The house money and break-even effects for different types of traders: Evidence from Taiwan futures markets

Yu Chuan Huang a,⁎, Shu Hui Chan b

a Department of Finance, National Kaohsiung First University of Science and Technology, 2, Juayue Road, Nantsu, Kaohsiung 811, Taiwan
b Department of Banking and Finance, Cheng Shiu University, Kaohsiung, Taiwan

Using a set of transaction records from the Taiwan Futures Exchange, we examine risk-taking behavior subject to prior outcomes and study the house money and break-even effects across various trader types. The empirical results show that the degree of morning gains/losses nonlinearly influences afternoon risk taking for all trader types, but the pattern is different for each type. Active individuals exhibit a house money effect after experiencing large gains and exhibit a break-even effect after large and small losses. Futures proprietary firms exhibit a break-even effect only after experiencing large morning losses. By contrast, foreign institutions exhibit only a house money effect after they experience small gains. The additional risk-seeking behaviors of futures proprietary firms and foreign institutions do not have a significant influence on market volatility or liquidity; only active individuals’ risk-seeking behaviors when facing large morning losses impact both market volatility and liquidity.

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1. Introduction

To date, literature on behavioral finance greatly emphasizes the relation between prior profits and subsequent risk-taking behavior (Barberis and Xiong, 2009; Genesove and Mayer, 2001; Heath et al., 1999). Using a large sample of students to study risk-taking behavior in an experimental setting, Thaler and Johnson (1990) find that under certain circumstances people are more likely to take risks after prior gains, known as the house money effect. On the other hand, Thaler and Johnson also note that prior losses lead to risk-seeking behavior in situations where future outcomes offering an opportunity to break even
look particularly attractive. This result is termed the break-even effect. In this study, we attempt to examine the relation between risk taking and prior gains/losses in the context of Taiwan’s stock index futures (TX futures) market.

Recent literature shows that the relation between risk taking and prior gains/losses is significantly different across various types of investors. For example, a considerable body of research finds that retail individuals (Dhar and Zhu, 2006; Feng and Seasholes, 2005; Odean, 1998) and professional investors (Frino et al., 2004; Locke and Mann, 2005) ride their losses and quickly cash out their gains and are thus prone to the disposition effect. A similar behavior pattern can be recognized among fund managers. Motivated by career or reputation concerns, fund managers tend to increase risk taking following bouts of poor performance and cut risk following bouts of good performance (Chevalier and Ellison, 1997). By contrast, O’Conell and Teo (2009) suggest that fund managers aggressively control risks after losses and mildly increase risks after gains, which is consistent with dynamic loss aversion (Barberis et al., 2001). The sign of the effect differs from that observed for individual investors and professional traders. In other examples, Locke and Mann (2005) argue that individual investors are likely to exhibit irrational behavior, whereas disciplined market professionals are able to minimize potential behavioral influence. Likewise, Grinblatt and Keloharju (2001) investigate the disposition effect and find significant differences in trading styles between Finnish individual investors and foreign institutions. However, the experimental study of Haigh and List (2003) finds that professional Chicago Board of Trade (CBOT) futures traders show more myopic loss aversion than less experienced decision makers (i.e., students). As a result, O’Conell and Teo (2009) suggest that behavioral bias is sensitive to investor types.

This study aims to conduct a detailed analysis of the trading behavior of different types of investors in the context of Taiwan’s futures market. This study examines whether prior outcomes affect subsequent risk-taking behavior and which effect exists on the TX futures market. The main focus is to examine how prior outcomes affect risk-taking behavior for each of the investor types (including futures proprietary firms, foreign institutions, and active individual investors) at the account level and determine whether changes in investor risk attitude have any impact on the market.

The contributions of this study are as follows. First, Coval and Shumway (2005) document that market makers engage in greater risk taking after prior losses to break even and reduce risk exposure after prior gains to stay ahead, consistent with the notion that investors try to avoid a sure loss. This effect was also determined by professional futures traders at the Chicago Mercantile Exchange during 1995 (Locke and Mann, 2005). Coval and Shumway (2005) treat profit as merely positive and negative values of a single psychological driver. However, Frino et al. (2008) argue that the value function of Kahneman and Tversky (1979) is built on the understanding that human decision makers react disparately to gains and losses. Accordingly, both a house money effect and break-even effect can occur at the same time since traders exhibit symmetric risk-taking behavior with respect to gains and losses.

Following Frino et al. (2008), this study includes both gains and losses as separate explanatory variables and examines whether traders exhibit a house money effect and/or a break-even effect. However, even using the gains and losses disparately employed by Frino et al. (2008), one cannot effectively capture the nonlinearity of risk-taking behavior on various morning performances. Grinblatt and Keloharju (2001) and Kaustia (2010) suggest that the propensity to sell a stock is affected by different levels of past performance. Therefore studying in more detail how risk perception varies as a (possibly nonlinear) function of previous performance allows more powerful inferences for risk-taking behavior. To better understand the changes in risk attitude, this study examines whether the risk-taking behaviors of different types of TX futures traders are affected by different levels of past gains and losses.

Second, institutional investors are believed to be more sophisticated than individuals. Locke and Mann (2005) argue that individuals display irrational behavior and that disciplined market professionals can minimize potential behavioral influences. Choe and Eom (2009) investigate the Korean futures market and find that individuals are much more prone to the disposition effect than institutional and foreign investors. The phenomenon is also found in Taiwan’s futures markets (Chou et al., 2010). However, the experimental study of Haigh and List (2003) finds that professional CBOT futures traders demonstrate

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1 A large body of theory and evidence distinguishes between gains and losses as separate mental entities (Barberis et al., 2001; Kumar and Lim, 2008; Lim, 2006).
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