92(3): 434-459.
- [14] Nerissa CB, Kelsey DW and Russ W (2014) Analyst Recommendations, Mutual Fund Herding, and Overreaction in Stock Prices. *Management Science* 60(1): 1-20.
- [15] Richard LO (1974) Expectancy Theory Predictions of Salesmen's Performance. *Journal of Marketing Research* 11(3): 243-253.
- [16] William NG and Nadav P (1997) Cognitive Dissonance And Mutual Fund Investors. *Journal of Financial Research*. *Journal of Financial Research* 20(2):145.