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Fundamental Strength and the 52-Week High Anchoring Effect*

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Abstract

When stocks are trading near their 52-week high investors tend to have low expectation about their future returns. We contrast such expectations against firms' fundamental strength. For firms with strong fundamentals, we confirm that investors' expectations are too low, which is consistent with the hypothesis that the 52-week high acts as a psychological anchor. We report that a fundamental-strength enhanced 52-week high trading strategy significantly outperform the unconditional strategy by nearly doubling its average return. Moreover, we provide interesting evidence that this anomalous effect is most evident when investor sentiment is high, but absent among more sophisticated institutions and short sellers.

JEL Classification: G11, G12, G14

Keywords: Anchoring Bias; Underreaction; 52-week High; Fundamental Strength

1. Introduction

Pioneering work by Nobel laureates Tversky and Kahneman (1974) suggest that when making decisions under uncertainty, human beings often rely on some forms of heuristics, one of them being "adjustments from an anchor, which is usually employed in numerical prediction when a relevant value is available." Empirical evidence also seems to support this conjecture. For example, Genesoveand and Mayer (2001) find that condo owners in downtown Boston rely on mark-ups relative to their purchase prices when setting selling prices. In labor economics, Camerer et al. (1997) show evidence that New York City cabdrivers use daily earnings targets as a reference point to determine their labor supply. Chira, Garcia-Feijoo, and Jeff Madura (2019) show the role of reference points in the merger and acquisition.

In financial markets, consistent with the prediction from this price-anchoring hypothesis, recent literature on behavioral finance suggests that investors' expectation of future stock returns appear to be influenced by price levels. For example, leveraging clearinghouse-level data from Finland, Della Vedova, Grant, and Westerholm (2022) provide direct evidence that households strongly sell with limit orders placed at the 52 week high price. Birru and Wang (2016) document that investors systematically overestimate the skewness of low-priced stocks. Li and Yu (2012) show that investors tend to underreact to news when the Dow is near the 52-week high. More closely related to our work, George and Hwang (2004) present intriguing cross-sectional evidence that on average stocks whose prices are near their 52-week highs significantly outperform stocks whose prices are far away from their 52-week highs in the subsequent months. They find that this 52-week-high strategy dominates both the price momentum strategy of Jegadeesh and Titman (1993) and the industry momentum strategy of Moskowitz and Grinblatt (1999). More recently, Huang, Lin, and Xiang (2021) report that the return predictability of economically linked firms is tied to the 52-week high. These authors all attribute the 52-week high anomaly to investors' anchoring bias, which triggers an initial

underreaction to news by investors. Under this anchoring hypothesis, the nearness to 52-week high induces investor underreaction to news, which leads to subsequent higher returns as information eventually prevails.

Other authors also relate the 52-week high to biases in analyst target prices (Cen et al., 2013; Birru, 2015), retail investors' trading activities (Grinblatt and Keloharju, 2001), trading volume (Huddart, Lang, and Yetman, 2009), option implied volatility (Driessen, Lin, and Hemert, 2012), merger and acquisition activities (Baker, Pan, and Wurgler, 2012), exercise of executive options (Heath, Huddart, and Lang, 1999), and short term reversal (Zhu, Sun, and Stivers, 2021). Please also see related theoretical work by Ingersoll and Jin (2013) and Barberis and Xiong (2012).

In this article, we formally test this anchoring bias hypothesis by explicitly exploring the relation between the fundamental news and nearness to the 52-week high (as measured by the ratio of current price to the 52-week high price, or PTH). If investors underreact to news, then an important question to ask is which types of news are most relevant to the valuation of a stock? This question is important because as shown by Huang, Lin, and Xiang (2021), even news about other economically linked firms could affect the stock returns of firms trading near the 52-week high. In this paper, we conjecture that a firm's own fundamental news should play a pivotal role in explaining the 52-week high momentum effect.

If the anchoring hypothesis is true, then firms that experience recent positive fundamental news should outperform those receiving bad fundamental news. Since the 52-week high anchor triggers investor underreaction to good fundamental news, a trading

strategy that takes a long (short) position in good (bad) fundamental news firms should be profitable. And that is exactly what we find out.

More specifically, we rely on the FSCORE from Piotroski (2000) as a proxy for news related to a firm's fundamental strength. The FSCORE is a nonparametric measure that is both simple and intuitive. It depicts a firm fundamental picture along three dimensions: profitability, operating efficiency, and leverage. The FSCORE approach has been widely adopted both in the finance and accounting literature to proxy for a firm's fundamental strength. Examples include Piotroski (2000), Fama and French (2006), Piotroski and So (2012), Zhu, Sun, and Chen (2019), and Zhu, Sun, Yung, and Chen (2020). Choi and Sias (2012) report that FSCORE can predict both future returns and future institutional demand.

Consistent with our main thesis, we find that the portfolio that takes a long (short) position in stocks with both high (low) PTH and high (low) FSCORE earns a highly significant monthly mean return of 1.54%, which nearly doubles the average returns of portfolios sorted on the PTH variable alone. In contrast, the spread portfolio where PTH and FSCORE are inconsistent has an average return that is essentially zero. Importantly, our results remain highly significant on a risk-adjusted basis and after controlling for a common set of firm characteristics that are known to have explanatory power in the setting of cross-sectional regressions. They also survive a battery of other robustness tests.

Moreover, we find evidence that the PTH anchoring effect is prevalent only when investor sentiment is high but disappears when sentiment level is low. Moreover, we also document that sophisticated investors (e.g., institutional investors and short sellers) do not appear to underreact to news when stock prices are near the 52-week highs. Thus, our

findings are consistent with Choi and Sias (2012) in that underreaction appears to be concentrated among less sophisticated investors.

This paper is organized as follows. Section 2 describes the data. Section 3 presents the main empirical results. Section 4 summarizes the findings related to investor sentiment. Section 5 describes the trading activities of institutions and short sellers. We provide some concluding remarks in section 6.

2. Data and Variable Description

Our main datasets are from standard financial databases. For example, the data on stock returns, share prices, trading volumes, and shares outstanding are obtained from CRSP. Our sample focuses exclusively on common stocks (share code 10 or 11) listed on the NYSE, AMEX, and NASDAQ. Financial statement data are collected from Compustat. The sample period is from January 1985 to December 2017. To alleviate concerns about market microstructure biases, we follow standard practice and exclude stocks with prices less than $5 at the beginning of portfolio holding period. Fama-French factors data are from Kenneth French's website. We also obtain investor sentiment data from Jeffrey Wurgler's website. Following Shumway (1997) and Shumway and Warther (1999), we assign delisting returns of -30% and -50%, respectively, to stocks delisted from NYSE/AMEX and NASDAQ if their delisting returns are missing, equal to zero, or if the delisting is attributable to performance reasons.

The FSCORE metric was first proposed by Piotroski (2000) and has been widely utilized to measure a firm's composite fundamental or financial strength in the extant

literature (e.g., Piotroski, 2000; Fama and French, 2006; Piotroski and So, 2012). It captures a firm's financial strength along three dimensions: profitability as measured by four variables (return on assets, change in return-on-assets, accrual, and operation cash flow), financial leverage or liquidity as measured by three variables (long-term-debt to total-assets ratio, change in current ratio, equity issues), and operation efficiency as measured by two variables (change in gross margin ratio, and asset turnover ratio). Firms with higher FSCORE is considered to have better financial performance. The range of FSCORE is from 0 to 9.

We construct the Quarterly FSCORE to capture the most recently available fundamental information. We jointly use the SEC filing rules and the Report Date of Quarterly Earnings (RDQ) to estimate the real-time availability of fundamental news. The SEC requires domestic public firms to file quarterly and annual financial reports within 45 and 90 days after the fiscal quarter, respectively. For accelerated filers / large accelerated filers, the SEC requires them to file quarterly and annual financial reports within 40 and 75/60 days, respectively. In addition, firms release earnings-related information in the RDQ, which normally occurs in the second month after the end of the fiscal quarter. However, Levi (2008) argues that some firms do not provide balance sheet and cash flow information that are used in constructing the quarterly FSCORE in the RDQ and these firms will finish the 10-Q filings a few weeks after the RDQ. Therefore, we assume that investors have access to this information half a month after the RDQ because most public firms try to finish their filings in time in order to avoid negative outcomes. Moreover, we skip one more month to make sure that the fundamental information is available for almost all sample firms in our empirical setting. Supposing a

stock's fiscal quarter is December, and the report date of the quarterly earnings for a stock is 02/16/2000, we could use the financial information in this report to measure its fundamentals at the end of April 2000. In subsequent months (i.e., May or June 2000), we still use the financial report that was announced in February 2000 until a new report is announced.

In our regression analysis, we control for some commonly used firm characteristic variables that are known to have explanatory power in the cross-section of average returns. These variables include: size as measured by a firm's market capitalization, a firm's book-to-market ratio (BM) at the end of prior year, past cumulative 11month return (MOM), most recently available return on equity (ROE) calculated with quarterly financial data, and standardized unexpected earnings (SUE) computed as the year-over-year change in quarterly earnings standardized with the standard deviation of these changes from the most recent eight quarters.

3. Main Empirical Results

In this section, we study investors' underreaction to fundamental news by considering the joint effect of both PTH and FSCORE with double-sorted portfolios and regression analysis. We also check the robustness of our results by accounting for the January effect, size effect, and consistency across two subperiods.

3.1. Portfolio Analysis

At the end of each month t, we assign stocks that meet our selection criteria into 15 (5 by 3) equal-weighted portfolios based on two-way independent sorts on a stock's nearness to

its 52-week high (PTH) and its fundamental strength as measured by its FSCORE. We use a quintile sort on PTH and categorize FSCORE into three groups: 0 to 3 (low FSCORE), 7 to 9 (high FSCORE), and 4 to 6 (mid FSCORE). Low (high) FSCORE proxies for firms that experience bad (good) fundamental news arising from their recent quarterly reports. The portfolios are then held for the next 6 months. Following Jegadeesh and Titman (1993), we rely on the monthly overlapping portfolio returns to measure the total holding-period returns. Therefore, the average monthly return reported in Table 1 represents the average return of 6 portfolios formed during each of the past 6 formation months.[1]

Panel A of Table 1 shows both raw and risk-adjusted returns of the high minus low (H-L) momentum portfolios sorted on PTH and FSCORE. We consider 3 popular factor models for risk adjustment: Fama and French 3-factor model (FF3), FF3 plus the Carhart (1997) momentum factor (Carhart), and Fama and French (2015) 5-factor model (FF5).

Consistent with prior studies, we find that a positive and significant PTH effect exists for each FSCORE group (low, mid, or high) based on the raw returns. However, the effect appears to attenuate as firms' fundamentals improve. For example, among low FSCORE stocks, on average high-PTH stocks outperform low-PTH stocks by 0.94% each month (*t*-statistic = 3.24). By comparison, the outperformance reduces to 0.65% (*t*-statistic = 3.01) within the high FSCORE group.

[1] An unreported table shows consistent results hold for 1-month holding period. For example, when the holding period is 1-month, the raw return, FF3-, FF4-, and FF5-adjusted returns for the consistent PTH-FSCORE are 1.60% (t-statistic = 4.68), 1.93% (t-statistic = 7.71), 1.14% (t-statistic = 5.88), and 1.36% (t-statistic = 4.08), respectively; the raw return, FF3-, FF4-, and FF5-adjusted returns for the inconsistent PTH-FSCORE are 0.15% (t-statistic = 0.58), 0.52% (t-statistic = 2.08), -0.16% (t-statistic = -0.74), and 0.33% (t-statistic = 0.94), respectively.

For each PTH quintile, we also report the raw and risk-adjusted mean returns of the trading strategy that is long high FSCORE stocks and short low FSCORE stocks. We find that the high minus low FSCORE portfolio earns an average monthly return of 0.89% (0.60%) per month in subsequent 6 months with a highly significant *t*-statistic of 5.96 (5.35) among low (high) PTH stocks. Interestingly, the FSCORE strategy appears to be profitable even after risk-adjustments based on all the factor models under consideration.

From Panel A, we also notice that the short legs of the PTH or FSCORE long-short portfolios tend to earn statistically insignificant profits. For example, the short leg for the PTH portfolio in the low (mid) FSCORE category has an average raw return of 0.04% (0.5%) with a *t*-statistic of 0.09 (1.3). In other words, the profits of the long-short portfolios appear to come mainly from the long positions.

Panel B of Table 1 reports the results for joint PTH-FSCORE (PF) portfolios. A *consistent* PF portfolio takes a long (short) position in stocks where both PTH and FSCORE rankings are high (low).[2] Otherwise it is called an *inconsistent* PF portfolio, which takes a long (short) position in stocks with high (low) PTH but low (high) FSCORE. We find that the consistent PF portfolio earns a highly significant average monthly raw return of 1.54% with all the profits contributed from the long leg. The inconsistent PF portfolio is found to be unprofitable. Importantly, we report that risk-adjusted returns for the consistent PF portfolio remain significant for all asset pricing models under consideration. Overall, we conclude that the empirical evidence from double sorted portfolio analysis is supportive of our view that the joint consideration of

[2] The consistent PF portfolio refers to the fundamental-consistent 52-week high (PTH) strategy, and the inconsistent PT portfolios refers to the fundamental-inconsistent PTH strategy in tables.

PTH and FSCORE can better identify firms where investor underreaction to fundamental news is most severe and consistent with the anchoring bias hypothesis.

In the appendix, we also report the results for other alternative anchors such as 50-day moving average and all-time high price. We find that 52-week high has stronger return predictability than all-time high and 50-day moving average.

3.2. Regression Analysis

The portfolio approach presented in section 3.1 is subject to the criticism that the results might be affected by omitted firm characteristics. To mitigate this concern, we run Fama-MacBeth (1973) style cross-sectional regressions that simultaneously control for several well-known firm characteristics such as size, book-to-market ratio, momentum, return on equity (ROE), and recent earnings surprises (SUE). [3] To ensure that our results are robust to variations in model specifications, we run two set of regression models.

First, we separately estimate the following monthly cross-sectional regressions in two types of subsamples, each of which is categorized by FSCORE and PTH:

$$R_{i,t+1:t+6} = \alpha_t + \beta_1 PTH_{i,t} + \beta_2 Size_{i,t} + \beta_3 BM_{i,t} + \beta_4 MOM_{i,t} + \beta_5 FSCORE_{i,t} + \beta_6 ROEi,t + \beta_7 SUEi,t + \varepsilon_{i,t}, \quad (1)$$

where the dependent variable $R_{i,t+1:t+6}$ is the average monthly raw return of firm i (that belongs to either the PTH or FSCORE subsamples) measured over a 6-month holding period from month $t + 1$ to $t + 6$.

[3] Fama and French (2008) emphasize that both the portfolio and regression approaches have their own strength and weakness. They find that these two approaches are complementary to each other.

Panel A of Table 2 reports the estimated coefficients within the three (high, mid, and low) FSCORE subsamples. By dividing the data into three FSCORE subsamples, we aim to control for the effect of fundamental news on the PTH variable. The results show that the coefficients of PTH are significantly positive in all three FSCORE subsamples, indicating that the nearness to 52-week high does contain useful incremental information after accounting for the FSCORE. Interestingly, we also find that the FSCORE variable is highly significant in both the low- and mid-FSCORE subsamples. Only in the high FSCORE subsample did the FSCORE variable lose its significance.

Panel B in Table 2 reports the estimated regression coefficients within the five PTH quintile subsamples. By cutting the sample in such a manner, we intend to sufficiently control for the effect of the PTH variable. As expected, we find that the PTH variable is only significant in one out of five PTH subsamples. By comparison, we find that the FSCORE variable is highly significant in all five PTH subsamples with *t*-statistic ranging from 5.76 to 8.28. Overall, the results from Table 2 are consistent with our prior that both PTH and FSCORE contribute to identifying firms that underreact to fundamental information.

Next, we directly test for the anchoring hypothesis by controlling for the interaction between PTH and FSCORE in our regression model. Following George and Hwang (2004) and Piotroski and So (2012), we estimate the following cross-sectional regression:

$$R_{i,t+1} = \beta_1 PTH_{i,t-1:t-j} + \beta_2 PTH_{i,t-1:t-j} \times HighFSCORE_{i,t-1:t-j} + \beta_3 PTH_{i,t-1:t-j} \times MidFSCORE_{i,t-1:t-j} + \beta_4 Middle_{i,t-1:t-j} + \beta_5 Middle_{i,t-1:t-j} \times LowFSCORE_{i,t-1:t-j} + \beta_6 Middle_{i,t-1:t-j} \times HighFSCORE_{i,t-1:t-j}$$

$$+ \beta_7 PTL_{i,t-1:t-j} + \beta_8 PTL_{i,t-1:t-j} \times LowFSCORE_{i,t-1:t-j}$$

$$+ \beta_9 PTL_{i,t-1:t-j} \times MidFSCORE_{i,t-1:t-j} + \beta_{10} SIZE_{i,t-1} + \beta_{11} BM_{i,t-1}$$

$$+ \beta_{12} MOM_{i,t-1} + \beta_{13} RET_{i,t} + \beta_{14} SUE_{i,t-1} + \beta_{15} ROE_{i,t-1} + \varepsilon_{i,t-1}. \quad (2)$$

Similar to our setup in portfolio analysis (Table 1), and to follow George and Hwang (2004), the dependent variable in equation (2) is the monthly return at month $t + 1$. We skip 1 month between dependent variable and independent variables except for the variable RET, which stands for the return in month t and is used to control for the short-term reversal effect of Jegadeesh (1990). The indicator variables PTH, Middle, and PTL are equal to one if the ratio of a stock's price to its 52-week high in the formation month $t-j$ (where j = 1,...,6) is in the top 20%, middle 60%, and bottom 20%, respectively. Likewise, the indicator variables LowFSCORE, MidFSCORE, and HighFSCORE are equal to one if a firm's FSCORE is less than 4, between 4 and 6, or greater than 6 in the formation month $t-j$, respectively. The interaction terms used in this regression, such as *PTL* × *LowFSCORE* and *PTH* × *HighFSCORE*, are intended to test for our hypothesis that both the PTH and FSCORE variables can help identify investor underreaction. Following Piotroski and So (2012), the intercept term is suppressed to avoid collinearity in the model, and the control variables such as size, BM ratio, momentum, past 1-month return, ROE, and SUE are assigned to deciles with their values ranging from 1 to 10.[4]

We estimate six different specifications of the regression model shown in equation (2). Model 1 includes only three nearness to 52-week high variables (PTL, Middle, PTH) on the right-hand side of the equation. Models 2 to 5 include various subsets of the firm characteristic variables. Model 6 includes everything. The results are reported in Table 3.

[4] Our results are robust to the use of these variables in untransformed format.

If we compare model 1 with models 5 and 6, we find that the three nearness to 52-week high variables are losing their statistical significance after we control for firm characteristics, especially with the inclusion of ROE. In contrast, we also find that the interaction terms with FSCORE variables retain their significance across all model specifications.

To summarize, the empirical evidence from both the portfolio and regression analyses appears to support the hypothesis that anchoring bias near the 52-week high induces investors' underreaction to fundamental news. By jointly considering the effect from both FSCORE and PTH, we can better identify firms where investor underreaction to fundamental news are most severe.

3.3. Additional Tests

3.3.1. January Effect

Numerous studies in the empirical asset pricing literature have found that January appears to be a special month. For example, it is well-documented that small firms tend to outperform large firms in January. George and Hwang (2004) report that the 52-week high strategy suffers from substantial losses in January, which is consistent with a similar finding by Jegadeesh and Titman (1993) in the case of price momentum strategy. To mitigate the impact from the January seasonality, we exclude January observations from our sample.

The results from this non-January sample are reported in Table 4. Panel A reports the raw and risk-adjusted returns for the high minus low PTH portfolios in three FSCORE groups. We find that the PTH portfolios are mostly profitable. Panel B reports

the raw and risk-adjusted returns for the high minus low FSCORE portfolios across the PTH quintiles. We find that the returns are highly significant in all cases regardless of the factor models used for risk adjustments. Panel C shows the average returns of joint PTH-FSCORE portfolios. We find that the consistent PF portfolio significantly outperforms the inconsistent PF portfolio. Overall, we conclude that our results are robust after controlling for the January effect.

3.3.2. Sub-Periods

We further perturb the robustness of our empirical results by splitting our sample into two subperiods: 1985 to 1999 and 2000 to 2015. Chordia, Subrahmanyam, and Tong (2014) document that the profitability of many anomalies decreases significantly in the post-2000 period due to increasing liquidity. Moreover, McLean and Pontiff (2016) show that the profits of many anomalies are weakened after they are disclosed to public investors. Since the PTH anomaly was first identified in 2004, it is interesting to see if our results survive this robustness check, especially in the second subperiod.

Panel A of Table 5 shows that in the first subperiod, both PTH- and FSCORE-based strategies earn significantly positive average returns. However, the second subperiod results presented in Panel B is somewhat different. For the PTH portfolios, the average returns become insignificant based on raw returns as well as on FF5 adjusted returns. For PTH portfolio returns within the high FSCORE group, none of the raw or adjusted returns are significant. By comparison, FSCORE-based portfolios generate positive and significant returns in all cases. The consistent PTH-FSCORE joint portfolios are mostly significant with the exception of the FF5 model in the second half of the sample.

3.3.3. Size Effect

Many studies document that many anomalies are more pronounced among small firms (e.g., Hong, Lim, and Stein, 2000; Hou, Xue, and Zhang, 2020). In Table 6, we divide our sample into three subsamples sorted by firm size. Panel A reports, within the small firm subsample, the raw and factor-adjusted average returns for the high minus low PTH (FSCORE) portfolios sorted by FSCORE groups (PTH quintiles). We find the average returns are highly significant in all cases. Panels B and C report the results for medium and large firms. We report that as firm size increases, the average returns tend to lose some significance, especially for PTH portfolios. The FSCORE portfolios appear to be less affected by variations in firm size. Table 6 shows that, *ceteris paribus*, investor underreaction is likely to be more severe among small firms. This result is consistent with the fact that the small firms are less likely to be followed by analysts, which exacerbates the slow dissemination of information among such firms (Hong, Lim, and Stein, 2000).

3.3.4 Value-Weighted Returns

Table 7 reports the results based on value-weighted returns. First, we find that the value-weighted return spread between high and low FSCORE portfolios is economically and statistically significant across five PTH quintiles. Second, the return spread between high and low PTH quintile portfolios is larger and more significant in low PTH portfolio, while it becomes much smaller and insignificant in high PTH portfolio. Third, the consistent PTH-FSCORE strategy also generates economically and statistically significant profits, while inconsistent PTH-FSCORE portfolio has low returns. Overall, these results show that our main results in Table 1 are robust when we use value-

weighted returns, suggesting that the incremental effect of fundamental news also exist among relatively large stocks, consistent with the findings in the above subsection 3.3.3.

3.3.5 Transaction Costs

Novy-Marx and Velikov (2016) show that many anomalies become weak and insignificant after adjusting for transaction costs. However, their study does not examine the enhanced anomalies based on two or more simple anomalies. To mitigate the concern about transaction costs, we calculate the transaction costs for the consistent PTH-FSCORE portfolio.

Following Da et al. (2014), the portfolio turnover ratios and the direct effective spreads jointly provide an approximate estimate of the transaction costs. When estimating transaction costs, we use the direct effective bid–ask spreads (Chordia et al., 2000). For example, the estimated transaction cost for the PTH-FSCORE joint strategy is 64.09% (portfolio turnover) × 0.895 (direct effective spreads) (for short leg: low PTH and low FSCORE) + 76.52% × 0.552 (for long leg: high PTH and high FSCORE)= 1.00% per month. This estimated transaction cost is economically smaller than the enhanced trading strategy's raw return of 1.60% (equal-weighted return and holding month is one-month).

Moreover, Novy-Marx and Velikov (2016) argue that the transaction costs of academic anomalies are overstated because, in practice, some simple rule-based methods could reduce trading costs. For example, Novy-Marx and Velikov (2016) propose the buy/hold strategy, which could significantly reduce the portfolio turnover. Since PTH strategy is a momentum strategy, a buy/hold strategy could efficiently reduce trading costs. In addition, most brokers in the U.S. are offering zero commission trading

nowadays. Taken together, transaction / trading costs are not a major concern for the PTH-FSCORE joint strategy.

3.3.6 Momentum Crashes

Traditional simple momentum strategies suffer from crashes in some periods (Daniel and Moskowitz, 2016). Barroso and Santa-Clara (2015) and Daniel and Moskowitz (2016) propose some methods to mitigate momentum crashes. Table 8 shows that simple PTH strategy and fundamental-based PTH strategy also suffer from several losses in some months. The simple PTH strategy and the fundamental-consistent PTH strategy suffer from a maximum loss of -31.11% and -36.19% in a specific month, respectively. Fundamental-based strategies also have high standard deviation and negative skewness. These results suggest that even incorporating fundamental information could not efficiently mitigate the crash risk.

Then we follow the volatility-managed method in Barroso and Santa-Clara (2015) to manage the risk of fundamental-consistent PTH strategy. Results show that the volatility-managed strategies have higher returns, lower volatility, and less negative skewness, and suffer from less severe crashes. Compared with the maximum loss of -36.19% for the fundamental-consistent PTH strategy, the volatility-managed fundamental-consistent PTH strategy has the maximum loss of -11.75%. However, the volatility-managed fundamental-consistent PTH strategy still outperforms the volatility-managed simple PTH strategy, suggesting that the fundamental information still has incremental effect.

4. The 52-Week High and Investor Sentiment

If the PTH anomaly is due to the anchoring effect, then it is plausible that less sophisticated investors such as noise traders, sentiment traders, and individual investors are more likely to suffer from this psychological bias. In this section, we directly test this implication by studying the PTH anomaly across high and low investor sentiment regimes.

It is well-known in the literature that noise or sentiment-driven traders are less likely to participate in the stock market when their sentiment level is depressed.[5] If so, then the PTH anomaly should be more (less) prominent when investor sentiment is high (low). We explore this conjecture in Table 9. We rely on the investor sentiment index constructed by Baker and Wurgler (2006), which is orthogonal to a set of macroeconomic variables. Following Yu and Yuan (2011), investor sentiment in any given month is deemed to be high (low) if the lagged value of the Baker and Wurgler index is above (below) the sample median.

Panel A of Table 9 reports the results based on PTH and FSCORE double-sorted portfolios when investor sentiment is high. Compared with the results from Table 1, we find both PTH and FSCORE effects become stronger. For instance, the average raw return for the High PTH / Low FSCORE portfolio increases from 0.94% (*t*-statistic = 3.34) to 1.53% (*t*-statistic = 5.28). Likewise, the Low PTH / High FSCORE portfolio sees its average monthly return increases from 0.89% (*t*-statistic = 5.35) to 1.35% (*t*-statistic = 6.72). The average returns are generally higher as compared with the unconditional results from Table 1, especially for the PTH portfolios.

[5] For example, please see Yu and Yuan (2011) and Stambaugh, Yu, and Yuan (2012).

Panel B tells a strikingly different story. We find that when investor sentiment is low, the PTH anomaly disappears. The average monthly raw returns are statistically indistinguishable from zero for all PTH portfolios across the three FSCORE groups. The FSCORE strategy is performing better than the PTH strategy. For example, the FSCORE portfolios retain positive and significant returns in the three highest PTH quintiles. The results from risk-adjusted returns are quite similar.

To sum up, we find that the PTH anomaly is sensitive to shifts in investor sentiment regimes. It becomes non-existent when investor sentiment is low. Thus, we conclude that the evidence presented here is consistent with a behavioral rather than a risk-based explanation of the PTH anomaly.

5. Evidence from Trading Activities of Sophisticated Investors

The previous section documents that the PTH anomaly is stronger when less sophisticated investors are active. In this section, we study the trading activities of the more sophisticated investors. We focus on two types of sophisticated investors: institutions and short sellers. Our prior is that these sophisticated investors are less likely to suffer from the anchoring bias. Therefore, it is unlikely that they underreact to fundamental news when a stock is trading at the 52-week high.

5.1. Trading Activities by Institutional Investors for Stocks Trading Near the 52-Week High

Following Nofsinger and Sias (1999) as well as Choi and Sias (2012), we use the quarterly changes in institutional ownership as a proxy for institutional trading. The

quarterly institutional ownership data are from Thomson-Reuters Institutional 13-F filings. Specifically, we compute standardized institutional ownership (IO), which is the ratio of the number of total shares held by all institutions to the number of total shares outstanding at the end of each quarter. Observations with missing IO data from the 13-F filings are excluded.

Results from Table 10 show that institutions speed up their buying when stocks are trading toward the 52-week high and reduce their holdings in stocks that are trading far away from the 52-week high. For instance, Panel A of Table 10 shows that on average institutions increase (decrease) their holdings on high-PTH (low-PTH) stocks by 1.15% (0.67%) in the quarter immediately prior to stocks reaching the 52-week high (low). Importantly, this trend of increasing (decreasing) institutional ownership in stocks trading near (away from) the 52-week high seems very persistent. It starts nearly a year before stocks are at the 52-week high and continues after that for another year.

Panel B of Table 10 cuts the sample into two subperiods: pre- and post-2000. Recall that our earlier results from Table 5 indicate the PTH effect is stronger in the first half of the sample, but much weakened in the post-2000 sample. Panel B shows that, during the quarter immediately before stocks reach the 52-week high, institutional investors increase their holdings on high-PTH stocks by 1.32% during the first half sample (1985 to 1999) and 0.99% during the second half sample (2000 to 2015). For low-PTH stocks, institutions dump their holdings by 1.08% in first half sample and 0.29% in the second half sample. Hence, the trend-chasing behavior exhibited by institutions appears to be consistent across the two subperiods.

In Panel C, we further divide the high- and low-PTH quintile into three groups sorted by the FSCORE variable. The results show that institutional investors are more inclined to buy (sell) stocks with strong (week) fundamentals. This effect is particularly obvious when PTH and FSCORE are in agreement with each other.

To sum up, our findings are consistent with the results from Choi and Sias (2012), who show that financial strength positively predicts future institutional investor demand. Similarly, but in a different context, we find that institutions appear to show persistent buying interest in stocks both long before and after they trade at or near the 52-week high.

5.2. Trading Activities by Short Sellers for Stocks Trading Near 52-Week High

Many studies show that short sellers are more sophisticated that the average retail investor (e.g., Boehmer, Huszar, and Jordan, 2010; Jiao, Massa, and Zhang, 2016). For example, Barber and Odean (2008) report that less than 0.29% of all positions from a discount broker are short positions. Thus, it is interesting to see if short sellers are susceptible to the anchoring bias. We use monthly short interest data from Compustat, which records the total number of shorted shares outstanding in the middle of each month. We compute standardized monthly short interest ratio (SIR), which is the ratio of its monthly short interest to its total number of shares outstanding from CRSP.

Panel A from Table 11 shows that short sellers are more willing to short low PTH stocks than high PTH stocks. The average SIR for low-PTH and high-PTH stocks are 4.43% and 2.5% respectively in the portfolio formation month. The difference in SIR between low and high PTH stocks stays slightly above 1.9% and is highly significant. More interestingly, we find that the SIR stays at approximately the same level both 1

month before and 3 months after portfolio formation. Panel B shows that these findings are robust in the pre- and post-2000 subperiods, although SIR levels are more elevated in the post-2000 sample.

In Panel C of Table 11, we further sorted the low and high PTH quintiles into three FSCORE sorted groups. Consistent with the notion that short sellers are more sophisticated investors, we find they are more willing to short sell stocks with low FSCORE than high FSCORE. For example, among low (high) PTH stocks, the differences in SIR levels between low and high FSCORE firms are 1.06% (0.59%) in the formation month, both with highly significant *t*-statistics. Consistent with results from Panels A and B, the SIR levels do not vary much in months before and after the portfolio formation.

Taken together, the evidence from trading activities of institutions and short sellers depict them as sophisticated investors who do not appear to suffer from the anchoring bias. Combined with the evidence from table 10, we conclude that the PTH anomaly is primarily driven by the actions of less sophisticated traders.

6. Conclusion

In this article, we test the hypothesis that anchoring bias related to the 52-week high likely triggers investors' underreaction to fundamental news as measured by the FSCORE index. Consistent with this hypothesis, we report that stocks with high PTH and strong fundamentals significantly outperform stocks with low PTH and weak fundamentals. We have several interesting findings.

First, we show that by considering the joint effect from both PTH and FSCORE, we can better identify firms where underreaction to fundamental news is prevalent. Specifically, we find that a PTH-FSCORE consistent (inconsistent) portfolio earns much higher (lower) average return than that of the unconditional PTH portfolio.

Second, we find that our results are evident based on both the portfolio analysis and cross-sectional regression analysis. In addition, they are robust across various sub-samples as well as risk adjustments. Interestingly, we also find that the 52-week high anomaly is prevalent only when investor sentiment high, but absent among more sophisticated institutions or short sellers. Moreover, we report that less sophisticated investors are more likely to suffer from the anchoring bias. Overall, our empirical findings are consistent with the hypothesis that the anchoring bias among less sophisticated investors drives the PTH anomaly.

We further contribute to the literature by showing the following connections between the PTH and FSCORE anomalies: (a) one the main sources of 52-week high momentum is underreaction to fundamental news, and (b) the PTH price anchoring effect is a key factor that drives the FSCORE anomaly. Consistent with the theoretic framework of Ingersoll and Jin (2013) and Barberis and Xiong (2012), the empirical evidence from this paper appears to contradict standard assumptions made by rational asset pricing models with a representative agent. In our humble opinion, our empirical findings indicate that models based on investors with reference-dependent preferences seem more promising in terms of explaining investor behavior in the real world.

In addition to the 52-week high, some investors could also rely on other types of price anchors when forming their expectations. In the appendices 1 and 2, we provide

additional robustness checks using two alternative price anchors: 50-day moving average (MA) and all-time-high price (ATH). Results from these two appendices indicate that MA has comparable performance with PTH but ATH leads to insignificant results. We note that the strong performance from MA is consistent with Han et al. (2016), whereas the insignificant result from ATH is consistent with Li and Yu (2012), who find that nearness to the historical high negatively predicts future market returns.

We also emphasize that while the results from this article appear to suggest a profitable trading strategy, our primary focus remains on hypothesis testing. Investors who wish to implement this new trading strategy must carefully evaluate many important factors such as potential risks, market liquidity, and trading frictions.

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Table 1: Portfolios Sorted on Nearness to 52-Week High and Fundamental Strength

Panel A presents average monthly raw and factor-adjusted returns of equal-weighted portfolios independently sorted on nearness to 52-week high (PTH) and fundamental strength (FSCORE). At the end of each month, stocks are assigned into quintiles based on PTH and three groups based on their FSCORE, respectively. The intersection of five PTH portfolios and three FSCORE portfolios produces 15 independently sorted portfolios. Low FSCORE (F1), mid FSCORE (F2), or high FSCORE (F3) portfolio includes stocks with FSCORE less than 4, between 4 and 6, or greater than 6, respectively. H-L for FSCORE portfolios are the returns to the zero-investment portfolios that long (short) stocks in the High (Low) FSCORE category. H-L for PTH portfolios are the returns to portfolios that longs (short) stocks in the High (Low) PTH quintile. The portfolios are held for 6 months (from month t+1 to t+6). The reported monthly return is the average return of 6 overlapping portfolios formed during each of the past six formation months. "FF3" denotes the Fama-French (1993) three factor model. "Carhart" denotes the FF3 factors plus Carhart (1997) momentum factor. "FF5" denotes the Fama-French (2015) five factor model. Panel B presents average monthly returns to joint PTH-FSCORE portfolios. The consistent PTH-FSCORE portfolio takes a long (short) position in stocks where the rankings for both PTH and FSCORE are high (low); otherwise it is an inconsistent PTH-FSCORE portfolio. Panel C reports the average number of stocks and market capitalization (in millions US dollars) for each portfolio. Our sample includes all common stocks from NYSE, AMEX and NASDAQ except for financial firms. Stocks with prices less than $5 at the end of portfolio formation periods are excluded. We skip 1-month between formation and holding periods. The sample period is from 1985 to 2017. Newey and West (1987) adjusted *t*-statistics are reported in parentheses.

Panel A: Average Returns of Portfolios Sorted on PTH and FSCORE

		Raw Return				FF3	Carhart	FF5
		Low FSCORE	Mid FSCORE	High FSCORE	H-L	H-L	H-L	H-L
	Low PTH	0.04	0.50	0.93	0.89	0.94	0.74	0.62
		(0.09)	(1.30)	(2.53)	(5.35)	(7.48)	(5.96)	(4.93)
	2	0.52	0.93	1.26	0.74	0.74	0.72	0.61
		(1.54)	(3.08)	(4.26)	(5.88)	(7.48)	(7.55)	(6.60)
	3	0.69	1.13	1.37	0.68	0.67	0.67	0.52
		(2.22)	(4.23)	(5.12)	(5.75)	(6.39)	(6.72)	(5.18)
	4	0.83	1.25	1.51	0.68	0.65	0.66	0.51
		(3.00)	(5.09)	(5.94)	(6.66)	(7.92)	(8.67)	(6.02)
	High PTH	0.98	1.30	1.58	0.60	0.55	0.57	0.43
		(3.50)	(5.23)	(6.11)	(5.96)	(5.94)	(6.58)	(4.59)
	H-L	0.94	0.80	0.65				
		(3.24)	(3.20)	(3.01)				
FF3	H-L	1.29	1.08	0.90				
		(5.59)	(5.53)	(5.15)				
Carhart	H-L	0.49	0.38	0.32				
		(2.91)	(3.00)	(2.84)				
FF5	H-L	0.81	0.64	0.61				

(2.40)	(2.23)	(2.56)	

Panel B: Average Returns of Joint PTH-FSCORE Portfolios

	Raw	FF3	Carhart	FF5
	Fundamental-Consistent 52-Week High			
Long-Short	1.54	1.84	1.06	1.24
	(4.84)	(8.15)	(6.30)	(4.00)
Long	1.58	0.65	0.50	0.49
	(6.11)	(7.40)	(5.72)	(5.93)
Short	0.04	-1.19	-0.57	-0.74
	(0.09)	(-6.99)	(-4.11)	(-2.86)
	Fundamental-Inconsistent 52-Week High			
Long-Short	0.05	0.35	-0.25	0.19
	(0.24)	(1.75)	(-1.76)	(0.67)
Long	0.98	0.10	-0.08	0.06
	(3.50)	(1.01)	(-0.81)	(0.57)
Short	0.93	-0.25	0.18	-0.12
	(2.53)	(-1.74)	(1.59)	(-0.61)

Panel C: The Number of Stocks and Market Capitalization

	The number of stocks			Market Capitalization		
	F1	F2	F3	F1	F2	F3
Low PTH	110	242	64	716	967	1064
2	76	253	88	1322	2044	1950
3	60	254	103	2091	3143	2921
4	50	251	115	2885	4398	3878
High PTH	44	243	123	3052	5158	4477

Table 2: Fama-MacBeth (1973) Regressions: The Role of PTH and Fundamental News in the 52-Week High Anomaly

This table reports the results from the following Fama and MacBeth (1973) monthly cross-sectional regressions:

$$R_{i,t+1:t+6} = \alpha_t + \beta_1 PTH_{i,t} + \beta_2 Size_{i,t} + \beta_3 BM_{i,t} + \beta_4 MOM_{i,t} + \beta_5 FSCORE_i + \beta_6 ROEi,t + \beta_7 SUEi,t + \varepsilon_{i,t}$$

where the dependent variable is the average monthly raw return measured over a 6-month holding period from month t+1 to t+6. The lagged independent variables include: the ratio of closing price at the end month t to the highest daily closing price over the past 52 weeks (PTH), the natural logarithm of stock market capitalization at the end month t (Size), the natural logarithm of a firm's book-to-market ratio (BM), the past 11-month cumulative return (MOM), FSCORE, a firms return on equity based on most recent quarterly report (ROE), and a firms most recent standardized earnings surprise (SUE). Independent variables are winsorized at the 1% and 99% levels except for FSCORE. In Panel A we run the regressions within three FSCORE groups: "Low FSCORE" includes stocks with FSCORE from 0 to 3; "High FSCORE" includes stocks with FSCORE from 7 to 9; and the rest are in the "Mid FSCORE" category. All coefficients are multiplied by 100. Panel B reports the results of the same monthly cross-sectional regressions within five PTH subsamples. Stocks are divided into five subsamples based on their PTH quintiles. PTH 1 (5) includes stocks trading at prices closest to (farthest from) their 52-week highs. We include all common stocks listed on NYSE, AMEX, and NASDAQ. Financial firms and stocks with prices less than $5 at the end of formation periods are excluded. The sample period is from 1985 to 2017. Newey and West (1987) adjusted t-statistics are shown in parentheses.

Panel A: FSCORE Sample

	Low FSCORE	Mid FSCORE	High FSCORE
Intercept	-0.955	-0.359	1.001
	(-1.71)	(-0.64)	(1.56)
PTH	1.362	1.125	1.152
	(2.65)	(2.35)	(2.32)
Size	0.019	-0.028	-0.119
	(0.49)	(-1.04)	(-4.26)
BM	0.117	0.108	0.001
	(1.31)	(1.52)	(1.20)
MOM	-0.069	0.151	0.252
	(-0.42)	(0.94)	(1.48)
FSCORE	0.186	0.121	-0.011
	(4.09)	(5.35)	(-0.30)
ROE	0.464	1.768	1.769
	(0.69)	(2.24)	(1.93)
SUE	0.016	0.008	0.037
	(0.69)	(0.66)	(2.54)
Adj-R^2	0.049	0.043	0.044

Panel B: PTH Sample

	PTH 1	PTH 2	PTH 3	PTH 4	PTH 5
Intercept	-0.673	-0.778	0.057	0.072	0.630
	(-1.18)	(-1.09)	(0.07)	(0.08)	(0.41)
FSCORE	0.136	0.131	0.107	0.105	0.086
	(5.76)	(7.24)	(7.07)	(8.28)	(6.44)
Size	0.034	-0.020	-0.029	-0.065	-0.097
	(0.79)	(-0.63)	(-0.98)	(-2.18)	(-3.85)
BM	0.177	0.155	0.126	0.046	0.041
	(1.84)	(1.92)	(1.72)	(0.58)	(0.59)
MOM	-0.370	0.098	0.175	0.221	0.254
	(-1.43)	(0.62)	(1.04)	(1.35)	(1.62)
PTH	0.517	1.541	0.677	0.898	0.642
	(0.65)	(2.13)	(0.82)	(1.05)	(0.43)
ROE	1.396	1.278	1.531	2.349	1.728
	(2.02)	(1.76)	(1.88)	(2.57)	(1.92)
SUE	-0.030	0.004	0.039	0.017	0.034
	(-1.42)	(0.23)	(2.93)	(1.26)	(2.20)
Adj-R^2	0.037	0.034	0.036	0.043	0.043

Table 3: Cross-Sectional Regressions: The Interactions between PTH and Fundamental News

This table presents the average coefficients from the following monthly cross-sectional regressions from 1985 to 2015:

$$R_{i,t+1} = \beta_1 PTH_{i,t-1:t-j} + \beta_2 PTH_{i,t-1:t-j} \times HighFSCORE_{i,t-1:t-j} + \beta_3 PTH_{i,t-1:t-j} \times MidFSCORE_{i,t-1:t-j}$$
$$+ \beta_4 Middle_{i,t-1:t-j} + \beta_5 Middle_{i,t-1:t-j} \times LowFSCORE_{i,t-1:t-j} + \beta_6 Middle_{i,t-1:t-j} \times HighFSCORE_{i,t-1:t-j}$$
$$+ \beta_7 PTL_{i,t-1:t-j} + \beta_8 PTL_{i,t-1:t-j} \times LowFSCORE_{i,t-1:t-j} + \beta_9 PTL_{i,t-1:t-j} \times MidFSCORE_{i,t-1:t-j}$$
$$+ \beta_{10} SIZE_{i,t-1} + \beta_{11} BM_{i,t-1} + \beta_{12} MOM_{i,t-1} + \beta_{13} RET_{i,t} + \beta_{14} SUE_{i,t-1} + \beta_{15} ROE_{i,t-1} + \varepsilon_{i,t-1}.$$

where $R_{i,t+1}$ is the return of stock i in month t+1; PTH, PTL, and Middle is the 52-week high dummy that takes the value of 1 if stock i's nearness to 52-week high is ranked in the top 20%, bottom 20%, and middle 60% in month $t - j$, respectively, and 0 otherwise. The indicator LowFSCORE, MidFSCORE, or HighFSCORE is equal to 1 if the stock's FSCORE is less than four, between four and six, or greater than six, respectively, and 0 otherwise. The estimated coefficients of any independent variable are averaged over j= 2 to 7. SIZE is the natural log of market capitalization; BM is the natural log of the book-to-market ratio; MOM is the past 11-month cumulative return; RET is the return in the previous month; ROE is a firm's return on equity based on the most recent quarterly report; SUE is the firm's most recent standardized earnings surprise. Each month, SIZE, BM, MOM, RET, ROE, and SUE are assigned to deciles (with a score ranging from one to ten). We skip 1 month between the dependent variable and the independent variables such as SIZE, BM, MOM, SUE, and ROE. All coefficients are multiplied by 100. The intercept is suppressed in the regression to avoid collinearity. Our sample includes all common stocks from NYSE, AMEX, and NASDAQ. Financial firms and stocks with prices less than $5 at the end of formation periods are excluded. Newey and West (1987) adjusted *t*-statistics are reported in parentheses.

	1	2	3	4	5	6	7
PTL	0.623	1.006	1.344	1.154	0.798	0.752	1.020
	(1.67)	(2.85)	(2.89)	(2.51)	(1.57)	(1.51)	(1.48)
PTL*LowFSCORE		-0.762	-0.760	-0.707	-0.538	-0.525	-0.536
		(-4.62)	(-4.97)	(-4.75)	(-4.49)	(-4.40)	(-4.71)
PTL*MidFSCORE		-0.317	-0.307	-0.279	-0.209	-0.201	-0.216
		(-3.36)	(-3.58)	(-3.30)	(-2.72)	(-2.61)	(-2.94)
Middle	1.166	1.154	1.216	1.029	0.686	0.636	0.820
	(4.37)	(4.41)	(3.08)	(2.64)	(1.59)	(1.50)	(1.27)
Middle*LowFSCORE		-0.407	-0.419	-0.391	-0.311	-0.308	-0.308

		(-6.24)	(-6.96)	(-6.46)	(-6.36)	(-6.22)	(-6.49)
Middle*HighFSCORE		0.280	0.242	0.223	0.186	0.180	0.177
		(5.88)	(6.00)	(5.76)	(4.83)	(4.78)	(4.93)
PTH	1.365	1.073	0.973	0.800	0.532	0.482	0.650
	(5.42)	(3.92)	(2.52)	(2.10)	(1.29)	(1.19)	(1.02)
PTH*MidFSCORE		0.235	0.239	0.215	0.132	0.127	0.130
		(3.14)	(3.20)	(2.87)	(1.84)	(1.77)	(1.82)
PTH*HighFSCORE		0.493	0.468	0.432	0.319	0.312	0.303
		(5.43)	(5.41)	(5.09)	(4.07)	(4.02)	(3.88)
Decile (Size)			-0.021	-0.020	-0.027	-0.026	-0.025
			(-1.10)	(-1.03)	(-1.38)	(-1.30)	(-0.73)
Decile (BM)			0.031	0.032	0.064	0.062	0.061
			(1.22)	(1.27)	(2.16)	(2.07)	(2.39)
Decile (MOM)			0.084	0.070	0.058	0.054	0.066
			(2.36)	(1.97)	(1.63)	(1.55)	(2.17)
Decile (Reversal)			-0.106	-0.108	-0.113	-0.114	-0.120
			(-4.87)	(-4.96)	(-5.18)	(-5.22)	(-5.47)
Decile (SUE)				0.047		0.023	0.024
				(4.44)		(2.13)	(2.46)
Decile (ROE)					0.097	0.090	0.082
					(4.08)	(3.57)	(3.80)
Decile (Beta)							-0.011
							(-0.46)
Decile (IVOL)							-0.044
							(-2.44)
Decile (ILLIQ)							0.019
							(0.63)
Simple 52-Week High	0.742						
	(3.22)						
Fundamental-Consistent		1.322	0.858	0.785	0.590	0.566	0.474
		(4.57)	(3.40)	(3.17)	(3.01)	(2.88)	(3.65)
Fundamental-Inconsistent		0.067	-0.371	-0.354	-0.266	-0.270	-0.365
		(0.33)	(-2.42)	(-2.31)	(-1.67)	(-1.69)	(-3.27)
Adj R^2	0.134	0.136	0.159	0.160	0.163	0.164	0.176

Table 4: Robustness Test: January Effect

This table presents the returns to the long-short portfolios defined in Table 1 after excluding the observations in January. Panel A reports the returns to the long-short PTH portfolios within three FSCORE portfolios. Panel B reports the returns to the long-short FSCORE portfolios within five PTH quintiles. Panel C reports the returns to the joint PTH-FSCORE portfolios. Our sample includes all common stocks from NYSE, AMEX, and NASDAQ. Financial firms and stocks with prices less than $5 at the end of formation periods are excluded. The sample period is from 1985 to 2017. Newey and West (1987) adjusted *t*-statistics are in parentheses.

	Raw	FF3	Carhart	FF5
	Panel A: Fundamental News			
Low FSCORE	1.23	1.58	0.64	1.10
	(3.38)	(5.61)	(2.96)	(3.29)
Mid FSCORE	1.09	1.38	0.56	0.96
	(3.58)	(5.92)	(3.91)	(3.43)
High FSCORE	0.91	1.18	0.48	0.91
	(3.67)	(5.90)	(3.58)	(3.74)
	Panel B: Nearness to 52-Week High			
PTH 1	0.96	1.00	0.79	0.66
	(4.69)	(6.79)	(5.70)	(5.21)
PTH 2	0.80	0.79	0.76	0.63
	(5.74)	(7.29)	(7.08)	(6.18)
PTH 3	0.75	0.72	0.73	0.54
	(6.36)	(7.26)	(7.45)	(5.60)
PTH 4	0.71	0.66	0.69	0.51
	(6.65)	(8.09)	(8.57)	(5.58)
PTH 5	0.65	0.59	0.63	0.46
	(7.09)	(7.16)	(7.29)	(5.26)
	Panel C: Fundamental-Based 52-Week High			
Consistent	1.87	2.17	1.27	1.56
	(4.74)	(7.75)	(6.16)	(5.05)
Inconsistent	0.27	0.58	-0.16	0.45
	(1.11)	(2.67)	(-0.95)	(1.61)

Table 5: Robustness Test: Sub-period Analysis

This table presents the average monthly returns to the long-short portfolios defined in Table 1 in two sub-periods. Newey and West (1987) adjusted *t*-statistics are in parentheses.

	1985 - 1999				2000 - 2015			
	Raw	FF3	Carhart	FF5	Raw	FF3	Carhart	FF5
	Fundamental News				Fundamental News			
Low FSCORE	1.20	1.17	0.58	1.10	0.55	0.81	0.46	0.11
	(5.84)	(7.33)	(3.70)	(5.63)	(1.06)	(2.06)	(1.80)	(0.23)
Mid FSCORE	1.11	1.06	0.47	1.01	0.45	0.63	0.33	0.05
	(5.26)	(5.89)	(3.10)	(4.11)	(1.02)	(1.94)	(1.78)	(0.12)
High FSCORE	0.99	0.93	0.43	0.87	0.26	0.48	0.22	0.10
	(4.69)	(5.14)	(2.89)	(3.77)	(0.74)	(1.61)	(1.30)	(0.30)
	Nearness to 52-Week High				Nearness to 52-Week High			
PTH 1	1.01	1.03	0.92	0.95	0.86	0.82	0.74	0.37
	(6.43)	(7.70)	(6.36)	(7.71)	(2.95)	(4.53)	(4.12)	(2.14)
PTH 2	0.95	0.97	0.96	0.90	0.67	0.62	0.60	0.44
	(6.58)	(7.84)	(8.41)	(7.59)	(3.23)	(4.57)	(4.46)	(3.66)
PTH 3	0.87	0.86	0.92	0.77	0.66	0.64	0.63	0.43
	(5.30)	(5.74)	(6.69)	(5.49)	(3.60)	(4.55)	(4.28)	(3.45)
PTH 4	0.88	0.88	0.90	0.82	0.64	0.58	0.58	0.43
	(7.41)	(9.05)	(9.01)	(8.15)	(3.45)	(4.53)	(4.35)	(3.59)
PTH 5	0.80	0.80	0.78	0.71	0.57	0.49	0.50	0.36
	(7.29)	(7.54)	(7.56)	(6.83)	(3.42)	(4.02)	(3.92)	(2.79)
	Fundamental-Based 52-Week High				Fundamental-Based 52-Week High			
Consistent	2.00	1.97	1.35	1.81	1.13	1.30	0.96	0.47
	(8.24)	(11.54)	(7.91)	(8.41)	(2.01)	(3.55)	(4.15)	(1.07)
Inconsistent	0.19	0.14	-0.34	0.15	-0.31	-0.02	-0.28	-0.26
	(0.90)	(0.70)	(-2.16)	(0.69)	(-0.81)	(-0.05)	(-1.20)	(-0.66)

Table 6: Robustness Test: Size Effect

This table presents the average monthly returns to the long-short portfolios defined in Table 1 in three firm-size sorted samples. Newey and West (1987) adjusted *t*-statistics are in parentheses.

	Small Stocks			Middle-size Stocks			Large Stocks		
	Raw	FF3	FF5	Raw	FF3	FF5	Raw	FF3	FF5
	Fundamental News			Fundamental News			Fundamental News		
Low FSCORE	1.05	1.37	1.08	0.81	1.20	0.68	0.70	1.09	0.63
	(3.58)	(5.56)	(3.08)	(2.42)	(4.21)	(1.63)	(2.24)	(4.13)	(1.85)
Mid FSCORE	1.12	1.38	1.03	0.70	0.98	0.50	0.42	0.74	0.36
	(4.82)	(7.60)	(4.04)	(2.39)	(4.18)	(1.45)	(1.79)	(3.59)	(1.28)
High FSCORE	1.23	1.45	1.23	0.59	0.89	0.54	0.20	0.47	0.26
	(5.49)	(7.41)	(4.77)	(2.10)	(3.52)	(1.74)	(0.97)	(2.51)	(1.01)
	Nearness to 52-Week High			Nearness to 52-Week High			Nearness to 52-Week High		
PTH 1	0.81	0.83	0.56	0.90	0.92	0.63	0.80	0.92	0.55
	(3.79)	(4.61)	(3.63)	(4.89)	(6.05)	(3.42)	(3.60)	(4.74)	(3.01)
PTH 2	0.97	0.99	0.85	0.63	0.61	0.41	0.54	0.55	0.47
	(5.86)	(6.53)	(5.97)	(3.77)	(4.52)	(2.92)	(3.96)	(4.40)	(3.81)
PTH 3	1.00	1.01	0.91	0.62	0.56	0.32	0.53	0.55	0.49
	(7.38)	(8.39)	(7.42)	(3.72)	(3.53)	(2.12)	(4.80)	(5.59)	(5.08)
PTH 4	0.93	0.90	0.76	0.71	0.66	0.49	0.41	0.36	0.24
	(5.93)	(5.98)	(5.23)	(4.89)	(5.00)	(3.59)	(3.92)	(4.07)	(2.78)
PTH 5	1.00	0.92	0.79	0.68	0.61	0.48	0.30	0.30	0.19
	(6.54)	(6.08)	(4.59)	(4.36)	(4.01)	(3.07)	(3.35)	(3.06)	(2.04)
	Fundamental-Based PTH			Fundamental-Based PTH			Fundamental-Based PTH		
Consistent	2.04	2.29	1.80	1.49	1.81	1.16	1.00	1.40	0.82
	(6.30)	(9.48)	(6.25)	(4.02)	(6.40)	(2.95)	(3.12)	(5.75)	(2.50)
Inconsistent	0.23	0.53	0.44	-0.10	0.28	0.05	-0.10	0.17	0.07
	(0.94)	(2.16)	(1.37)	(-0.36)	(1.06)	(0.14)	(-0.46)	(0.80)	(0.27)

Table 7: Robustness Test: Value-Weighted Returns

This table presents the average monthly value-weighted returns to the long-short portfolios defined in Table 1. Newey and West (1987) adjusted *t*-statistics are in parentheses.

	Raw	FF3	Carhart	FF5
	Panel A: H-L PTH Portfolios			
Low FSCORE	0.92	1.36	0.49	0.81
	(2.74)	(5.57)	(2.66)	(2.65)
Mid FSCORE	0.52	0.91	0.15	0.53
	(1.91)	(4.34)	(0.99)	(1.92)
High FSCORE	0.24	0.53	-0.13	0.31
	(0.88)	(2.36)	(-0.71)	(1.18)
	Panel B: H-L FSCORE Portfolios			
PTH 1	0.91	1.08	0.86	0.71
	(4.00)	(5.50)	(4.48)	(3.95)
PTH 2	0.74	0.80	0.81	0.65
	(4.85)	(5.20)	(5.29)	(4.24)
PTH 3	0.41	0.45	0.45	0.33
	(2.91)	(3.59)	(3.79)	(2.59)
PTH 4	0.26	0.27	0.21	0.18
	(2.39)	(2.95)	(2.51)	(1.88)
PTH 5	0.22	0.24	0.24	0.22
	(2.03)	(2.32)	(2.58)	(2.07)
	Panel C: Joint PTH-FSCORE Portfolios			
Consistent	1.15	1.61	0.73	1.02
	(3.38)	(6.91)	(4.40)	(3.56)
Inconsistent	0.01	0.29	-0.37	0.10
	(0.06)	(1.31)	(-2.06)	(0.36)

Table 8: Volatility-Managed Strategies

This table reports the summary statistics (average monthly returns, standard deviation of returns, skewness, kurtosis, and maximum and minimum monthly returns) for various strategies. Simple PTH strategy buys stocks with high PTH and shorts sell stocks with low PTH. Risk-managed (RM) strategy follows the method in Barroso and Santa-Clara (2015).

	Mean Ret	Std Dev	Skewness	Kurtosis	Maximum	Minimum
Simple PTH	1.07%	5.45%	-1.03	7.35	22.82%	-31.11%
RM Simple PTH	1.62%	4.61%	-0.16	0.10	13.82%	-14.62%
Fundamental-consistent PTH	1.60%	6.48%	-1.13	6.88	25.52%	-36.19%
RM Fundamental-consistent PTH	1.81%	4.80%	-0.16	0.14	15.18%	-11.75%
Fundamental-Inconsistent PTH	0.15%	5.69%	-0.70	5.77	28.42%	-26.74%
RM Fundamental-Inconsistent PTH	0.35%	4.43%	0.12	1.88	22.90%	-14.85%

Table 9: Portfolio Returns Sorted on Nearness to the 52-Week High and Fundamental Strength across Investor Sentiment Regimes

This table reports average monthly raw and factor-adjusted returns of portfolios independently sorted on nearness to PTH and FSCORE across high/low investor sentiment regimes. Portfolios are formed in the same way and sample selection criteria are the same as in Table 1. Investor sentiment index is from Baker and Wurgler (2006). Investor sentiment is high (low) if the lagged value of the sentiment index is above (below) sample median. The sample period is from 1985 to 2017. Newey and West (1987) adjusted *t*-statistics are reported in parentheses.

Panel A: High Investor Sentiment

		Raw Return				FF3	Carhart	FF5
		Low FSCORE	Mid FSCORE	High FSCORE	H-L	H-L	H-L	H-L
	Low PTH	-0.69	-0.03	0.66	1.35	1.26	1.00	0.87
		(-1.36)	(-0.07)	(1.62)	(6.72)	(7.91)	(6.46)	(5.96)
	2	0.09	0.64	1.14	1.05	0.97	0.93	0.78
		(0.22)	(1.77)	(3.25)	(7.32)	(8.70)	(8.82)	(7.67)
	3	0.44	0.93	1.24	0.81	0.70	0.70	0.48
		(1.19)	(2.86)	(3.71)	(6.17)	(6.04)	(5.89)	(4.36)
	4	0.67	1.14	1.41	0.74	0.62	0.64	0.43
		(1.93)	(3.69)	(4.41)	(5.76)	(6.00)	(6.57)	(3.70)
	High PTH	0.84	1.25	1.56	0.72	0.59	0.62	0.41
		(2.48)	(4.03)	(4.92)	(6.62)	(5.72)	(6.30)	(3.70)
	H-L	1.53	1.29	0.90				
		(5.28)	(5.34)	(4.53)				
FF3	H-L	1.74	1.47	1.07				
		(5.90)	(5.34)	(5.11)				
Carhart	H-L	0.65	0.49	0.27				
		(3.08)	(3.11)	(1.91)				
FF5	H-L	1.19	0.94	0.73				
		(2.77)	(2.73)	(2.56)				

Panel B: Low Investor Sentiment

		Raw Return				FF3	Carhart	FF5
		Low FSCORE	Mid FSCORE	High FSCORE	H-L	H-L	H-L	H-L
	Low PTH	1.23	1.40	1.41	0.18	0.45	0.37	0.26
		(1.63)	(2.15)	(2.18)	(0.78)	(2.46)	(2.09)	(1.30)
	2	1.24	1.42	1.49	0.26	0.41	0.4	0.35
		(2.28)	(2.89)	(3.11)	(1.48)	(2.92)	(2.88)	(2.49)
	3	1.11	1.48	1.6	0.49	0.63	0.63	0.58
		(2.19)	(3.45)	(4.00)	(2.33)	(3.78)	(3.89)	(3.80)
	4	1.11	1.45	1.69	0.58	0.7	0.71	0.65
		(2.63)	(3.83)	(4.44)	(4.03)	(6.17)	(6.26)	(5.80)
	High PTH	1.22	1.40	1.64	0.41	0.5	0.51	0.47
		(2.77)	(3.72)	(4.32)	(2.39)	(3.25)	(3.34)	(3.08)
	H-L	-0.01	0.00	0.23				
		(-0.01)	(0.01)	(0.50)				
FF3	H-L	0.58	0.49	0.63				
		(1.26)	(1.23)	(1.68)				
Carhart	H-L	0.26	0.21	0.4				
		(0.99)	(1.00)	(2.15)				
FF5	H-L	0.22	0.18	0.44				
		(0.46)	(0.42)	(1.10)				

Table 10: Quarterly Changes in Institutional Ownership for Stocks Trading Near the 52-Week High

This table presents the changes in institutional ownership before and after a stock's price approach its 52-week high. A stock's institutional ownership is defined as the ratio of the number of shares held by all institutions to the total shares outstanding. At the end of each quarter, stocks are sorted into PTH quintiles. Panel A reports the results for the low PTH quintile, high PTH quintile, and high-low PTH portfolios. Panel B reports the results in two subperiods: 1985 to 1999 and 2000 to 2015. Panel C reports the results for the FSCORE sorted PTH portfolios. The sample selection criteria are the same as in Table 1. The sample period is from 1985 to 2017. All number are in percentage. Newey and West (1987) adjusted *t*-statistics are in parentheses.

Panel A: Changes in Institutional Ownerships

	T-4:T-3	T-3:T-2	T-2:T-1	T-1:T	T:T+1	T+1:T+2	T+2:T+3	T+3:T+4
Low PTH	0.94	0.41	-0.06	-0.67	-0.34	-0.15	-0.12	-0.09
High PTH	0.68	0.80	0.91	1.15	0.55	0.31	0.17	0.10
High - Low	-0.26	0.39	0.97	1.82	0.89	0.46	0.30	0.18
	(-3.08)	(3.57)	(8.69)	(16.04)	(8.32)	(6.45)	(4.09)	(2.53)

Panel B: Changes in Institutional Ownerships in Subperiods

	1985-1999				2000-2015			
	T-2:T-1	T-1:T	T:T+1	T+1:T+2	T-2:T-1	T-1:T	T:T+1	T+1:T+2
Low PTH	-0.43	-1.08	-0.50	-0.06	0.29	-0.29	-0.19	-0.23
High PTH	1.06	1.32	0.91	0.49	0.76	0.99	0.20	0.14
High - Low	1.49	2.40	1.42	0.55	0.47	1.28	0.39	0.37
	(9.17)	(14.84)	(10.76)	(5.76)	(3.79)	(10.06)	(2.76)	(3.55)

Panel C: Changes in Institutional Ownerships in the Context of Fundamental News

	T-4:T-3	T-3:T-2	T-2:T-1	T-1:T	T:T+1	T+1:T+2	T+2:T+3	T+3:T+4
Low PTH								
Low FSCORE	0.98	0.49	-0.36	-0.75	-0.48	-0.43	-0.26	-0.21
Mid FSCORE	0.97	0.45	0.01	-0.71	-0.33	-0.09	-0.10	-0.03
High FSCORE	0.79	0.06	0.20	-0.38	-0.21	0.07	0.03	-0.06
High - Low	-0.19	-0.43	0.56	0.37	0.27	0.50	0.29	0.15
	(-1.66)	(-3.68)	(4.09)	(3.08)	(2.51)	(4.64)	(2.60)	(1.12)
High PTH								
Low FSCORE	0.67	0.98	0.95	1.48	0.83	0.22	-0.01	-0.05
Mid FSCORE	0.76	0.81	0.88	1.16	0.55	0.31	0.23	0.06
High FSCORE	0.52	0.70	0.96	1.05	0.45	0.34	0.13	0.24
High - Low	-0.15	-0.28	0.02	-0.43	-0.38	0.12	0.14	0.30
	(-1.45)	(-2.45)	(0.14)	(-3.46)	(-2.81)	(0.82)	(1.11)	(2.41)

Table 11: Short Selling for Stocks Trading Near the 52-Week High

This table reports the short interest ratio (SIR) when a stock trades near the 52-week high. Panel A reports the results for the PTH-sorted portfolios. Panel B reports the results in two subperiods: 1985 to 1999 and 2000 to 2015. Panel C reports the results for the PTH portfolios sorted by FSCORE. Short interest ratio refers to the ratio of short interest in the middle of each month to the total shares outstanding. The sample selection criteria are the same as in Table 1. The sample period is from 1985 to 2017. All number are in percentage. Newey and West (1987) adjusted *t*-statistics are in parentheses.

Panel A: Short Interest Ratio around the 52-Week High

	T-1	T	T+1	T+2	T+3
Low PTH	4.43	4.45	4.51	4.54	4.53
High PTH	2.50	2.52	2.56	2.55	2.55
High - Low	-1.92	-1.94	-1.95	-1.99	-1.98
	(-27.65)	(-26.66)	(-25.65)	(-25.97)	(-26.03)

Panel B: SIR around the 52-Week High in Subperiods

1985-1999

	T-1	T	T+1	T+2	T+3
Low PTH	2.03	2.02	2.06	2.08	2.08
High PTH	1.06	1.08	1.15	1.14	1.13
High - Low	-0.97	-0.94	-0.91	-0.94	-0.95
	(-27.77)	(-27.77)	(-26.35)	(-26.70)	(-27.11)

2000-2015

	T-1	T	T+1	T+2	T+3
Low PTH	6.68	6.73	6.81	6.85	6.86
High PTH	3.86	3.86	3.89	3.88	3.90
High - Low	-2.81	-2.87	-2.92	-2.98	-2.95
	(-30.34)	(-29.63)	(-28.72)	(-28.90)	(-28.61)

Panel C: SIR around the 52-Week High in the Context of Fundamental News

	T-1	T	T+1	T+2	T+3
Low PTH					
Low FSCORE	4.95	5.01	5.10	5.15	5.15
Mid FSCORE	4.38	4.40	4.44	4.47	4.46
High FSCORE	3.89	3.89	3.91	3.92	3.92
High - Low	-1.06	-1.12	-1.20	-1.23	-1.24
	(-17.09)	(-17.87)	(-18.09)	(-18.43)	(-18.81)
High PTH					
Low FSCORE	2.97	2.98	3.03	3.01	3.04
Mid FSCORE	2.50	2.51	2.55	2.54	2.55
High FSCORE	2.38	2.38	2.42	2.40	2.41
High - Low	-0.59	-0.59	-0.60	-0.61	-0.63
	(-11.45)	(-11.85)	(-11.83)	(-11.96)	(-12.17)

Appendix 1: Portfolios Sorted on All-Time High and Fundamental Strength

Panel A presents average monthly raw and factor-adjusted returns of equal-weighted portfolios independently sorted on the ratio of current price to the all-time high price (ATH) and fundamental strength (FSCORE). At the end of each month, stocks are assigned into quintiles based on ATH and three groups based on their FSCORE, respectively. The intersection of five ATH portfolios and three FSCORE portfolios produces 15 independently sorted portfolios. Low FSCORE, mid FSCORE, or high FSCORE portfolio includes stocks with FSCORE less than 4, between 4 and 6, or greater than 6, respectively. H-L for FSCORE portfolios are the returns to the zero-investment portfolios that long (short) stocks in the High (Low) FSCORE category. H-L for ATH portfolios are the returns to portfolios that longs (short) stocks in the High (Low) ATH quintile. The portfolios are held for 6 months (from month t+1 to t+6). The reported monthly return is the average return of 6 overlapping portfolios formed during each of the past six formation months. "FF3" denotes the Fama-French (1993) three factor model. "Carhart" denotes the FF3 factors plus Carhart (1997) momentum factor. "FF5" denotes the Fama-French (2015) five factor model. Panel B presents average monthly returns to joint ATH-FSCORE portfolios. The consistent ATH-FSCORE portfolio takes a long (short) position in stocks where the rankings for both ATH and FSCORE are high (low); otherwise it is an inconsistent ATH-FSCORE portfolio. Our sample includes all common stocks from NYSE, AMEX and NASDAQ except for financial firms. Stocks with prices less than $5 at the end of portfolio formation periods are excluded. We skip 1-month between formation and holding periods. The sample period is from 1985 to 2017. Newey and West (1987) adjusted t-statistics are reported in parentheses.

Panel A: Average Returns of Portfolios Sorted on ATH and FSCORE

		Raw Return				FF3	Carhart	FF5
		Low FSCORE	Mid FSCORE	High FSCORE	H-L	H-L	H-L	H-L
	Low ATH	0.32	0.80	1.35	1.03	1.08	0.75	0.67
		(0.73)	(2.15)	(3.89)	(5.23)	(8.39)	(5.87)	(4.13)
	2	0.32	0.85	1.33	1.01	1.03	0.88	0.73
		(0.88)	(2.66)	(4.34)	(6.02)	(8.36)	(6.96)	(5.80)
	3	0.30	0.89	1.24	0.94	0.93	0.87	0.70
		(0.93)	(3.19)	(4.50)	(6.47)	(8.68)	(8.12)	(7.21)
	4	0.61	1.09	1.37	0.76	0.75	0.76	0.58
		(2.08)	(4.31)	(5.49)	(6.58)	(8.27)	(8.06)	(6.64)
	High ATH	0.87	1.28	1.51	0.64	0.63	0.61	0.51
		(3.19)	(5.22)	(6.03)	(6.13)	(6.72)	(6.24)	(5.34)
	H-L	0.55	0.48	0.17				
		(2.11)	(2.26)	(0.92)				
FF3	H-L	0.85	0.73	0.40				
		(4.26)	(4.26)	(2.66)				
Carhart	H-L	0.21	0.21	0.06				
		(1.08)	(1.49)	(0.45)				
FF5	H-L	0.40	0.38	0.23				
		(1.45)	(1.64)	(1.36)				

Panel B: Average Returns of Joint ATH-FSCORE Portfolios

	Raw	FF3	Carhart	FF5
	Fundamental-Consistent All-Time High			
Long-Short	1.20	1.48	0.81	0.90
	(4.06)	(7.18)	(4.54)	(3.21)
Long	1.22	0.60	0.46	0.45
	(4.93)	(7.09)	(5.59)	(5.39)
Short	0.03	-0.88	-0.36	-0.46
	(0.06)	(-5.75)	(-2.41)	(-1.95)
	Fundamental-Inconsistent All-Time High			
Long-Short	-0.48	-0.23	-0.55	-0.27
	(-2.44)	(-1.34)	(-3.27)	(-1.53)
Long	0.58	-0.03	-0.15	-0.06
	(2.11)	(-0.27)	(-1.46)	(-0.56)
Short	1.06	0.20	0.40	0.21
	(3.04)	(1.61)	(3.33)	(1.58)

Appendix 2: Portfolios Sorted on Moving Average and Fundamental Strength

Panel A presents average monthly raw and factor-adjusted returns of equal-weighted portfolios independently sorted on the ratio of current price to the past 50-day moving average price (MA) and fundamental strength (FSCORE). At the end of each month, stocks are assigned into quintiles based on MA and three groups based on their FSCORE, respectively. The intersection of five MA portfolios and three FSCORE portfolios produces 15 independently sorted portfolios. Low FSCORE, mid FSCORE, or high FSCORE portfolio includes stocks with FSCORE less than 4, between 4 and 6, or greater than 6, respectively. H-L for FSCORE portfolios are the returns to the zero-investment portfolios that long (short) stocks in the High (Low) FSCORE category. H-L for MA portfolios are the returns to portfolios that longs (short) stocks in the High (Low) MA quintile. The portfolios are held for 6 months (from month t+1 to t+6). The reported monthly return is the average return of 6 overlapping portfolios formed during each of the past six formation months. "FF3" denotes the Fama-French (1993) three factor model. "Carhart" denotes the FF3 factors plus Carhart (1997) momentum factor. "FF5" denotes the Fama-French (2015) five factor model. Panel B presents average monthly returns to joint MA-FSCORE portfolios. The consistent MA-FSCORE portfolio takes a long (short) position in stocks where the rankings for both MA and FSCORE are high (low); otherwise it is an inconsistent MA-FSCORE portfolio. Our sample includes all common stocks from NYSE, AMEX and NASDAQ except for financial firms. Stocks with prices less than $5 at the end of portfolio formation periods are excluded. We skip 1-month between formation and holding periods. The sample period is from 1985 to 2017. Newey and West (1987) adjusted t-statistics are reported in parentheses.

Panel A: Average Returns of Portfolios Sorted on MA and FSCORE

		Raw Return				FF3	Carhart	FF5
		Low FSCORE	Mid FSCORE	High FSCORE	H-L	H-L	H-L	H-L
	Low MA	0.08	0.63	1.03	0.95	0.98	0.75	0.64
		(0.20)	(1.83)	(3.15)	(5.22)	(7.39)	(5.52)	(4.27)
	2	0.58	1.03	1.31	0.73	0.78	0.63	0.51
		(1.76)	(3.78)	(5.02)	(5.25)	(8.26)	(6.52)	(4.85)
	3	0.54	1.04	1.37	0.83	0.87	0.75	0.65
		(1.79)	(4.08)	(5.56)	(6.97)	(10.54)	(9.38)	(8.51)
	4	0.58	1.05	1.38	0.80	0.82	0.72	0.60
		(1.85)	(3.98)	(5.23)	(6.59)	(9.18)	(7.84)	(6.64)
	High MA	0.57	1.19	1.61	1.03	1.04	0.92	0.78
		(1.58)	(3.79)	(5.21)	(6.95)	(8.87)	(8.44)	(7.01)
	H-L	0.49	0.55	0.58				
		(3.23)	(4.2)	(4.75)				
FF3	H-L	0.63	0.66	0.69				
		(4.25)	(5.4)	(6.1)				
Carhart	H-L	0.17	0.25	0.35				
		(1.29)	(2.48)	(3.75)				
FF5	H-L	0.44	0.49	0.59				
		(2.06)	(2.83)	(4.09)				

Panel B: Average Returns of Joint MA-FSCORE Portfolios

	Raw	FF3	Carhart	FF5
	Fundamental-Consistent MA			
Long-Short	1.53	1.66	1.09	1.23
	(6.91)	(9.44)	(7.24)	(5.1)
Long	1.32	0.58	0.49	0.52
	(4.29)	(6.56)	(5.42)	(6.45)
Short	-0.21	-1.09	-0.61	-0.71
	(-0.52)	(-7.8)	(-4.78)	(-3.33)
	Fundamental-Inconsistent MA			
Long-Short	-0.46	-0.35	-0.57	-0.20
	(-2.68)	(-2.52)	(-4.45)	(-1.28)
Long	0.28	-0.46	-0.43	-0.27
	(0.77)	(-5.07)	(-4.89)	(-3.27)
Short	0.74	-0.11	0.14	-0.07
	(2.26)	(-0.97)	(1.38)	(-0.54)