Individual Investors Trading Strategies and Responsiveness to Information – A Virtual Stock Market Internet Experiment
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Theoretical research as well as empirical evidence offer mixed results regarding individual investor trading strategies and motives behind them. Are investors trading on information or are they simply trying to predict prices based on fads and/or behavioral biases? If investors follow certain patterns, what are those – trend-chasing or contrarian? Do investors watch closely news related to stocks in their portfolios and respond to them accordingly or perhaps they focus on market-wide macroeconomic information? This experiment aims to investigate links between public information and short-term investment behavior at the individual decision-making level. As these issues are of particular importance in financial markets, we have designed a virtual stock market experiment to investigate the relevant decision processes directly.

Whereas there are numerous extant studies that use aggregate market data, in a controlled experiment we were able to gather detailed data on individual trading strategies – this was the main motivation behind our project. The other driving force behind our experiment was the need to advance our understanding behind the very motives for trading by individuals, particularly concerning the utilization and responsiveness to information. We feel conducting such an experiment was necessary to directly examine the relationship between trading behavior and information – we used real-world real-time information gathered on the Internet and real stocks with real prices, albeit in a virtual stock market environment. Our field experiment may thus be considered to be a fact finding investigation into the short-term behavioral patterns and trading motives of individual investors.

We focus on individual investors’ trading strategies and their relation to public information – about prices, macroeconomic news, and relevant individual-stock information. Our principal goals are to address the following issues:

1. Do investors actually take into account contemporaneous public information when making their trading decisions?
   - Does the amount of information influence frequency of trading?
   - Do investors adhere to distinctive trading patterns, i.e. do they use positive feedback or negative feedback strategies?

2. What are the reasons behind specific trading decisions and decisions not to trade?
   - What kind of strategies are utilized most frequently and are they based on fundamental or behavioral motives?
   - To what extent do investors employ “wait and see” hold strategies and why?

3. Are investors prone to behavioral biases and if so, what are they?
   - Do we observe the disposition effect and if so, when?
   - Are trading decisions based on regret aversion?

Based on our results, participants of our experiment did find useful and did take into account when making their trading decisions the information that was provided to them. Those, who studied that information more carefully – i.e. looked at more pieces of information – traded more than those who paid relatively less attention to the information. Moreover, those who studied prices in particular, turned out to be mostly positive feedback traders. The shorter the trading horizon, the more
pronounced this effect appears to be.

It is rather striking that in more than half of the reported cases, our subjects described some form of regret aversion as their main reason behind trading. Regret is undoubtedly an emotional reaction, the very pain one experiences when they face negative effects of their own decisions, and regret aversion, simply put, is the fear of that psychological pain – fear to be sorry. Our subjects thus engaged in “emotional investing” rather than rational decision making. Even though they did account for information when deciding their trading strategies, emotions turned out to be the ruling factor behind their decisions. Moreover, those who refrained from trade did so also, arguably, for fear of regret. According to the model of Shefrin and Statman (1985)\textsuperscript{[?]}, disposition effect has four components: (i) Prospect Theory – it predicts the disposition effect when the proceeds realized are held and not rolled over into another investment period; (ii) Mental Accounting – it clarifies conditions under which the disposition effect holds when realization profits are reinvested; (iii) Regret Aversion – it provides a reason for why investors may resist the realization of losses as it proves their original judgment to have been wrong; and (iv) Self-Control – it explains the rationale for methods investor use to force themselves to realize losses: there is an internal conflict between a rational part and a more primitive emotional part of the investor which may result in insufficient self-control to close a position at a loss, despite the trader’s awareness of riding losers being irrational. In case of this experiment, we presume regret aversion is the main suspect behind the participants’ tendency to hold on to losing stocks. By choosing to “wait and see” rather than sell a stock that has declined in value our subjects avoided making their paper losses a reality.

One possible, and a viable one, critique that arises in the context of testing for the disposition effect is that too much information obstructs the possible impact of the disposition effect. Our experiment indeed demands from the participants a lot of attention to be paid to information. Thus the evidence we find for the disposition effect in spite of the large amount of information the subjects had to process signifies its robustness and prevalence.

Individual investors who consider investing in stocks have a lot of information to process: they are bombarded with a flood of information, some of which might be relevant for their decisions, some of which might be not. Perhaps instead of trying to obtain that information people simply follow their gut-feelings or a fad and are thus “behavioral” traders. There are numerous theories as well as empirical studies in support of either thesis and most probably it is the combination of information and sentiment that drives individual investor behavior in the end. Our study offers a new, experimental approach based on real-world information provision to add to the body of extant research.

We find support for the idea that individual investors are driven by psychological factors in their financial decision making. In particular, regret aversion appears to be a very robust and prevalent behavioral trait, manifesting itself in both trading and not trading – the latter through the disposition effect. In future experimental research, it would be advisable to confront regret aversion with other salient behavioral phenomena such as biased confidence. Regret aversion is an inherently “negative” motive for making decisions; on the other hand, overconfidence being a widely documented phenomenon in itself, is a rather “positive” motive that propels investors to trade aggressively.