The Key to Succeed in FX Margin Trading: The Role of Investment Strategy and Behavioural Biases☆

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Abstract

In a large-scale survey on the Japanese FX market, we measure several classical behavioural factors as well as the investment strategy, trading behaviour, and performance of more than 1300 private investors. We find that among these factors, behavioural biases have the largest impact on performance. Among the behavioural factors, overconfidence, in particular, leads to a significantly lower performance, but also the theory of mind, time discounting, loss aversion, and ambiguity avoidance play a significant role. We also identify several investment strategies and trading behaviour that are detrimental to performance, which include, in particular, high leverage, reference to other people's rates, lack of a consistent trading style, and trend-following. The effect of behavioural factors is still strong after controlling for investment strategy and trading behaviour. This suggests that recognizing and modifying one's own behavioural biases is the most effective way to improve investment performance.

Keywords: FX trading; behavioural biases; investment strategies; trading behaviour; overconfidence; theory of mind; time discounting; ambiguity avoidance.

JEL classification: G59, G11, G42.

☆ This paper is a summary created for the presentation at the Association of Behavioral Economics and Finance. If you wish to read the full paper, please send me an email to request at iwatsubo@econ.kobe-u.ac.jp

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1 Introduction

In this article, we particularly focus on the performance of private investors on the market: what factors affect this performance most? Are trading behaviour and investment strategy most important, or is avoiding behavioural biases the key to success?

In order to answer these questions, we conduct a large-scale survey among more than 1300 FX margin retail traders where we test several classical behavioural factors, as well as investment strategies, trading behaviour and performance. This unique dataset allows us to deduce the impact of the various factors on trading success (i.e. performance) and evaluate their relative importance as well as their interactions. Unlike studies which rely only on trading data, we can also include behavioural biases into our study that are not directly measurable from trades but only through specific survey questions.

Our study, therefore, fills in several gaps in literature. First, we connect survey data on a large sample of retail investors with their performance. Second, we focus on behavioural biases that have shown to affect investment behaviour negatively in many experimental studies (see, e.g., Barberis and Thaler, 2003) but are rarely measured directly for investors. Finally, we focus on the FX market that is substantially understudied in comparison to the stock market.

2 Data and Methodology

We utilize survey data collected via the Internet on behalf of the SBI FXTRADE Co., Ltd., one of the top ten FX brokers in Japan in terms of assets under custody (400,000 accounts with total assets of 75 billion yen), during the period from August 6 to August 20, 2019. After excluding the respondents with inconsistent answers, a sample of 1,365 individual traders between the ages of 20 and 80 was drawn from their clients, with a preference given to those conducting foreign exchange margin transactions at the time of the survey. The sample is chosen to match the same proportions of gender, age and profit/loss as the total population of active investors of the FX broker in the previous year. The appendix gives the comparisons between the survey and the population distributions which show that the three-dimensional matching is quite successful. One could suspect that selecting the sample in terms of the profit and loss (the dependent variable in our regression) may cause a distortion, but it is a useful way to avoid overreporting on their performance.

We do not have demographic or performance characteristics of traders on the whole Japanese FX market but we know how many of the FX accounts were profitable and how many of them lost money in the same year as the survey was answered (Financial Futures Association of Japan, 2020b). A comparison of these proportions with the respective proportions at our FX broker and in our sample shows very little difference, so at least in this respect our sample is also representative of the overall market.

The survey consists of socio-demographic questions, questions on investment strategy and performance and finally measurements of the aforementioned behavioural biases. The survey questions and the variables used in our analysis are explained in detail in Appendix.

As a performance measure, we use the total profit in the previous year divided by the average margin size, as the latter provides a good proxy for the total amount invested. Ideally, the denominator of the performance measure should be the total amount investors invested in the previous year, but it is difficult to obtain this number, so we have to use the average margin size as proxy. We included the annual income and leverage ratio as control variables to compensate for this limitation.

We classify our explanatory variables into three broad categories: (i) behavioural biases, (ii) investment strategy and trading behaviour, and (iii) socio-demographic and economic situation

(see Appendix A for a detailed description of variables). Regarding (i), we have seven measures of behavioural biases: (1) Theory of mind (Beauty contest), (2) Fairness, (3) Overconfidence, (4) Sunk cost, (5) Time discounting, (6) Loss aversion, and (7) Ambiguity aversion.

Variable group (ii), investment strategy and trading behaviour, is captured by Leverage (leverage ratios for FX transactions), FX experience (years of experience in FX margin trading), Holding period (average period of holding new positions), Trade frequency (number of FX transactions during a year), Technical analysis (preference for technical analysis vs fundamental analysis), Technical dummy (the dummy to control for those who do not take technical/fundamental analysis into account), Reference (the degree of referencing other peoples' rate), Own rule (the degree of keeping own rules), Contrarian (preference for being contrarians vs. trend followers), Contrarian dummy (the dummy to control for those who are not contrarians/trend followers), Rate check (the frequency of checking rates), Info collecting time (length of time for collecting information in a day), Knowledge index (sum of positive answers regarding FX trading), Major FX information index (sum of using major sources of information for FX trading).

With regard to (iii), we describe the respondent's socio-demographic and economic position by the variables: Female (dummy), Age (in years, based on 10-year intervals from the 20s to 70s), Education (four dummies ranging from elementary to graduate school), Occupation (five dummies), and Income (in billion yen per year).

To estimate the impact of our various indicators on the performance of FX margin traders, we use up to 33 explanatory variables, the influence of which we estimate jointly in a general model.

3 Results

In this section, we will study the relations between trading behaviour, behavioural biases, and investment performance.

3.1 What makes a trader perform well?

We first test the impact of investment strategies and behavioural biases on the investment performance by using ordinary least square models. We employ the heteroscedasticity-consistent standard error estimator developed by MacKinnon and White (1985), which is based on jack-knifing and has better small sample properties than the robust standard errors estimator originally put forward by White (1980). In Table 1, we give a base line regression for profit/margin where we control (whenever stated) for all socio-demographic variables listed in the Appendix but highlight only the gender variable in the tables.

We see throughout all models that being a contrarian investor and following an own rule increases performance while taking other people's positions or perspectives as reference diminishes it. Leverage, too, is clearly bad for the performance. We do not observe significant impacts of many of the other trading variables, there is, in particular, no effect of experience, trading frequency, technical analysis or information acquisition. The positive effect of a longer holding period vanishes once we control for behavioural factors. Overall, the trading-oriented variables explain only a tiny fraction of the performance (adjusted R^2 is around 4%). Socio-demographic variables, however, have even less explanatory power (around 2%).

What about the behavioural biases? Here we find surprisingly strong effects: theory of mind has a positive effect[3], while overconfidence, time discounting (=impatience), loss aversion and ambiguity aversion all have a negative impact on performance. We could not find any

[3] This variable takes smaller values when theory of mind is better.

significant effect of fairness and sunk cost fallacy, but overall the most successful investors seem to be rational and at the same time knowledgeable about their own limitations and able to understand other people's behaviour.

Behavioural factors alone have an adjusted R^2 of around 25% and thus a good predictive power for investment performance.

3.2 Overconfidence and its robustness tests

What is the most influential variable for traders' performance among the explanatory variables in the baseline results of Section 4.1 (Table 1)? To compare their impacts, we study the effect of a one standard deviation change in the explanatory variables. On average, a one standard deviation change in overconfidence decreases profit/margin by 1.21, while that in time discounting (impatience) decreases by 0.11, loss aversion by 0.10 and ambiguity aversion by 0.13. A one standard deviation change in theory of mind increases profit/margin by 0.15. Investment strategy variables such as leverage also have a much smaller impact than overconfidence. These suggest that overconfidence has a greater influence than any other factor.

However, the argument that overconfidence is the most influential predictor could be criticised for two reasons. First, the indicator of overconfidence may implicitly overemphasize the role of overconfidence: the best 10% of investors in our sample cannot be overconfident by definition because they cannot overestimate their ranking within the total sample. This might lead to a misleading correlation between overconfidence and performance. In order to control for this problem, we repeat the previous analysis omitting the 10% top performers from the sample. The results confirm basically the previous findings. Additionally, we also find a significant impact of the sunk cost bias on performance in the expected direction. Given that this is not significant in the baseline regression, however, we think this effect requires further empirical verification.

Second, endogeneity may be a potential problem with our findings. Since the indicator of overconfidence is created using the last year's profit/loss which is the explained variable, this might bias the estimation results. To tackle the endogeneity, we re-estimate the baseline model using instrumental variables with two-stage least squares estimation. We first regress overconfidence on the variables of other behavioural biases, investment strategy and socio-demography to identify which of the insignificant variables in the baseline model (4) in Table 1 meet the requirements for instrumental variables. The OLS regression using the whole sample is displayed in the column (1) of Table 3, while that using the sample excluding top 10% performers is displayed in the column (3) in the same table. We find that the coefficient of overconfidence is highly significant and about the same as the one estimated with OLS. Thus, even if we consider the possible endogeneity between overconfidence and trading performance using instrumental variable estimation, the results shown in Table 1 appear to be robust.

3.3 Behavioural biases and trading behaviour

The connection between behavioural factors and trading behaviour can be studied from our dataset as well. We present regression results with each trading behaviour as dependent variables and the behavioural biases plus socio-demographic controls as independent variables.

We find that a good theory of mind goes hand in hand with longer holding periods and more technical analysis but less referencing to other traders. We also find that traders with better theory of mind are typically more knowledgeable and experienced. All of this together can, to some extent, explain the better performance of investors with better theory of mind. However, we have seen in the previous section that the impact of this variable on performance is still significant even after controlling for these biases, i.e. there must be a further direct effect.

Overconfidence, on the other hand, seems to cause negative trading behaviour: it increases the leverage, decreases the holding period, increases trade frequency and reduces contrarian investment. It also increases technical analysis.

Time discounting increases the leverage and decreases the holding period. It is more common among inexperienced investors. Loss aversion, on the other hand, increases leverage and holding period. Its effect on leverage is at first glance surprising. One might assume that it is mainly caused by traders who ended up in the loss zone and tried to recover their losses by taking more leverage. Given that we do not have data on that, this is, however, only an assumption that suggests further investigation. Ambiguity aversion, finally, has no significant association with investment strategies and behaviours, except for experience. Therefore, it seems that the impact of ambiguity aversion on investment performance works through entirely different channels than the trading behaviour that we elicited.

4 Conclusions

We have seen in this article which factors affect the performance of traders on the FX market most. It turned out that behavioural biases explain most of the performance differences. In particular, overconfidence but also loss aversion, ambiguity aversion, time discounting (impatience) and (lack of) theory of mind, seem to play a crucial role.

Specific aspects of investment strategy and trading behaviour also influence performance but, surprisingly, to a lesser degree: leverage, reference to other investors, following an own rule, and investing contrarian. The variation explained by these factors, however, is rather modest.

Most of the behavioural biases also influence trading behaviour (usually in a way that turns out to be detrimental to performance), but their impact on performance is to a large extent direct and not via this channel.

The key message from our results is that recognizing and modifying one's own behavioural bias is probably the best way to improve investment performance. While we have demonstrated that for the special case of the FX market, it is likely that this insight will also hold true for other markets.

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Table 1: Baseline regression on profit/margin: some trading behaviours as well as certain behavioural biases show a significant impact on the investment performance.

	(1)	(2)	(3)	(4)	(5)	(6)
Leverage	-0.116 ***	-0.162 ***	-0.166 ***	-0.110 **	-0.108 ***	-0.150 ***
	(0.041)	(0.052)	(0.044)	(0.045)	(0.039)	(0.050)
Income	0.045 ***	0.021	0.021	0.038 **	0.042 ***	0.017
	(0.012)	(0.014)	(0.017)	(0.017)	(0.016)	(0.018)
Theory of mind	-0.516 ***			-0.412 ***	-0.491 ***	
	(0.184)			(0.158)	(0.173)	
Fairness	0.004			-0.004	-0.003	
	(0.028)			(0.030)	(0.029)	
Overconfidence	-0.918 ***			-0.925 ***	-0.929 ***	
	(0.056)			(0.057)	(0.056)	
Sunk cost	-0.109			-0.139	-0.128	
	(0.115)			(0.120)	(0.116)	
Time discount	-0.289 **			-0.244 *	-0.313 **	
	(0.146)			(0.143)	(0.146)	
Loss aversion	-0.240 **			-0.210 *	-0.233 **	
	(0.113)			(0.113)	(0.113)	
Ambiguity aversion	-0.289 ***			-0.280 **	-0.279 **	
	(0.108)			(0.110)	(0.108)	
Experience		0.035		0.055		0.051
		(0.040)		(0.037)		(0.043)
Holding period		0.105 **		0.006		0.095 **
		(0.042)		(0.041)		(0.045)
Trade frequency		0.066		0.074 *		0.066
		(0.048)		(0.045)		(0.049)
Technical		-0.096		-0.062		-0.081
		(0.078)		(0.071)		(0.080)
Technical dummy		0.499		0.400		0.401
		(0.401)		(0.368)		(0.402)
Reference		-0.150 **		-0.140 **		-0.166 **
		(0.076)		(0.067)		(0.078)
Own rule		0.139 **		0.165 ***		0.143 **
		(0.06)		(0.055)		(0.060)
Contrarian		0.202 ***		0.152 ***		0.208 ***
		(0.055)		(0.048)		(0.057)
Contrarian dummy		0.183		0.286		0.254
		(0.332)		(0.309)		(0.336)
Rate check		-0.055		-0.064		-0.055
		(0.057)		(0.053)		(0.058)
Info collection		-0.050		-0.011		-0.045
		(0.082)		(0.076)		(0.082)
Knowledge sum		0.049		0.086 **		0.052
		(0.045)		(0.04)		(0.044)
Info. source sum		0.049		-0.045		0.016
		(0.075)		(0.070)		(0.075)
Female			0.553 ***	0.353 ***	0.145	0.737 ***
			(0.144)	(0.133)	(0.111)	(0.164)
Other demographics	No	No	Yes	Yes	Yes	Yes
N	1332	1340	1350	1308	1325	1333
Adjusted R^2	0.245	0.044	0.022	0.278	0.254	0.054
F-statistic	49.087***	5.071***	3.510***	16.734***	24.778***	4.032***

Notes: *, ** and *** indicate significance at 10 percent, 5 percent and 1 percent level, respectively.