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Another look at anchoring and stock return predictability

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A B S T R A C T

The superior performance of a momentum strategy long in stocks trading near their 52-week high prices and short in stocks trading far from their 52-week high prices is well-documented. In contrast, recent research finds that a similar strategy based on historical high prices exhibits subsequent reversals instead. This paper shows that after excluding low-priced stocks and/or January returns from the sample, the stocks trading near their historical high prices, in fact, exhibit significant outperformance. In particular, in a sample without low-priced stocks, a strategy long in 10% of the stocks with prices nearest to their historical high prices and short in 10% of the stocks with prices furthest from their historical high prices earns an average monthly return of 0.93% in non-January months. The performance of 52-week high momentum strategy also improves significantly upon exclusion of low-priced stocks and/or January returns. These findings have important implications for the anchoring-based behavioral explanations of these return patterns.

1. Introduction

Since the seminal study by Jegadeesh and Titman (1993), stock return momentum has been extensively studied in the literature. While conventional momentum strategies rank stocks based on their recent past returns, an alternative momentum strategy based on stocks' 52-week high prices is proposed in George and Hwang (2004). George and Hwang find that the stocks trading near their 52-week high prices significantly outperform the stocks trading far from their 52-week high prices over next 6 to 12 months. This return predictability is attributed to investors' "anchoring and adjustment" bias (Tversky and Kahneman, 1974) that causes them to underreact to positive (negative) information about stocks with prices near (far from) their 52-week high prices.[1]

More recent research also examines return patterns associated with stocks' historical or all-time high prices. Interestingly, this research documents an opposite pattern: the stocks trading near their historical high prices underperform, consistent with investor overreaction.[2] Li and Yu (2012) document such reversals at both the aggregate market level for Dow Jones Industrial Average, and find consistent evidence in the cross-section of individual stocks. Lee and Piqueira (2017) study short-selling behavior around 52-week high and historical high prices, and find that short-selling is positively associated with proximity to the historical high, and negatively associated with proximity to the 52-week high. Thus, they conclude that their evidence is consistent with short-sellers exploiting the mispricing resulting from investors' anchoring bias.

The goal of this paper is to examine the impact of low-priced stocks and January seasonality on return predictability associated with these psychological price anchors. It is common in the momentum literature to exclude low-priced stocks to avoid

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[1] The anchoring effects are well-documented in various contexts such as real estate pricing (Northcraft and Neale, 1987), mergers and acquisitions, and takeover premiums (Baker et al., 2012; Gerritsen, 2015), gold and silver prices (Lucey and O'Connor, 2016), and financial decision-making (Jetter and Walker, 2017).

[2] It has been proposed that underreaction in case of the 52-week high, and overreaction in case of the historical high can be attributed to evidence of investors' underreaction to sporadic news, but overreaction to a prolonged string of good or bad news (see Griffin and Tversky, 1992).

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microstructure biases. Bhootra (2011) shows that the strong reversal experienced by loser penny stocks over short horizons reduces the momentum strategy returns significantly. Therefore, inclusion of penny stocks in the sample can alter the inferences, especially in case of equally-weighted portfolio returns. The effect of January seasonality is also well-documented. The momentum profits are significantly higher when January returns are excluded due to the large positive returns of loser stocks in January.

We find that with either of these adjustments, excluding the stocks priced below $5 or excluding January returns, the stocks trading near historical high prices significantly outperform the ones trading far below their historical high prices. In our sample, we also find that in the presence of these sub-$5 stocks, the momentum strategy based on 52-week high price does not earn a significant positive all-months raw return, on average.[3] However, when both low-priced stocks and January returns are excluded, a long-short strategy based on decile portfolio sorts earns an average monthly return of 0.93% (t-statistic = 5.27) in case of the historical high price, and 1.64% (t-statistic = 7.72) in case of the 52-week high price. Because of the reversals experienced by low-priced loser stocks, our evidence from portfolio sorts also reveals nonlinear return patterns which are not captured in commonly employed linear regressions. We document a similar impact of low-priced stocks and January returns in one-anchor (52-week high = historical high) and two-anchor (52-week high < historical high) subsamples, in which the investor misreactions are likely to be more pronounced, as discussed in Li and Yu (2012).

In summary, we find that the presence of low-priced stocks and January returns is detrimental to the performance of both the 52-week high and the historical high based strategies. Their exclusion from the sample reveals a momentum pattern associated with both the strategies and there is no pervasive cross-sectional evidence of overreaction-driven reversal associated with the historical high prices.

The rest of the paper is organized as follows. Section 2 discusses the data and methodology. Section 3 presents the results of our empirical analyses. Section 4 concludes.

2. Data and methodology

Our sample comprises of all NYSE, AMEX, and NASDAQ listed common stocks (share codes 10 or 11) with available data included in the Center for Research in Security Prices (CRSP) files over the period from January 1963 to December 2015. The historical high price is the highest closing price ever attained by the stock, and the 52-week high price is the highest closing price of the stock during the past 52 weeks, as reported in CRSP daily files.[4] Following George and Hwang (2004), in computing the historical high and the 52-week high prices and related measures, the prices are adjusted for stock splits and dividends using the CRSP price adjustment factor.

At the end of each month, we compute the historical high ratio and 52-week high ratio for each stock as follows:

$$Historical\ High\ Ratio = \frac{current\ \ price}{historical\ high\ price} \tag{1}$$

$$52 - Week\ High\ Ratio = \frac{current\ \ price}{52 - week\ \ high\ \ price} \tag{2}$$

The closer the current price is to the historical high or the 52-week high price, the higher is the corresponding ratio. If the formation month end price equals the respective peak price, then the corresponding ratio has the maximum possible value of 1.

The equally-weighted portfolio returns are computed using the overlapping period approach originally proposed in Jegadeesh and Titman (1993). As an example, consider the computation of holding period portfolio returns for the historical high ratio using decile portfolios. In each month t, 10% of the firms with the highest ratio are assigned to the ``high" portfolio, and 10% of the firms with the lowest ratio are assigned to the ``low" portfolio. The firms remain in these portfolios over months $t + 1$ to $t + 6$.[5,6] Each month's momentum strategy involves a long position in the equally-weighted ``high" portfolio and a short position in the equally-weighted ``low" portfolio. The monthly portfolio returns represent the equally-weighted average of returns from current month's strategy and strategies implemented during each of the previous five months. Thus, in any given month, approximately one-sixth of the securities in the portfolios are replaced with new ``high" and ``low" stocks. In addition to using 10% cutoffs, we also employ 30% cutoffs to identify winners and losers.

In addition to portfolio level analyses, we also employ a simple Fama–MacBeth (Fama and MacBeth, 1973) cross-sectional regression framework. Instead of the somewhat arbitrary $5 price screen, the regression frameworks allows us to account for short-term reversals in small, low-priced stocks by explicitly controlling for firm size and lagged return.

[3] The absence of momentum is sample-specific. The momentum is insignificant since 2001, owing to several months of momentum strategy crashes (Daniel and Moskowitz, 2016). From 1963 to 2000, we find significant momentum returns in the absence of filters. However, the impact of low-priced stocks and January seasonality is evident during this period as well.

[4] Although our sample begins in 1963, we use the CRSP sample start date in 1926 to determine the highest historical price attained by a stock.

[5] We also examine the impact of skipping a month between the formation and holding periods. After excluding sub-$5 stocks, skipping a month does not have any material impact on the results.

[6] The momentum strategy with 6-month holding period has received the most attention in the literature. Hence, we focus on this strategy. We obtain similar results with a 12-month holding period.