TRIVARIATE RESEARCH

# WHAT IS MOST CROWDED NOW?

06/10/2022

ADAM S. PARKER, Ph.D., FOUNDER
adam@trivariateresearch.com
646-734-7070

COLIN COONEY, HEAD OF SALES
colin@trivariateresearch.com
617-910-7934

JONATHAN GILL, SR. ANALYST
jonathan@trivariateresearch.com
203-461-5110

MAXWELL ARNOLD, ANALYST
maxwell@trivariateresearch.com
347-514-1234

# RESEARCH SUMMARY

Investors are always interested in what other investors are doing and seem particularly focused on crowding when there is a risk-off regime. We computed a proprietary crowding score, and the volatility adjusted performance of this score has been substantial over time. Moreover, the most crowded names have been particularly bad in the last year, fueling the incoming investor questions we have been getting about how to define crowding and which names appear most crowded today.

**Determining crowding:** We analyzed several metrics and concluded through efficacy and parsimony that six signals - both level and change - across liquidity, volatility, and conviction by way of 13-F filings are good signals for identifying crowded stocks. For our conviction signal (both level and change), we took a universe of managers that excludes Trivariate's proprietary universe of 60 hedge fund managers (as our previous work showed they are different and on average represent "good" not "bad crowding") and then examined the number of managers holding a given stock at 3% of more of their long AuM.

**Forming the crowding ranking:** We combined these six signals in multiple ways - equal-weighted, weighting liquidity more, weighting conviction more - into a set of overall crowding signals - in which we generally looked at beta-adjusted spread portfolios of the signal's top quintile ("least crowded") and bottom quintile ("most crowded").

**Performance:** The least crowded stocks beat the most crowded both in total performance and beta-adjusted performance over 2% per annum with a Sharpe ratio of 0.93 vs. 0.44. Efficacy has been particularly strong of late, and equally-weighting our six signals was better than over-weighting either liquidity or conviction in aggregate.

# INVESTMENT CONCLUSIONS

**Deviations in signal efficacy:** For the industrials sector, weighting 13-F filings conviction enhanced the signal, whereas liquidity degraded the crowding score efficacy. For consumer discretionary stocks, using liquidity mattered more than conviction. Overall, efficacy was not that strong for consumer stocks. For healthcare, conviction also degraded signal efficacy, and the equally-weighted factor approach.

**Cohorts / Sectors:** Across all the cohorts and sectors, our crowding score is more effective for growth stocks, and micro-to-small-caps, than it is for value or mega caps. It is notably better among quality stocks, than our lowest quality quartile, we call “junk”. Model efficacy is relatively strong for consumer staples and financials, and quite weak in consumer discretionary and communication services.

**Conclusion: Using our crowding score can be helpful to your risk management process.**

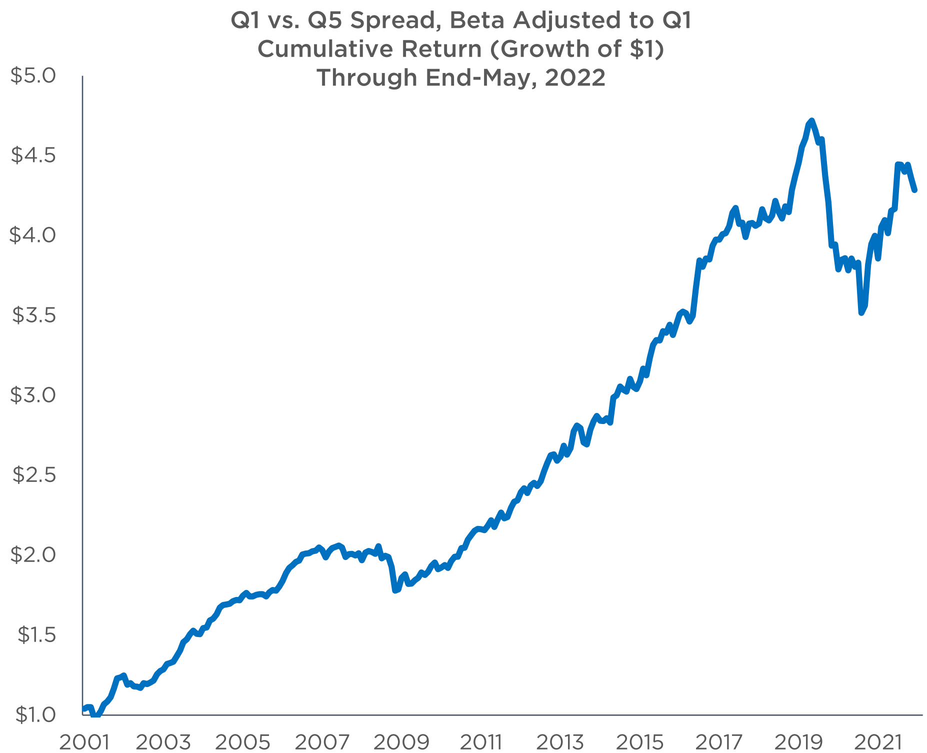
Given many investors are focused on avoiding crowded growth stocks, and some are looking to deploy fresh capital in growth names that are down a lot, we offer long / short ideas that are the least / most crowded among growth stocks that are not in the lowest quartile of quality.

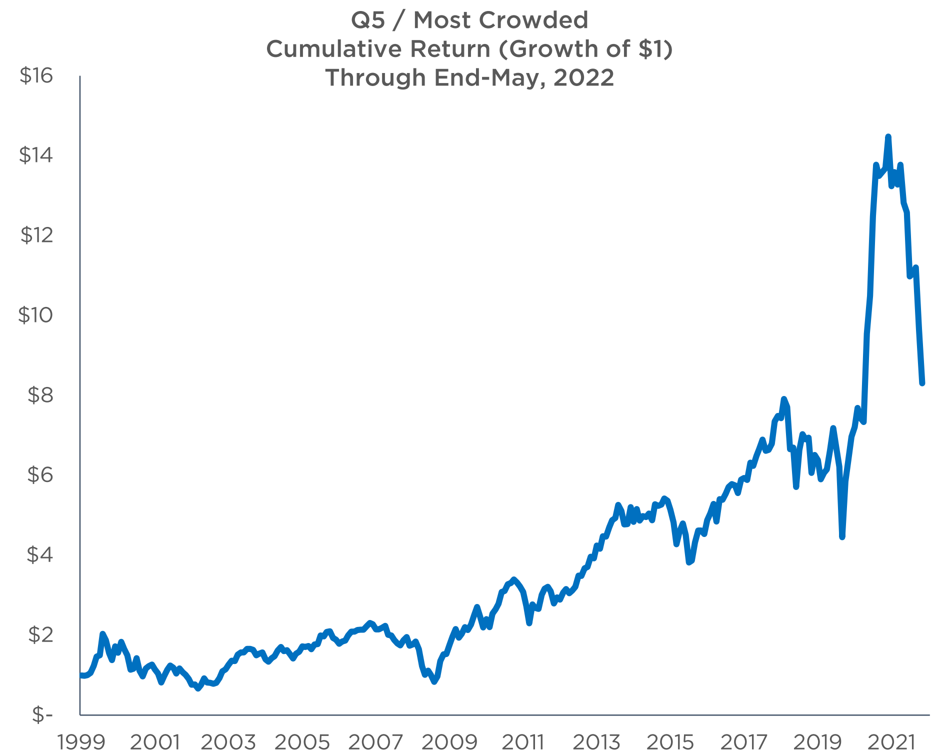
**Most crowded stocks** include SHOP, UBER, TEAM, SNOW, and CRWD. Mega / large cap growth that is **not crowded** includes ACN and EW.

For investors interested in the overall crowded scores, or scores for a custom basket, please do not hesitate to reach out to us.

# WHY ARE INVESTORS INTERESTED IN CROWDED STOCKS TODAY?

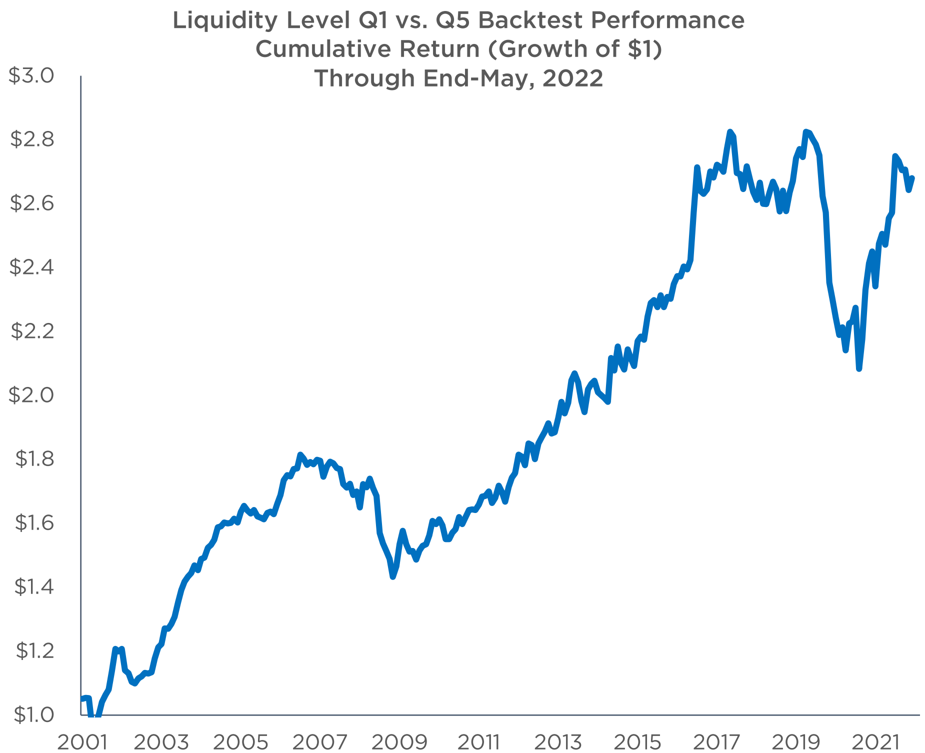
We created a proprietary crowding score, and the least crowded names have outperformed the most crowded names over the last twenty years (left chart). **Crowded stocks are an inferior asset class over time.** The challenge is that investors need to buy stocks when they are a little crowded and sell them when they are maximally crowded. Historically, the ability to time that is often challenging. We think measuring performance on a volatility-adjusted basis is crucial. The bottom quintile of the model (the most crowded names) had incredibly strong performance from the bottom of COVID in March of 2020 through the middle of 2021 (up over 3x) but is now down 43% since the peak (right chart). Likely, this is the reason for the plethora of incoming questions we have received on crowding of late, and the catalyst for us to create a proprietary crowding score.

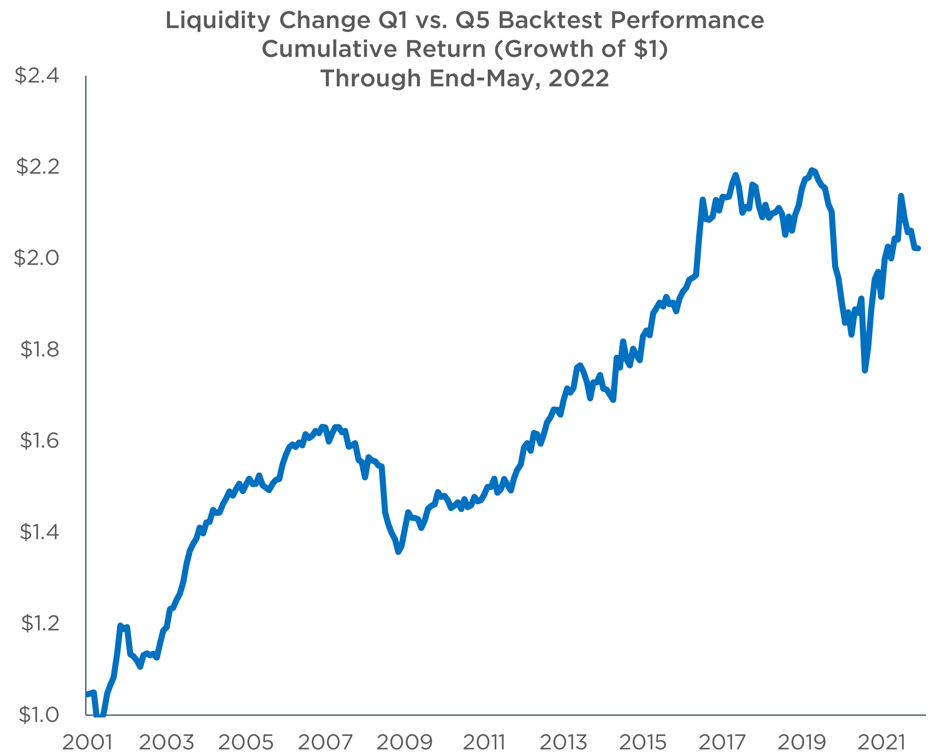


# LIQUIDITY IS A KEY METRIC FOR CROWDING

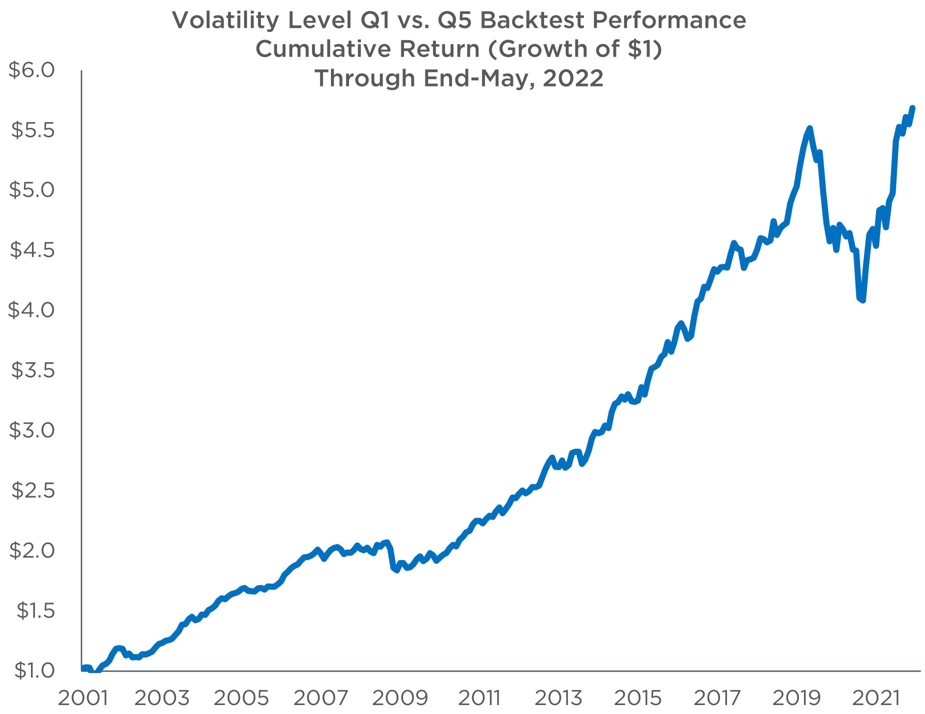
We looked at the percentage of a stock's free float that trades (average daily trading volume over the last three months divided by the free-floated market capitalization) and ranked stocks on this "liquidity" metric. We then studied both the level of liquidity and the month-over-month change in liquidity as proxies for crowding. Less liquid stocks (Q1) outperformed more liquid stocks (Q5) strongly from 2001-2017 but have not really outperformed much in the last five years (left chart). The most liquid names strongly outperformed following the onset of COVID but have lagged materially since. The month-over-month change in liquidity (right chart) shows a similar pattern of efficacy to level.

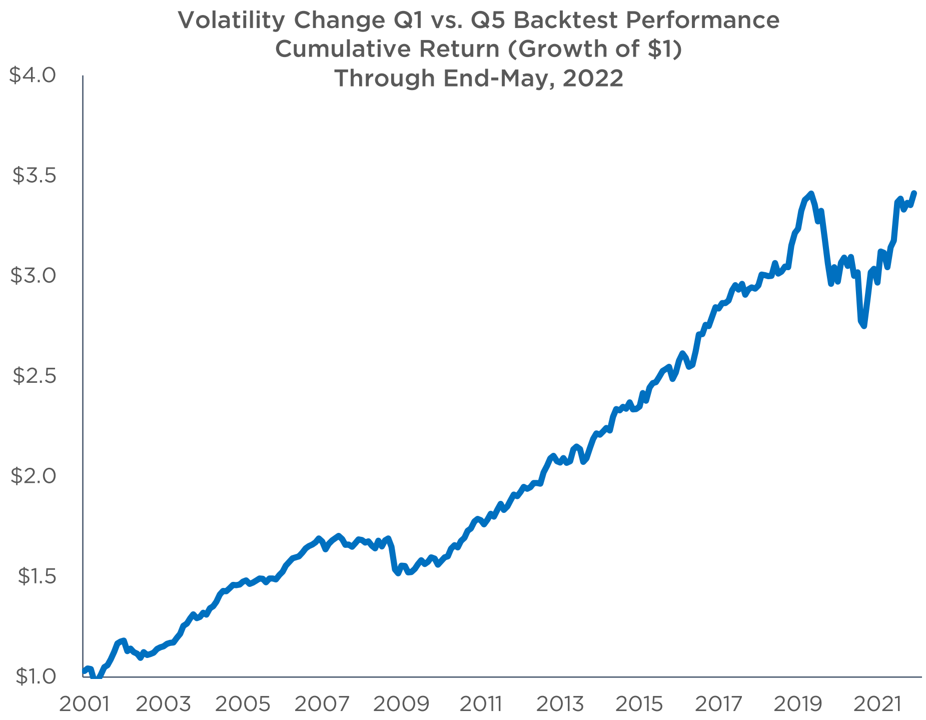


# VOLATILITY ALSO IS A GOOD CROWDING SIGNAL

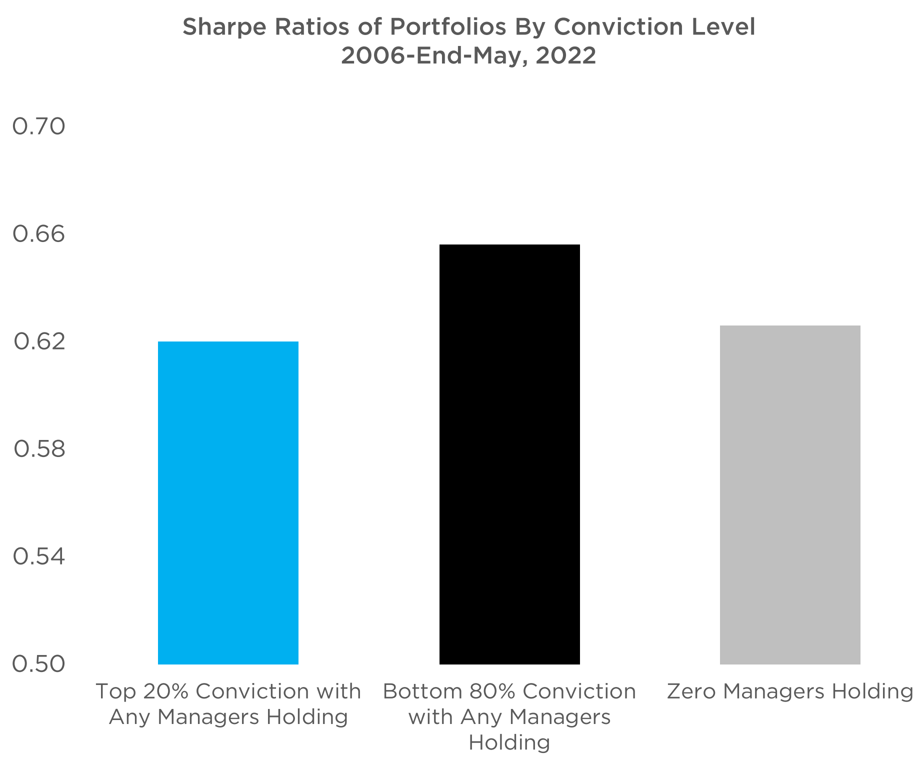
We define volatility as the standard deviation of the daily stock returns over the previous three months.  The least volatile names (Q1) strongly outperformed the most volatile (Q5) over the last twenty years, suffering during COVID but now having fully recovered (left chart).  Change in volatility has also mattered, though overall has resulted in lower cumulative returns than volatility level (right chart).

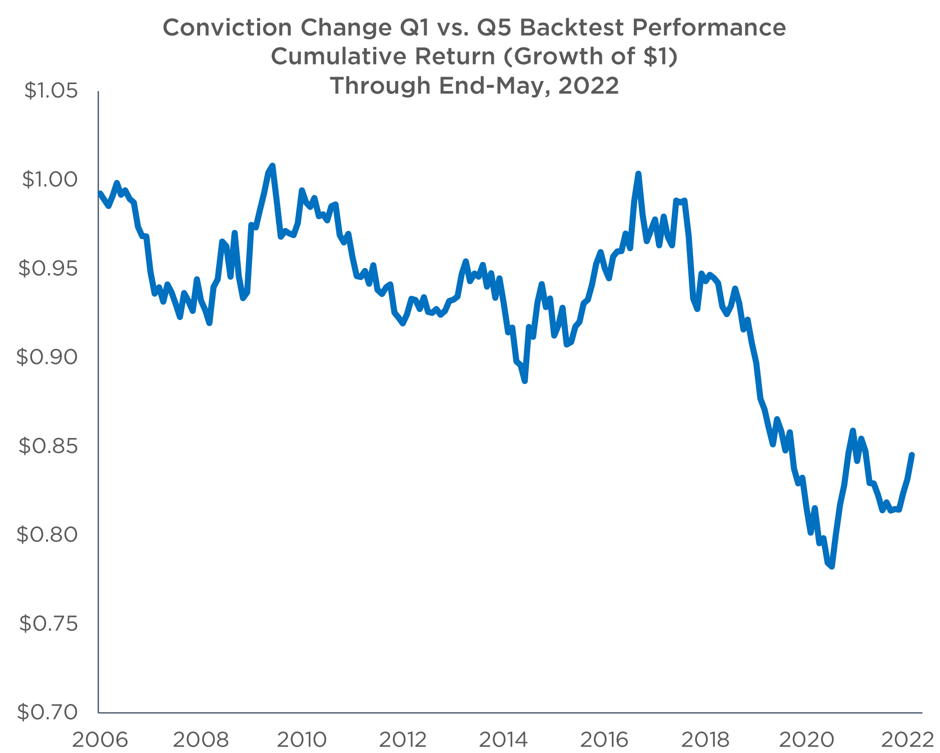


# 13F CONVICTION ANALYSIS SHOWS LEVEL, NOT CHANGE MATTERS

We defined a fund to have high conviction in a name if the stock accounts for 3% or more of their long AuM from their latest 13-F filing. Across the sample of stocks where at least one manager held the stock at high conviction, the lowest conviction stocks - the least held among a select group of 400+ managers that omits a group of 60 managers we feel do strong fundamental research - outperformed the highest conviction (the most held) stocks over the last 15 years on a risk-adjusted basis (left chart), with zero-conviction names also outperforming the highest-conviction names. **Too many people owning a stock in high conviction is worse than no one owning it in high conviction.** Change in conviction has not been a good signal, so avoiding stocks that just became high conviction month-over-month is not effective in aggregate (right chart) as likely this is too early in the crowding process to be investable.



# FORMING THE CROWDING SCORE

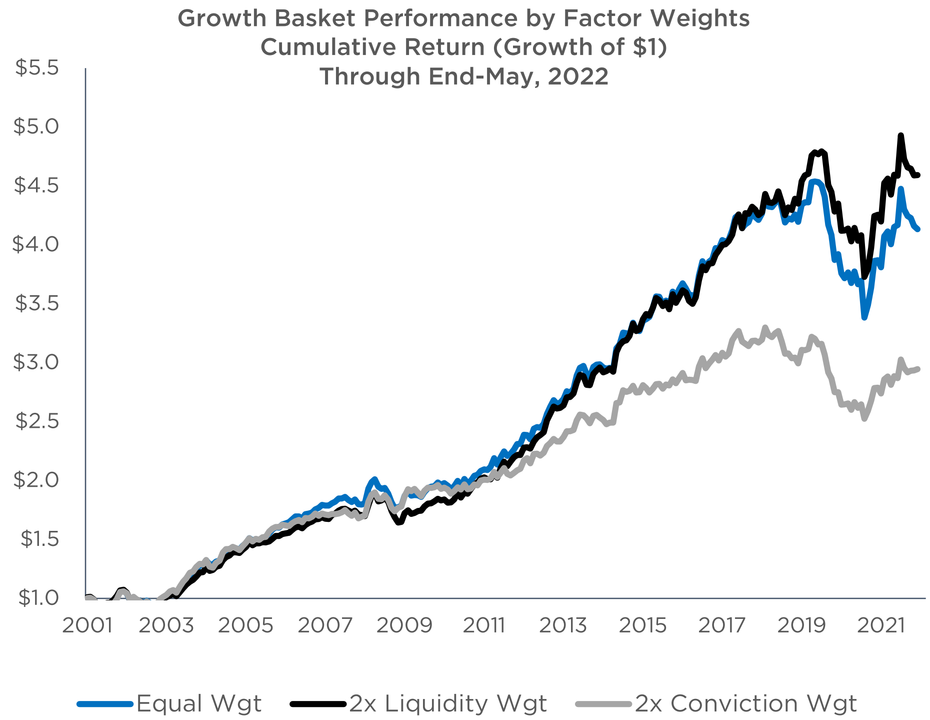
Combining level and change of liquidity, volatility, and high conviction from 13-F filings, we created and then back-tested our crowding score, both the least and most crowded quintiles and the least vs. most crowded quintile spreads.  We then compare equally-weighting the six signals and alter the weights of conviction and liquidity to the beta-adjusted and volatility-adjusted results.  The least crowded group substantially outperforms the most crowded, and the equally-weighted signals result in the best Q1-Q5 spread portfolio, with a Sharpe of 0.99.

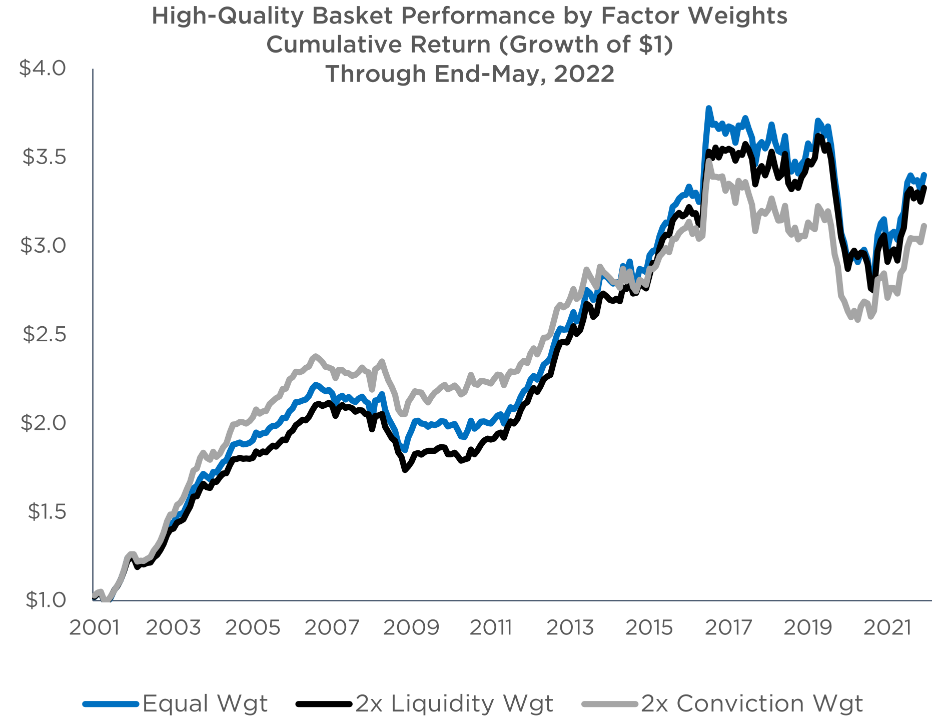
**Crowding Model Performance**
**Through End-May, 2022**

| Portfolio | Annualized Return | Sharpe Ratio |
|---|---|---|
| Least Crowded Quintile, Equal Weight Model | 11.89% | 0.93 |
| Most Crowded Quintile, Equal Weight Model | 9.68% | 0.44 |
| Least vs. Most Crowded Quintile Spread, Equal Weight Model, Volatility Adjusted | 6.8% | 0.91 |
| Least vs. Most Crowded Quintile Spread, Equal Weight Model, Beta Adjusted | 7.2% | 0.99 |
| Least vs. Most Crowded Quintile Spread, 2x Up-Weight Conviction, Volatility Adjusted | 6.3% | 0.87 |
| Least vs. Most Crowded Quintile Spread, 2x Up-Weight Conviction, Beta Adjusted | 6.8% | 0.97 |
| Least vs. Most Crowded Quintile Spread, 2x Up-Weight Liquidity, Volatility Adjusted | 6.2% | 0.83 |
| Least vs. Most Crowded Quintile Spread, 2x Up-Weight Liquidity, Beta Adjusted | 6.6% | 0.90 |

# CROWDING MATTERS MORE FOR STYLE THAN SUBSTANCE

In addition to assessing overall performance, we analyzed the Q1-Q5 spreads by style, substance, size, and sectors to search for pockets of efficacy or failure for our crowding framework. For growth stocks, liquidity has clearly mattered more than conviction (left chart) as cumulative performance has been stronger over time. For the highest-quality quartile of stocks, crowding has mattered less than for growth stocks, and factoring in conviction or liquidity more than the equal-weight approach did not really make a material difference (right chart).



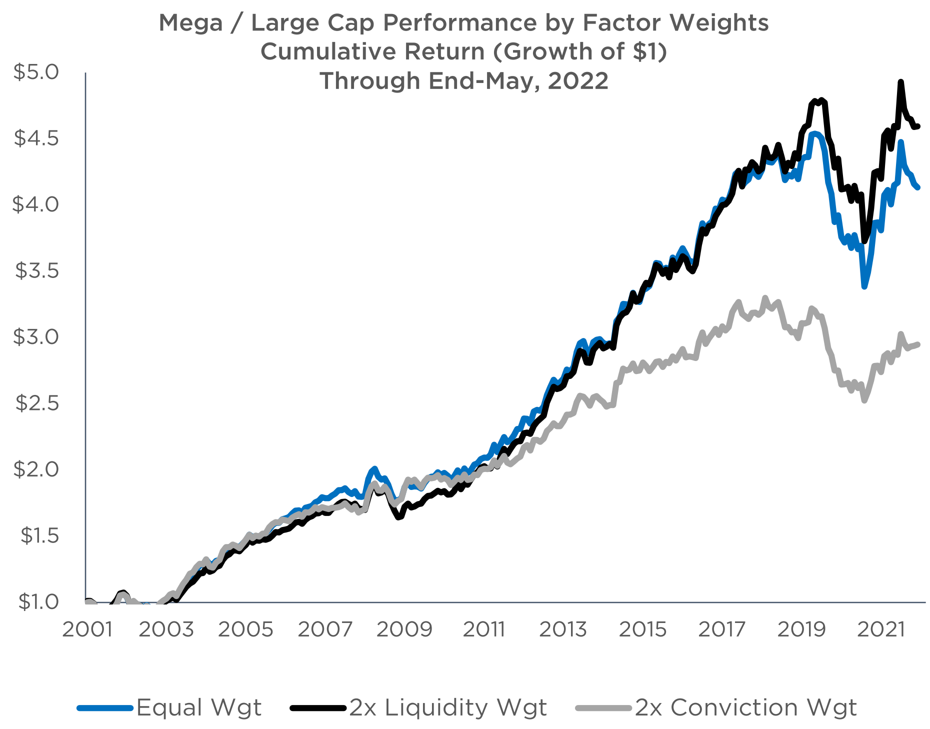



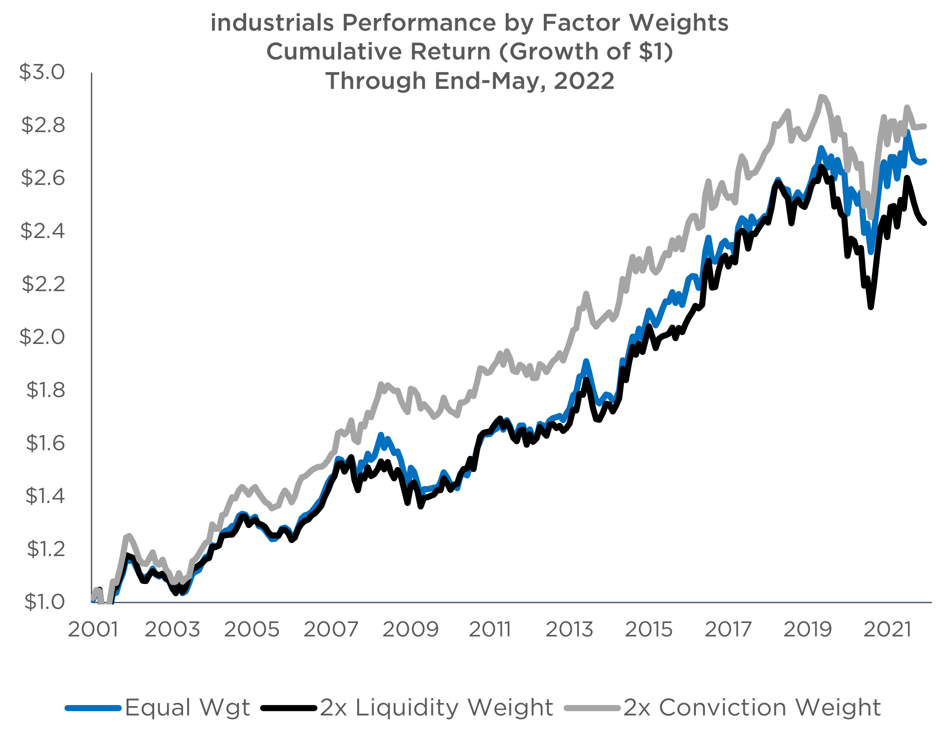


# MEGA / LARGE CAP AND INDUSTRIALS SECTOR PERFORMANCE

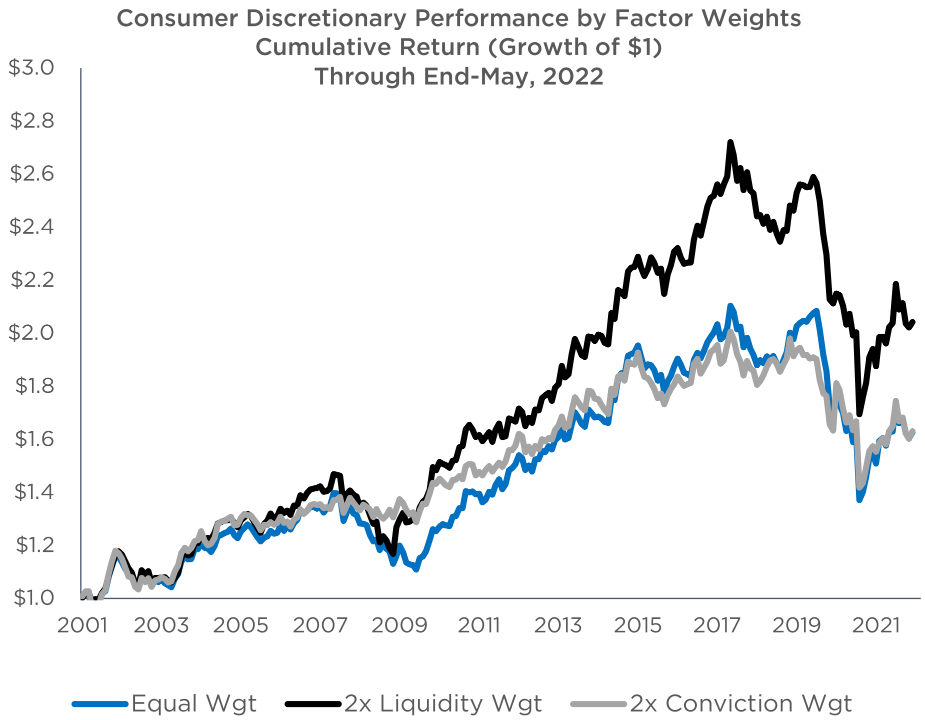
For mega / large cap stocks, the crowding score was effective over time, but the 13-F filings factor clearly degraded the efficacy relative to liquidity and turnover (left chart). At the sector level, there was some deviation in efficacy of the underlying signals. For the industrials sector (right chart), increasing the weight of the 13-F filings conviction factor enhanced the crowding signal, whereas liquidity degraded the crowding score efficacy for this sector.

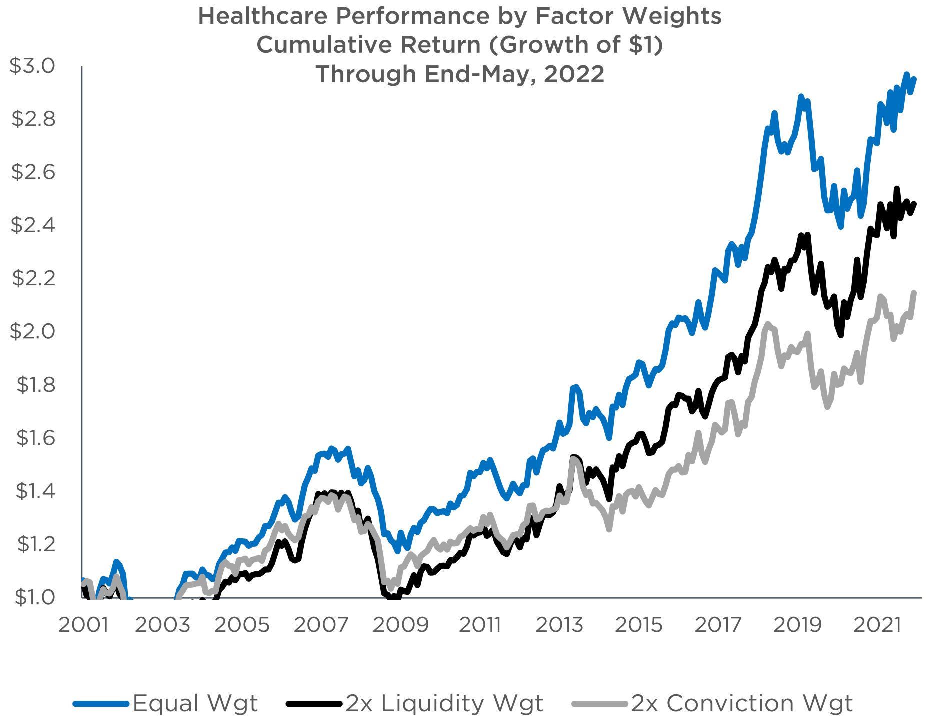


# CONSUMER DISCRETIONARY AND HEALTHCARE PERFORMANCE

Unlike in industrials where the 13F filings data made our crowding score more efficacious at predicting subsequent return, for consumer discretionary stocks, using liquidity mattered more than conviction. Overall, efficacy was not that strong for consumer stocks (left). For healthcare, conviction also degraded signal efficacy, but the equally-weighted factor approach has historically worked best (right).



# OUR CROWDING SCORE WORKS BEST FOR GROWTH AND SMALL CAPS

Across all the cohorts and sectors, our crowding score is more effective for growth stocks, and micro-to-small-caps, than it is for value or mega caps. It is notably better among quality stocks, than our lowest quality quartile, we call "junk". Model efficacy is relatively strong for consumer staples and financials, and quite weak in consumer discretionary and communication services.

**Performance of Various Sector/Style/Size/Substance Top vs. Bottom Crowding Quintile Spread Portfolios**
**Equal Weight vs. 2x Higher Weight Conviction vs. 2x Higher Weight Liquidity**
**Mid-1999 - End-May, 2022**

| Portfolio | Sharpe, Equal-Weighted Portfolio | Sharpe, 2x Higher Weight on Conviction | Sharpe, 2x Higher Weight on Liquidity |
|---|---|---|---|
| Style: Growth | 0.91 | 0.74 | 0.99 |
| Cap: Mid | 0.89 | 0.87 | 0.90 |
| Cap: Small/Micro | 0.87 | 0.83 | 1.01 |
| Consumer Staples | 0.84 | 0.86 | 0.67 |
| Substance: High | 0.81 | 0.78 | 0.86 |
| Substance: Mid | 0.78 | 0.68 | 0.78 |
| Financials | 0.69 | 0.72 | 0.64 |
| Style: Value | 0.69 | 0.76 | 0.79 |
| Style: Neither Growth/Value | 0.66 | 0.74 | 0.80 |
| Substance: Low | 0.66 | 0.55 | 0.76 |
| Industrials | 0.63 | 0.68 | 0.56 |
| Utilities | 0.61 | 0.68 | 0.74 |
| Energy | 0.60 | 0.58 | 0.52 |
| Information Technology | 0.58 | 0.47 | 0.60 |
| Health Care | 0.57 | 0.41 | 0.47 |
| Cap: Mega/Large | 0.55 | 0.55 | 0.68 |
| Materials | 0.53 | 0.63 | 0.43 |
| Substance: Junk | 0.48 | 0.58 | 0.52 |
| Communication Services | 0.39 | 0.42 | 0.19 |
| Consumer Discretionary | 0.32 | 0.32 | 0.43 |

# LONG IDEAS – THE LEAST CROWDED GROWTH STOCKS

Given the relative outperformance of the model in growth and relative underperformance in junk, below are the least crowded growth stock ideas.

**Least Crowded, Trivariate Proprietary Score**
**Non-Junk Growth Stocks**
**End-May 2022**

| Ticker | Company | Sector | Market Cap ($B) |
|---|---|---|---|
| ACN | Accenture plc | Information Technology | 189.04 |
| EW | Edwards Lifesciences Corporation | Health Care | 62.70 |
| TECH | Bio-Techne Corporation | Health Care | 14.51 |
| FDS | FactSet Research Systems Inc. | Financials | 14.47 |
| RPM | RPM International Inc. | Materials | 11.41 |
| TIXT | TELUS International (Cda) Inc. | Information Technology | 6.67 |
| OPCH | Option Care Health, Inc. | Health Care | 5.47 |
| KNSL | Kinsale Capital Group, Inc. | Financials | 5.04 |
| EXLS | ExlService Holdings, Inc. | Information Technology | 4.73 |
| DORM | Dorman Products, Inc. | Consumer Discretionary | 3.18 |
| JOE | The St. Joe Company | Real Estate | 2.97 |
| NEOG | Neogen Corporation | Health Care | 2.85 |
| PLXS | Plexus Corp. | Information Technology | 2.35 |
| SPXC | SPX Corporation | Industrials | 2.30 |
| SYBT | Stock Yards Bancorp, Inc. | Financials | 1.72 |
| GIC | Global Industrial Company | Industrials | 1.30 |
| NBHC | National Bank Holdings Corporation | Financials | 1.22 |
| ATRI | Atrion Corporation | Health Care | 1.13 |
| OFLX | Omega Flex, Inc. | Industrials | 1.12 |
| MLAB | Mesa Laboratories, Inc. | Health Care | 1.10 |

# SHORT IDEAS – THE MOST CROWDED GROWTH STOCKS

These are the most crowded growth stocks.

**Most Crowded, Trivariate Proprietary Score**
**Non-Junk Growth Stocks**
**End-May 2022**

| Ticker | Company | Sector | Market Cap ($B) |
|---|---|---|---|
| SHOP | Shopify Inc. | Information Technology | 47.32 |
| UBER | Uber Technologies, Inc. | Industrials | 45.56 |
| TEAM | Atlassian Corporation Plc | Information Technology | 45.08 |
| SNOW | Snowflake Inc. | Information Technology | 40.60 |
| CRWD | CrowdStrike Holdings, Inc. | Information Technology | 37.12 |
| TWTR | Twitter, Inc. | Communication Services | 30.21 |
| DASH | DoorDash, Inc. | Consumer Discretionary | 27.01 |
| SNAP | Snap Inc. | Communication Services | 23.09 |
| MDB | MongoDB, Inc. | Information Technology | 16.14 |
| HUBS | HubSpot, Inc. | Information Technology | 16.13 |
| ROKU | Roku, Inc. | Communication Services | 12.90 |
| BILL | Bill.com Holdings, Inc. | Information Technology | 12.33 |
| ETSY | Etsy, Inc. | Consumer Discretionary | 10.31 |
| LYFT | Lyft, Inc. | Industrials | 6.15 |
| SAIL | SailPoint Technologies Holdings, Inc. | Information Technology | 5.98 |
| GTLB | GitLab Inc. | Information Technology | 5.75 |
| MQ | Marqeta, Inc. | Information Technology | 5.70 |
| DOCN | DigitalOcean Holdings, Inc. | Information Technology | 4.99 |
| FTCH | Farfetch Limited | Consumer Discretionary | 3.42 |
| CARG | CarGurus, Inc. | Communication Services | 3.00 |

# DISCLOSURES

Disclaimer

This presentation is confidential and may not be reproduced or distributed without the express prior written permission of Trivariate Research LP and its affiliates (collectively, "Trivariate").

The information contained herein reflects the opinions and projections of Trivariate as the date of publication, which are subject to change without notice at any time subsequent to the date of issue. Trivariate does not represent that any opinion or projection expressed herein will be realized. All information provided is for informational and research purposes only and should not be deemed as investment advice or a recommendation to purchase or sell any specific portfolio investment, security or other asset. While the information presented herein is believed to be reliable, no representation or warranty is made concerning the accuracy of any data or other information presented. Information obtained by Trivariate from third party sources in connection with the preparation of this presentation has not been independently verified by Trivariate. Additional information regarding Trivariate is available on request.

Any projections, forecasts, targets or other estimates presented herein constitute "forward-looking statements" that can be identified by the use of forward-looking terminology such as "may," "will," "should," "could," "would," "predicts," "potential," "forecasted," "continue," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," or the negatives thereof or other variations thereon or comparable terminology. Furthermore, any projections, targets, forecasts or other estimates in this presentation are "forward-looking statements" and are based upon certain assumptions that may change. Due to various risks and uncertainties, actual events or results or the actual performance of the funds may differ materially from those reflected or contemplated in such forward-looking statements. Moreover, actual events are difficult to predict and often depend upon factors that are beyond the control of the Trivariate. Nothing herein shall under any circumstances create an implication that the information contained herein is correct as of any time after the earlier of the relevant date specified herein or the date of this presentation. In addition, unless the context otherwise requires, the words "include," "includes," "including" and other words of similar import are meant to be illustrative rather than restrictive. Forward-looking statements and discussions of the business environment included herein (e.g., With respect to financial markets, business opportunities, demand, investment pipeline and other conditions) are subject to the ongoing novel coronavirus outbreak ("COVID" or "COVID-19"). The full impact of COVID-19 is particularly uncertain and difficult to predict, therefore such forward-looking statements do not reflect its ultimate potential.

This shall not constitute an offer to sell or the solicitation of an offer to buy any interests in any fund, product or account that is or may in the future be advised or managed by, Trivariate or any of its affiliates.

*All data sourced from S&P Global, Bloomberg, or our Trivariate estimates. All forward-looking-statements reflect the opinion of Trivariate.*