Disposition effect in Securities trading

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Abstract

The presence of disposition effect in individual investor trading behavior is examined with the daily trading data. It is observed that individual investors are more likely to hold losing positions than winning position under a critical point. The gap between holding periods get smaller as gains and losses widen. The holding period of winner is longer than the losers implying that investors are likely to hold gains longer than losing position over the critical point.

Keywords: ***Liquidation decisions; Disposition effect***

1. Motivation

The individual investor's tendency to hold on to the losing positions too long and to liquidate the winner position too soon was observed in many settings. It is an extension of the Prospect theory that suggests an S-shaped value function defined on gains and losses relative to a reference point. The investors are risk-averse in the gains zone while they are risk-seekers in the losses zone. Kyle's framework to analyse the liquidation decisions of these economic agents suggest that investor preferences induces the economic agents to delay the liquidation of inferior project if it is in losses and to accelerate liquidation of a superior position if it is in gains.

The objective of the study is to search for empirical evidence of the differential holding time for winning and losing positions. We examine how the liquidation decisions are influenced by their gains and losses and investigate the effect of trading performances on the holding time of their short positions. Barberis and Xiong (2009) find that the realized gain/loss model predicts the disposition effect more reliably than the annual gain/loss model. Nevertheless, they occasionally observe the opposite of the disposition effect in the realized gain/loss model (Ben-David and Hirshleifer, 2012). This leads us to examine how the liquidation decisions of investors are influenced by the magnitude of the realized gains and losses and under what conditions does the disposition effect not appear.

We need to examine the relationship between the liquidation decision and the magnitude of trading gains / losses. When gains and losses are high enough, the holding time of winners is longer than that of losers, which is the opposite of the disposition effect. The main implication is that investors' show the opposite disposition effect when gains are high enough to compensate for the risk aversion and

loss aversion. This can shed light on the question of how investors trade in relation to their past gains/ losses.This provides fertile ground for the analysis of the out-of-sample portfolios forecasting or trading.

2. Methodology and Data

We have analyzed the entire set of trades in Nifty futures from Apr 2012 to March 2015. The sample composed predominantly of individual investors while the trades by domestic institutions and foreign investors are less. On the basis of trading volume, individual investors contribute relatively lower. The widely used measures of disposition effect are the frequency approach and the duration approach. The duration approach that is used in Coval and Shumway (2005) and Locke and Mann (2005) was used in this study. We are able to calculate the trading speed, the time for each transaction and the trading profit. The latter is categorized into realized gain, realized zero, and realized loss. Unrealized profit is calculated using the average cost and end price. It is also categorized into paper gain, paper zero, and paper loss.

3. Results and Discussion

A table containing the mean holding time, realized profit and profit per contract is prepared. It is observed that the average holding time is very short. The average holding time of a loss is about 1.25 times the average holding time of a gain trade. This result support the disposition effect. The absolute magnitude of profit per contract in loss is much higher than that in gain. These results also support behavioral bias that investors are likely to realize small gain more frequently. From the perspective of holding time, magnitude of profit, and frequency, investors display the disposition effect.

We look at the results by investor type. The mean holding time of individual investors, domestic institutions and foreigners are in the increasing order. In particular, the foreigners hold the position much longer than the other two investor groups. The reason could be that the individual investors do not want to be exposed to position risk. The purpose of trade could be different across investor type. Most individual investors' trade for speculative reasons, but the domestic institutions and foreigners could be trading for hedging purpose. In sum, this study supports that individuals and domestic institutions exhibit disposition effect, while foreigners are not thereby exhibiting substantial heterogeneity in magnitude of disposition effect across the investor types.

Investors have a tendency to hold losers longer than winners. The result supports the hypothesis that the propensity to liquidate gains is not always greater than the propensity to liquidate losses. Investors are likely to hold gains longer than losses over the critical point. As gains increases, investors are less sensitive to risk and loss because gains are high enough to compensate for the risk aversion and loss aversion. Overall, investors will hold losses longer than gains around the break-even point, but will hold gains longer than losses over the critical point. The holding time of gains is shorter than that of losses to a critical point, but is longer over the critical point. Consistent with previous results, investors realize gains more rapidly than losses in low profit area, but realize gains more slowly than losses in high profit area. This pattern is most strikingly evident in individual investors. This result implies that each investor group has different risk aversion and loss aversion.

4. Conclusion

An empirical evidence of both the disposition effect and the opposite of the disposition effect is observed in this study. In most cases, the holding time oflosers is longer than that of winners. As the absolute magnitude of gains and lossesincreases, however, the gap between the holding time of winners and that of losers gets smaller. When gains and losses are highenough, the holding time of winners is longer than that of losers, which is the opposite of the disposition effect. This result implies that investors are likely to hold gains longer than losses over the critical point, because gains are high enough to compensate for the risk aversion and loss aversion.

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