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Do foreign investors mitigate anchoring bias in stock market? Evidence based on post-earnings announcement drift

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ABSTRACT

In this paper, we examine the role of foreign investors in the anchoring bias of stock markets. While the existing behavioral finance literature is mostly based on established capital markets like U.S. and U.K., this paper focuses on emerging economy in which foreign investors are important stockholders. Using a sample of common stocks listed on the Korea Stock Exchange between 2001 and 2014, we document the following empirical results. First, the nearness of current price to the 52-week high is positively related to the magnitude of post-earnings announcement drift (PEAD). This indicates that investors are hesitant to revise their beliefs upward (downward) when positive (negative) surprises arrive if the price is already near (far below) its 52-week high, on average. More important, the positive relation between the price proximity to the 52-week high and PEAD disappears for stocks with high level of foreign investor ownership, suggesting that anchoring effect of stocks' 52-week high prices is mitigated by foreign investors. Also, dedicated foreign institutions play an important role in mitigating the extent of PEAD due to anchoring bias. These findings add new evidence to the literature that sophisticated foreign investors reduce market anomaly because they are less subject to cognitive bias such as anchoring on 52-week high stock price in forming earnings expectations.

1. Introduction

The semi-strong form efficient market hypothesis (EMH), which assumes that all public information is reflected in the security price, has been challenged in recent decades. Several studies have documented anomalous phenomena of investors gaining abnormal returns by using publicly available information in the securities market. For instance, post-earnings announcement drift (PEAD) is the tendency of cumulative abnormal returns to continue to drift up for good earnings news firms and down for bad earnings news firms after earnings are announced (Ball and Brown, 1968; Bernard and Thomas, 1990). Such a market anomaly suggests the presence of market inefficiency (e.g., mispricing) through investors' under-reaction or delayed reaction to new financial information. Still, it is unclear why a delayed price response or under-reaction would occur. One stream of research based on behavioral finance has studied investors' irrationality to characterize how individuals make complicated decisions. According to prospect theory, people tend to use common heuristics to economize on cognitive effort in their decision-making processes (Kahneman and Tversky, 1979). Such cognitive biases may also affect individuals' investment decisions. These studies focus on the role of investors' limited attention, overconfidence, or distraction in driving their under-reaction to public information. For instance, since more information is competing for investors' attention than they can process, investors are inattentive to earnings news and thus they under-react to earnings announcements (Hirshleifer and Teoh, 2003).

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The anchoring and adjustment heuristic is one of the most investigated psychological biases. Anchoring is a cognitive bias that describes the common human tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions. Once an anchor is set, other judgments are made by adjusting away from that anchor, and there is a bias toward interpreting other information around the anchor.[1] Evidence has suggested that the 52-week high price acts as an anchor in investors' beliefs. Thus, if the price is already near (far below) its 52-week high, investors are hesitant to revise their beliefs upward (downward) when good (bad) news arrives. George and Hwang (2004) and Li and Yu (2012) show that returns are predictable based on the nearness of the current price to the 52-week high price. In addition, George et al. (2015) and Liu et al. (2011) document that anchoring on the 52-week high price plays a dominant role in financial market phenomena such as the momentum effect and PEAD.

While the existing literature on anchoring bias is mostly based on established equity markets including U.S. and U.K, this study focuses on emerging economy like South Korea because of its different composition of stock investors compared to the established stock markets. One interesting aspect of emerging markets is the existence and role of foreign institutional investors. Also, Korea is one of the few countries that provide detailed data on the identification of foreign investors' ownership (Kho et al., 2009). Hence, it is important to examine whether initial stock price under-reaction to earnings news and subsequent drift in prices are attributable to investors anchoring on 52-week high prices based on the Korean stock market. More important, this paper sheds light on whether foreign investors mitigate or exacerbate the anchoring bias that may lead to PEAD.

In order to test our research question, we use a sample that consists of common stocks listed on the Korea Stock Exchange (KSE) between 2001 and 2014. The hedge return portfolio analysis show that positive (negative) stock price drift exists when extremely positive (negative) earnings surprises coincide with stock prices near (far below) their 52-week high prices, indicating that investors anchor their beliefs on 52-week high prices. Also, the regression analyses provide evidence suggesting that foreign investors in Korean equity market mitigate the anchoring effect of 52-week high price on PEAD. The positive relationship between stock price proximity to the 52-week high and PEAD no longer exists for stocks with high level of foreign ownership. Moreover, after controlling for foreign ownership level, low foreign investor turnover (i.e., dedicated foreign investment) has an incremental effect in mitigating the anchoring bias, thereby reducing the extent of subsequent price drift. This suggests that foreign investors, especially when they are dedicated to long-term investment, are less subject to anchoring bias on 52-week high stock price in forming earnings expectations. This eventually manifests in a smaller magnitude of post-announcement abnormal returns.

This study offers several contributions that differentiate it from previous works. First, the major contribution of this paper is to utilize the unique institutional feature of Korean capital markets in showing that anchoring bias due to excess dependence on 52-week high stock price is reduced by the level of foreign ownership and their investment horizon. Our findings add new evidence to the existing behavioral finance literature that is mostly based on established capital markets like U.S. and U.K., because foreign investors are important equity holders in the emerging markets (Aggarwal et al., 2011).

Second, the paper provides fresh evidence that PEAD is related to investors' behavioral bias due to anchoring on the precedent piece of information (i.e., highest stock price in the prior year). Under the pre-assumption that foreign investors is a good proxy for investor sophistication, our findings fill the void in the literature on the relation between investor sophistication and PEAD. It is well established that investor sophistication reduces market inefficiency such as the PEAD. For example, Bartov et al. (2000) find that institutional holdings are negatively related to the post-announcement abnormal returns. The authors conclude the paper that trading activities of unsophisticated investors are a cause of drift. As such, previous research has argued that foreign investors mitigate market inefficiency because they have superior ability to collect and analyze financial and accounting information for their investment decisions. This study adds to this line of research by showing that sophisticated foreign investors distinguish themselves from unsophisticated investors by overcoming cognitive bias. Namely, foreign investors are more rational in processing current earnings news because they are less likely to rely on the 52-week high stock price when forming earnings expectations, thereby reducing the extent of PEAD.

Finally, this study is closely related to a concurrent paper by George et al. (2015), who document that trading on the anchoring effect earns abnormal returns in excess of momentum strategies. However, important differences distinguish our study from theirs since we adopt an accounting approach by running regression analyses while controlling for various factors that have been shown to affect PEAD in previous research.

The remainder of the paper is organized as follows. Section 2 reviews the related literature and motivates our research question. Section 3 describes the research methodology including sample selection and variable measurement. Sections 4 presents the empirical test results and Section 5 concludes the paper.

2. Related literature and research question

2.1. Anchoring bias

Despite the body of empirical evidence consistent with the EMH, anomalous phenomena in the securities market cannot be explained by this hypothesis. For instance, PEAD (Ball and Brown, 1968; Bernard and Thomas, 1990), accruals anomaly (Collins et al., 2003; Sloan, 1996), the value/glamour effect (LaPorta et al., 1997), and investment anomaly (Titman et al., 2004) have been

[1] This definition is retrieved from *Science Daily* ("Anchoring bias in decision-making"). Anchoring bias was first surveyed by Kahneman et al. (1982) in which experiment subjects are asked to estimate a quantity as an increment to a randomly generated number that they observe. The estimates are shown to be higher (lower) for subjects who start with a higher (lower) random number.