US EQUITY STRATEGY I **RESEARCH**

Monday Morning Quarterback

Pessimism May Have Simply Gotten Too Extreme

June 8th, 2020

RBC Capital Markets, LLC

Lori Calvasina (Head of U.S. Equity Strategy) (212) 618-7634 lori.calvasina@rbccm.com

Sara Mahaffy, CFA (US Equity Strategist) (212) 618-7507 sara.mahaffy@rbccm.com

Carlos Torres, CFA (Senior Associate) (212) 618-3312 carlos.torres@rbccm.com

April Lu, CFA (Senior Associate) (212) 428-6350 april.lu@rbccm.com

This report is priced as of market close ET on June 5, 2020.
All values in U.S. dollars unless otherwise noted.

For Required Conflicts Disclosures, please see page 26

Capital Markets

Disseminated: June 8, 2020 10:56ET; Produced: June 8, 2020 10:56ET

Overview

- **About this report:** In this new publication, we update the most important high frequency (daily & weekly) charts from our widely followed *Macroscope*, which generally comes out monthly. We won't make any big forecast changes in *Quarterback*, but will update our thoughts on each of these indicators and reflect on what we learned last week.
- **Vicious rotations were seen in most layers of the equity market.** There was a lot of talk late last week about how Small Caps outperformed Large Caps, and Value beat Growth as the cyclical trade started to work again, triggered by economic data showing signs of improvement at the margin and coming in less bad than feared. Only time will tell whether these leadership transitions will be sticky (we've seen plenty of head fakes on both trades in the past few years and are staying neutral on both on a 6-12 month view). Two other trends caught our attention that have been getting less attention. First, within equities, the US lagged non-US slightly. This isn't surprising since the US/non-US trade has tracked the Growth/Value trade closely in recent years. Second, the most popular stocks in hedge funds underperformed, a trade that began in mid-May. This has happened the last few times the Value trade has made a serious attempt to assume leadership (2016, late 2019) and suggests that hedge fund rotation either already is or soon could be fueling further rotation. See pages 4 – 7 for details.
- **Pessimism may have simply gotten too extreme.** The investment community has given itself a bald spot from all the head scratching over Friday's jobs report. We view it as another release that showed signs of improvement at the margin and came in better than massively lowered expectations. The Citi US Economic Surprise index (page 17) ended the week in positive territory for the first time in 11 weeks after returning to levels that have tended to mark the bottom in the past, but was already improving before the jobs report. S&P 500 performance had started to move in sync with this gauge of economic sentiment again, anticipating that forecasts for the economy had gotten too negative. Other gauges of sentiment have also been starting to improve from levels that had marked important turning points, if not absolute lows, in the past – EPS estimate revisions which hit Fin Crisis lows (page 8), CFTC asset manager positioning in US equity futures which returned to Dec 218 levels (page 12), and AAII retail bears which crossed the 50% mark several times (page 14). At the March 23rd low, the forward P/E (based on 2021 EPS) for the S&P 500 was also close to its December 2018 low, suggesting that market has been viewing the pandemic recession more like a growth scare than a deep economic contraction all along.
- **The stock market has decoupled from Trump.** For the past year, expectations as to whether Trump will win again in November (as tracked by the betting markets) have been moving in sync with S&P 500 performance. But that relationship has broken down a bit in early June, with Trump's chances (according to the betting markets) falling and the S&P 500 surging (page 22). Perhaps the stock market no longer views Trump as necessary for continued gains. Perhaps it is taking comfort in the idea that Harris, not Warren, will be the VP nominee for the Democrats. Perhaps it thinks the improving economic data will give Trump the momentum again. This is an issue we'll be exploring in June.

Asking for Your Support in This Year’s II Survey….

If you find our research helpful, please vote for our team in this year’s *All-America Research Survey* by *Institutional Investor.*

Click Here to Vote/Request A Ballot

Click Here For Tips On How to Vote

Under All-America Research: Economics & Strategy,
select Portfolio Strategy and/or Thematic Research,
type RBC,
then select Lori Calvasina and/or Sara Mahaffy.

More stars = a higher vote.

Votes can be added/changed up until June 26th.

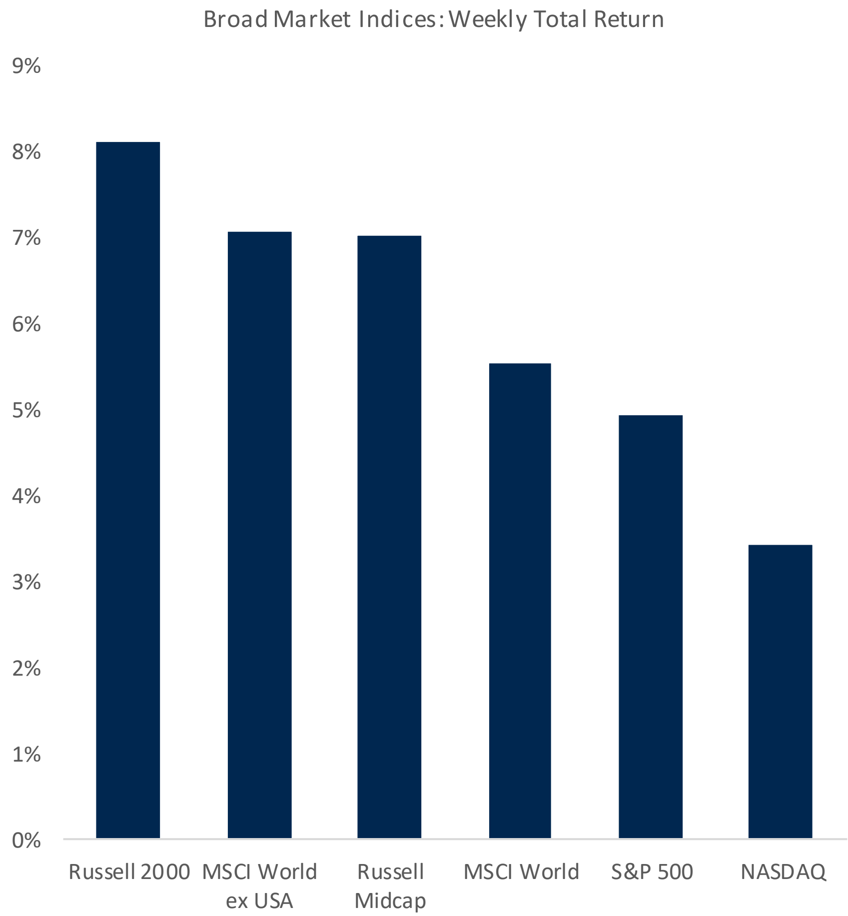
The results of this poll are very important to our firm.

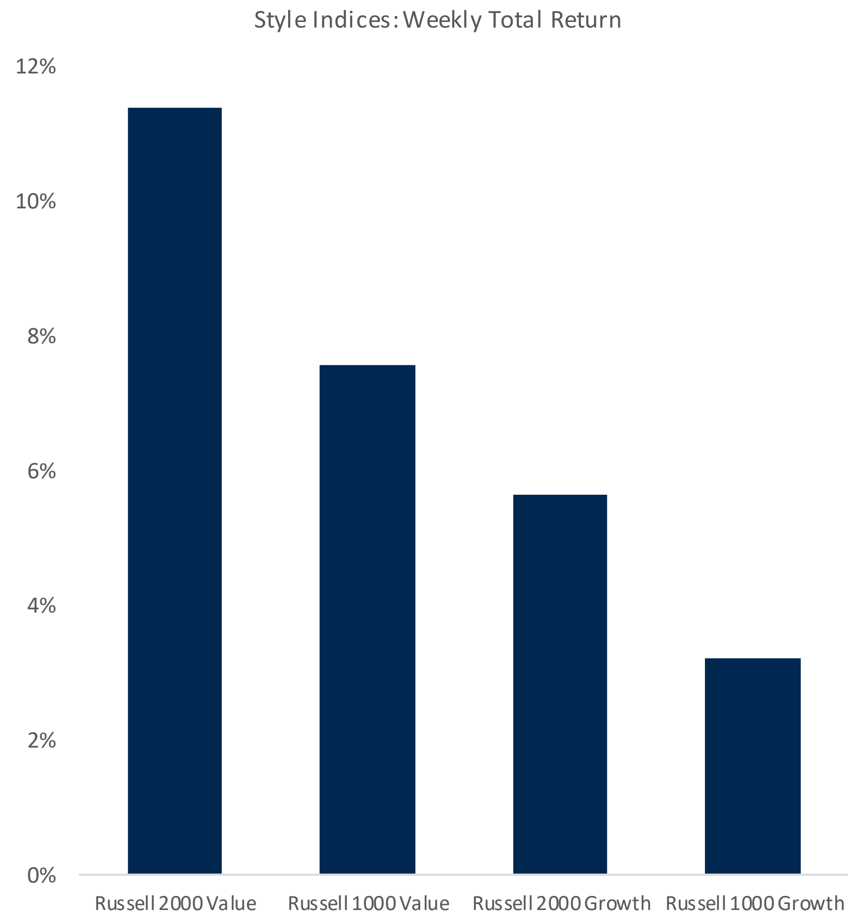
We appreciate your support!

Geography, Size & Style: US Lagged ROW, Small Beat Large & Nasdaq, Value Beat Growth

Key Takeaways

- US equities surged last week, with safe haven trades (US, Nasdaq, and Growth) lagging and the more out-of-favor and cyclical areas leading the way (Non-US, Small Cap, Value).



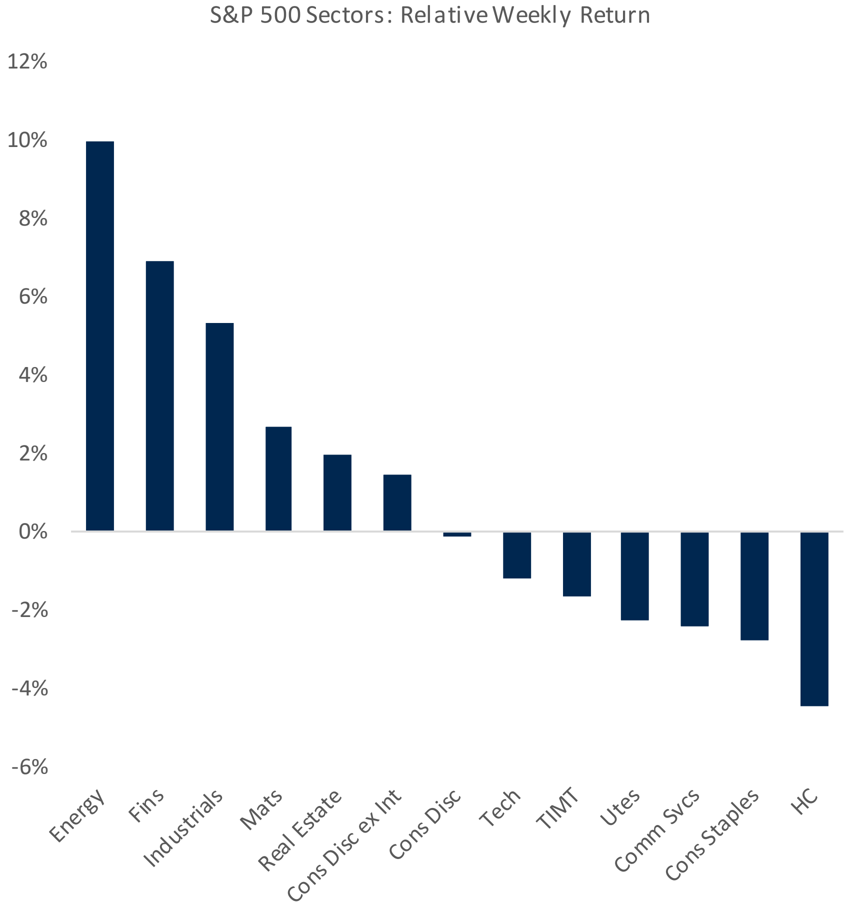


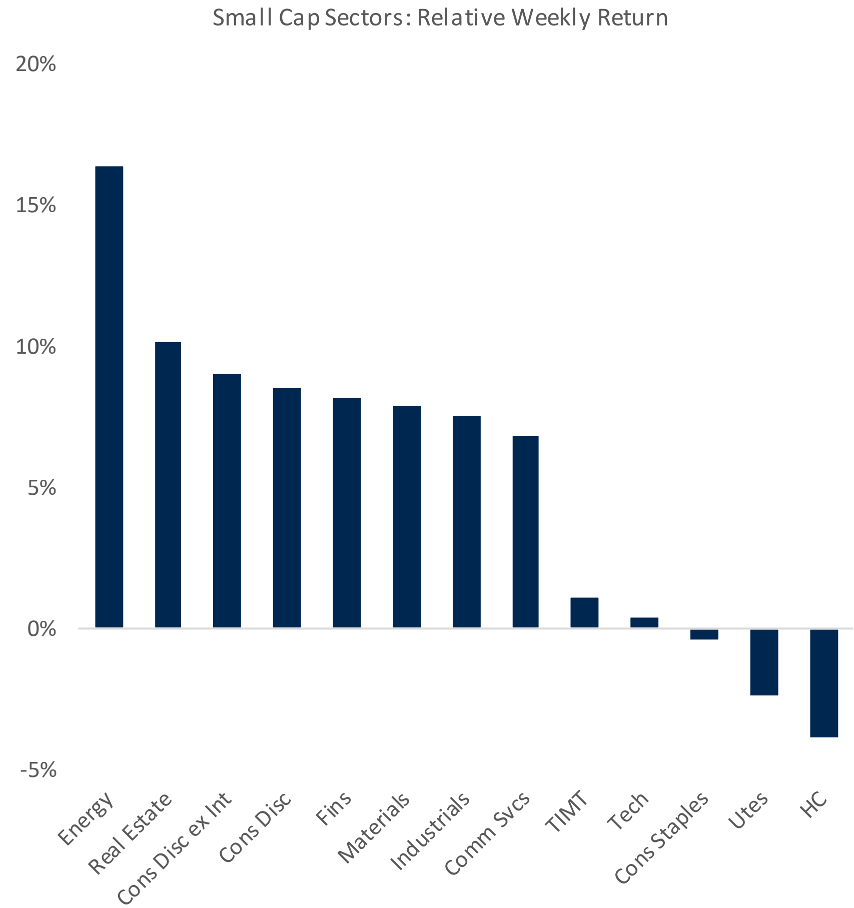
Source: RBC US Equity Strategy, Bloomberg, Total Returns; as of June 5th, 2020

Sectors: Commodities & Cyclicals Led While Secular Growth & Defense Lagged

Key Takeaways

- Energy, along with Financials and Industrials, which are two of the most cyclical sectors in the market today in terms of trading behavior, were counted among the top performers in Large Cap. Energy, REITs and Consumer Discretionary outperformed within Small Cap.
- Meanwhile, Health Care lagged within both Large Cap and Small Cap, along with Staples and Utilities and TIMT within Large Cap.



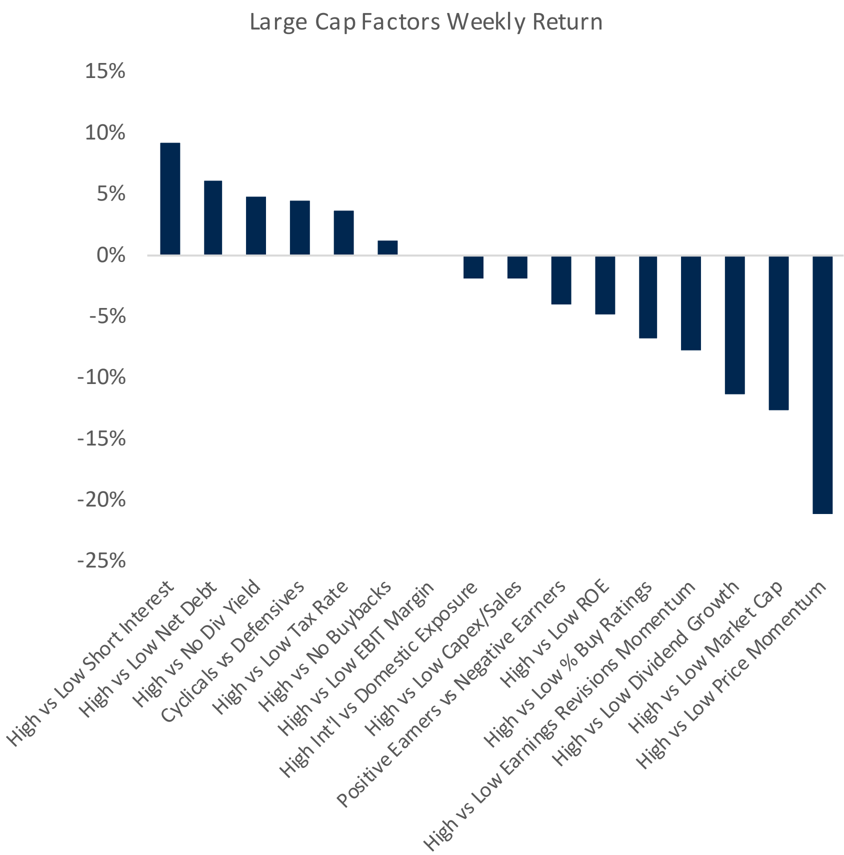


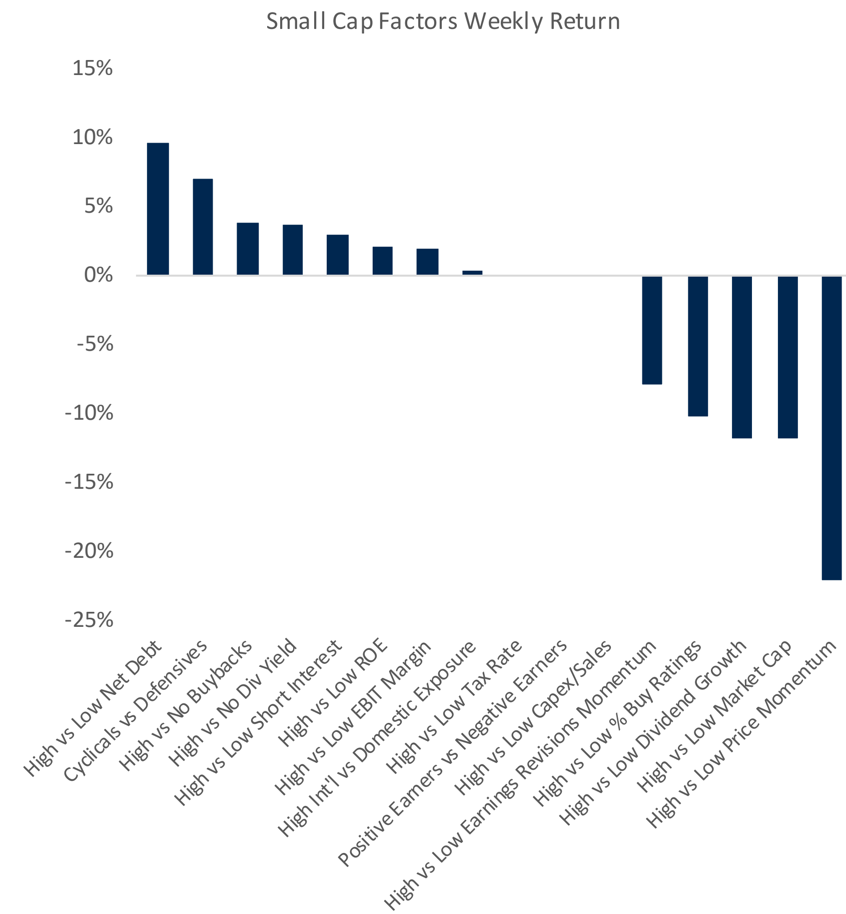
Source: RBC US Equity Strategy, S&P Capital IQ/Clarifi, Total Returns; through June 5th, 2020

Factors: High Short Interest, High Leverage & Cyclicals Outperformed

Key Takeaways

- There was a lower quality bias to last week's performance, with high debt beating low debt within both Large Cap and Small Cap. High short interest also outperformed low short interest in both universes.
- Generally, Cyclicals beat Defensives.



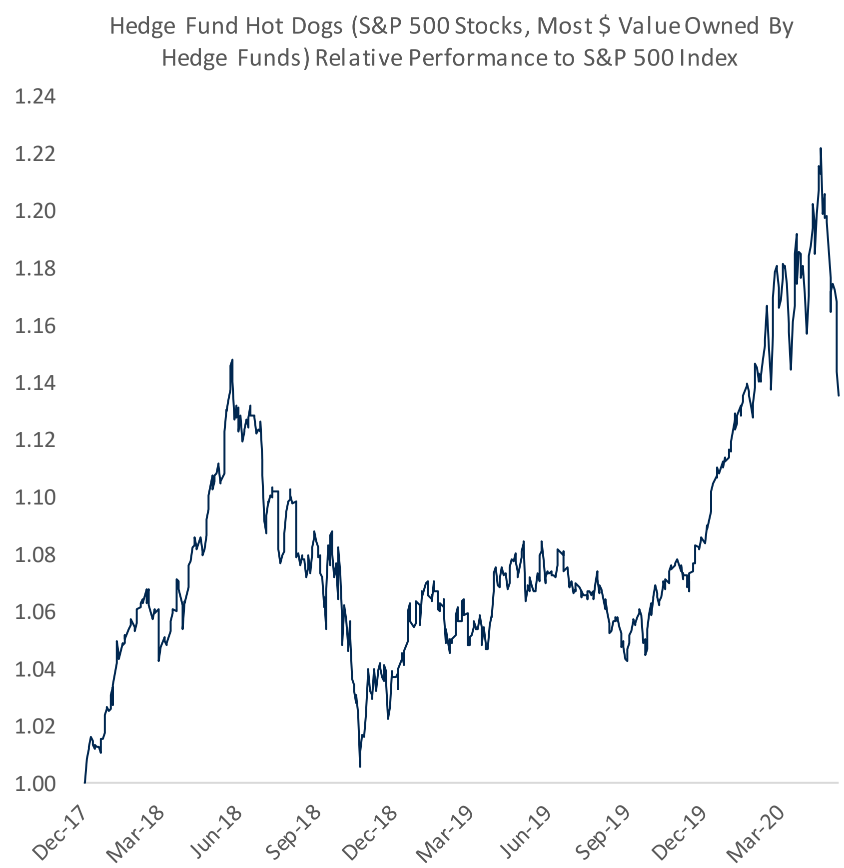


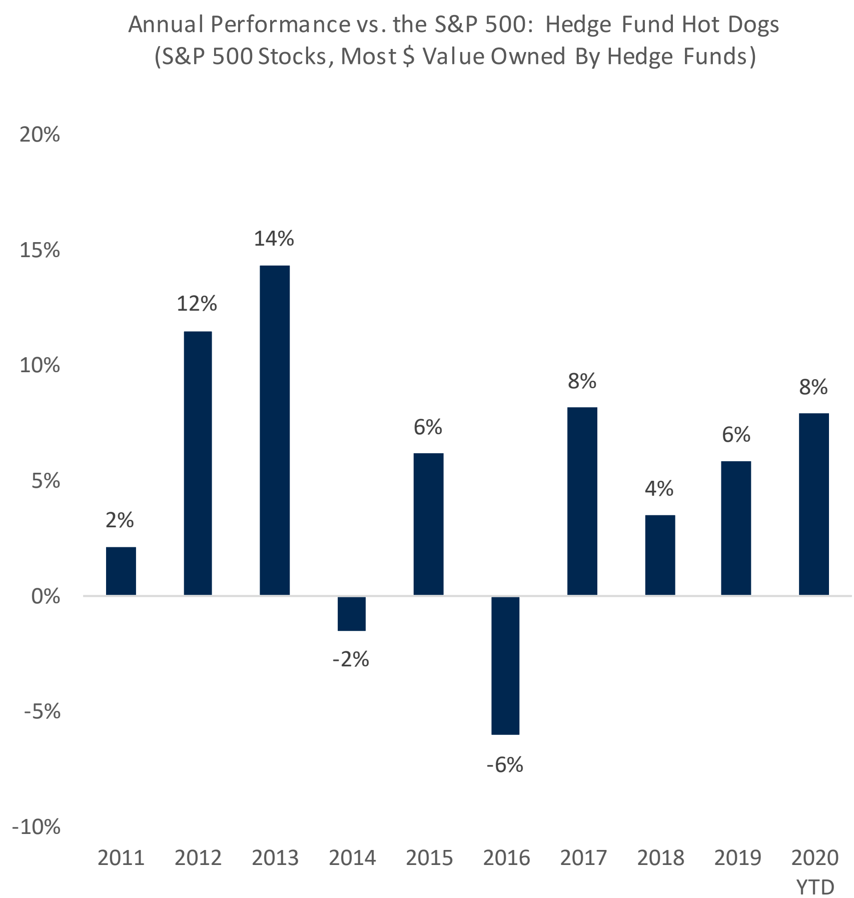
Source: RBC US Equity Strategy, S&P Capital IQ/Clarifi, Total Returns; as of June 5th, 2020

The Most Popular Stocks in Hedge Funds Have Been Victims of the Recent Rotation into Value

Key Takeaways

- The most popular stocks in hedge funds at the end of 1Q20, based on the dollar value owned by hedge funds, started to underperform the broader US equity market in mid May.
- Similar bouts of underperformance were also seen in the third quarter of 2019, the last time the market saw a significant rotation out of Growth stocks and into Value stocks. These names also underperformed in 2016, another period marked by a significant rotation in the stock market back to Value.



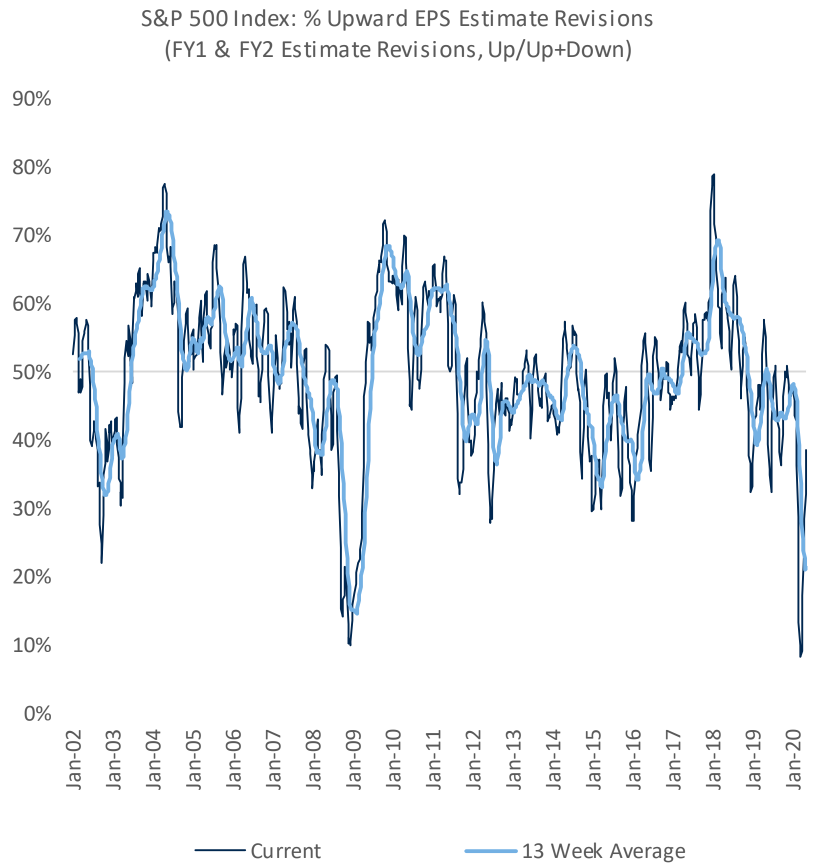


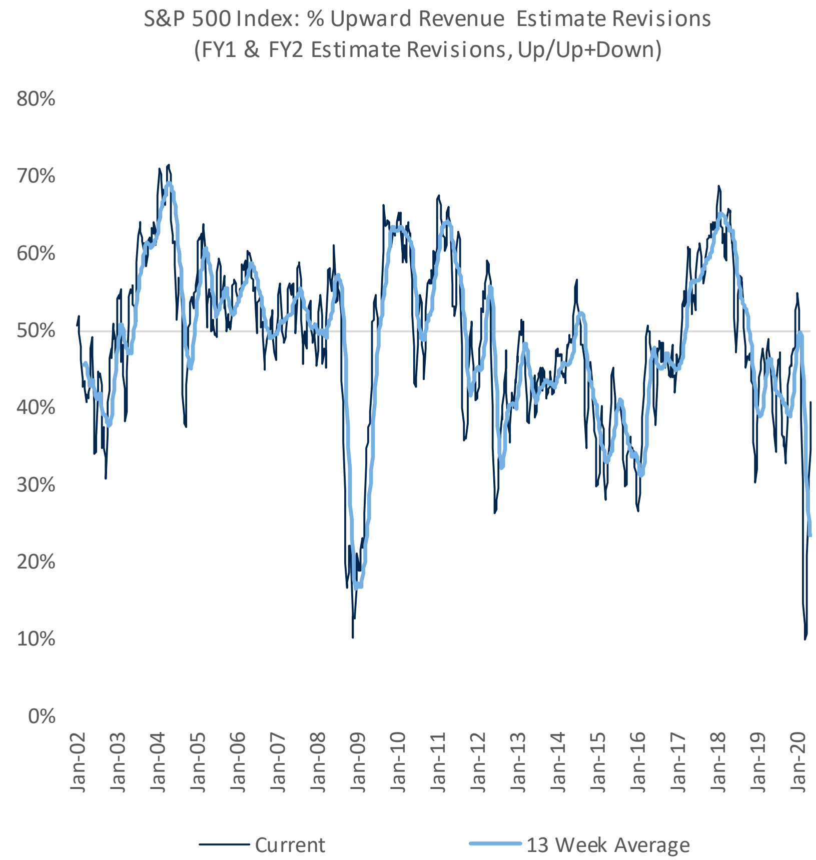
Source: RBC US Equity Strategy, S&P Capital IQ/ClariFi; as of June 5th, 2020
Methodology notes: Rebalanced quarterly; equal weighted daily total returns basket against market cap weighted S&P 500; latest holdings data drawn from 1Q20 13f filings for 342 hedge funds, with significant investments in US equities, both diversified and sector-focused funds, all strategies.

Earnings Sentiment Continued to Improve

Key Takeaways

- One of our favorite ways to gauge sentiment around earnings is looking at the percent of sell-side EPS estimate revisions to the upside. Essentially, this indicator looks at whether analysts are generally taking estimates on individual companies up or down and how deeply the phenomenon of downward revisions has infiltrated the equity market.
- As of early June, this indicator had risen to 41%, after falling to 8% in mid-April, below the 10% low water mark seen in past recessions. During the Financial Crisis, this indicator stayed below 20% for 19 of the 21 weeks from 10/10/2008 to 02/27/2009. This time around, earnings sentiment stayed under 20% for just 6 weeks, and has been improving every week since April 17th. The recent rebound resembles what we've seen in a number of industrial related economic indicators where the levels are still quite bad, but are starting to improve at the margin. This all feeds the "things are getting less bad" narrative that's been boosting US equities in recent weeks.



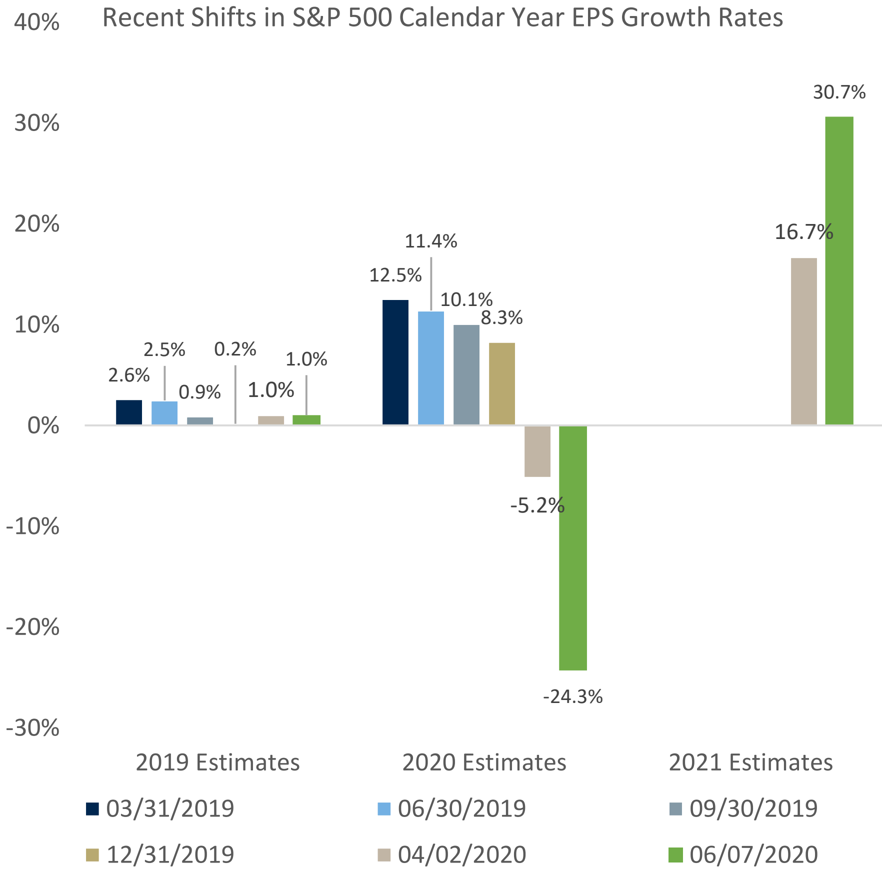


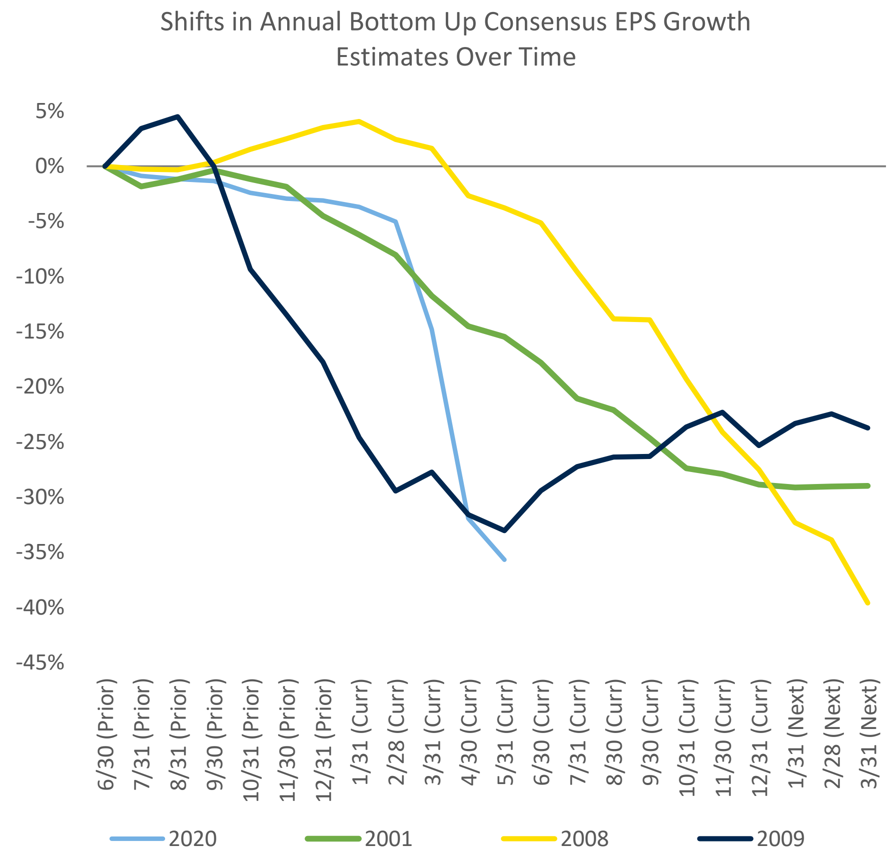
Source: RBC US Equity Strategy, S&P Capital IQ/Clarifi, CIQ estimates. For REITS, FFO/share revisions are used instead of EPS revisions

Drop in 2020 EPS Growth Expectations Similar to 2009

Key Takeaways

- As of early June, bottom-up sell-side estimates for the S&P 500 were tracking at $125 for 2020, down 29.5% since the start of the year when they were tracking at $177. The current $125 reading implies a yr/yr decline of 24.3% vs. 2019, down from a positive 8.3% implied growth rate at the beginning of the year. History suggests that these cuts might be enough, but isn't entirely clear on this point. In 2001, 2008, and 2009 bottom-up full year EPS forecasts fell a total of 29.6% (2001), 42.3% (2008) and 50.2% (2009) at their low point (using June estimates of the prior year as a starting point). If 2020 estimates were to experience a similar drop, they would fall to a range of $93 - $131, meaning that the drop that's been seen for 2020 is within the range of what we'd expect. Note that 2021 EPS is still tracking at $163.
- Interestingly, in 2009 after EPS forecasts fell by a similar amount to what we've seen so far in 2020, they began to creep higher, supporting the March 2009 bottoming in the stock market. We suspect a similar reversion will be needed in 2020 to keep US equities on their upward trajectory.



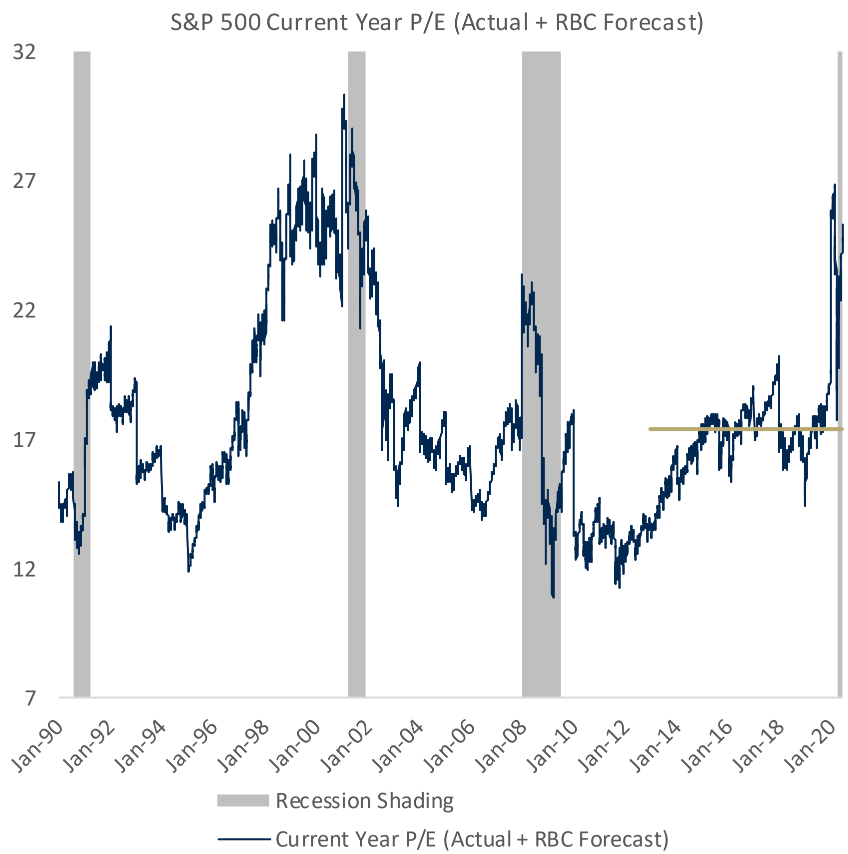


Source: RBC US Equity Strategy, FactSet, Thomson

S&P 500 Looks Expensive Again on 2020E EPS

Key Takeaways

- As of June 5th, the S&P 500 was trading at 25.3x current year P/E, based on our 2020 EPS forecast of $126. This is well above the highs of its pre-pandemic range, close to its 2020 peak of 27x and above its Financial Crisis high of more than 23x. Stocks returned to their post 2013 average at the March 23rd low, but never became technically attractive from a valuation perspective on current year P/E. This P/E tends to spike early on in recessions before contracting. It's new high is usually lower than the recent peak.



S&P 500 Current Year P/E Levels	Price Level	Current Year P/E (Based On 2020 RBC EPS Forecast of $126)	Current Year P/E (Based On 2020 Bottom Up Consensus of $125)
Current (as of June 5, 2020)	3194	25.3	25.6
June 5th, 2020 High	3194	25.3	25.6
March 23rd 2020 Low	2237	17.8	17.9

S&P 500 Implied Price Levels	Current Year P/E Level	Implied Level Based On 2020 RBC EPS Forecast of $126	Implied Level Based On 2020 RBC EPS Forecast of $125
Average Since 1990	17.8	2239	2221
Average Since 2013	17.4	2193	2175
Max Since 1990	30.4	3828	3797
Max Since 2013	26.9	3386	3359
Min Since 1990	10.9	1374	1364
Min Since 2013	13.2	1663	1650
Peak Near 1990-1991 Recession (as of July 16th, 1990)	15.8	1985	1969
Peak Near 2001 Recession (as of Jan 30th, 2001)	30.4	3828	3797
Peak Near 2008-2009 Recession (as of Jan 2nd, 2008)	23.4	2948	2925
Peak Near 2015-2016 Growth Scare (as of May 21st, 2015)	18.0	2271	2253
Peak Near 2018 Growth Scare (as of Sept 20th, 2018)	18.0	2267	2249
Low During 1990-1991 Recession (as of Oct 11th, 1990)	12.6	1590	1577
Low During 2001 Recession (as of Sept 21st, 2001)	21.4	2691	2670
2007-2009 Recession Low (as of March 9th, 2009)	10.9	1374	1364
2015-2016 Growth Scare Low (as of Feb 11th, 2016)	15.4	1935	1920
2018 Growth Score Low (as of Dec 24th, 2018)	14.4	1818	1804

Source: RBC US Equity Strategy, S&P Capital IQ/Clarifi, CIQ estimates, IBES estimates

The S&P 500 Also Looks Expensive on 2021E EPS

Key Takeaways

- As of June 5th , the S&P 500 was trading at 21.4x next year P/E, based on our 2021 EPS forecast of $149. Stocks had broken below their recent average at the March 23rd low (15x vs. an average of 16.8x) and got decently close to December 2018's low (14.3x). But that valuation opportunity has evaporated with the recent rally. This version of P/E also tends to spike early in a crisis before contracting. In the 2014-2019 period, it stayed fairly range bound.

S&P 500 Next Year P/E Levels	Price Level	Next Year P/E (Based On 2021 RBC EPS Forecast of $149)	Next Year P/E (Based On 2021 Bottom Up Consensus of $163)
Current (as of June 5, 2020)	3194	21.4	19.6
June 5th 2020 High	3194	21.4	19.6
March 23rd 2020 Low	2237	15.0	13.7

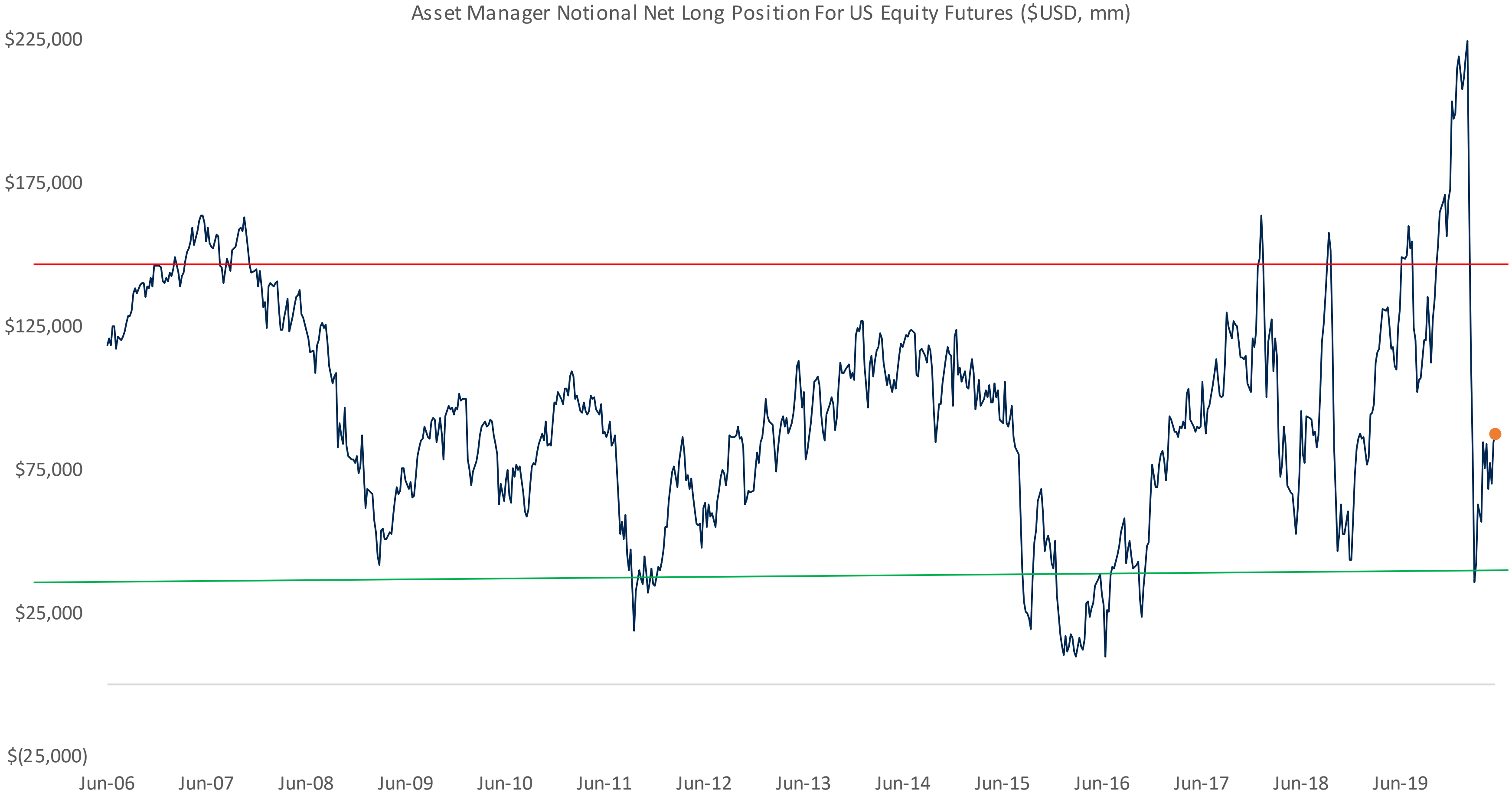
S&P 500 Implied Price Levels	Next Year P/E Level	Implied Level Based On 2021 RBC EPS Forecast of $149	Implied Level Based On 2021 Bottom Up Consensus Of $163
Average Since 1990	17.0	2531	2769
Average Since 2013	17.0	2540	2779
Max Since 1990	33.8	5033	5506
Max Since 2013	25.7	3831	4191
Min Since 1990	7.9	1179	1290
Min Since 2013	12.3	1827	1999
Peak Near 1990-1991 Recession (as of July 16th, 1990)	18.9	2819	3084
Peak Near 2001 Recession (as of March 24th, 2000)	33.8	5033	5506
Peak Near 2008-2009 Recession (as of Oct 9th, 2007)	25.3	3771	4125
Peak Near 2015-2016 Growth Scare (as of May 21st, 2015)	17.9	2666	2917
Peak Near 2018 Growth Scare (as of Sept 20th, 2018)	17.8	2653	2902
Low During 1990-1991 Recession (as of Jan 9th, 1991)	13.7	2038	2230
Low During 2001 Recession (as of Sept 21st, 2001)	20.1	2999	3281
2007-2009 Recession Low (as of March 9th, 2009)	7.9	1179	1290
2015-2016 Growth Scare Low (as of Feb 11th, 2016)	13.8	2050	2242
2018 Growth Score Low (as of Dec 24th, 2018)	14.3	2128	2328

Source: RBC US Equity Strategy, S&P Capital IQ/Clarifi, CIQ estimates, IBES estimates

Institutional Investor Sentiment Has Been Deeply Bearish, Slowly Starting to Heal

Key Takeaways

- We track US equity futures positioning among asset managers to gauge shifts in institutional investor sentiment for the US equity market. In the latest update, for the week ending June 2nd, this indicator turned slightly lower vs. the prior week.
- But in general, what we are seeing in this indicator is that asset manager positioning in US equities via the futures market has been extremely low relative to history, and well below February 2020's all-time high. It's been creeping up since late March, when it returned to December 2018's low.

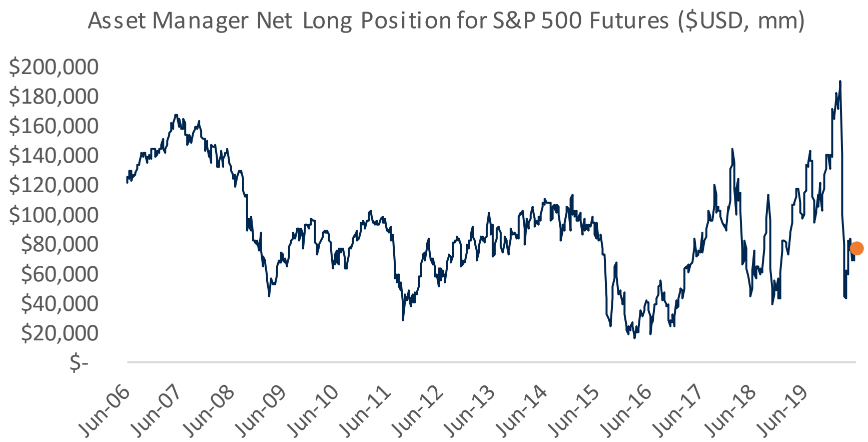


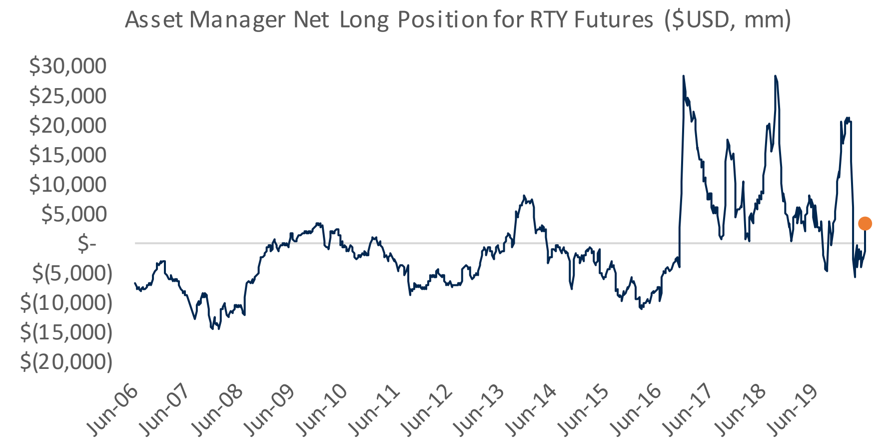
Source: RBC US Equity Strategy, RBC Futures Desk, CFTC. Asset Manager/Institutional: These are institutional investors, including pension funds, endowments, insurance companies, mutual funds, and portfolio/investment managers whose clients are predominantly institutional. As of 06/02/2020

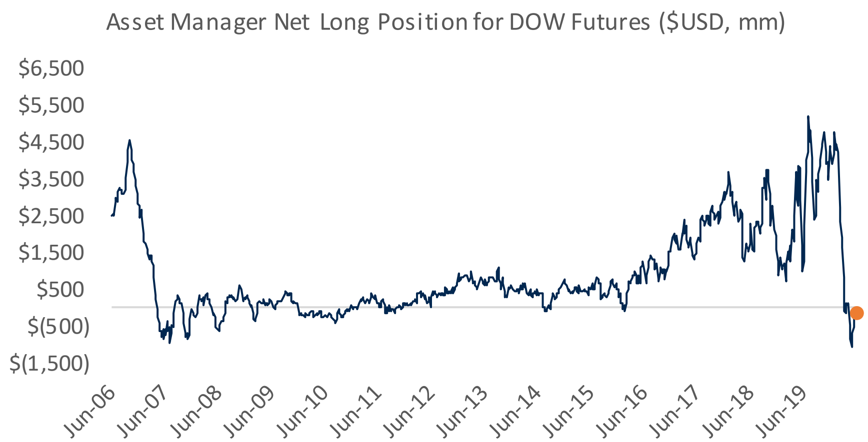
S&P 500, R2000 & Dow Futures Positioning Still Low, Nasdaq Futures Positioning Has Been High

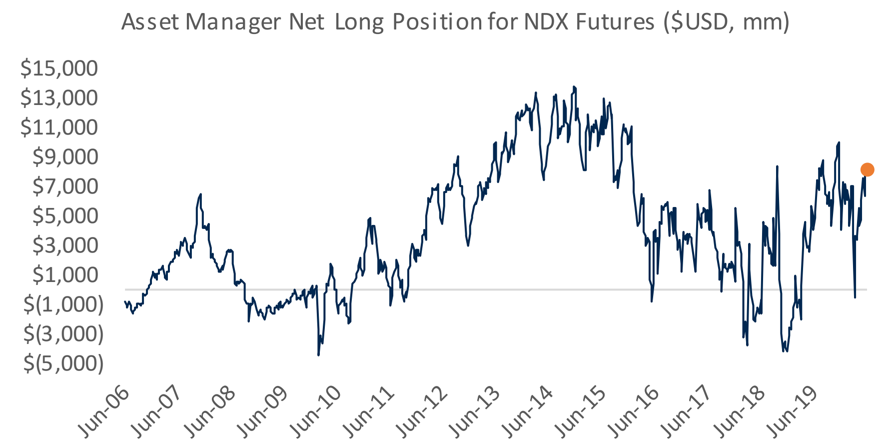
Key Takeaways

- In the latest update, Small Cap positioning turned to net long after 13 weeks of being net short. Positioning is still low relative to the extreme highs of Feb 2020, fall 2018, and Dec 2016.
- Nasdaq futures positioning has been most constructive recently, with levels fairly close to the highs of the past few years.
- These charts suggest to us that secular growth/Nasdaq has been crowded, likely as a defensive trade, while other areas like Small Cap has been under-owned.







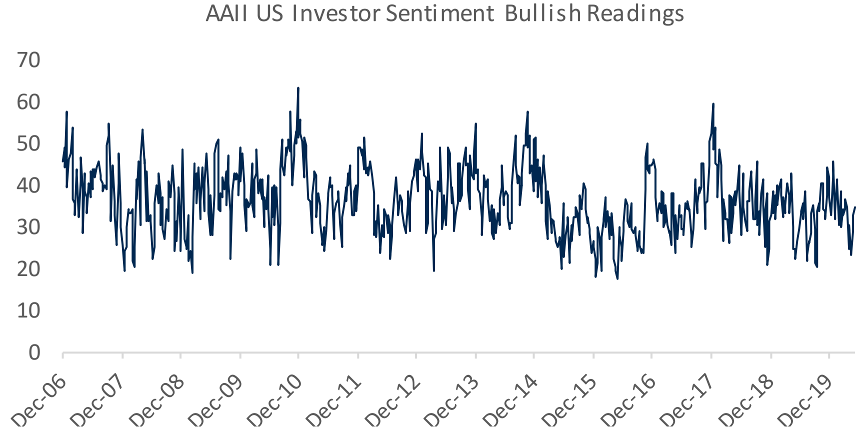


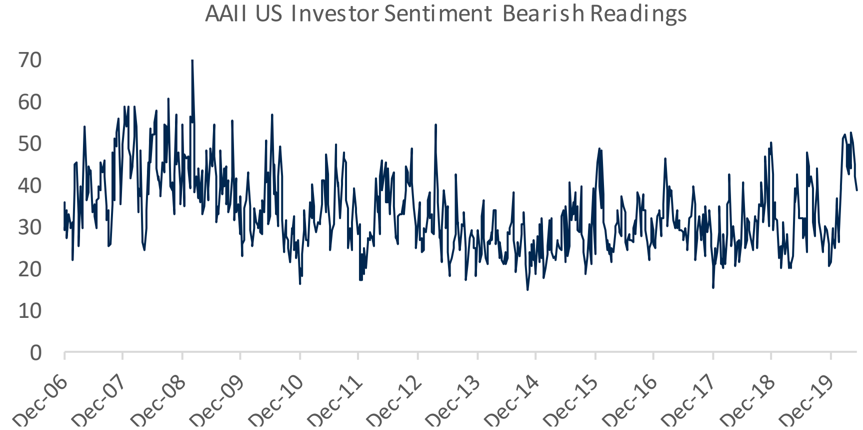
Source: RBC US Equity Strategy, RBC Futures Desk, CFTC. Asset Manager/Institutional: These are institutional investors, including pension funds, endowments, insurance companies, mutual funds, and portfolio/investment managers whose clients are predominantly institutional. As of 06/02/2020

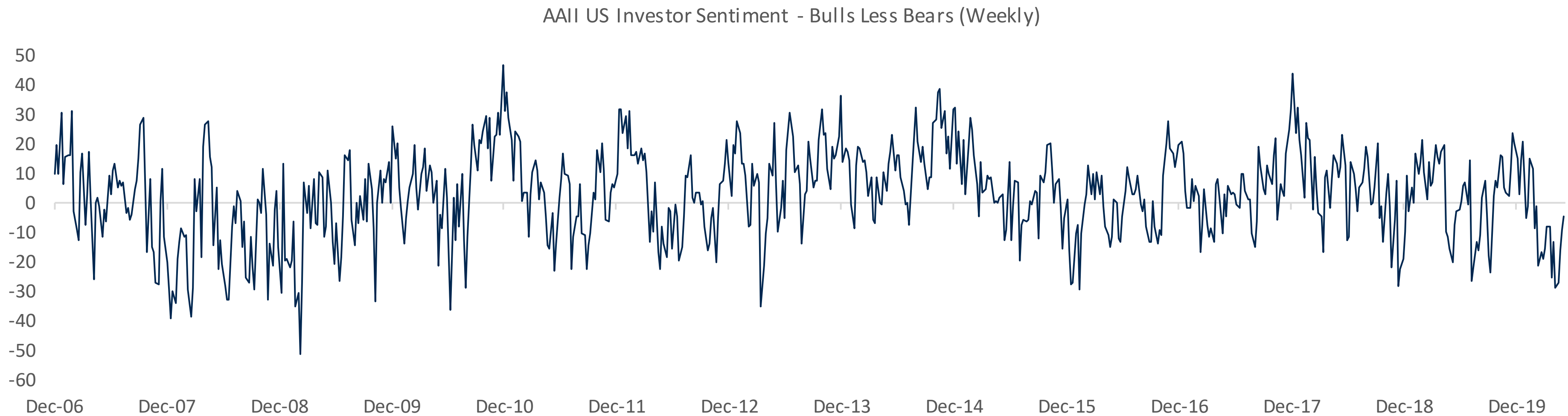
Retail Bears Remain Elevated, but Are Starting to Retreat

Key Takeaways

- Bearishness fell again last week (released Thursday morning, with data captured 06/04/2020), coming in at 38.87% vs. 42.13% the prior week. Bearishness hit a peak at 52.66% during the 2020 pandemic in early May. This week's update represents the fourth weekly decline for the bears, but it's fair to say that bearishness is still fairly elevated.
- Meanwhile, bulls were tracking at 34.55%, up from the 33% level in place the prior week. This is the third week in a row that we have seen bullishness increase in this survey, after it hit a 2020 pandemic low of 23.31% four weeks ago.







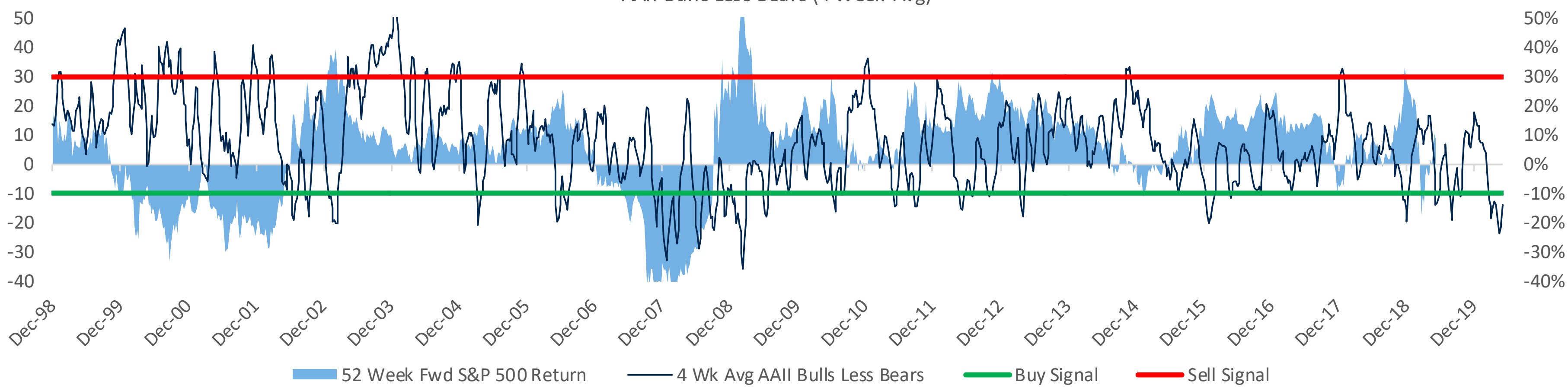
Source: RBC US Equity Strategy, AAII, Bloomberg; as of May 7, 2020

Gap Between Bulls & Bears Has Been Sending a Buy Signal for Longer-Term Investors

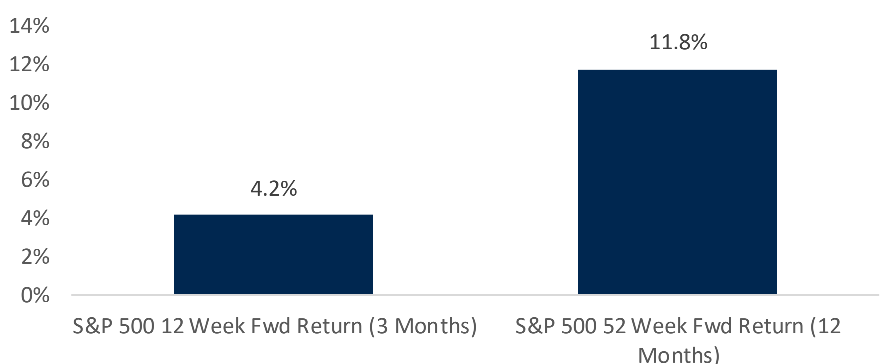
Key Takeaways

- Our model looking at the four-week average gap between the bulls and bears has stayed below our 10% threshold for several weeks now. But the gap is starting to narrow, driven by a pick-up in bulls and a retreat by the bears.
- The S&P 500 is typically higher two, three, and 12 months after crossing the -10% threshold on this model, arguing for a constructive stance on stocks.

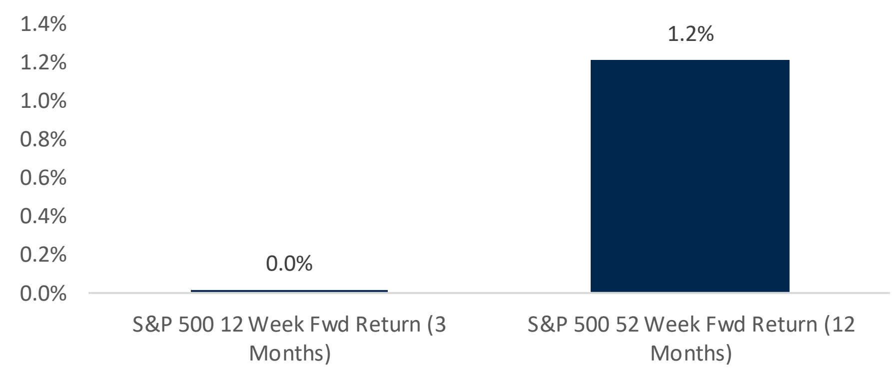
AAII Bulls Less Bears (4 Week Avg)



Avg S&P 500 Fwd Return since 1987 when 4 Week Avg AAII Bulls Less Bears Spread is below -10



Avg S&P 500 Fwd Return since 1987 when 4 Week Avg AAII Bulls Less Bears Spread is above +30

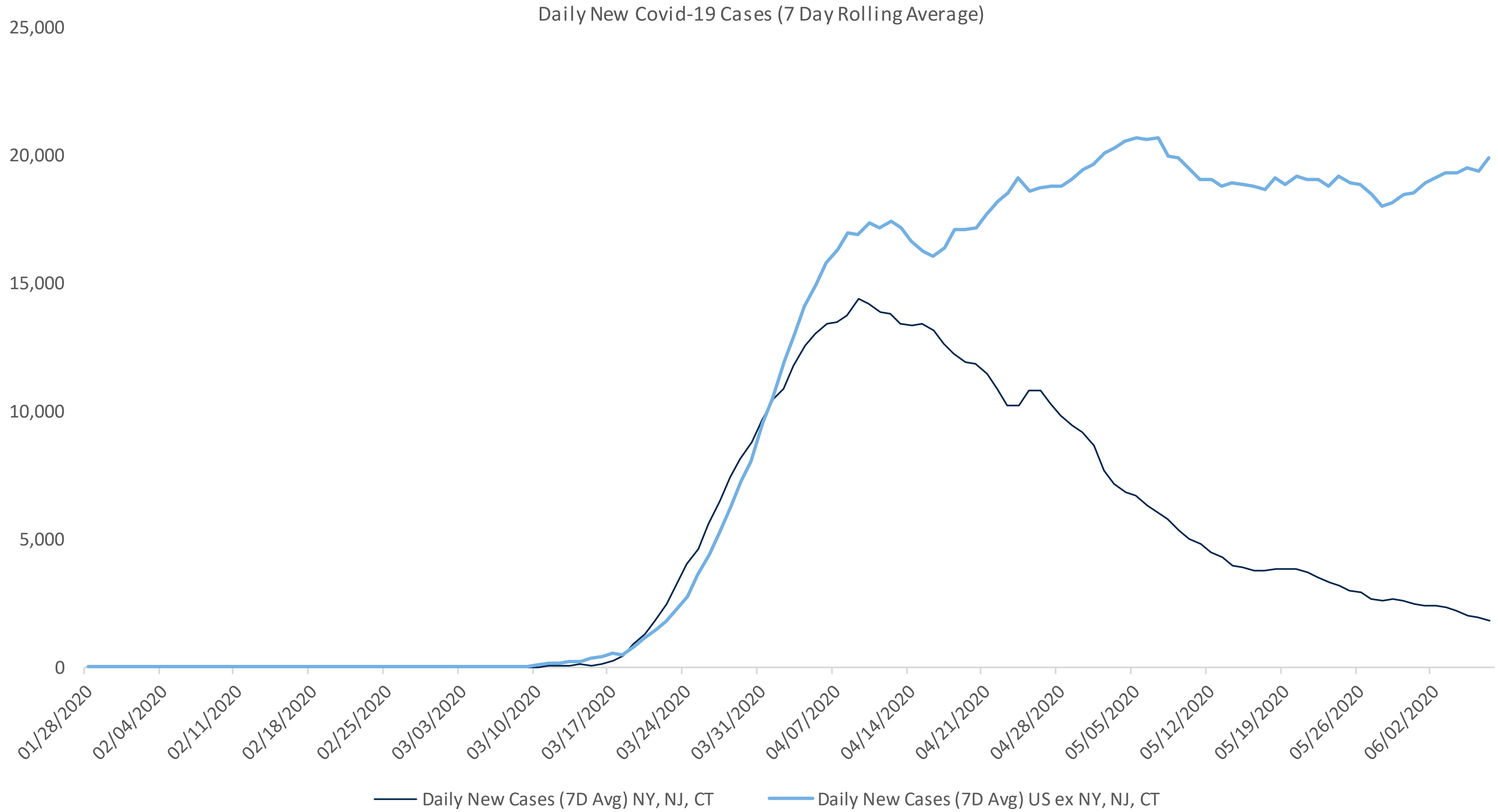


Source: RBC US Equity Strategy, AAII, Bloomberg; as of June 4th, 2020

New Coronavirus Cases in the United States, Ex NY Area, Have Hit a Plateau

Key Takeaways

- The number of new coronavirus cases in the United States appears to have hit a plateau as measured by the 7-day rolling average when excluding New York, New Jersey & Connecticut.
- These 3 states have managed to flatten their cumulative curve of daily new cases, as lockdown restrictions have been more strict relative to the rest of the country.

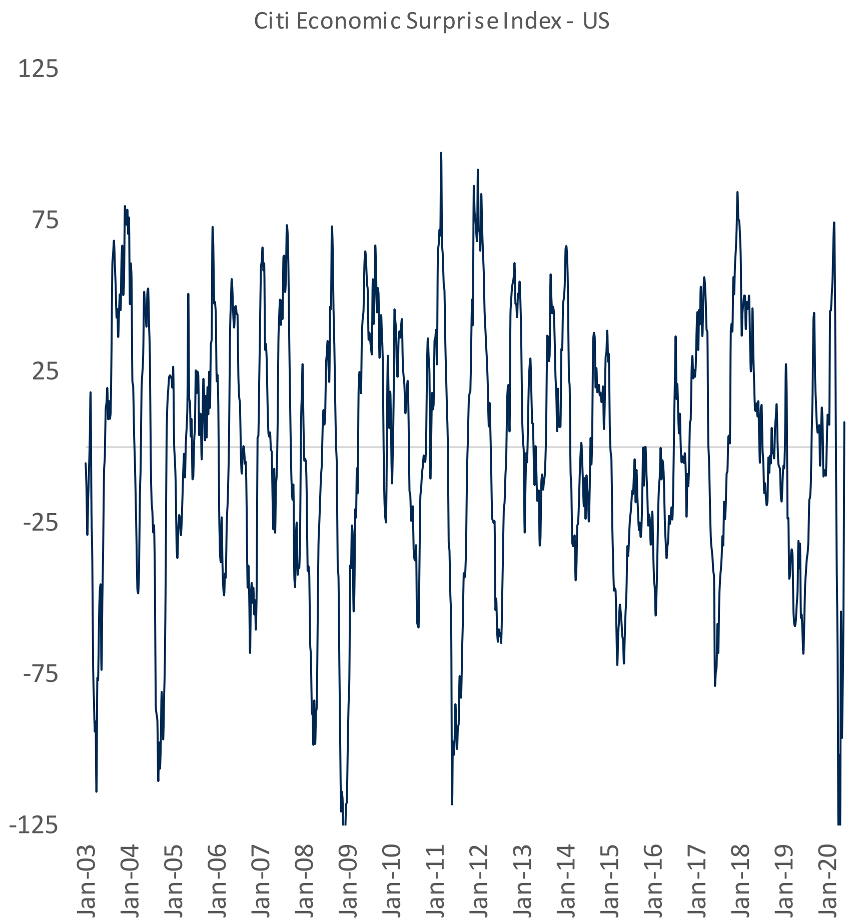


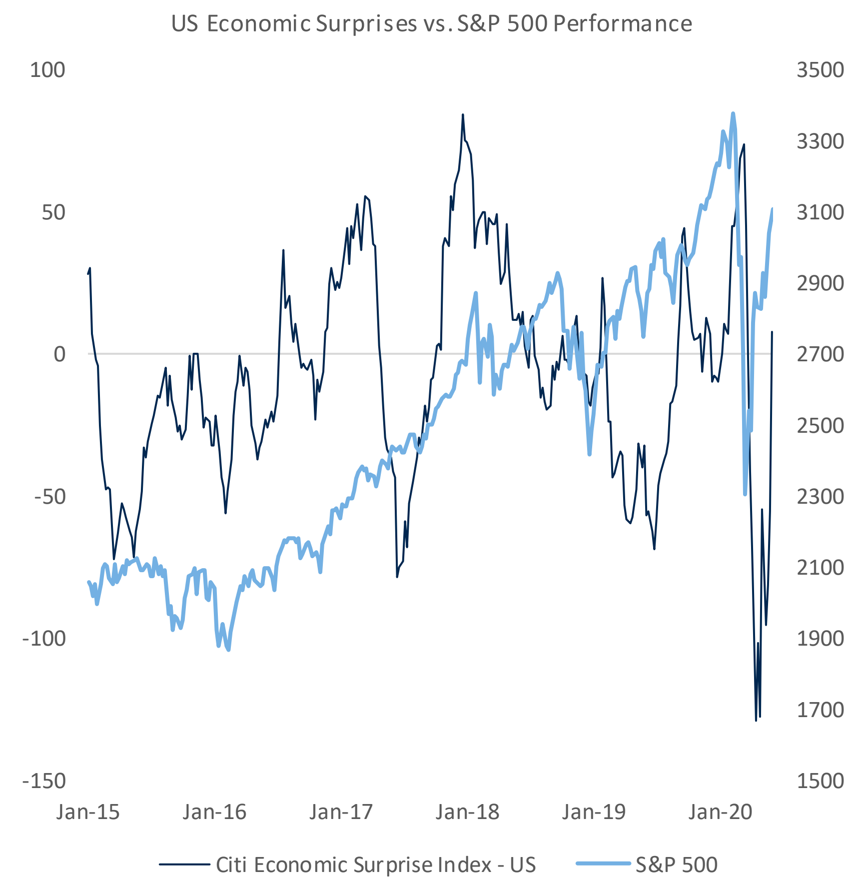
Source: RBC US Equity Strategy, Bloomberg; as of 06/07/2020

Positive Economic Surprises Have Returned to the US

Key Takeaways

- Aggregate economic surprises for the US, as measured by Citi's Economic Surprise index, turned net positive for the first time in 11 weeks this past week. Even before that move and Friday's jobs report, this gauge had been improving for the last few weeks after hitting levels in line with those that had marked extreme lows in the past.
- Recently, trends in this metric have coincided with the performance of the S&P 500. The market has moved a bit ahead of the positive turn in economic surprises.



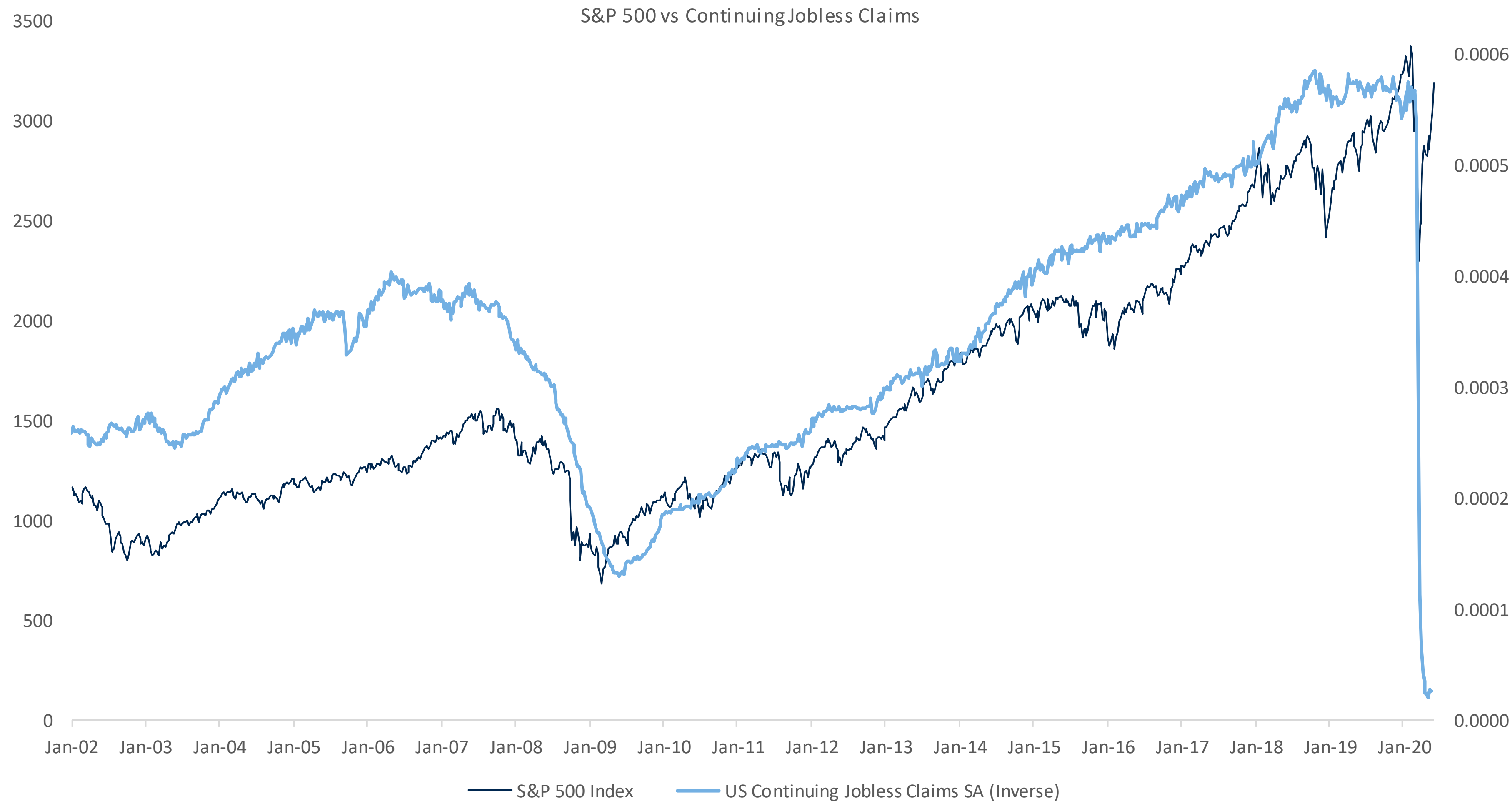


Source: RBC US Equity Strategy, Bloomberg; as of June 5th, 2020

S&P 500 Price Action Hasn't Reflected the Severe Weakness Already Seen in the Labor Market

Key Takeaways

- S&P 500 performance generally moves inversely with continuing jobless claims.
- Recent price action in the S&P 500 appears to have anticipated the marginal improvement this indicator that has been seen recently and Friday's far less bad than anticipated job report. But it's still fair to say that the S&P 500's price action never fully reflected the pain the labor market has experienced.

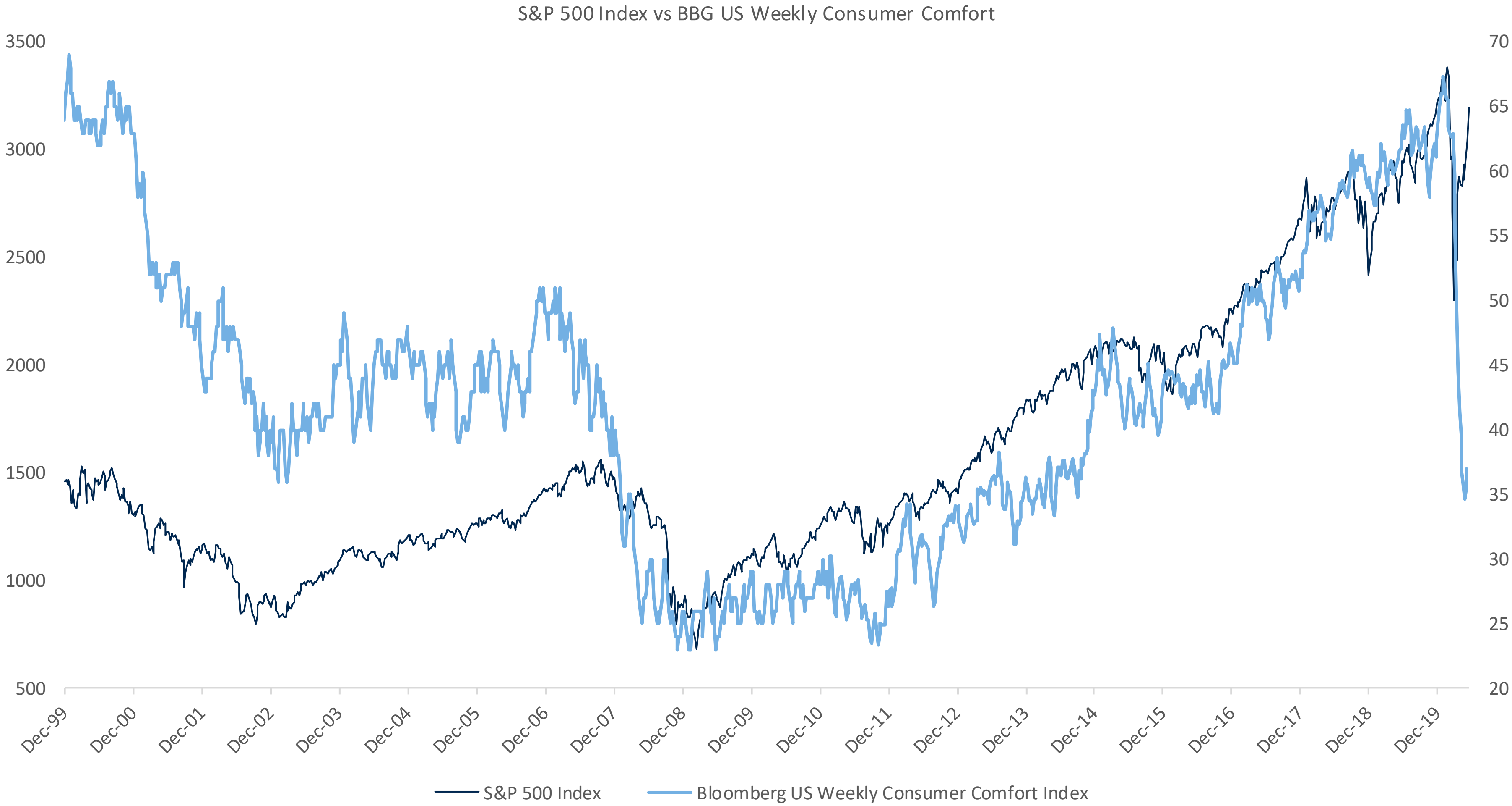


Source: RBC US Equity Strategy, Bloomberg, S&P 500 Price as of 06/05, Continuing Claims as of 05/22

Consumer Sentiment Has Been Surprisingly Resilient & Has Started to Stabilize

Key Takeaways

- Over time, the link between the sentiment of the US consumer and equity returns has grown as the US economy has transformed itself into a consumer-led economy. Various gauges of consumer sentiment, including the weekly gauge tracked by Bloomberg, never fell back to Financial Crisis lows in early 2020. This is likely because many Americans have viewed job losses as temporary. The recent upward move in the S&P 500 has anticipated the stabilization in consumer sentiment that's been seen recently. But it's still fair to say that the stock market never fully reflected the hit to confidence that did occur.

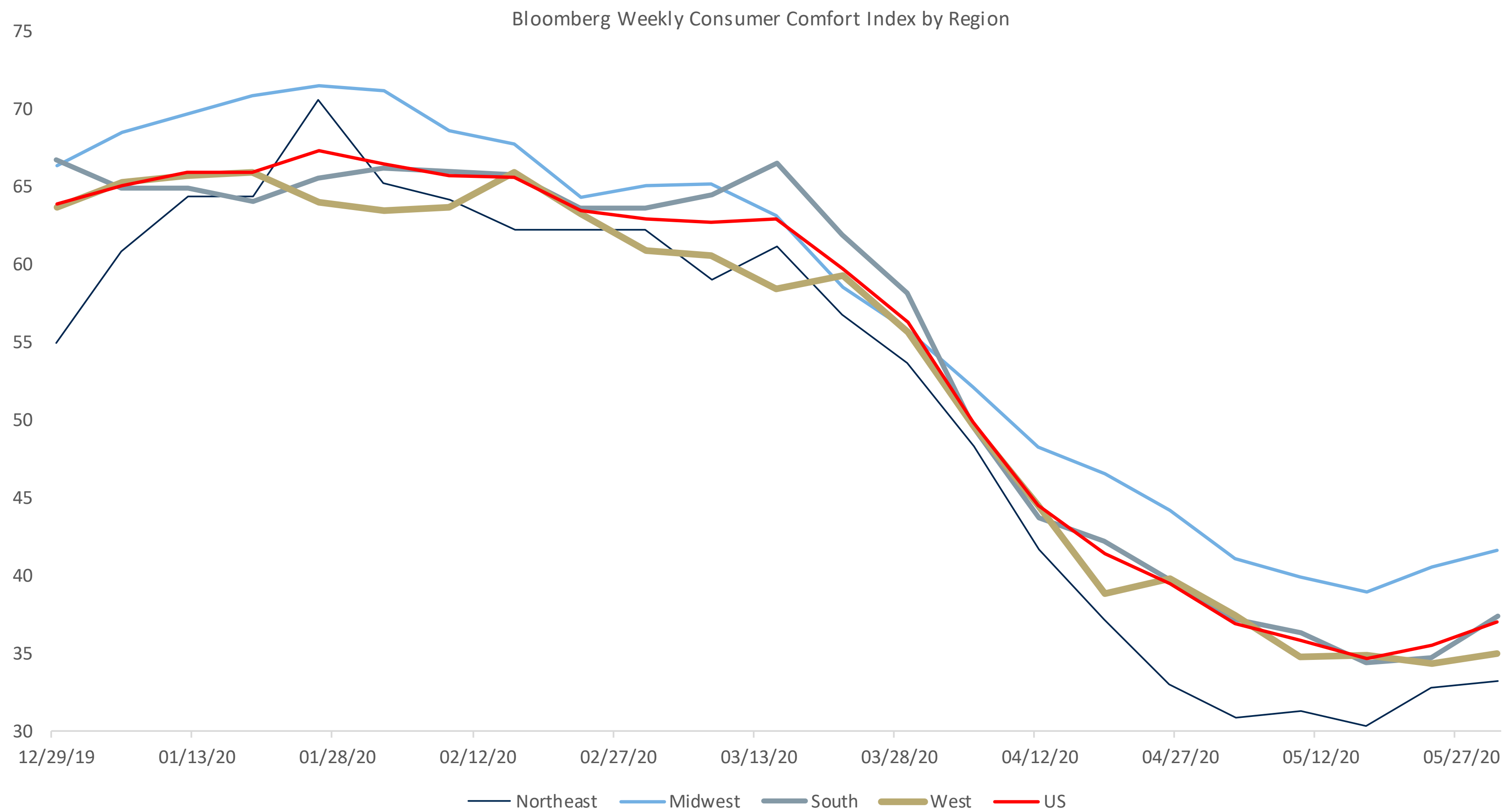


Source: RBC US Equity Strategy, Bloomberg, Consumer Comfort as of 05/31, S&P 500 as of 06/05

Consumer Sentiment Has Stabilized in the Northeast, Has Been Most Resilient in the Midwest

Key Takeaways

- Sentiment in the Northeast has generally been worse than in other major regions of the country, not surprising since this is the part of the country where the impact of the coronavirus was most severe.
- Sentiment in the US has generally been better in the Midwest.
- All of the major regions have shown signs of stabilization or improvement recently, though the Northeast remains a drag on the US.

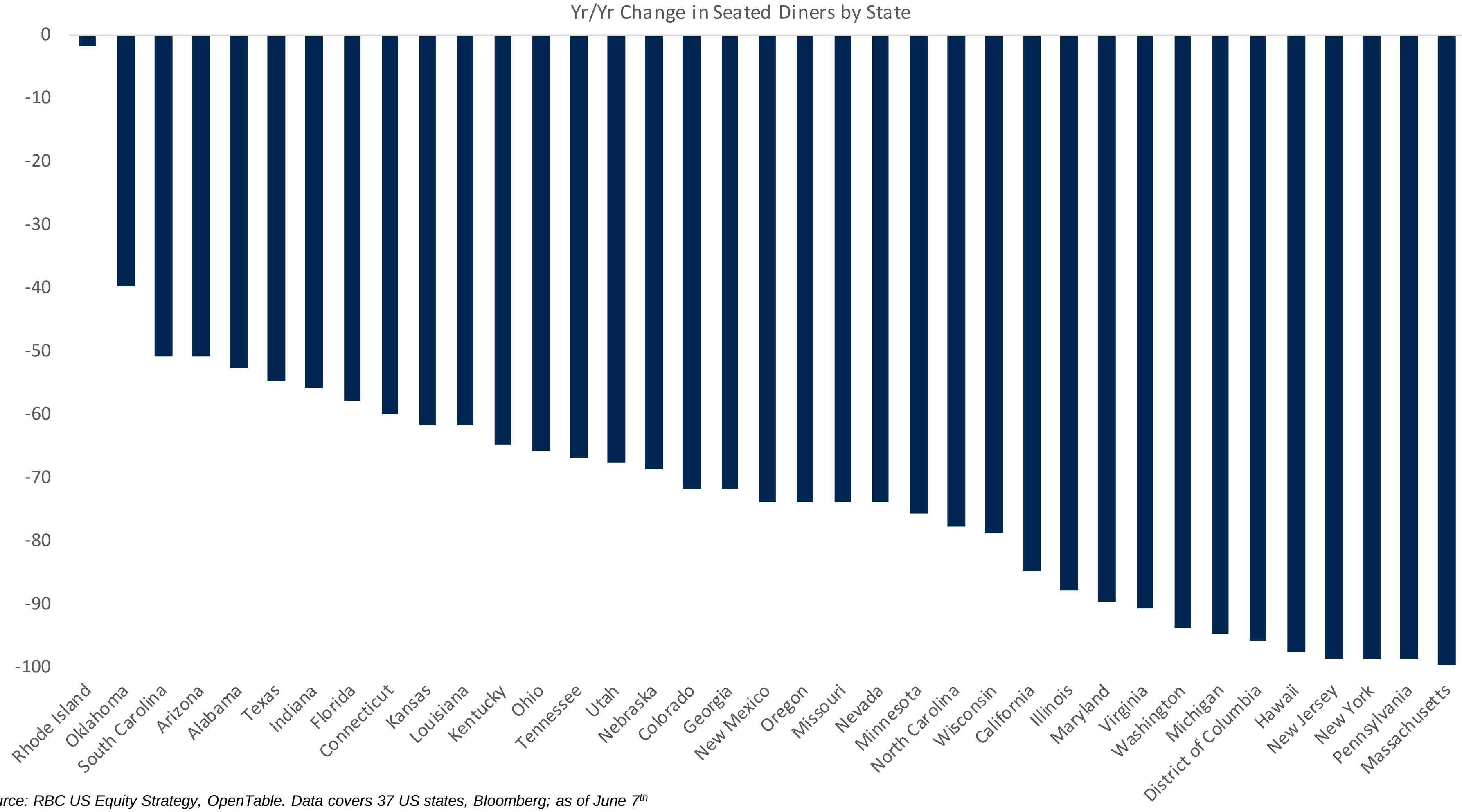


Source: RBC US Equity Strategy, Bloomberg; through May 31st, 2020

Restaurants Bookings Are Also Starting to Improve, Driven Mostly by States in the South & West

Key Takeaways

- Aside from Rhode Island and Connecticut, most of the states that are seeing improvements in restaurant bookings are located in the South and West.
- The states where restaurants bookings remain deeply negative year-over-year represent major population centers in the Northeast.

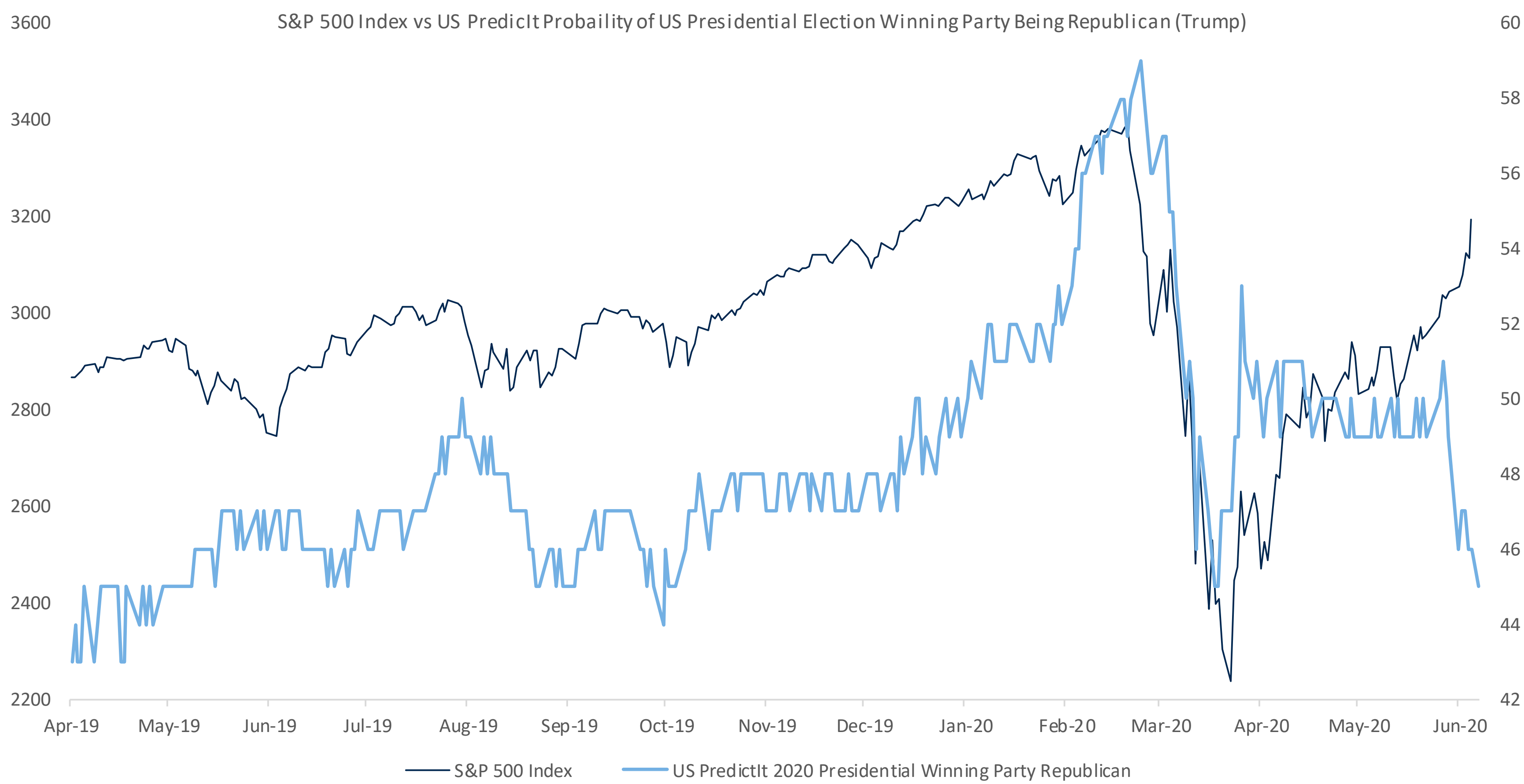


Source: RBC US Equity Strategy, OpenTable. Data covers 37 US states, Bloomberg; as of June 7th
Data shows year-over-year (the same day of the week over the same week YA) seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins.

US Equity Market Performance Has Started to Decouple from Trump's Re-Election Prospects

Key Takeaways

- Since last summer, S&P 500 performance has essentially moved in sync with expectations regarding Trump's re-election in the betting market. In late 1Q20, the betting markets turned pessimistic that Trump would win again as stocks fell sharply. In April, and May as stocks rallied back, the betting markets became more optimistic on Trump, but did not recapture their early 2020 peak.
- In late May and early June, stocks climbed despite further declines in expectations that Trump will win again. This could be occurring due to the civil unrest in the US, something stocks seem to be ignoring generally for the moment. Or the market could be anticipating a shift in Trump's chances due to improving economic data.

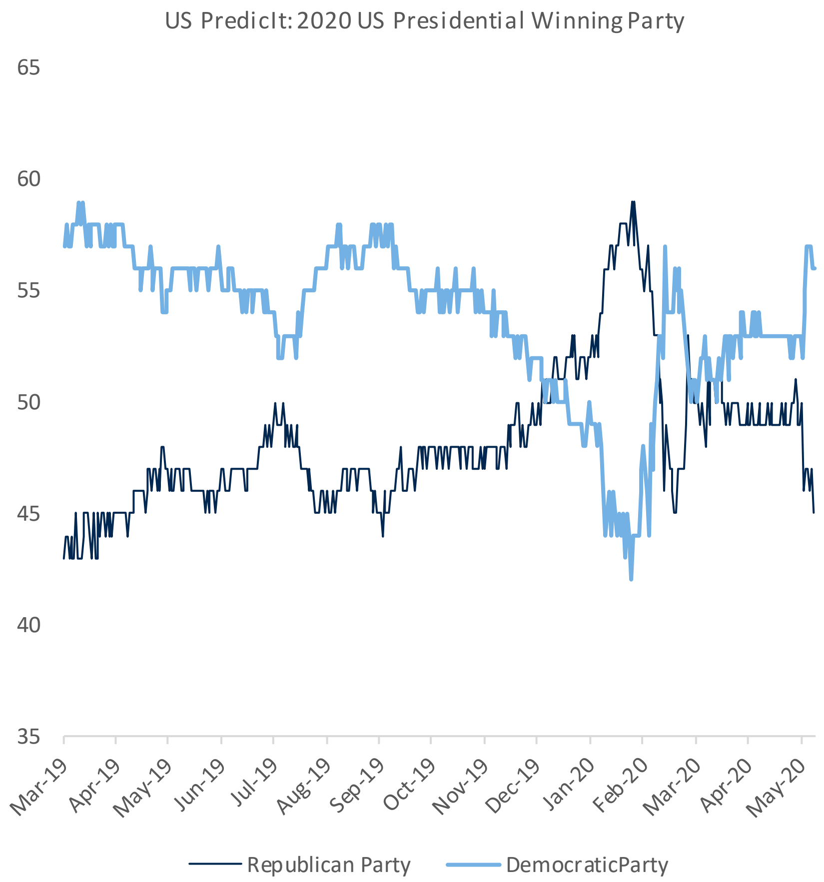


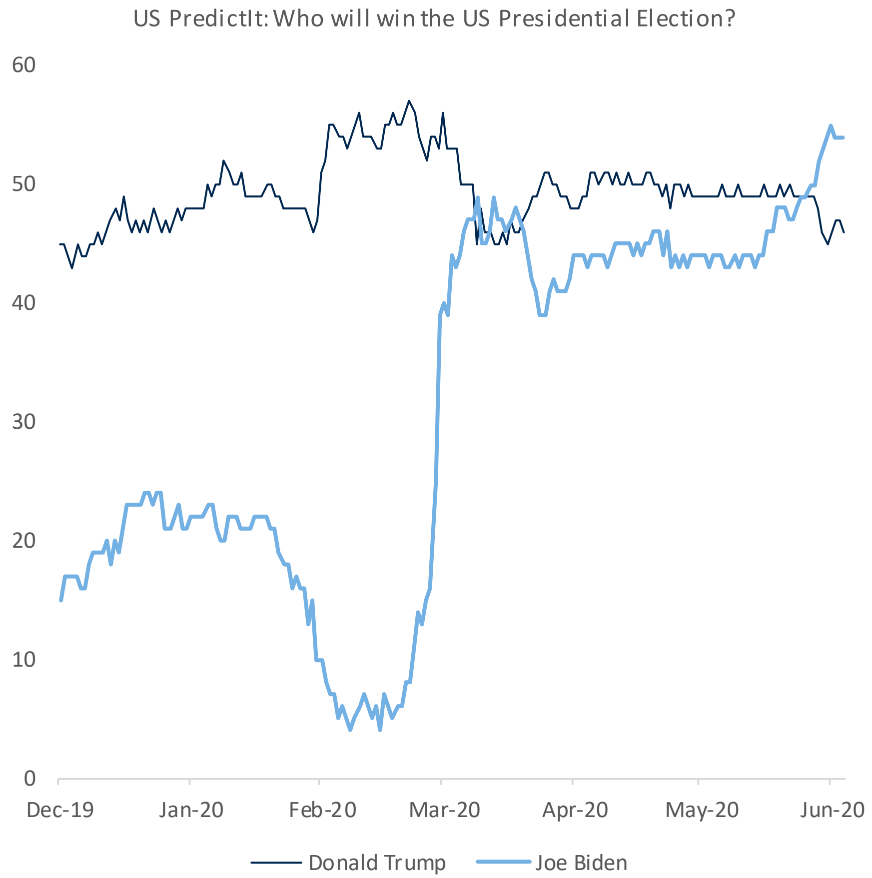
Source: RBC US Equity Strategy, Bloomberg, PredictIt, Probabilities derived by betting markets as of June 7, 2020, S&P 500 as of June 5, 2020

Betting Markets Now Believe Biden Has an Edge in November

Key Takeaways

- When asked about which party will win the presidency in November, the betting markets currently favor the Democrats over the Republicans, a gap that has been in place since March.
- When asked about which specific candidate will win the presidency in November, the betting markets had continued to favor Trump over Biden until recently. But Biden took the lead in this market in late May.



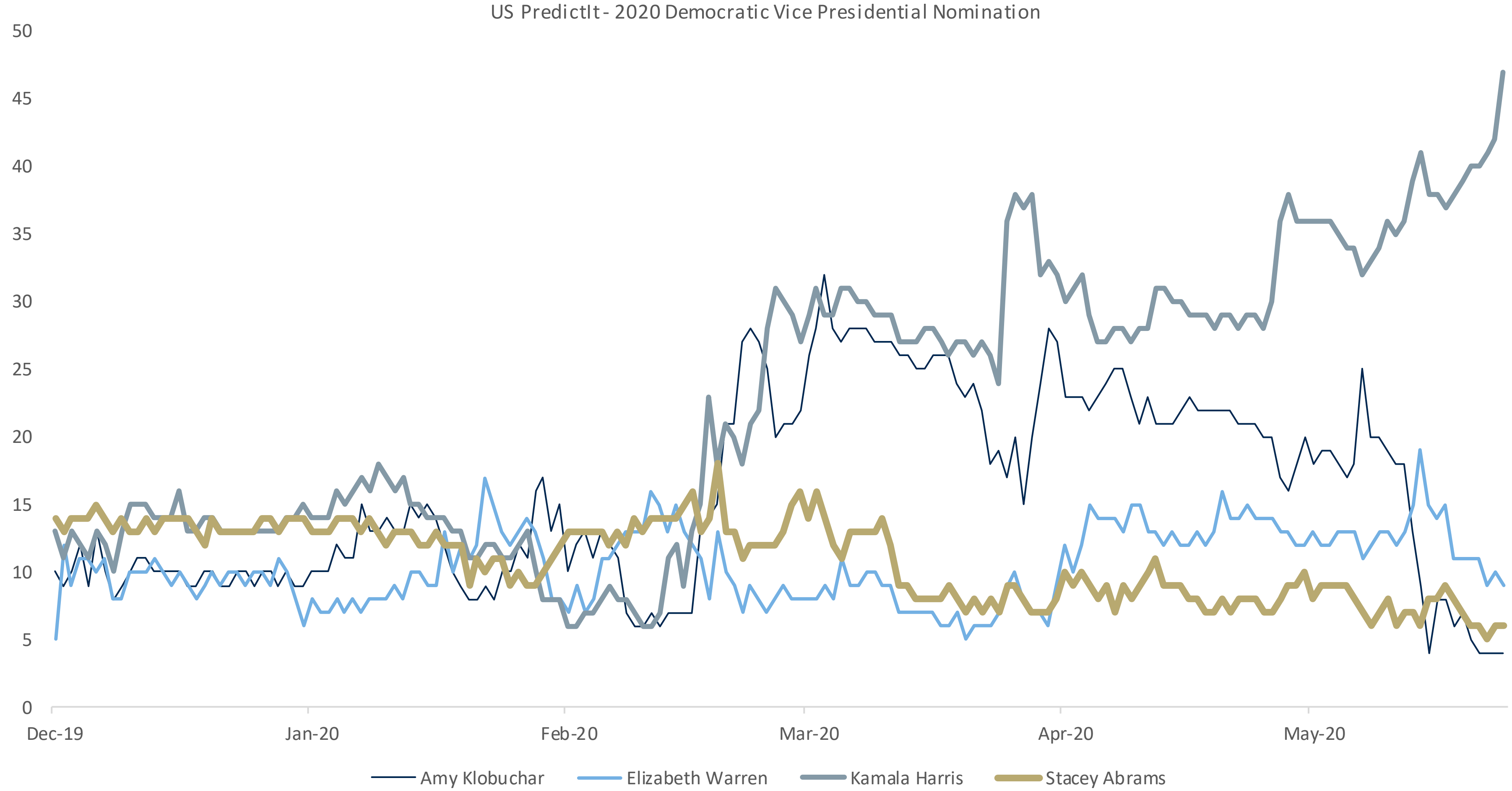


Source: RBC US Equity Strategy, Bloomberg, PredictIt, Probabilities derived by betting markets; as of June 7, 2020

Betting Markets Continue to Expect Harris to Be the Vice Presidential Nominee

Key Takeaways

- The betting markets continue to expect former presidential nominee and current California Senator Kamala Harris to be Joe Biden's running mate. Warren is second on the list. Several political polls released in May suggested Warren is the top pick for VP among Democratic voters. Crisis management experience and economic expertise were two traits that most participants said were very important for the job.
- The view that Warren won't be the nominee may be one reason why stocks have decoupled from declining expectations for Trump's re-election recently.

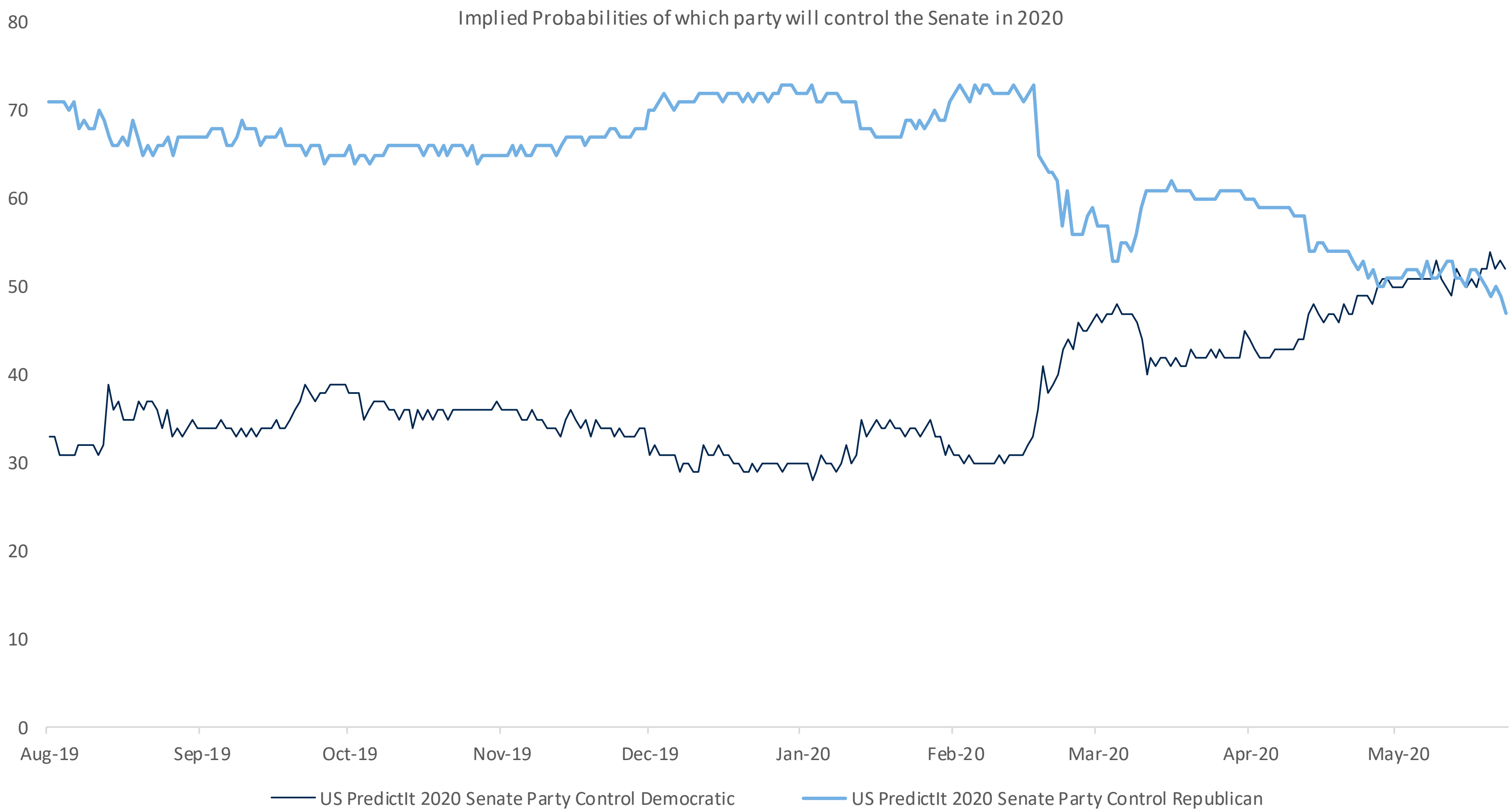


Source: RBC US Equity Strategy, Bloomberg, PredictIt, Probabilities derived by betting markets, as of June 7, 2020

Betting Markets Unsure About the Fate of the Senate

Key Takeaways

- The betting market no longer has conviction that the Senate will stay under Republican control. The race for control of the Senate recently became a close one in the betting market, as expectations for the Democrats to take control of the Senate have risen while decreasing for the Republicans. The possibility that Republicans will lose control of the Senate is also highlighted by the latest analysis from the non-partisan Cook Political Report. Recent ratings of the individual Senate races suggests that the Democrats could get to 50 if they win all four toss-up seats (AZ, CO, ME, and NC). If the Democrats reclaim the White House, the VP will break any ties, meaning that the Democrats have a shot at taking the slimmest of control in the chamber.



Source: RBC US Equity Strategy, Bloomberg, PredictIt, Probabilities derived by betting markets, as of June 7, 2020

Required Disclosures

Conflicts Disclosures
The analyst(s) responsible for preparing this research report received compensation that is based upon various factors, including total revenues of the member companies of RBC Capital Markets and its affiliates, a portion of which are or have been generated by investment banking activities of the member companies of RBC Capital Markets and its affiliates.

Distribution of Ratings
For the purpose of ratings distributions, regulatory rules require member firms to assign ratings to one of three rating categories - Buy, Hold/Neutral, or Sell - regardless of a firm's own rating categories. Although RBC Capital Markets' ratings of Outperform (O), Sector Perform (SP), and Underperform (U) most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because our ratings are determined on a relative basis.

Distribution of ratings
RBC Capital Markets, Equity Research
As of 31-Mar-2020

			Investment Banking Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [Outperform]	755	51.64	220	29.14
HOLD [Sector Perform]	619	42.34	126	20.36
SELL [Underperform]	88	6.02	11	12.50

Conflicts Policy
RBC Capital Markets Policy for Managing Conflicts of Interest in Relation to Investment Research is available from us on request. To access our current policy, clients should refer to https://www.rbccm.com/global/file-414164.pdf or send a request to RBC CM Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7. We reserve the right to amend or supplement this policy at any time.

Required Disclosures

Dissemination of research and short-term trade ideas

RBC Capital Markets endeavors to make all reasonable efforts to provide research simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. RBC Capital Markets' equity research is posted to our proprietary website to ensure eligible clients receive coverage initiations and changes in ratings, targets and opinions in a timely manner. Additional distribution may be done by the sales personnel via email, fax, or other electronic means, or regular mail. Clients may also receive our research via third party vendors. RBC Capital Markets also provides eligible clients with access to SPARC on the Firm’s proprietary INSIGHT website, via email and via third-party vendors. SPARC contains market color and commentary regarding subject companies on which the Firm currently provides equity research coverage. Research Analysts may, from time to time, include short-term trade ideas in research reports and / or in SPARC. A short-term trade idea offers a short-term view on how a security may trade, based on market and trading events, and the resulting trading opportunity that may be available. A short-term trade idea may differ from the price targets and recommendations in our published research reports reflecting the research analyst's views of the longer-term (one year) prospects of the subject company, as a result of the differing time horizons, methodologies and/or other factors. Thus, it is possible that a subject company's common equity that is considered a long-term 'Sector Perform' or even an 'Underperform' might present a short-term buying opportunity as a result of temporary selling pressure in the market; conversely, a subject company's common equity rated a long-term 'Outperform' could be considered susceptible to a short-term downward price correction. Short-term trade ideas are not ratings, nor are they part of any ratings system, and the firm generally does not intend, nor undertakes any obligation, to maintain or update short-term trade ideas. Short-term trade ideas may not be suitable for all investors and have not been tailored to individual investor circumstances and objectives, and investors should make their own independent decisions regarding any securities or strategies discussed herein. Please contact your investment advisor or institutional salesperson for more information regarding RBC Capital Markets' research.

For a list of all recommendations on the company that were disseminated during the prior 12-month period, please click on the following link: https://rbcnew.bluematrix.com/sellside/MAR.action

The 12 month history of SPARCs can be viewed at https://www.rbcinsightresearch.com/.

Analyst Certification

All of the views expressed in this report accurately reflect the personal views of the responsible analyst(s) about any and all of the subject securities or issuers. No part of the compensation of the responsible analyst(s) named herein is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the responsible analyst(s) in this report.

Third-party-disclaimers

The Global Industry Classification Standard (“GICS”) was developed by and is the exclusive property and a service mark of MSCI Inc. (“MSCI”) and Standard & Poor’s Financial Services LLC (“S&P”) and is licensed for use by RBC. Neither MSCI, S&P, nor any other party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability and fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of their affiliates or any third party involved in making or compiling the GICS or any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

References herein to “LIBOR”, “LIBO Rate”, “L” or other LIBOR abbreviations means the London interbank offered rate as administered by ICE Benchmark Administration (or any other person that takes over the administration of such rate).

Disclaimer

RBC Capital Markets is the business name used by certain branches and subsidiaries of the Royal Bank of Canada, including RBC Dominion Securities Inc., RBC Capital Markets, LLC, RBC Europe Limited, Royal Bank of Canada, Hong Kong Branch and Royal Bank of Canada, Sydney Branch. The information contained in this report has been compiled by RBC Capital Markets from sources believed to be reliable, but no representation or warranty, express or implied, is made by Royal Bank of Canada, RBC Capital Markets, its affiliates or any other person as to its accuracy, completeness or correctness. All opinions and estimates contained in this report constitute RBC Capital Markets' judgement as of the date of this report, are subject to change without notice and are provided in good faith but without legal responsibility. Nothing in this report constitutes legal, accounting or tax advice or individually tailored investment advice. This material is prepared for general circulation to clients and has been prepared without regard to the individual financial circumstances and objectives of persons who receive it. The investments or services contained in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about the suitability of such investments or services. This report is not an offer to sell or a solicitation of an offer to buy any securities. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. RBC Capital Markets research analyst compensation is based in part on the overall profitability of RBC Capital Markets, which includes profits attributable to investment banking revenues. Every province in Canada, state in the U.S., and most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as the process for doing so. As a result, the securities discussed in this report may not be eligible for sale in some jurisdictions. RBC Capital Markets may be restricted from publishing research reports, from time to time, due to regulatory restrictions and/ or internal compliance policies. If this is the case, the latest published research reports available to clients may not reflect recent material changes in the applicable industry and/or applicable subject companies. RBC Capital Markets research reports are current only as of the date set forth on the research reports. This report is not, and under no circumstances should be construed as, a solicitation to act as securities broker or dealer in any jurisdiction by any person or company that is not legally permitted to carry on the business of a securities broker or dealer in that jurisdiction. To the full extent permitted by law neither RBC Capital Markets nor any of its affiliates, nor any other person, accepts any liability whatsoever for any direct, indirect or consequential loss arising from, or in connection with, any use of this report or the information contained herein. No matter contained in this document may be reproduced or copied by any means without the prior written consent of RBC Capital Markets in each instance.

Additional information is available on request.

To U.S. Residents: This publication has been approved by RBC Capital Markets, LLC (member FINRA, NYSE, SIPC), which is a U.S. registered broker-dealer and which accepts responsibility for this report and its dissemination in the United States. Any U.S. recipient of this report that is not a registered broker-dealer or a bank acting in a broker or dealer capacity and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, should contact and place orders with RBC Capital Markets, LLC.

To Canadian Residents: This publication has been approved by RBC Dominion Securities Inc. (member IIROC). Any Canadian recipient of this report that is not a Designated Institution in Ontario, an Accredited Investor in British Columbia or Alberta or a Sophisticated Purchaser in Quebec (or similar permitted purchaser in any other province) and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report should contact and place orders with RBC Dominion Securities Inc., which, without in any way limiting the foregoing, accepts responsibility for this report and its dissemination in Canada.

To U.K. Residents: This publication has been approved by RBC Europe Limited ('RBCEL') which is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority ('FCA') and the Prudential Regulation Authority, in connection with its distribution in the United Kingdom. This material is not for general distribution in the United Kingdom to retail clients, as defined under the rules of the FCA. RBCEL accepts responsibility for this report and its dissemination in the United Kingdom.

To German Residents: This material is distributed in Germany by RBC Europe Limited, Frankfurt Branch which is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).

To Persons Receiving This Advice in Australia: This material has been distributed in Australia by Royal Bank of Canada, Sydney Branch (ABN 86 076 940 880, AFSL No. 246521). This material has been prepared for general circulation and does not take into account the objectives, financial situation or needs of any recipient. Accordingly, any recipient should, before acting on this material, consider the appropriateness of this material having regard to their objectives, financial situation and needs. If this material relates to the acquisition or possible acquisition of a particular financial product, a recipient in Australia should obtain any relevant disclosure document prepared in respect of that product and consider that document before making any decision about whether to acquire the product. This research report is not for retail investors as defined in section 761G of the Corporations Act.

To Hong Kong Residents: To Hong Kong Residents: This publication is distributed in Hong Kong by Royal Bank of Canada, Hong Kong Branch, which is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission (SFC) in Hong Kong, RBC Investment Services (Asia) Limited and RBC Global Asset Management (Asia) Limited, both entities are regulated by the SFC. This material is not for general distribution in Hong Kong to persons who are not professional investors (as defined in the Securities and Futures Ordinance of Hong Kong (Cap. 571) and any rules made thereunder.

To Singapore Residents: This publication is distributed in Singapore by the Royal Bank of Canada, Singapore Branch, a registered entity licensed by the Monetary Authority of Singapore. This material has been prepared for general circulation and does not take into account the objectives, financial situation, or needs of any recipient. You are advised to seek independent advice from a financial adviser before purchasing any product. If you do not obtain independent advice, you should consider whether the product is suitable for you. Past performance is not indicative of future performance. If you have any questions related to this publication, please contact the Royal Bank of Canada, Singapore Branch. Royal Bank of Canada, Singapore Branch accepts responsibility for this report and its dissemination in Singapore.

To Japanese Residents: Unless otherwise exempted by Japanese law, this publication is distributed in Japan by or through RBC Capital Markets (Japan) Ltd. which is a Financial Instruments Firm registered with the Kanto Local Financial Bureau (Registered number 203) and a member of the Japan Securities Dealers Association (“JSDA”) and the Financial Futures Association of Japan (“FFAJ”).