



Is short-term reversal driven by liquidity provision in emerging markets? Evidence from China

Gábor Neszveda^{*}, Gábor Till, Barnabás Timár, Marcell Varga

MNB Institute, John von Neumann University, Hungary

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ABSTRACT

Studies focusing on the U.S. stock markets argue that the short-term reversal is related to liquidity provision. We test the implications of the theory of liquidity provision to investigate the profitability of reversal trading strategies in the Chinese markets. We find highly robust and puzzling patterns that are mainly inconsistent with findings in the U.S. markets and liquidity provision. There is a momentum based on the most recent day instead of reversal, only few specific days drive the profitability of the reversal strategies, and even these profits do not depend on liquidity constraints as liquidity provision theory implies.

1. Introduction

The reversal strategy is well documented in the literature for the U.S. equity markets (Hameed and Mian, 2015; Lehmann, 1990; Nagel, 2012). The profit from buying stocks that underperformed the market (losers) and selling stocks that outperformed the market (winners) over the prior days/month is often explained by liquidity provision in the U.S. markets (e.g., Hameed and Mian, 2015; Nagel, 2012). According to the liquidity provision explanation, this pattern of negative serial correlation in equity price changes implies that investors step in to absorb the excess supply and exit when the market turmoil is over. Although several studies investigate the profitability of reversal (also known as contrarian) strategy in the Chinese market (e.g., Cheema et al., 2020; Chen et al., 2018; Chu et al., 2019; Wu, 2011; Yu et al., 2019), none of the studies investigate the potential explanation of liquidity provision in the Chinese equity markets.

The aim of this study is to test several hypotheses about the profitability of short-term reversal strategies based on the theory of liquidity provision in the Chinese equity markets. Following Nagel (2012), we analyze the profitability of a trading strategy based on the last five days as a proxy for the return on liquidity provision. This approach yields several new hypotheses which have not yet been tested in the Chinese equity markets.

Hypothesis 1: the profit on the liquidity provision strategy is statistically significant and positive.

In studies on U.S. data, scholars find a strong negative daily return correlation, which is usually associated with bid-ask bounces. Several studies on the reversal strategy in Chinese equity markets also skip one time period between the holding period return and the portfolio formation to show that their results are robust even after controlling for bid-ask bounces (e.g., Chen et al., 2018; Wu, 2011). However, it has not been tested whether this relation also exists in the Chinese equity markets, so these incompleteness lead us to our second and third hypothesis.

Hypothesis 2: the profit on the liquidity provision strategy based on the most recent daily return is statistically significant and positive.

^{*} Corresponding author.

E-mail address: neszveda.gabor@uni-neumann.hu (G. Neszveda).

Hypothesis 3: skipping a day in portfolio formation decreases the profit on the liquidity provision strategy.

Furthermore, the liquidity provision explanation for short-term reversal also implies that there is a monotone negative relation between the expected daily return on liquidity provision and the number of lags on the portfolio formation, which is consistent with findings of several studies on U.S. data (e.g., [Bogousslavsky, 2016](#)). In other words, there is a decreasing magnitude of negative return autocorrelations yielding our fourth hypothesis.

Hypothesis 4: the profit on the daily liquidity provision strategy decreases as the distance increases between the holding period and the portfolio formation period.

Finally, there are two competing theories to explain the short-term reversal (e.g., [Da et al., 2014](#)). The first explanation claims that the return on the reversal strategy is the profit for liquidity provision, while the second explanation argues that it is a result of behavioral biases such as overreaction. Studies on reversal strategies in the Chinese equity markets find that return mean-reversal can be associated with behavioral explanation, however, they do not test the liquidity provision explanation yielding our fifth hypothesis.

Hypothesis 5: the profit on liquidity provision strategy depends on liquidity constraints.

We find that liquidity provision is only profitable in the beginning of the sample for equal-weighted portfolio. However, we also find that the profit of the reversal strategy based on the most recent daily return is negative and statistically significant. As a result, skipping a day do not decrease the profitability of liquidity provision strategy but improves it substantially. The liquidity provision strategy becomes profitable and highly significant after skipping a day. However, we do not find a monotone decrease in the daily profit of liquidity provision. In contrast, the second and the fifth prior days drive the results which are inconsistent with the theory of liquidity provision. Finally, we find that the profitability of these strategies does not depend on liquidity constraints. These results suggest that the profitability of reversal strategies is not strongly related to liquidity provision in China.

This research sheds new light on the profitability of reversal strategies and on its source in the Chinese equity markets. Many studies document the return on several strategies based on different portfolio formation periods and holding periods without providing any result on the mechanism (e.g., [Lin et al., 2020](#); [Yu et al., 2019](#)). Other studies argue that short-term returns in the Chinese equity markets are influenced by behavioral biases ([Cheema et al., 2020](#); [Chen et al., 2018](#); [Kang et al., 2002](#); [Wu, 2011](#)). However, these studies do not examine the potential explanation of liquidity provision for short-term reversal in the Chinese equity markets.

As a consequence, testing the implications of the liquidity provision theory differentiates our study from existing literature on reversal strategies in the Chinese equity markets. First, we examine the profitability of reversal strategy based on daily returns instead of weekly and monthly returns (e.g., [Chen et al., 2018](#); [Kang et al., 2002](#); [Wu, 2011](#); [Yu et al., 2019](#)) because weekly and monthly returns do not allow us to test the main implications of liquidity provisions such as bid-ask bounces or monotonicity of the profits within a week. Therefore, we can document several additional findings providing new insights on previous results. For instance, weekly return reversals seem to be driven only by few days. Second, we add to the literature of the mechanism behind the profitability of short-term reversal in China. Several studies find that liquidity provision can provide an explanation for the profitability of short-term reversal based on the last few days in the U.S. markets (e.g., [Nagel, 2012](#)). However, our results indicate that liquidity provision does not explain the short-term reversal in China.

2. Data and methodology

2.1. Data

Our sample ranges from January 1999 to December 2018 and consists of primary, major, common A-shares of the Shanghai and Shenzhen stock exchanges including delisted stocks to control for survivorship bias ([Shumway, 1997](#)). Daily data were obtained from Datastream/Wordscope databases. We drop market days on which less than 10% of the stocks are traded following [Amihud et al. \(2015\)](#). We drop the smallest 5% of companies by market capitalization in each day following [Chui et al. \(2010\)](#). In China, trading is suspended if the price changes more than 10% a day, thus, we exclude higher (lower) than 10% (−10%) daily returns following [Nartea et al. \(2017\)](#). Finally, we drop all the observations with missing values or zero for volume and we also require at least 100 observations for each day after exclusions.

2.2. Methodology

Following [Lehman \(1990\)](#), [Nagel \(2012\)](#), and [Hameed and Mian \(2015\)](#), our strategy assigns weights ($w_{i,t}$) to stocks at time t based on the past return of the stock i ($R_{i,t-1}$) relative to the past equal-weighted market portfolio return ($R_{m,t-1} = \frac{1}{N} \sum_{i=1}^N R_{i,t-1}$).

Formally:

$$w_{i,t} = - \left(\frac{1}{2} \sum_{i=1}^N |R_{i,t-1} - R_{m,t-1}| \right)^{-1} (R_{i,t-1} - R_{m,t-1}) \quad (1)$$

The scaling factor of $\frac{1}{2} \sum_{i=1}^N |R_{i,t-1} - R_{m,t-1}|$ ensures equal size of short and long positions. A security is considered to be past winner (loser) if its return was greater (less) than the market return. According to the weights, the past loser securities are bought while past winners are sold. Assuming a 50% margin with \$1 short and \$1 long position, the strategy would require one-dollar capital for each period. As a result, the payoff of the strategy at time t is:

$$\pi_t = \sum_{i=1}^N w_{i,t} R_{i,t} \quad (2)$$

This profit represents the return per dollar of investment for each day combining the short and long positions following Nagel (2012). We also calculate the value-weighted returns using market capitalization (size):

$$\pi_{t,vw} = - \left(\frac{1}{2} \sum_{i=1}^N |R_{i,t-1} - R_{m,t-1}| Size_{i,t-1} \right)^{-1} \sum_{i=1}^N (R_{i,t-1} - R_{m,t-1}) Size_{i,t-1} R_{i,t} \quad (3)$$

Nagel (2012) considers the average of the last five days' profit at time t as the main measure for profitability of the reversal strategy to account for potential delayed reversal. To better understand the drivers of the reversal strategy profits, we also test the significance of the long and short leg of the strategy. Finally, we regress these profits on the Chinese VIX index to test its relation to liquidity constraints.

3. Results

3.1. Profit on liquidity provision

The results of the profitability of the reversal strategies are summarized in Table 1. We report the results in three sub-samples to show the robustness of our results. We use 2011 as one of the separating dates because short-selling is possible from this date (Yu et al., 2019) and we also use 2008 as the other separating date to provide a sub-sample around the financial crises.

We find a highly significant daily return of 0.06% for liquidity provision (average 1~5) before 2008. This return increased to a significant 0.08% during the years of the financial crisis, but its t-statistic decreased. The profitability of this strategy disappears after the crisis as its daily return is low and insignificant. Surprisingly, the profit of the value-weighted version of this strategy is only significant during the crisis, moreover, it is negative. Thus, we reject our first hypothesis. The profit on liquidity provision is not robustly positive and significant.

We also examine daily sub-strategies labeling the most recent day as Day1, the day before the most recent day as Day2, and so on. Day1 shows evidence for an ultra-short-term momentum effect that remains high and significant in every time period and is not sensitive for value-weighting. This ultra-short-term momentum effect is inconsistent with the results in the U.S. markets. Specifically, many studies find that the most recent day drives the predictive power of the short-term reversal possibly because of bid-ask bounces (e.g., Hameed and Mian, 2015). This result might be the consequence of the daily price limit in the Chinese equity markets (Nartea et al., 2017). Thus, we reject our second hypothesis. To investigate the explanation of daily price limit for this surprising result, we perform the same previous analyses excluding the observations with higher (lower) than 8% (−8%) daily return in the portfolio formation. The results are reported in Table 2. Assuming that this ultra-short-term momentum is a consequence of the limit of 10% daily price change, we expect that eliminating the returns between 8% (−8%) and 10% (−10%) makes this ultra-short-term momentum disappear. As Table 2 presents, the ultra-short-term momentum disappears for equal weighted portfolios after excluding the returns close to 10% (−10%), while it remains significant for value-weighted portfolios. It suggests that this relation might be driven by the daily price limit for small companies, however companies with large market capitalization seem to really have a significant momentum.

We also calculate the lagged profit of the reversal strategy (average 2~6) to test hypothesis 3. In this case, the equal-weighted portfolio return largely increases and the value-weighted portfolio return becomes significantly positive. Moreover, the daily returns exhibit similar patterns to the U.S. markets after controlling for ultra-short-term momentum. Specifically, Day2 provides large daily profit with a highly significant t-statistic, while Day3 and Day4 provides no statistically significant daily returns neither for equal-weighted nor for value-weighted portfolios in most cases. Therefore, we reject our third hypothesis. The profit on liquidity provision (reversal strategy) do not decrease after skipping one time period but it rises substantially and becomes positive and statistically significant.

However, these results present another striking pattern in the daily profits. Day5 generates a largely positive daily return for equal-weighted portfolio and it remains both statistically and economically significant for value-weighted portfolios except for the crisis period. This is inconsistent with the results of the U.S. markets and it also challenges the liquidity provision explanation (e.g., Hameed and Mian, 2015; Nagel, 2012) for the short-term reversal. This result is also inconsistent with the return seasonality in the U.S. markets (e.g., Bogousslavsky, 2016; Hirshleifer et al., 2020). There is no monotone decline in the profit. In contrast, there is a large and statistically significant profit on Day2 and Day5, while the profits on Day3 and Day4 are not significant and the profit on Day6 is not statistically significant either in the most recent time period. Thus, we also reject our fourth hypothesis.

We also provide additional insights on the robustness of the findings. In Table 1, we also report the results for CAPM-adjusted returns. None of our previous conclusions changes after controlling for CAPM. Furthermore, we also report the Chinese four factor alpha following Liu et al. (2019) to control for common risk factors but it yields the same conclusions as previous results. We report the Chinese four factor model because it dominates the Fama-French three factor model in the Chinese equity markets, and it also explains several anomalies including the profitability and investments which are the basis of the Fama-French five factor model (Liu et al.,

Table 1

Reversal strategy returns in different time periods.

			Reversal profits Sub-strategies						Average	Lagged average
			1	2	3	4	5	6	1–5	2–6
1999–2007	EW	mean	−0.07%	0.18%	0.02%	0.02%	0.15%	0.08%	0.06%	0.09%
		t-stat	(−3.07)	(11.36)	(1.16)	(1.43)	(11.10)	(7.42)	(6.84)	(10.68)
		sd	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
		α	−0.08%	0.17%	0.01%	0.02%	0.15%	0.09%	0.05%	0.09%
		t-stat	(−3.51)	(11.30)	(0.79)	(1.17)	(11.10)	(7.46)	(6.53)	(10.84)
		CH-4 α	−0.07%	0.16%	0.01%	0.00%	0.14%	0.07%	0.05%	0.08%
	VW	t-stat	(−3.25)	(11.00)	(0.95)	(0.18)	(10.99)	(6.12)	(6.22)	(10.01)
		mean	−0.14%	0.09%	−0.02%	0.00%	0.10%	0.07%	0.01%	0.05%
		t-stat	(−4.90)	(3.92)	(−0.69)	(−0.04)	(4.21)	(2.70)	(0.40)	(3.29)
		sd	0.03%	0.02%	0.03%	0.03%	0.02%	0.03%	0.01%	0.01%
		α	−0.15%	0.09%	−0.02%	0.00%	0.11%	0.08%	0.01%	0.05%
		t-stat	(−4.94)	(3.92)	(−0.75)	(−0.05)	(4.48)	(2.90)	(0.48)	(3.45)
		CH-4 α	−0.15%	0.07%	−0.03	−0.02%	0.11%	0.06%	−0.01	0.04%
		t-stat	(−5.27)	(2.28)	(−1.35)	(−0.88)	(4.31)	(2.40)	(−0.34)	(2.66)
2008–2010	EW	mean	−0.19%	0.23%	0.08%	0.03%	0.23%	0.09%	0.08%	0.13%
		t-stat	(−4.55)	(7.28)	(3.28)	(1.26)	(10.75)	(4.95)	(4.40)	(9.29)
		sd	0.04%	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%	0.01%
		α	−0.19%	0.23%	0.08%	0.03%	0.23%	0.09%	0.08%	0.13%
		t-stat	(−5.37)	(7.50)	(3.28)	(1.23)	(10.84)	(4.97)	(4.71)	(9.40)
		CH-4 α	−0.17%	0.23%	0.09%	0.03%	0.23%	0.10%	0.08%	0.13%
	VW	t-stat	(−4.89)	(7.31)	(3.40)	(1.38)	(11.61)	(5.35)	(4.75)	(9.41)
		mean	−0.48%	−0.00%	0.03%	−0.06%	0.01%	0.06%	−0.10%	0.01%
		t-stat	(−5.13)	(−0.05)	(0.49)	(−0.83)	(0.21)	(0.80)	(−2.03)	(0.15)
		sd	0.09%	0.09%	0.06%	0.07%	0.06%	0.07%	0.05%	0.04%
		α	−0.48%	−0.01	0.03%	−0.06%	0.01%	0.06%	−0.10%	0.01%
		t-stat	(−5.47)	(−0.05)	(0.48)	(−0.81)	(0.20)	(0.80)	(−2.14)	(0.14)
		CH-4 α	−0.4%	−0.00%	0.03%	−0.06%	0.01%	0.05%	−0.10%	0.00%
		t-stat	(−7.45)	(−0.05)	(0.42)	(−1.15)	(0.14)	(0.71)	(−2.54)	(0.11)
2011–2018	EW	mean	−0.16%	0.09%	−0.01%	0.00%	0.18%	0.01%	0.02%	0.06%
		t-stat	(−4.28)	(4.69)	(−0.59)	(0.07)	(12.01)	(0.87)	(1.52)	(5.61)
		sd	0.04%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%
		α	−0.17%	0.09%	−0.01%	−0.00%	0.18%	0.01%	0.02%	0.05%
		t-stat	(−4.63)	(4.65)	(−0.78)	(−0.07)	(12.01)	(0.73)	(1.30)	(5.53)
		CH-4 α	−0.13	0.09	−0.01	0.00%	0.18%	0.01%	0.03%	0.05%
	VW	t-stat	(−4.76)	(6.05)	(−0.75)	(0.25)	(12.28)	(0.72)	(2.61)	(6.64)
		mean	−0.17%	0.05%	−0.00%	−0.00%	0.14%	−0.03%	0.00%	0.03%
		t-stat	(−5.70)	(2.02)	(−0.09)	(−0.03)	(4.82)	(−1.47)	(0.18)	(2.02)
		sd	0.03%	0.03%	0.02%	0.03%	0.03%	0.02%	0.02%	0.02%
		α	−0.18%	0.05%	−0.00%	0.00%	0.13%	−0.04%	0.00%	0.03%
		t-stat	(−5.88)	(2.08)	(−0.03)	(0.02)	(4.80)	(−1.55)	(0.17)	(2.03)
		CH-4 α	−0.16%	0.04%	0.00%	0.01%	0.13%	−0.03%	0.00%	0.03%
		t-stat	(−6.24)	(1.62)	(0.10)	(0.27)	(5.07)	(−1.10)	(0.32)	(2.24)

This table presents the daily profits of the reversal strategies based on the last six days, their averages, their standard deviations (sd), their CAPM-adjusted returns, their four factor (Liu et al., 2019) alphas (CH-4), and their corresponding Newey-West (1987) t-statistics in parentheses. Time periods range between 1999 and 2007, 2008–2010, and 2011–2018. First panel of each period includes results of equal-weighted portfolios, while the second includes value-weighted results.

2019). As a further robustness test, we also examine the results of the strategies on each exchange separately.¹ Results show that there is no change in the conclusions. Furthermore, we also calculate the profits of liquidity provision after excluding firms with smaller market capitalization than the median in each time period t . Finally, we also calculate the profits of a long-short strategy based on portfolio deciles in each time period t to investigate the robustness of our results.² All our conclusions remain the same.

3.2. Mechanism

In this section, we explore the drivers of the profitability of these strategies in the most recent time period (from 2011) in which short-selling is already available in China (Yu et al., 2019) to test our fifth hypothesis. First, we regress these profits on the Chinese VIX index³ to gain more insights on the mechanism. Second, using alternative proxy instead of the Chinese VIX index such as the realized market volatility yields the same conclusions that liquidity constraints do not explain the time variation of the profit on liquidity

¹ In this case, we only require 50 observations per day when examining Shanghai or Shenzhen separately.

² Tables are available upon request.

³ <https://fred.stlouisfed.org/series/VXFXICLS>

Table 2

Reversal strategy returns after excluding extreme daily returns.

			Reversal profits Sub-strategies					
			1	2	3	4	5	6
1999–2007	EW	mean	0.02%	0.20%	0.02%	0.03%	0.15%	0.08%
		t-stat	(0.97)	(12.44)	(1.59)	(2.17)	(11.35)	(6.71)
		sd	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%
	VW	mean	−0.07%	0.11%	−0.02%	0.00%	0.11%	0.07%
		t-stat	(−2.72)	(4.74)	(−1.00)	(0.19)	(4.97)	(3.01)
		sd	0.03%	0.02%	0.02%	0.03%	0.02%	0.02%
2008–2010	EW	mean	−0.03%	0.21%	0.09%	0.04%	0.20%	0.09%
		t-stat	(−0.92)	(6.63)	(4.27)	(1.46)	(8.89)	(3.79)
		sd	0.04%	0.03%	0.02%	0.03%	0.02%	0.02%
	VW	mean	−0.29%	0.01%	0.04%	−0.04%	−0.01%	0.05%
		t-stat	(−4.40)	(0.11)	(0.67)	(−0.56)	(−0.18)	(0.83)
		sd	0.07%	0.09%	0.06%	0.08%	0.06%	0.06%
2011–2018	EW	mean	0.04%	0.16%	0.05%	0.04%	0.18%	0.01%
		t-stat	(1.72)	(8.86)	(2.91)	(2.09)	(10.04)	(1.03)
		sd	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%
	VW	mean	−0.06%	0.09%	0.04%	0.03%	0.14%	−0.03%
		t-stat	(−2.40)	(3.86)	(2.02)	(0.93)	(4.61)	(−1.16)
		sd	0.02%	0.02%	0.02%	0.03%	0.03%	0.02%

This table presents the daily profits of the reversal strategies based on the last six days, their corresponding Newey-West (1987) t-statistics in parentheses, and standard deviations (sd) after excluding all observations with higher (lower) than 8% (−8%) return in the portfolio formation. Time periods range between 1999 and 2007, 2008–2010, and 2011–2018. First panel of each period includes results of equal-weighted portfolios, while the second includes value-weighted results.

provision or the profitability of Day2, ..., Day5.⁴ Thus, we reject our fifth hypothesis because the profit on liquidity provision strategy does not seem to depend on liquidity constraints based on the results summarized in Table 3. It shows that only the profit based on the most recent day depends on the Chinese VIX. This relation is consistent with our previous results because we can expect more extreme news and changes in values in more volatile (higher VIX) time periods increasing the relevance of the daily price limit.

Third, we decompose the profit of each reversal strategy into winners (short leg) and losers (long leg). Table 4 presents the decomposed profits of the reversal strategies. It shows that the short leg drives mainly the profits of Day2, and Day5. It might be the consequence of the higher transaction cost of shorting compared to long position. However, the lack of profitable reversal strategy on the long leg (for instance, because of a fire sale) suggests again that the results are not driven by liquidity provision. Furthermore, these results are consistent with a behavioral explanation. Finally, the profitability of liquidity provision is supposed to robustly increase during high uncertainty time period such as around the great financial crises beginning in 2008. As Table 1 reports, this is inconsistent with the data. Thus, none of the approaches shows clear evidence on liquidity provision mechanism.

4. Conclusion

We formulate several hypotheses to test the implications of liquidity provision theory in the Chinese equity markets, which is the biggest emerging market. We find that the liquidity provision strategy does not generate a robust statistically significant positive return. However, we also find that it is mainly because of the substantial negative return on the reversal strategy based on the most recent daily return. It is exactly the opposite finding compared to the results in the U.S. markets. Additional analyses suggest that it is partly because of the daily price limit in China. We also find that only two days drive the profit on reversal strategy: the second most recent day and the day one week ago. This is again inconsistent with the results in the U.S. markets because, according to liquidity provision theory, there should be a monotone decrease in the profits. Finally, we find that even these profits do not depend on liquidity constraints suggesting that these profits on reversals are not related to liquidity provision.

These results suggests that there is a short-term momentum based on the most recent day in the Chinese equity markets because of the daily price limit as a microstructure effect instead of a bid-ask bounce, while there is a potential behavioral influence on the profitability of the reversal strategy based on the second most recent day and the day one week ago.

CRedit authorship contribution statement

Gábor Neszveda: Project administration, Methodology, Writing – original draft, Writing – review & editing. **Gábor Till:** Data curation, Formal analysis, Methodology, Writing – review & editing. **Barnabás Timár:** Data curation, Formal analysis, Methodology, Writing – review & editing. **Marcell Varga:** Data curation, Formal analysis, Methodology, Writing – review & editing.

⁴ Tables are available upon request

Table 3

Time variation of reversal strategy returns.

2011–2018		Reversal profits Sub-strategies						Average	Lagged average
		1	2	3	4	5	6	1~5	2~6
China VIX	coef	−0.029	−0.006	0.000	0.001	−0.001	0.001	−0.007	−0.001
	t-stat	(−3.63)	(−1.58)	(0.12)	(0.27)	(−0.56)	(0.52)	(−2.83)	(−0.62)
constant	coef	0.601	0.240	−0.031	−0.011	0.215	−0.026	0.203	0.077
	t-stat	(3.22)	(2.79)	(−0.33)	(−0.19)	(3.99)	(−0.43)	(3.61)	(2.17)

This table presents the results of regressions of the reversal strategy returns based on the last six days, and their averages on the Chinese VIX. We report the corresponding [Newey-West \(1987\)](#) t-statistics in parentheses.

Table 4

Reversal strategy returns decomposition.

2011–2018		Reversal profits Sub-strategies						Average	Lagged average
		1	2	3	4	5	6	1~5	2~6
Total	mean	−0.16%	0.09%	−0.01%	0.00%	0.18%	0.01%	0.02%	0.06%
	t-stat	(−4.28)	(4.69)	(−0.59)	(0.07)	(12.01)	(0.87)	(1.48)	(5.55)
	sd	0.04%	0.02%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%
Short leg	mean	−0.01%	0.12%	0.04%	0.05%	0.16%	0.04%	0.07%	0.08%
	t-stat	(−0.21)	(2.79)	(0.98)	(1.10)	(3.38)	(0.87)	(1.65)	(1.80)
	sd	0.04%	0.04%	0.05%	0.05%	0.05%	0.05%	0.04%	0.05%
Long leg	mean	−0.15%	−0.02%	−0.06%	−0.05%	0.03%	−0.03%	−0.05%	−0.03%
	t-stat	(−2.81)	(−0.46)	(−1.14)	(−0.03)	(0.51)	(−0.66)	(−1.00)	(−0.54)
	sd	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%

This table presents the daily profits of the reversal strategies based on the last six days, their averages, their corresponding [Newey-West \(1987\)](#) t-statistics in parentheses, and their standard deviations (sd). The first panel includes results of the total equal-weighted portfolios, the second includes the profit of the short leg of the portfolios, and the third includes the profit of the long leg.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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