# Quantitative factors built from retail trade flow data

February 2021

## Research Signals

Trend and sentiment data are important signals in the investment process and individual investor activity provides one such aspect in equity pricing. With retail trading platforms offering zero commission trading and the influx of extra funds due to economic stimulus, we observe retail trading becoming an increasingly impactful segment of the equity market. To capture this trend, we introduce a suite of retail trade flow indicators constructed from proprietary IHS Markit Trading Analytics data.

- We introduce four trade flow signals - Standard Net Sentiment, Total Net Sentiment, Market-adjusted Standard Net Sentiment and Standard Short Sentiment
- In general, we found retail net buying flows display a degree of short-term predictive power since January 2017, a relationship that was more pronounced during the heightened volatility at the onset of the Covid-19 pandemic
- Standard Net Sentiment was the strongest signal over our analysis period for time horizons ranging from open-to-close through 10 days, including a positive daily long-short spread in 55.7% of months and cumulative spread of 53.8%


## Contacts

**Research Signals** · MK-ResearchSignals@ihsmarkit.com




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## Background

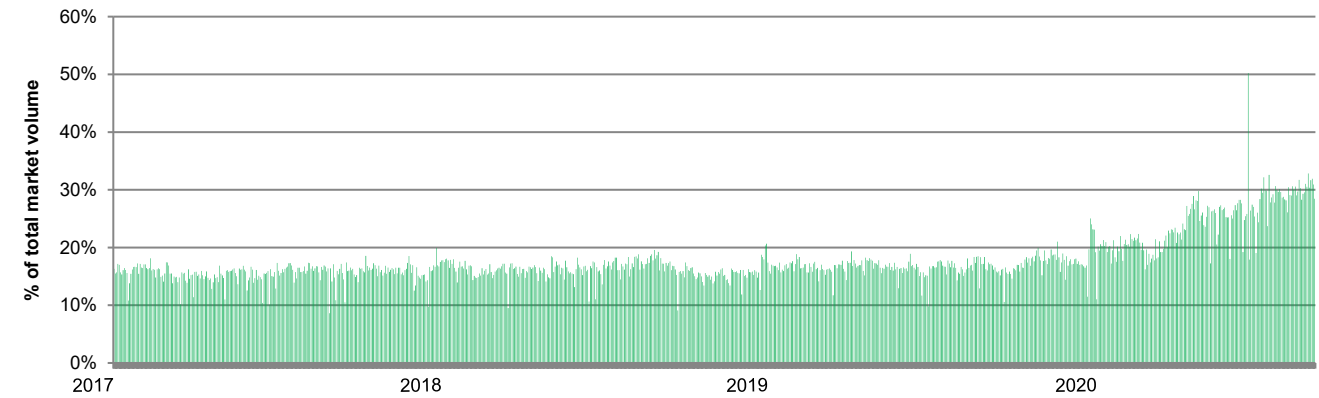
Equity retail traders have become a more significant **source** of market liquidity, especially during periods of heightened volatility, driven in part by brokerage firms' move to offer free trades. In the ongoing quest for alternative datasets, the investment community has expressed increased interest in retail trade flow data, as exemplified by hedge funds and other financial companies which sought to aggregate data from the **now defunct** Robintrack website which collected Robinhood trading activity to gauge stock 'popularity'.

To this end, Research Signals is introducing a suite of retail trade flow indicators sourced from regulatory reporting within the IHS Markit Trading Analytics group, extending our growing collection of proprietary signals derived from IHS Markit's unique datasets which reside outside the traditional array of technical and financial statement-based signals.

The data is aggregated daily beginning in 2017 by ticker across US trading venues to provide a consolidated view of trade flow. Based on total dollar notional captured by our retail flow dataset, we observe that retail market share as a percent of total market volume (Figure 1) increased since October 2019 when major retail brokers moved to zero commission, and accelerated since the lockdown imposed by COVID-19 pandemic in the US in March 2020.

Figure 1

**Retail flow market share**




Source: IHS Markit



For each security, we report total buy, sell and short executed order flows. We also attempt to distinguish between standard retail flow versus sophisticated flow by order type and execution time. Standard orders are defined as orders meeting the following criteria:

- Execution time during regular (9:30-16:00 EST) and post (16:00-20:00 EST) market hours
- Market, limit, stop, stop limit and stop loss order types
- Day orders (often the default time in force order for brokerage accounts)

In the following sections, we introduce our Retail Trade Flow factors followed by an in-depth performance review.

## Factor introduction

In this initial research note, we report on four factors in our Retail Trade Flow factor group. The factors are constructed as follows:

$$Standard\ Net\ Sentiment = \frac{Buy_{std} - Sell_{std} - Short_{std}}{Buy_{std} + Sell_{std} + Short_{std}}$$

$$Total\ Net\ Sentiment = \frac{Buy_{total} - Sell_{total} - Short_{total}}{Buy_{total} + Sell_{total} + Short_{total}}$$

$$Market - adjusted\ Standard\ Net\ Sentiment = \frac{Buy_{std} - Sell_{std} - Short_{std}}{MarketVolume}$$

$$Standard\ Short\ Sentiment = \frac{-Short_{total}}{Buy_{total} + Sell_{total} + Short_{total}}$$

Due to the timing of the contributed data, we use a conservative 2-day lag in the factor calculations.

To test factor efficacy, we calculate simulated long-short decile portfolio returns using the following method. We begin with the percentile ranks at the beginning of the holding period and divide the universe into ten deciles, with the top ranked, or buy-rated, names assigned to decile 1 (D1) and the bottom ranked, or sell-rated, names in decile 10 (D10). At the end of each holding period, we then compute the equal-weighted decile return and report the return spread between D1 and D10, simulating a long-short portfolio. Holding periods include open-to-close, 1-day, 2-day, 3-day, 5-day, 10-day and 1-month terms.

Factors are tested over the US Total Cap universe which represents 98% of the cumulative market cap, or approximately 3,000 names. Average decile return spreads are reported for each holding period over the full backtest period from January 2017 through December 2020. The following section summarizes the results.

## Results

We begin with a review of daily holding period performance results across each factor for the US Total Cap universe. Table 1 presents average decile return spreads over each holding period (overlapping periods for daily time horizons).

Table 1

**US Total Cap daily average decile return spreads (%), Jan 2017 - Dec 2020**

| Factor | Open-to-close | 1-day | 2-day | 3-day | 5-day | 10-day |
|---|---|---|---|---|---|---|
| Standard Net Sentiment | 0.01 | 0.04 | 0.05 | 0.05 | 0.04 | 0.04 |
| Total Net Sentiment | -0.02 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 |
| Market-adjusted Standard Net Sentiment | -0.08 | 0.02 | 0.04 | 0.03 | 0.03 | 0.03 |
| Standard Short Sentiment | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |

Source: IHS Markit

Overall, we found retail net flow to display a degree of short-term predictive power in the single-digit basis point range over daily and weekly time horizons. For example, average 1-day decile spreads were positive for Standard Net Sentiment (0.04%), Total Net Sentiment (0.05%) and Market-adjusted Standard Net Sentiment (0.02%). Performance improved for Standard Net Sentiment (0.05%) and Market-adjusted Standard Net Sentiment (0.04%) through the following day, though all factors showed some indications of decay out to 10-days.

We drill down further into the time series of 1-day holding period results for each factor (Figures 2 - 5) to gain more insights into performance over time. Standard Net Sentiment saw relatively consistent outperformance over the analysis period with a hit rate (percent of days with positive performance) of 55.7%. On a cumulative basis, we report a cumulative spread of 53.8%, particularly driven by results since March 2020. Indeed, the low single-digit basis point performance through February 2020 improved to a 13-basis point average decile spread since that time. This regime shift may have been catalyzed by the spiked participation of retail investors as volatility increased at the onset of the Covid-19 pandemic to levels not seen since the financial crisis.

Relatedly, enhanced retail investor participation delivered a slightly higher bump to Total Net Sentiment performance, contributing to a full-period hit rate of 54.5% and 58.0% cumulative spread at the 1-day time horizon, while Market-adjusted Standard Net Sentiment's hit rate came in at 52.2%, with a cumulative spread of 25.3%. Standard Short Sentiment, on the other hand, tends to be a reverse signal, with a 48.7% hit rate and -10.9% cumulative spread, suggesting that retail shorting flows are a less informed short-term trade. We further note that its average decile spreads were of similar magnitude to the full period results both prior to and following February 2020.

Figure 2

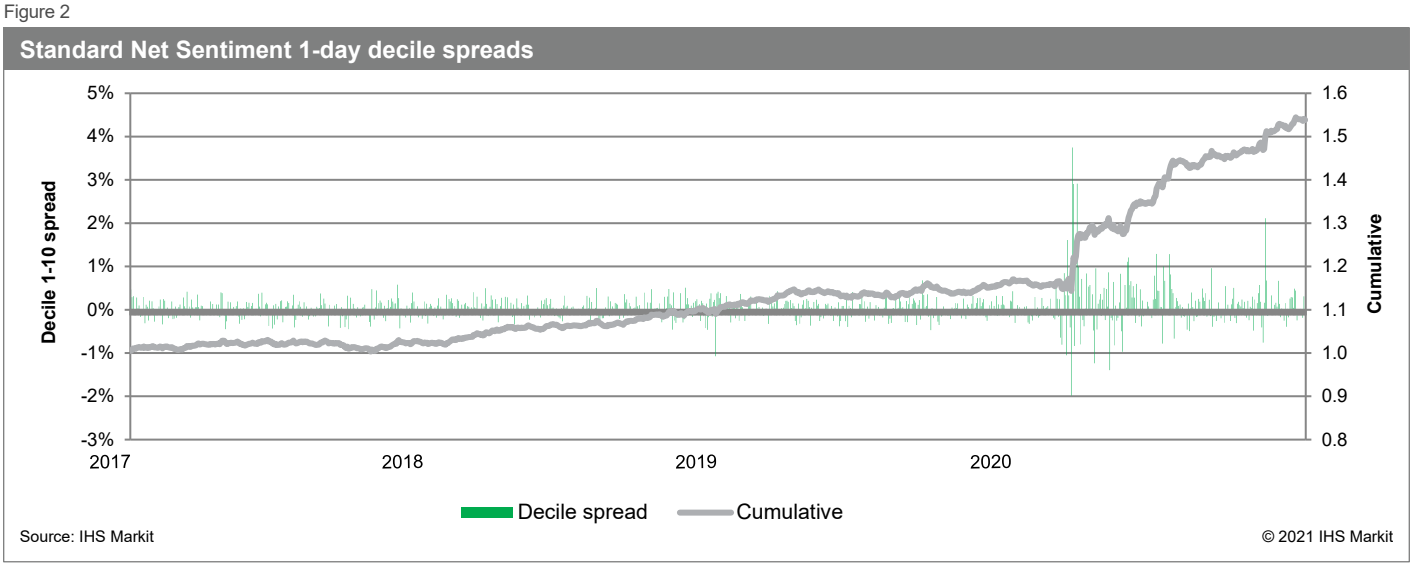
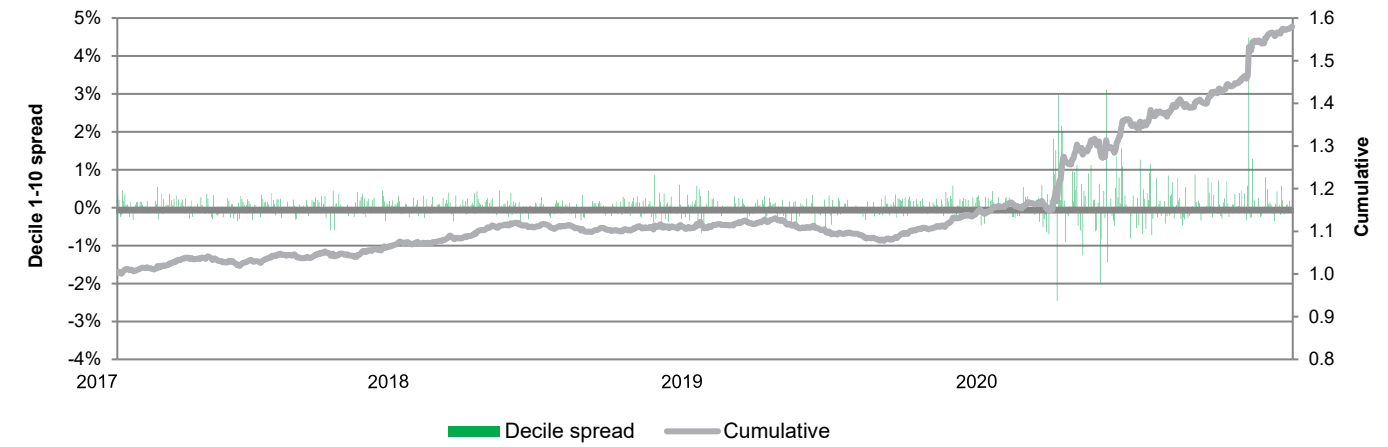


Figure 3

**Total Net Sentiment 1-day decile spreads**

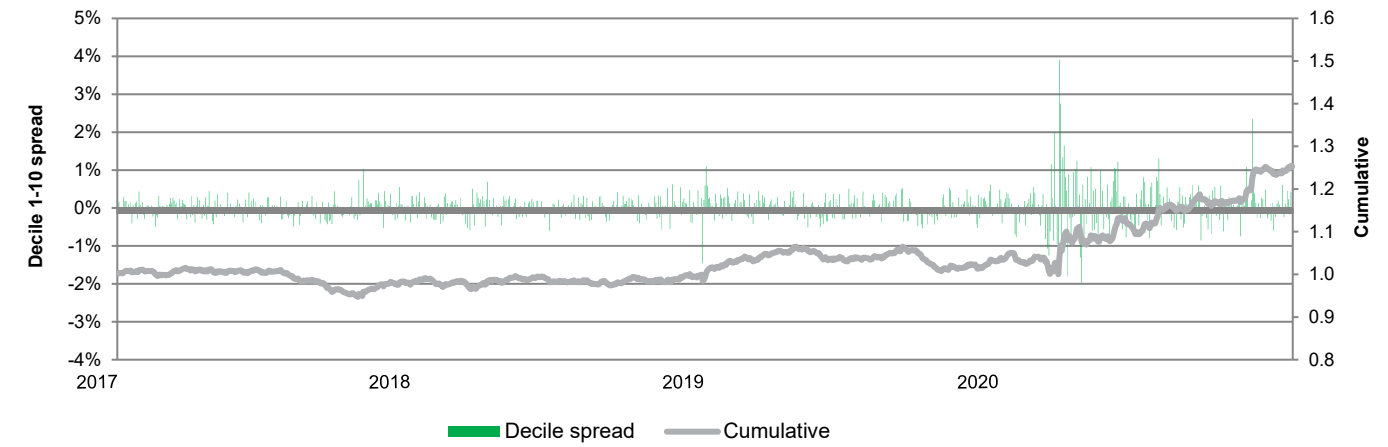



Source: IHS Markit



Figure 4

**Market-adjusted Standard Net Sentiment 1-day decile spreads**

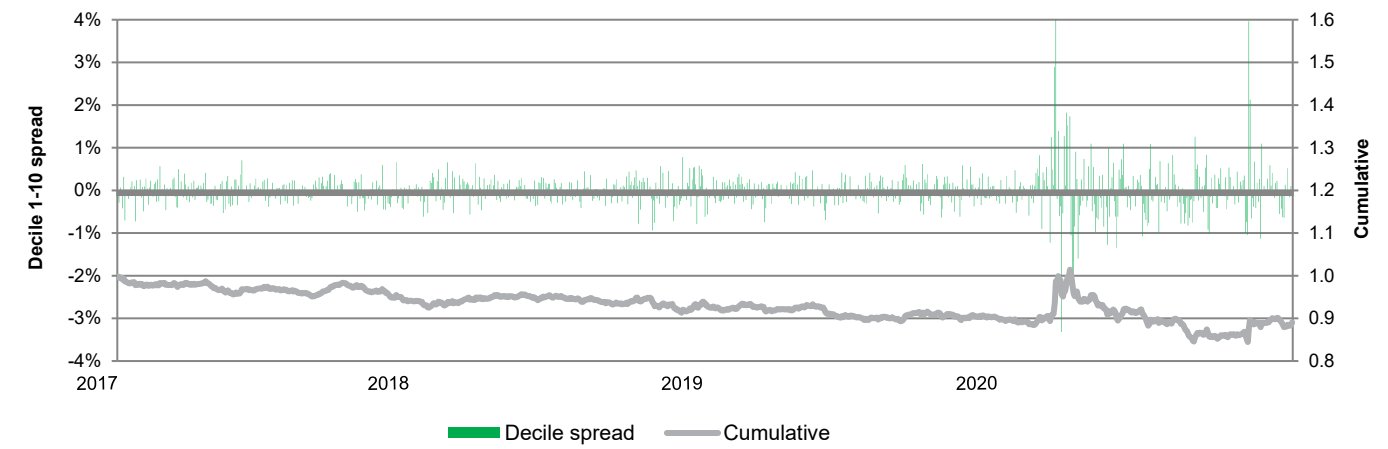



Source: IHS Markit



Figure 5

**Standard Short Sentiment 1-day decile spreads**




Source: IHS Markit

We wrap up with a review of monthly (non-overlapping) holding period results. For this analysis, we include a break out of performance across large and small caps universes, which represent approximately the top 1,000 and following 2,000 names by market cap, respectively. Table 2 summarizes the results and Figures 6 - 9 present the time series of cumulative performance.

At the 1-month time horizon, return spreads remained directionally the same as the daily and weekly results, though with higher returns over the longer holding period. Also, in this case, Market-adjusted Standard Net Sentiment spreads (US Total Cap: 1.08%) marginally outpaced Standard Net Sentiment (US Total Cap: 0.95%), while Standard Short Sentiment (US Total Cap: -0.20%) remained a reverse signal.

Lastly, the time series plots draw attention to the stronger results captured by small caps compared with large caps. For example, small cap Market-adjusted Standard Net Sentiment monthly spreads cumulated to 68.8% over the full analysis period, or 14.0% annualized. The results were particularly pronounced relative to large caps, which posted a cumulative spread of 26.5%, or 6.1% annualized.

Table 2

**Monthly average decile return spreads (%), Jan 2017 - Dec 2020**

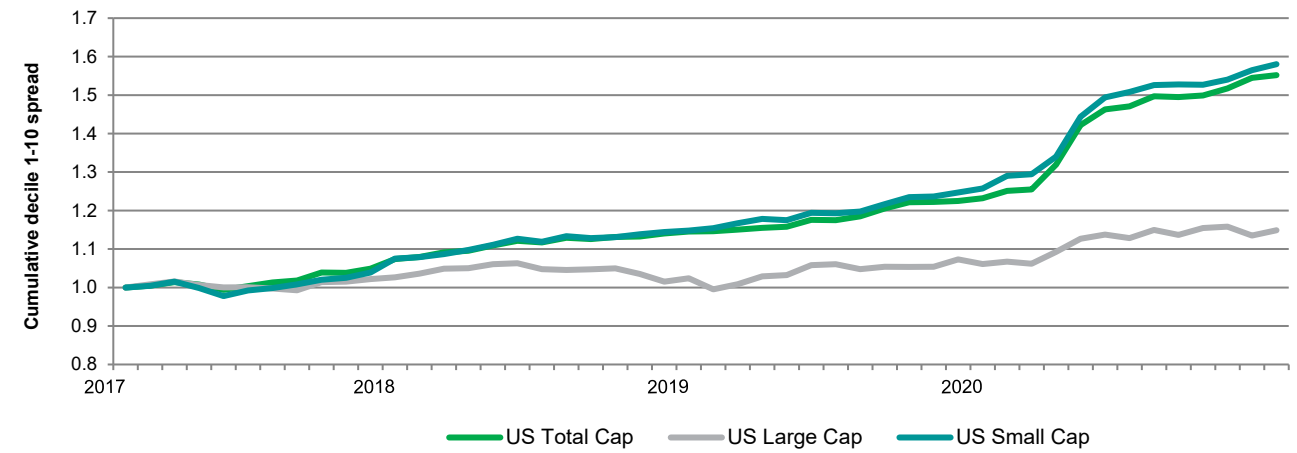
| Factor | US Total Cap | US Large Cap | US Small Cap |
|---|---|---|---|
| Standard Net Sentiment | 0.95 | 0.30 | 0.99 |
| Total Net Sentiment | 0.51 | 0.21 | 0.40 |
| Market-adjusted Standard Net Sentiment | 1.08 | 0.52 | 1.15 |
| Standard Short Sentiment | -0.20 | -0.04 | -0.34 |

Source: IHS Markit



Figure 6

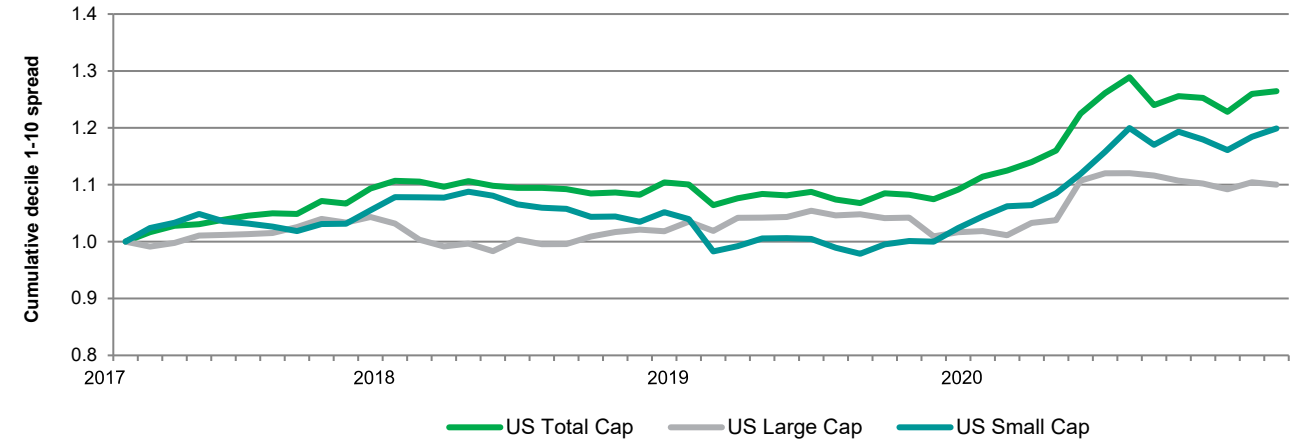
**Standard Net Sentiment cumulative monthly decile spreads**




Source: IHS Markit

Figure 7

**Total Net Sentiment cumulative monthly decile spreads**

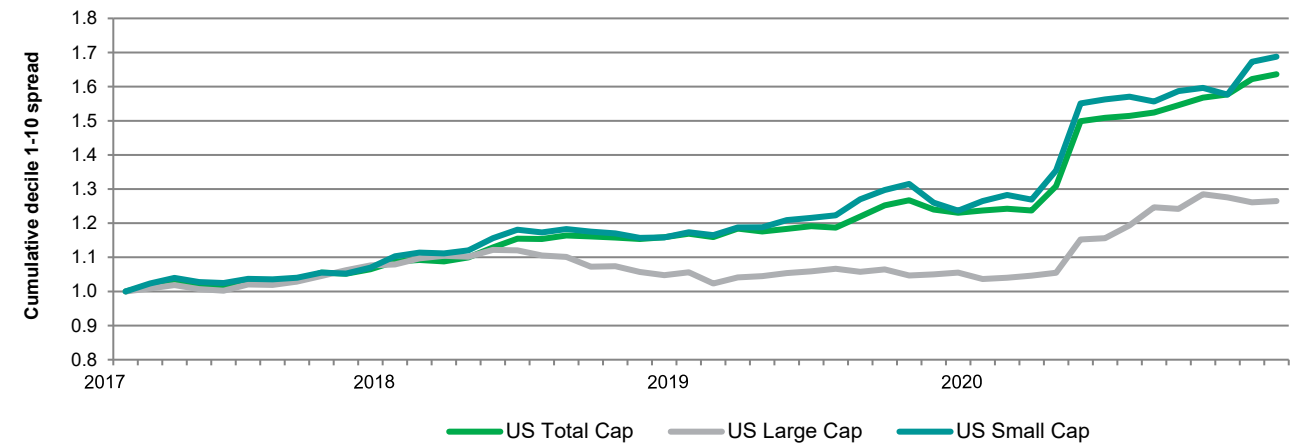



Source: IHS Markit



Figure 8

**Market-adjusted Standard Net Sentiment cumulative monthly decile spreads**

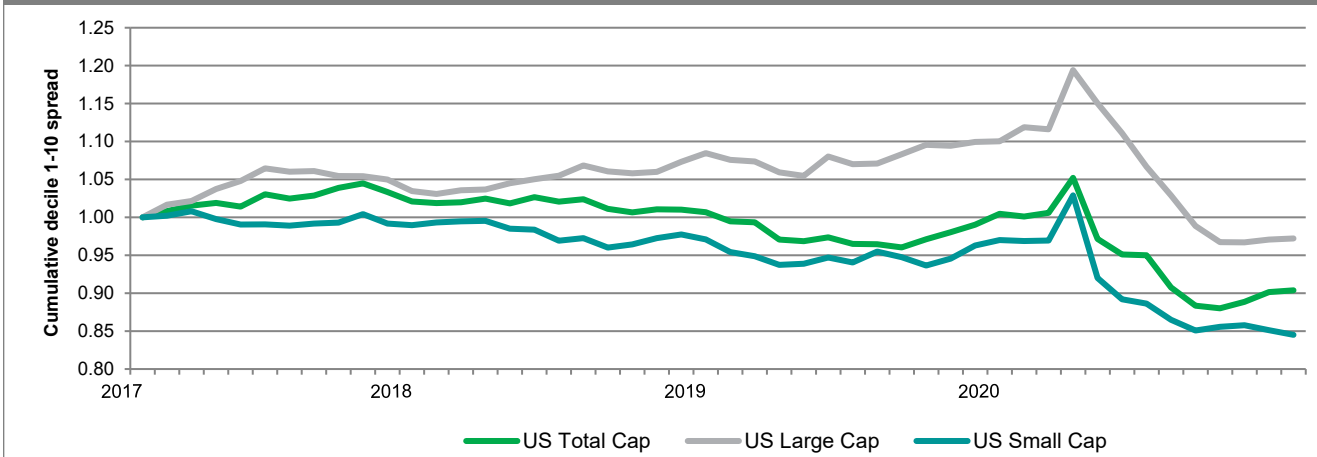



Source: IHS Markit



Figure 9

**Standard Short Sentiment cumulative monthly decile spreads**




Source: IHS Markit

## Conclusion

The IHS Markit Retail Trade Flow product provides insights into retail equity trade flow for US securities. The data is aggregated on a daily basis, by ticker, and across US trading venues to provide a consolidated view of trade flow.

In all, we constructed four trade flow signals - Standard Net Sentiment, Total Net Sentiment, Market-adjusted Standard Net Sentiment and Standard Short Sentiment. In general, our retail net buying flow factors were positive signals over short-range time horizons, a relationship that was more pronounced during the heightened volatility at the onset of the Covid-19 pandemic.

Since January 2017, average 1-day decile spreads were positive for Standard Net Sentiment (0.04%), Total Net Sentiment (0.05%) and Market-adjusted Standard Net Sentiment (0.02%) and tended to extend out to the following day. Conversely, Standard Short Sentiment average 1-day decile spreads (-0.01%) suggest that retail shorting flows are a less informed short-term trade. At the 1-month time horizon, return spreads were directionally the same, though higher in magnitude, from the daily holding periods, with stronger performance associated with small caps.

## IHS Markit Customer Support:

Support@ihsmarkit.com
Americas: +1 877 762 7548
Europe, Middle East, and Africa: 00800 6275 4800
Asia and the Pacific Rim: +65 6922 4210



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