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TRIVARIATE RESEARCH

SEPTEMBER 2021

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We have also published notes on FAANGM, BATJ (Baidu, Alibaba, Tencent, JD.com) and ESG ETFs. Please reach out to us or visit www.trivariateresearch.com for access

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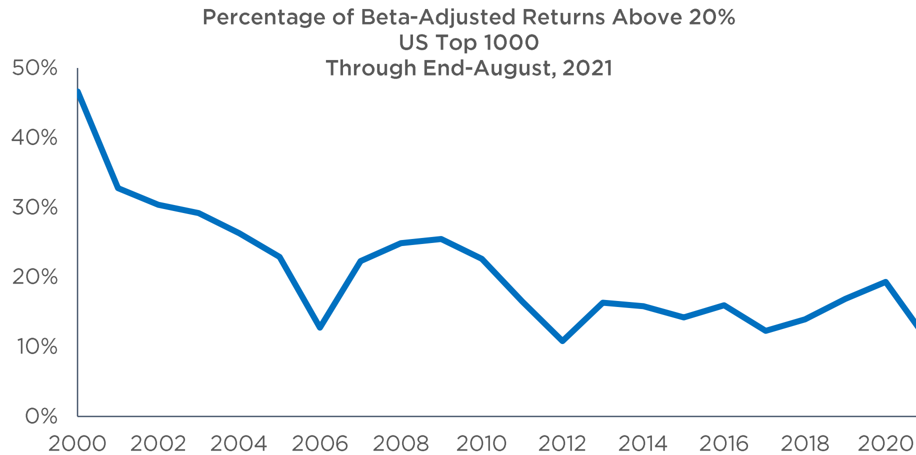
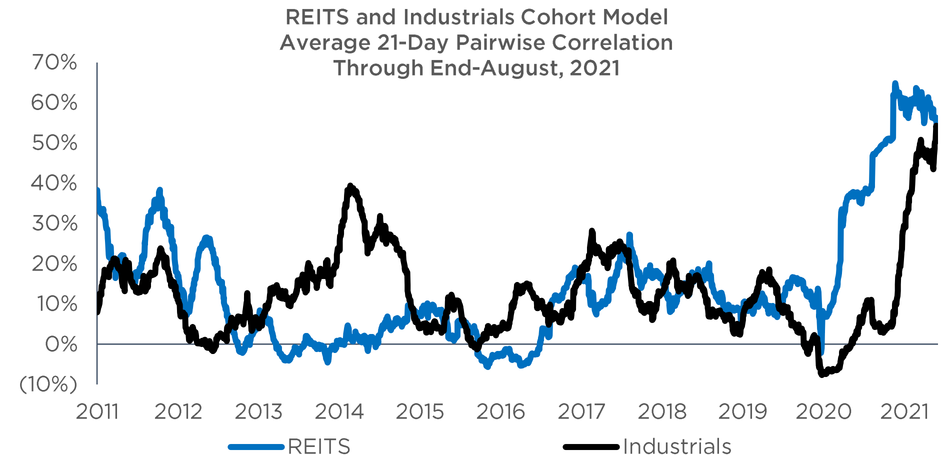
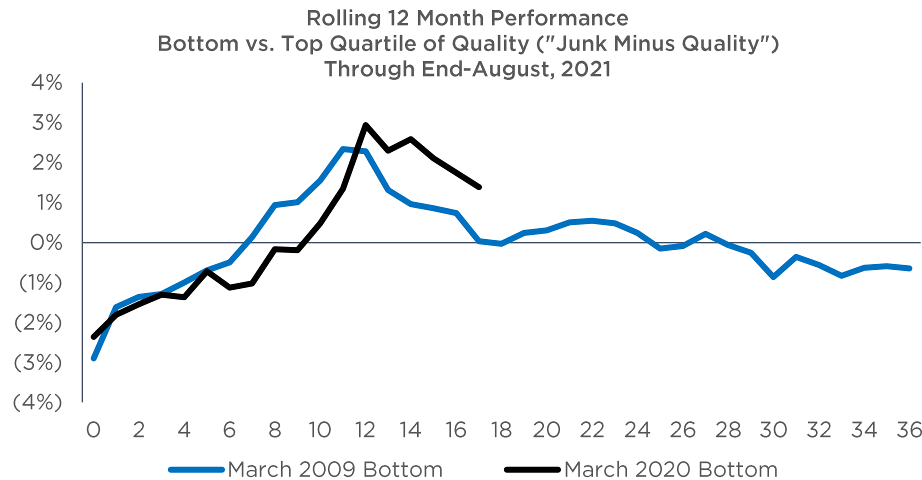
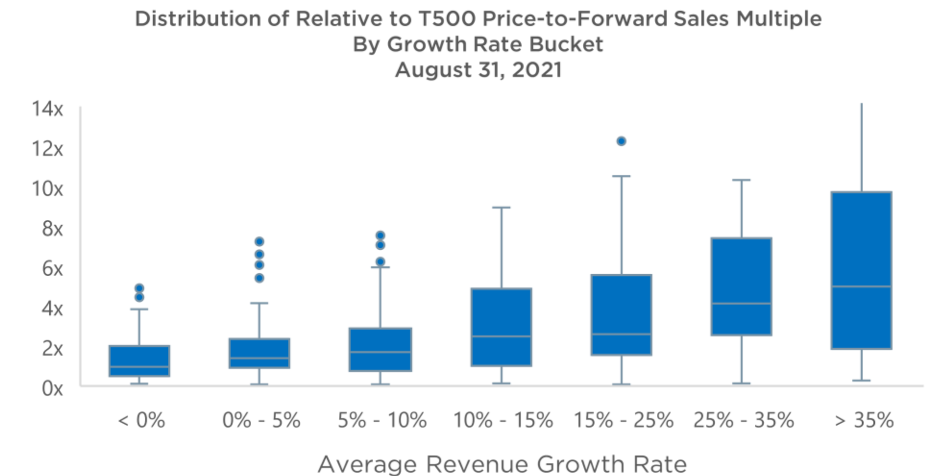
FOUR CHARTS YOU SHOULD NOT MISS

Alpha generation has been challenged in part by the fewest "big" long ideas in years (upper left). Signal correlation in REITs and Industrials is incredibly high (upper right) and an important risk to monitor. This cycle is rhyming 2009-2010 in many ways (bottom left). We search for the Double Whammy of growth ideas (bottom right) with higher revenue growth and disproportionately higher multiples









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INVESTMENT CONCLUSIONS

- **We are bullish on the US stock market**. We see earnings and a solid US economy, accompanied by accommodative monetary policy and a massive fiscal stimulus. The market is expensive relative to its own history and in absolute terms at roughly 22x forward earnings. However, nearly 20% of the top 3000 US stocks market cap is FAANGM. Roughly another 20% of the market is biotechnology and software companies, where current profitability is not as important as sustained growth. Signs of management hubris are missing, as capital spending-induced impediments to margin expansion in most industries do not appear likely and inventory risk is small
- **We think a growth – value barbell is appropriate**. Following large drawdowns in growth stocks, we prefer margin expanders with positive free cash flow. There is a non-linear relationship between revenue growth and valuation, revealing several opportunities. Within value, we are bullish on energy and materials, where net margin expectations are strong, but price-to-forward earnings multiples have not been excessively rewarding. Yes, strength is transitory, but profits are so strong that balance sheet improvement is substantial
- **This regime is closely rhyming the 2009-2010 recovery** that followed the financial crisis. Then, and now, profitability and margin expansion are more important than valuation for stock selection, and this will likely remain the case for the remainder of 2021
- **Alpha generation has been challenging**. Poor performing high-conviction out of consensus ideas, volatility in what works to make money, a dearth of long ideas beating the market by 20% or more and growth being less idiosyncratic than value have been among the challenges

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INVESTMENT CONCLUSIONS

- **Gross exposure advice**: We ingest over 100 macro variables and conclude that investors should gross up TMT and lower quality stocks that are not fast growing (i.e., gross up high yield junk and other junk) and de-gross durables, and lower quality stocks that do not pay a dividend.
- **If risks did not change, anyone could do risk management**. The failure of short interest, the importance of measuring "work from home" vs. "reopening" exposure crossed with quality and junk, the difference between 12-, 6-, and 3-month price momentum and the unprecedented correlation of signals in certain segments like REITS and industrials were all huge risks that grew after COVID-19 roiled markets in Q1 2020. We think the growing risks in the last quarter of 2021 are managing inflation, value vs. growth and quality vs. junk exposure. When considering risk, investors should consider correlation convexity and negative asymmetric beta. Canvassing multiple metrics, REITs look particularly risky today. We also identify the riskiest technology stocks through ten metrics
- **We believe investors need some inflation exposure in their portfolio**. We are bullish on energy and materials companies. We also think inflation-sensitive healthcare services are attractive. Large cap banks are more attractive than regionals as improved profitability and balance sheets do not appear to be appropriately re-rated, but generally we are cautious on banks
- **We are bullish on the US consumer**, believing a recovery in services and select retailers do well. We like quality reopening plays, and would short idiosyncratic staples, over-earning durables, and work from home "junk" consumer stocks

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WE ARE OPTIMISTIC ABOUT US EQUITIES

- **Our conclusion: We are bullish on US equities for 2021.** When investors look back several years from now what will they observe? A strong economy with sustained profit growth, accommodative monetary policy and massive fiscal stimulus
- **Does it matter that the market is expensive?** While there is no question that the US stock market is expensive on forward earnings vs. its own history, we do not think history is a relevant determinative of subsequent return as market constitution, profit margins, and sustained growth render many historical comparisons irrelevant
- **We prefer large-over-small cap stocks today:** Mega/large caps now have 95% of the top 3000 net profits, yet valuations have been wildly anticipatory of margin recovery for small/micro caps
- We generally do not see signs of management hubris, with capital spending unlikely to impede margin progress and inventory levels for a decreasingly relevant set of companies relatively tame. **Hence optimism about the sustainability of earnings growth and the maintenance of these higher multiples is likely**
- **IN SUMMARY: We have a healthy economy, growing earnings, limited impediments to margin expansion, massive fiscal stimulus and an accommodative monetary policy. We are optimistic about US equities because we do not see major impediments to margin expansion in the coming quarters. The biggest risks in our mind is input costs rising faster than revenue for select companies, though a material reset due to policy related to the COVID Delta variant, or increased China tension could unnerve the market at these levels**

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DOES EVERYTHING ACTUALLY MAKE SENSE?

1. **Earnings revisions have sharply risen during the first half of the year**. The SP500 is up ~20% YTD, and the bottom-up analyst earnings estimates for calendar year 2021 are now 20.3% higher than they were on December 31st of 2020. Maybe everything does make sense, at least year to date!
2. **Retailers, capital goods, banks, and energy have all seen near record high number of upward revisions** (relative to total analyst estimates this year). Our suspicion is that energy and retail estimates are relatively more achievable than banks and capital goods in 2H of 2021
3. **Incremental gross margin expectations** are crucial to gauge at this point in the cycle. Retailers on average appear to have lower expectations and potentially above average estimate achievability. Materials expectations are in-line with long-term averages despite a super cycle. Capital goods and semiconductors have analyst estimates that embed incremental margin expansion above the business model averages in many cases, potentially a harbinger for below average estimate achievability, particularly as we get into 2022
4. **Elevated valuation makes sense** because there are fewer capital-intensive businesses (i.e. few fixed cost business models) and 40% of US companies now do not have any inventory. The constitution of the market has changed, with FAANGM 22% of the market. cap, and biotechnology and software now 20% of the top 3000 US companies. These companies grow for longer, so investors do not need current profitability as much as they used to – these all partially justify higher multiples – but the main justification remains low real rates

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EARNINGS EXPECTATIONS PEAKED IN Q2 AND DECELERATE UNTIL Q1

The bottom-up analyst earnings growth expectations are for 25.2% YoY earnings growth for Q3, down from the 92% growth in Q2 (a function of the trough last year). Earnings will decelerate but remain in the mid-twenties through Q4, trough in Q2 2022, and then accelerate again from there. The energy sector lost money in 2020, so the rebound off the trough is to be expected. Industrials companies have very high YoY earnings growth expectations every quarter through 2022, which may be a risk as input costs rise

Bottom-Up Analyst Earnings Growth Expectations
September 3, 2021

Sector	1Q21	2Q21E	3Q21E	4Q21E	1Q22E	2Q22E	3Q22E	4Q22E
S&P 500	46.7%	92.0%	25.2%	21.3%	5.6%	3.8%	13.8%	12.8%
S&P ex-Financials	33.2%	72.6%	27.6%	27.0%	12.9%	9.3%	15.0%	13.4%
Consumer Discretionary	224.2%	258.2%	1.5%	17.9%	10.1%	27.8%	46.7%	31.9%
Consumer Staples	8.3%	15.9%	(1.0%)	1.8%	5.6%	5.8%	10.6%	10.0%
Energy	16.0%	N/A	N/A	N/A	101.9%	25.5%	4.4%	(1.4%)
Financials	130.9%	251.8%	14.1%	(2.2%)	(20.6%)	(18.4%)	7.2%	10.0%
Health Care	21.7%	18.9%	10.0%	15.4%	4.2%	4.1%	9.1%	4.8%
Industrials	(4.6%)	383.8%	74.3%	138.3%	63.8%	33.8%	30.9%	21.4%
Info Tech	37.7%	41.9%	25.5%	14.1%	6.9%	6.1%	13.7%	15.1%
Materials	53.7%	128.3%	88.3%	55.7%	26.6%	(4.4%)	(11.7%)	(8.8%)
Communication Services	49.7%	68.2%	23.1%	11.2%	2.3%	3.0%	16.1%	18.3%
Utilities	(1.0%)	13.7%	(0.7%)	(0.0%)	7.9%	(12.0%)	4.2%	16.6%
REITS	3.4%	27.5%	15.7%	13.0%	5.3%	0.4%	8.5%	9.3%

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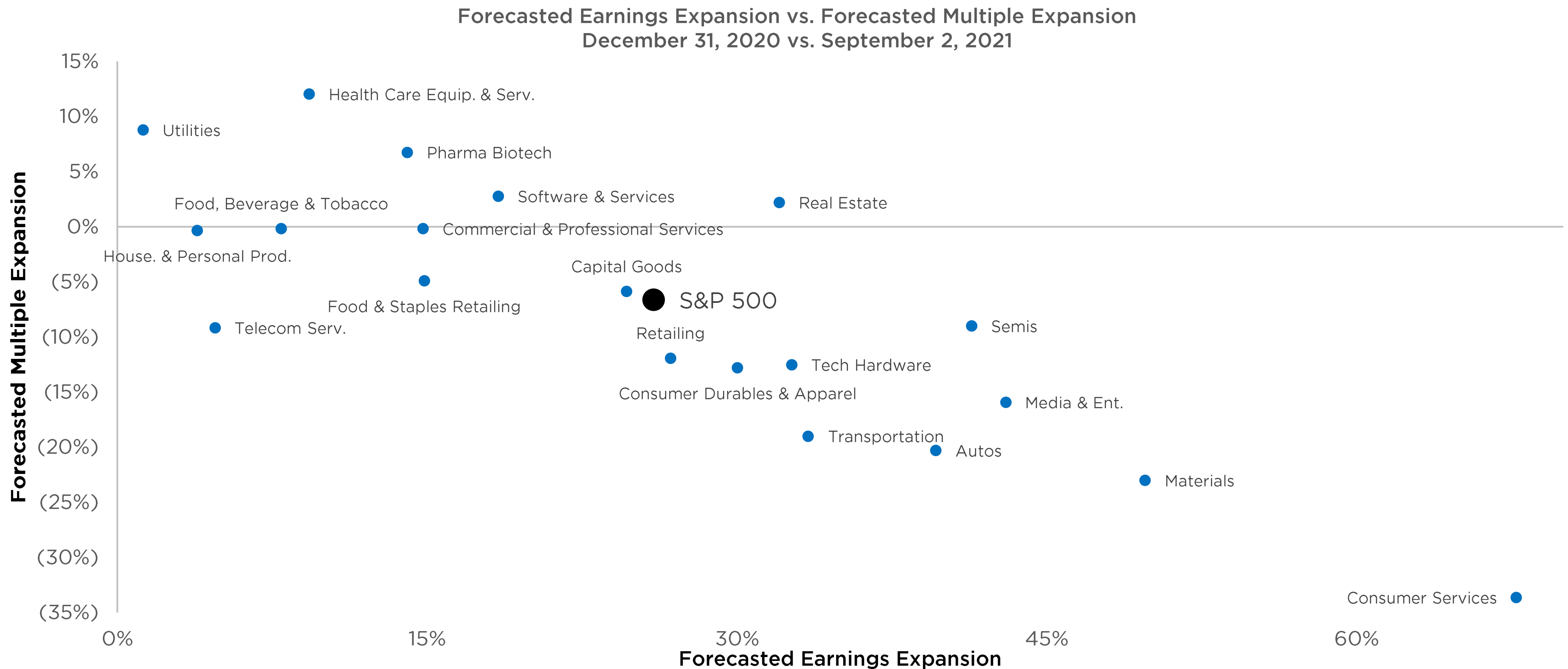
EARNINGS EXPANSION AND MULTIPLE CONTRACTION ARE COMMON

Only a five industries have both upward earnings revisions and higher multiples this year. On a 12-month forward basis, we have seen modest multiple contraction YTD overall, and massive multiple contraction in energy, materials, and consumer services where the market thinks earnings strength is not sustainable or where the strength of the rebound seems structurally jeopardized. (The energy sector earnings expansion and multiple contraction are so extreme that they are literally “off the chart”). Consumer services also lost money and are starting to recover



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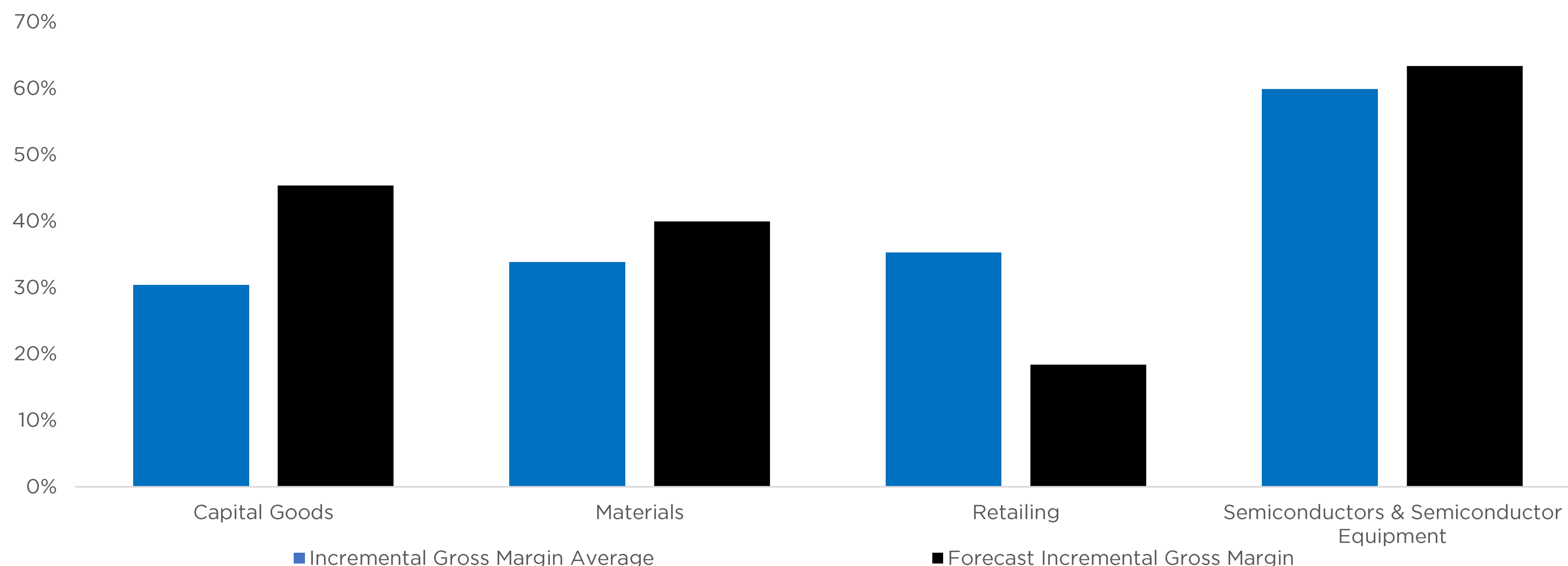
INCREMENTAL GROSS MARGIN EXPECTATIONS VS. HISTORY

Cyclical industries are in part defined by having high fixed costs, causing cyclical earnings when revenues inflect. We think it is extremely important for investors to assess the incremental margins of the stocks in which they are investing. Analysts should have some knowledge about the fixed and variable costs of a business, and whether the incremental margin expectations embedded in the consensus outlook are achievable. We measure the median stocks expectations for the next year vs. the incremental margins the company has on average achieved previously, as a proxy for estimate achievability. Capital goods, semiconductors, and materials are expecting more incremental margin expansion than "normal" and retailers far lower – which potentially bodes well for relative estimate achievability for retailers



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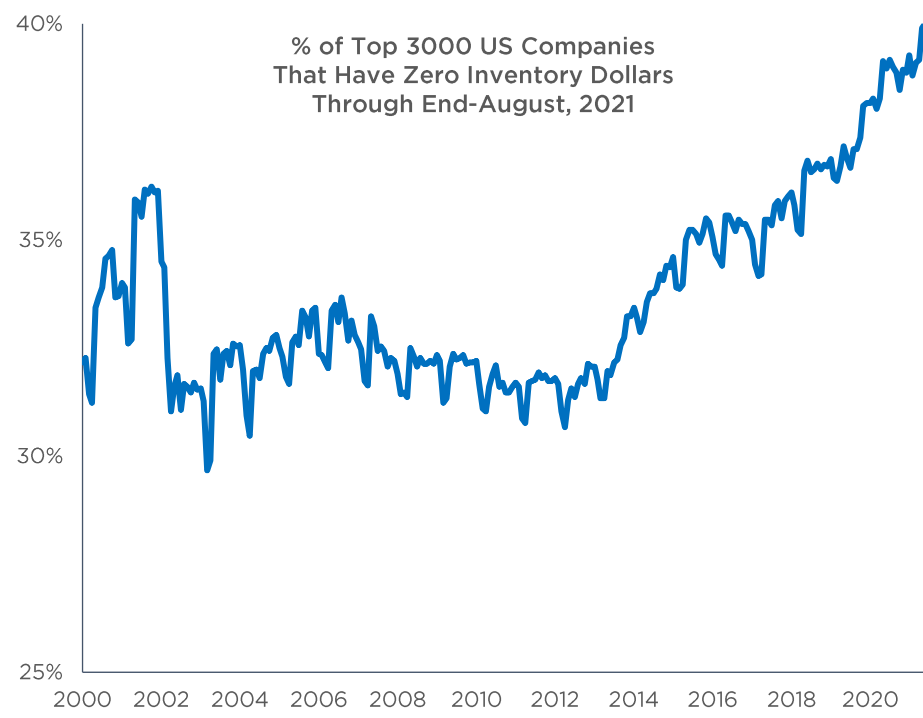
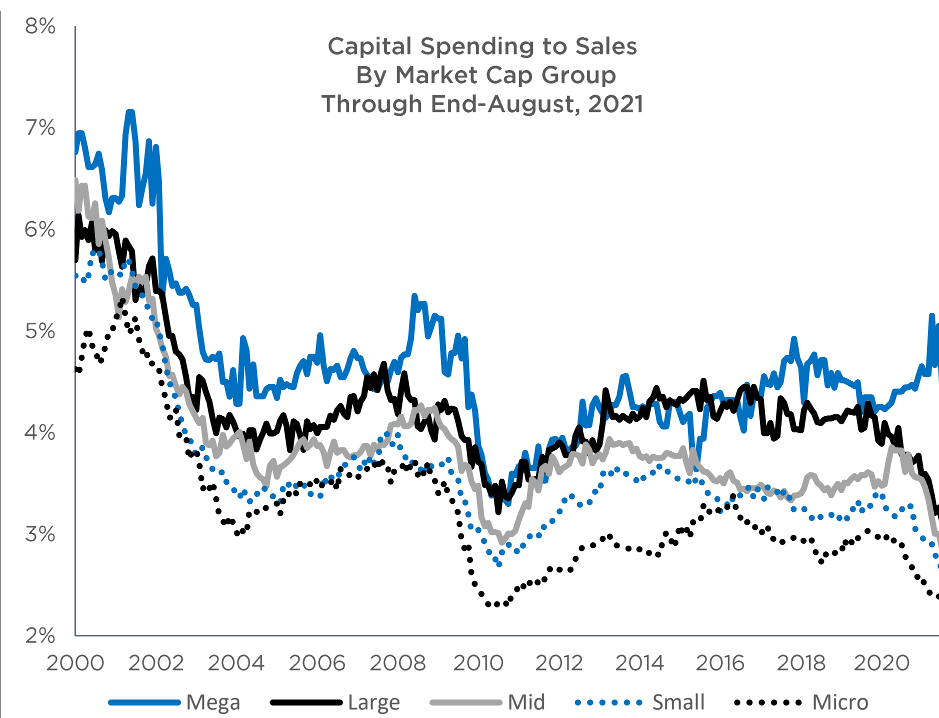
INVENTORY AND CAPITAL SPENDING ARE NOT BURDENS TO PROFITS

Overall inventory is less of a risk than it was in the past, because now approximately 40% of the top 3000 US equities do not even have inventory as part of their business model. That is roughly 300 more stocks than 20 years ago. Moreover, we are still more likely to hear about shortages (semiconductor supply chain) than excesses in many area of manufacturing today. Therefore, an inventory burn off or backlog cancellation seems highly unlikely to impede margin expectations for the coming couple of quarters. Restocking could drive higher factory utilization and margins for manufacturers. Excessive capital spending can also be bad. However, we generally have not seen any increases in capital intensity (right chart), so there is limited fear of over-producing consumption in the near-to-medium term. In the end, management hubris that caused cycle tops previously seems less likely when inventory and capital spending are under control





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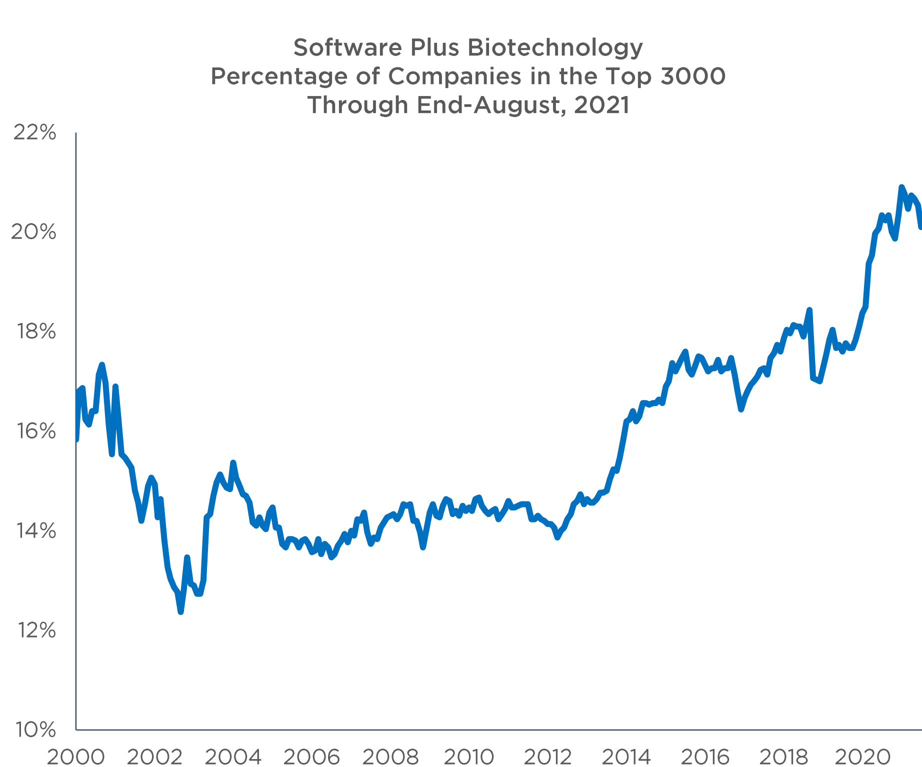
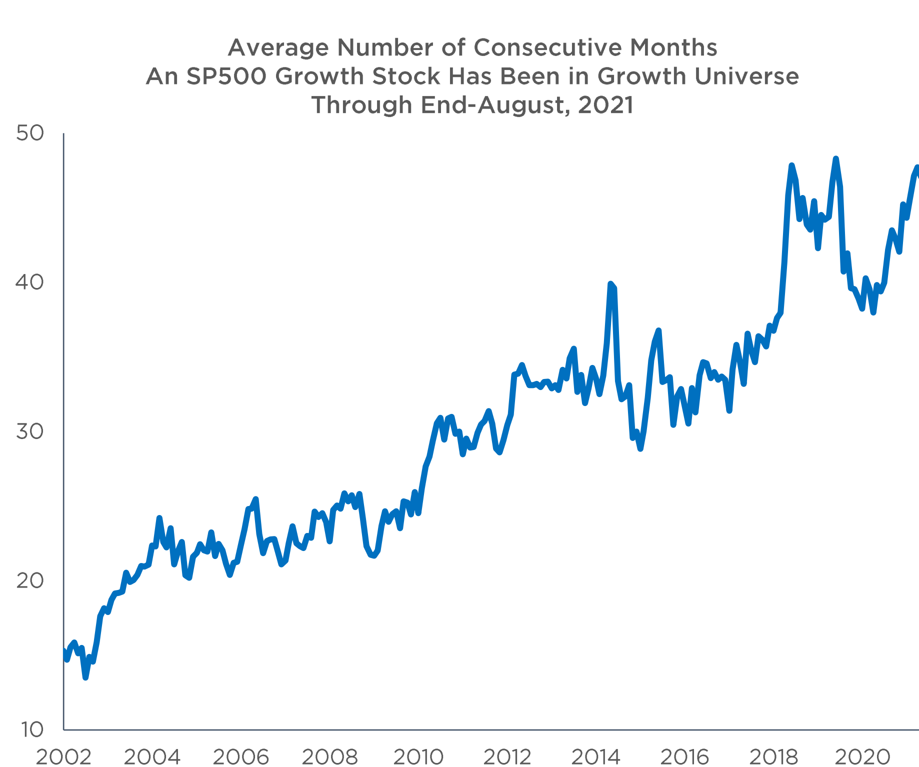
IS VALUATION DEFENSIBLE? CONSTITUENTS HAVE SHIFTED

Roughly twenty percent, or 600 of the biggest 3000 public US equities are currently in the Software & Services or Pharmaceuticals, Biotechnology, and Life Sciences industries. That is nearly twice the number we had 20 years ago! Investors are buying long-dated potential growth, not current profitability (left chart). We think that the elevated market valuation is in part sensible because these faster-growing businesses are maintaining their growth status for close to the longest amount of time ever (right chart) with the average number of consecutive months a growth stock in the SP500 has been able to grow near a record level of 48 months straight, up from just under two years in 2007





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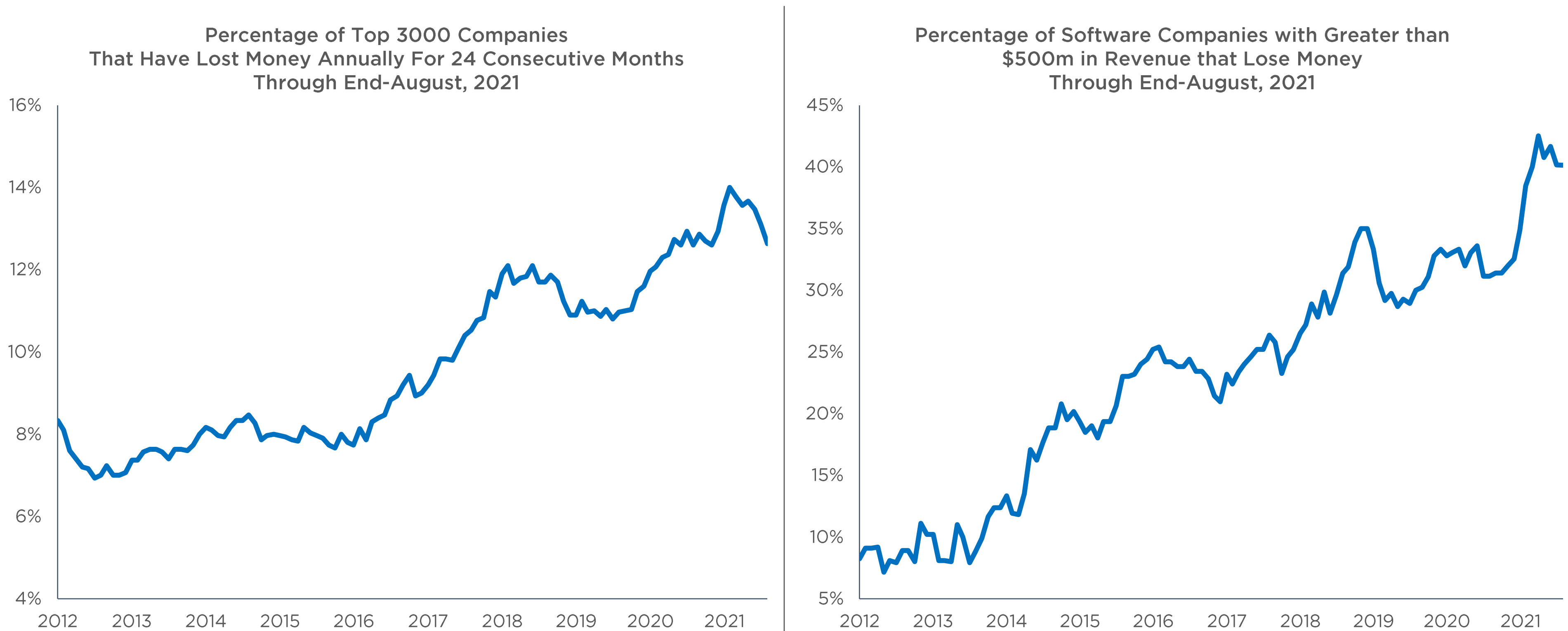
CURRENT PROFITS DO NOT MATTER FOR GROWTH INDUSTRIES

Investors in hyper growth stocks do not seem to care that much about current profitability, because more than 13% of the largest 3000 companies by market capitalization have lost money on an annual basis every quarter for the past two years (left chart). In industries like software, over 40% of the companies that have more than $500 million in annual trailing revenue still lose money (right chart). Investors clearly are not concerned focused on current profitability and will pay in an increasingly anticipatory fashion for growth if they believe it will be sustained or recurring for longer in the future



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WHAT IS THE CYCLICALS PLAYBOOK NOW?

- **We have just seen historic upward revisions for cyclicals:** We looked at seven classic cyclical industries, autos & components, capital goods, homebuilders, energy, materials, semiconductors and transports. All cyclicals have just received all-time high six-month earnings revisions, except autos (96th percentile) and energy (97th). Broadly, relative cyclical revisions have not been stronger in over 20 years. Moreover, profitability has reached all-time highs or is well-above average in all cyclical industries (excluding energy), a potential sign of a peak. China is causing a demand scare through restrictions, and supply in some cases is starting to come on-line
- **What happens next?** Some investors have suggested that selling cyclicals after strong upward revisions and peak profitability is prudent, as COVID clearly caused consumption to exceed production in many industries. We created a framework evaluating profitability, stock performance, and valuation to discriminate between cyclical industries following strong upward revisions
- **Our cyclicals framework:** Using forecasted net margin, trailing 6-month price momentum, and changes in relative price-to-sales, we developed buy and sell signals for the cyclicals and offer long / short ideas

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CYCLICALS – HUGE REVISIONS AND HIGH PROFITABILITY

We looked at seven cyclical industries, autos & components, capital goods, homebuilders, energy, materials, semiconductors & semiconductor capital equipment and transports. Given the powerful economic recovery and strong upward earnings revisions we have seen across the stock market, we thought it would be useful to contextualize the magnitude of the last six months of analyst earnings revisions. All cyclicals have just received near all-time high six-month earnings revisions. Relative cyclical revisions broadly have not been stronger in over 20 years. Net margins have reached peak levels for many cyclical industries as well, (with energy a notable exception) sparking a debate about over-earning

Percentiles of FWD EPS Revisions
As of End-August, 2021

Industry Group	Percentile of 6m FWD EPS Revisions	Percentile of Forecast Net Margins
Automobiles & Components	97.6%	69.5%
Capital Goods	99.6%	100.0%
Homebuilders	97.6%	98.4%
Energy	96.9%	45.8%
Materials	98.0%	100.0%
Semiconductors & Semiconductor Equipment	99.5%	100.0%
Transportation	100.0%	80.0%

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THE TRI-VARIATE FRAMEWORK THAT FOLLOWS UPWARD REVISIONS

We analyzed forecasted net margin revisions (profitability), how much the stocks are up already (6-month momentum), and changes in valuation (price-to-sales) to see if these signals differentiate cyclicals following large upward earnings revisions (left chart). Stocks that screen as long / short ideas are shown on the right side

6m Forward Performance of Cyclicals When 6m EPS Revisions are Highest As of End-August, 2021

Group	Forecasted Net Margin Revisions	Trailing 6m Momentum	Change in Price to Sales
Automobiles & Components	Not in Bottom Tercile	Not in Bottom Tercile	More Expensive
Capital Goods	Top Tercile	Bottom Tercile	Less Expensive
Homebuilders	Not in Bottom Tercile	Bottom Tercile	Less Expensive
Energy	Top Tercile	Top Tercile	More Expensive
Materials	Top Tercile	Not in Bottom Tercile	Not Less Expensive
Semiconductors & Semiconductor Equipment	Middle Tercile	Top Tercile	Not More Expensive
Transportation	Not Middle Tercile	Not Middle Tercile	Not Middle Tercile

Prospective Cyclicals Longs and Shorts August 31, 2021

Long

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
BA	The Boeing Company	Capital Goods	128.66
AMAT	Applied Materials, Inc.	Semiconductors & Semiconductor Equipment	122.01
CAT	Caterpillar Inc.	Capital Goods	115.45
F	Ford Motor Company	Automobiles & Components	52.05
NUE	Nucor Corporation	Materials	34.53
DAL	Delta Air Lines, Inc.	Transportation	25.79

Short

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
CVX	Chevron Corporation	Energy	187.14
NSC	Norfolk Southern Corporation	Transportation	62.62
NOC	Northrop Grumman Corporation	Capital Goods	58.87
ROK	Rockwell Automation, Inc.	Capital Goods	37.76
PXD	Pioneer Natural Resources Company	Energy	36.51
FAST	Fastenal Company	Capital Goods	32.10

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SUMMARY OF VIEWS ON GROWTH STOCKS

- There is a non-linear relationship between revenue growth and relative price-to-sales multiples – the “Double Whammy” is identifying stocks that will not only grow faster(slower) but also begin to command a higher (lower) multiple – please contact us for stock ideas
- We looked at industry-level revenue growth and relative to SP500 price-to-forward sales and compared the forecasted growth and multiples to historical averages. Every industry is forecasted to grow faster than its long-term average next year. Energy is expected to grow nearly 25% faster than its average over the next year, but its sales multiple is nearly half its long-term average, as oil prices recover. Software is expected to grow 4% faster than average but is nearly 32% more relatively expensive than average
- We evaluated 11 prior growth-stock sell-offs since 2008 and identified that the key signals to focus on following every sell-off are largely similar – positive free cash flow and gross margin expansion. These typically work better than very fast growing, high margin, and low free cash flow stocks, which were more the type of growth stock that worked in 2020

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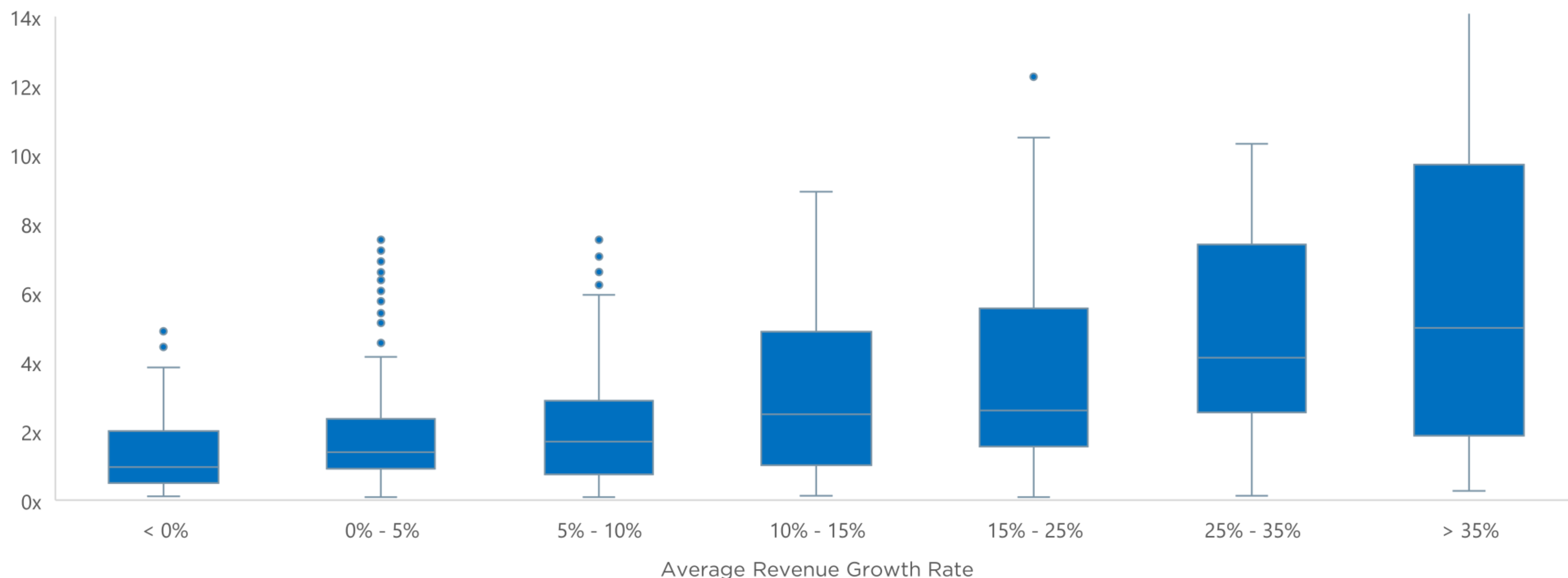
FASTER GROWTH MEANS DISPROPORTIONATELY HIGHER MULTIPLES

We analyzed the growth rates and relative to SP500 price-to-sales multiples for US stocks (excluding small / micro caps and value stocks). Growth / neither stocks with revenue growth below 0% have a relative price-to-sales multiple close to the market level, but as annual revenue growth exceeds 10%, the relative multiple begins to incrementally expand. Companies that grow 25-35% annual trade at nearly 4x the market multiple on sales on average, vs. 2x on average at 5-10% annual growth. **Higher growth means disproportionately higher multiples!**



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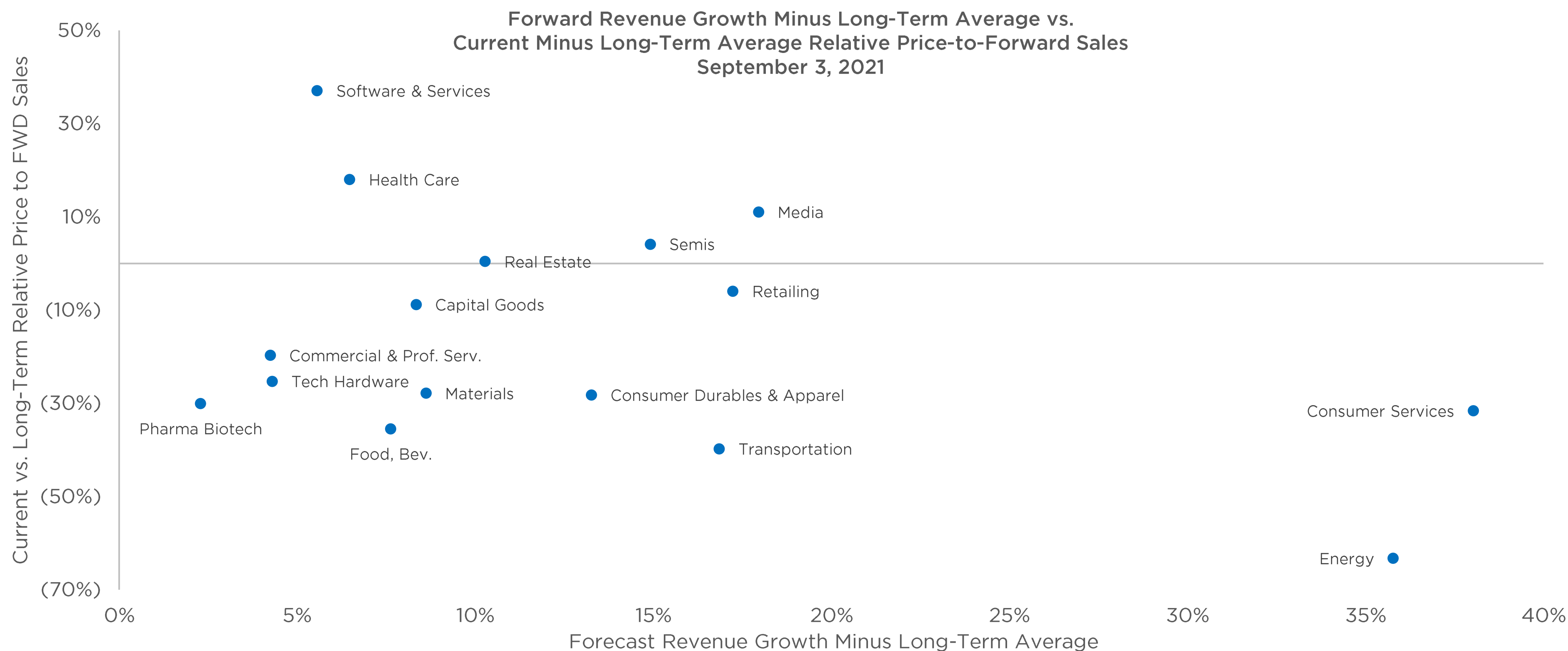
INDUSTRY GROWTH RATES AND MULTIPLES SHOW DISLOCATIONS

We looked at industry-level revenue growth and relative to SP500 price-to-forward sales and compared the forecasted growth and multiples to historical averages. Every industry is forecasted to grow faster than its long-term average next year. Energy is expected to grow nearly 36% faster than its average over the next year, but its sales multiple is less than half its long-term average. Software is expected to grow ~6% faster than average but is 37% more relatively expensive than average



Note: Our analysis excludes all "value" stocks, financials, and all small and micro cap. stocks

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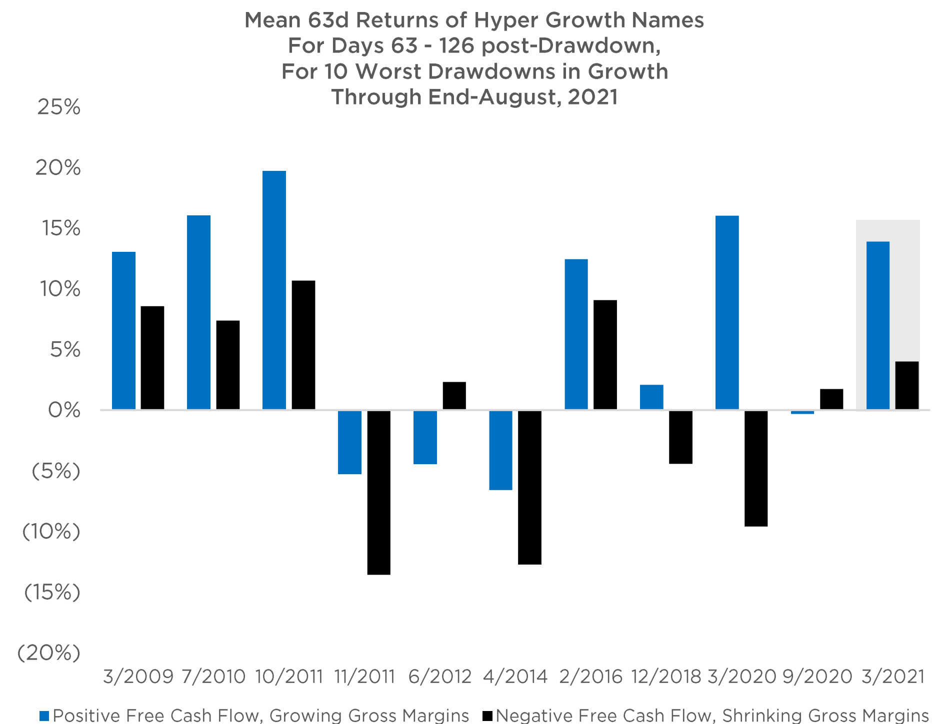
AFTER THE GROWTH SELL OFF USE MARGINS AND POSITIVE FCF

The sharp growth stock sell-off starting in mid-February may be over, but clearly is still the source of apprehension, particularly given the starting valuation levels prior to the sell-off were the most extreme since the financial crisis. On an absolute basis it was only the 11th worst drawdown (left chart), but relative to the SP500 the drawdown lasted until May 13th and was the WORST index-relative growth-stock drawdown since the financial crisis. So far this year those stocks with positive free cash flow and growing margins have beat the opposite by nearly 10%, showing the historical trend continued (right chart)

Date			Drawdown			
Starting	Ending	Days of Drawdown	Absolute	Relative	Prior 12-Month Momentum	Growth : Market Price-to-Sales Multiple
2/20/2020	3/23/2020	23	(30.4%)	3.4%	(8.1%)	1.7x
10/14/2008	3/9/2009	100	(30.2%)	1.5%	(30.2%)	1.7x
10/2/2018	12/24/2018	58	(24.2%)	(5.0%)	(0.5%)	1.8x
7/25/2011	10/3/2011	50	(21.4%)	(3.5%)	2.5%	2.1x
7/21/2015	2/8/2016	140	(17.9%)	(6.0%)	(2.7%)	1.7x
4/26/2010	7/2/2010	49	(17.3%)	(1.7%)	20.7%	1.7x
4/4/2012	6/1/2012	41	(12.4%)	(3.2%)	(3.8%)	1.9x
9/3/2020	9/23/2020	14	(11.5%)	(1.9%)	39.1%	2.3x
3/6/2014	4/11/2014	27	(11.0%)	(8.1%)	21.7%	1.8x
11/9/2011	11/25/2011	12	(10.6%)	(1.5%)	(5.2%)	2.1x
2/16/2021	3/8/2021	15	(10.4%)	(2.8%)	35.5%	2.1x



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LONG / SHORT GROWTH STOCK IDEAS

Long (short) ideas are poised to grow faster (slower) and get higher (lower) multiples

Buy Cheap Relative to Bucket or Moving to Higher Revenue Bucket, Short Expensive Relative to Bucket or Moving to Lower Revenue Bucket
End-August, 2021

Long				Short			
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)	Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
ANTM	Anthem, Inc.	Health Care Equipment & Services	91.46	MA	Mastercard Incorporated	Software & Services	341.65
DELL	Dell Technologies Inc.	Technology Hardware & Equipment	74.97	CRM	salesforce.com, inc.	Software & Services	259.70
HUM	Humana Inc.	Health Care Equipment & Services	52.10	AMT	American Tower Corporation (REIT)	Real Estate	132.98
MAR	Marriott International, Inc.	Consumer Services	44.01	WDAY	Workday, Inc.	Software & Services	67.74
DHI	D.R. Horton, Inc.	Consumer Durables & Apparel	34.25	PSA	Public Storage	Real Estate	56.71
W	Wayfair Inc.	Retailing	29.17	DG	Dollar General Corporation	Retailing	52.01
VLO	Valero Energy Corporation	Energy	27.11	GPN	Global Payments Inc.	Software & Services	47.78
CCL	Carnival Corporation & plc	Consumer Services	26.85	ZS	Zscaler, Inc.	Software & Services	38.13
DAL	Delta Air Lines, Inc.	Transportation	25.79	MTCH	Match Group, Inc.	Media & Entertainment	38.04
Z	Zillow Group, Inc.	Media & Entertainment	24.27	WELL	Welltower Inc.	Real Estate	36.99
LNG	Cheniere Energy, Inc.	Energy	22.18	ANSS	ANSYS, Inc.	Software & Services	31.88
CZR	Caesars Entertainment, Inc.	Consumer Services	21.69	PAYC	Paycom Software, Inc.	Software & Services	28.32
WMG	Warner Music Group Corp.	Media & Entertainment	19.55	VRSN	VeriSign, Inc.	Software & Services	24.19
J	Jacobs Engineering Group Inc.	Commercial & Professional Services	17.59	IR	Ingersoll Rand Inc.	Capital Goods	22.28
MOH	Molina Healthcare, Inc.	Health Care Equipment & Services	15.70	CLX	The Clorox Company	Household & Personal Products	20.64
CAH	Cardinal Health, Inc.	Health Care Equipment & Services	15.25	PODD	Insulet Corporation	Health Care Equipment & Services	20.51
CLF	Cleveland-Cliffs Inc.	Materials	11.73	CDAY	Ceridian HCM Holding Inc.	Software & Services	16.84

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THIS CYCLE MIRRORS THE 2009 RECOVERY IN SEVERAL WAYS

The recovery we have seen since the March 2020 market lows has mirrored the March 2009 recovery in many ways including:

1. **Junk vs. quality** – The way the cycles are most similar is probably the strong outperformance of "junk" stocks in the initial phases of the recovery
2. **Profitability degradation** – The stock performance of companies with both little or high margin degradation have tracked a similar path
3. **Small / micro-cap valuation and profitability** – price-to-forward earnings ratios expanded as profits contracted in 2009 and 2020 for small / micro-cap stocks the same way
4. **Short interest failed** – heavily shorted stocks massively failed as stocks discounting some probability of bankruptcy recovered strongly following government intervention – obviously this has recently been fueled by retail armies and meme stocks, but there was also a failure of efficacy in 2009

We show the first two points on the next slide:

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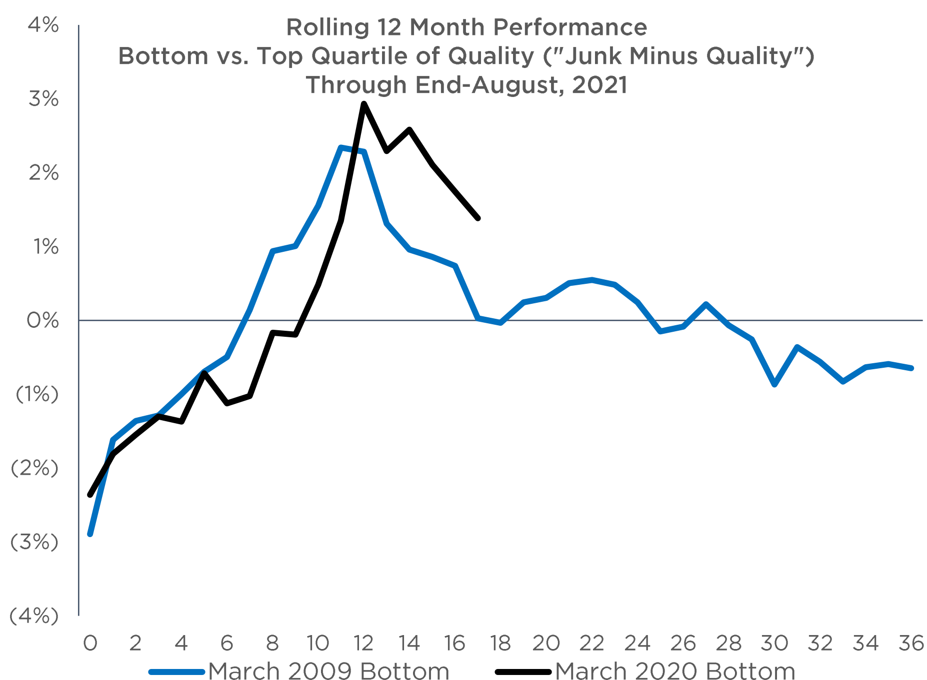
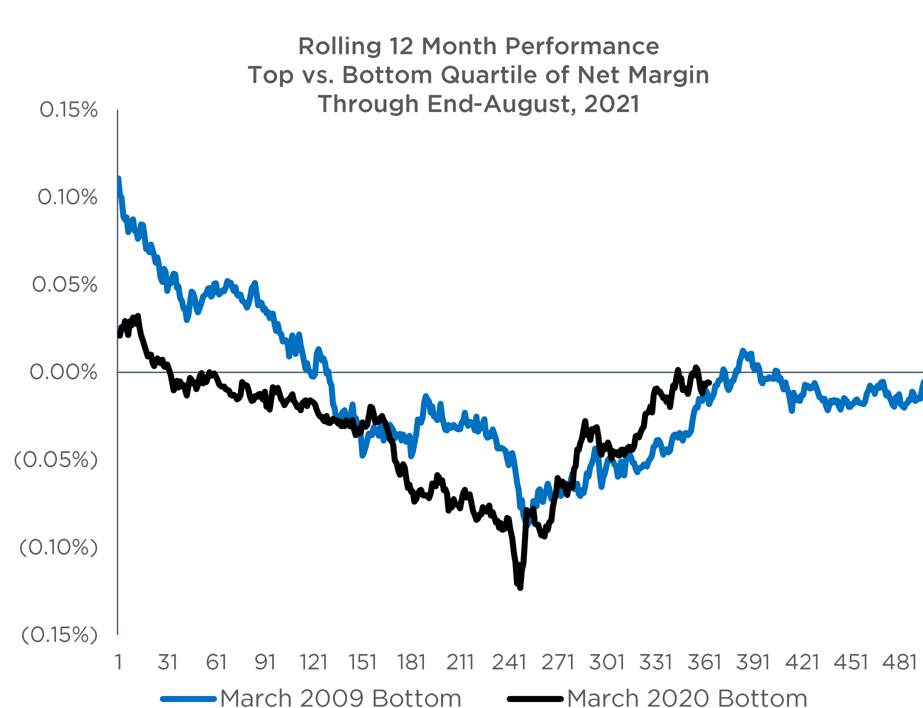
TODAY'S REGIME RHYMES THE AFTERMATH OF THE FINANCIAL CRISIS

In many ways the recovery after the COVID-19 crisis mirrored what we saw following the financial crisis. Both crises were followed by enormous government intervention, both with monetary and fiscal policy, and this is in part why we see parallels between now and the period from mid 2009 through 2011. One clear similarity is the rally we saw in junk stocks following both recessions (left chart). We have a model that systematically labels each stock as high, moderate, low quality or junk and we track the performance of junk relative to quality from the market bottom. Overall relative performance to date has been similar. We would be surprised to see junk re-emerge as a sustained leader going forward. We analyzed the trailing 12-month stock performance of companies that had high vs. low profit degradation and the performance is tracking very similarly (right chart). The relative performance of the top quartile of stocks with net margins to the bottom quartile on margins shows that lower margin stocks outperformed through the first year, and then began to underperform – as we expected - with higher margin companies sustaining their outperformance that started about a year (252 trading days) after the COVID crisis





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WHY ALPHA HAS BEEN TOUGH FOR MANY THIS YEAR

We have traditionally used valuation dispersion, company-specific risk, and pairwise correlation as quantitative metrics to suggest whether the environment is reasonable for alpha generation. In summary, the environment has looked more attractive than average on the surface. With the market up just over 20% YTD, and the hedge fund industry in the US running at 60% net long, many managers expect to be up in the mid-to-high teens when hedged and the low 20s long only YTD. Yet, few managers have been performing at that level. Hence, we analyzed the data with more granularity and found five meaningful reasons why alpha generation has been more challenging in 2021

1. **Conflicting signals at the industry level:** We analyzed pairwise correlation, company-specific risk and dispersion of price-to-forward earnings for each of the 24 industry GICS. We found that while the aggregate looks directionally above average for alpha generation, many of the industries show conflicting signals. Only five of the 24 GIC industries in the market look above average on all three metrics, meaning there are competing signals at the industry level to the overall market view. In particular, we think looking at transports here is interesting
2. **Far fewer good longs than good shorts**: This year there have been the fewest number of longs beating the market by 20% or more in 15 years. After several years of long alpha being substantially easier than short alpha, this year the percentage of shorts lagging the market by 20% or more has been far greater than the number of longs beating by 20% or more. Following the "meme stock" short-selling difficulties at the beginning of the year, many managers gave up on their single stock short processes, right at a time where more shorts lagged than longs beat

WHY ALPHA HAS BEEN TOUGH FOR MANY THIS YEAR

3. **High conviction hedge fund holdings are having a bad stretch**: After strong performance through much of 2020, the high conviction (3% or more of long AUM) long ideas of 60 hedge fund managers have lagged the market. So not only have here been fewer long ideas, but the fundamental managers high conviction names have had their worst performance over the last 6 months
4. **Growth now more "macro" than value**: The names with the highest company-specific risk are now more likely to be value than growth, a sharp reversal from the environment in 2020. The dispersion on price-to-forward earnings of the most idiosyncratic names has also sharply corrected, now only modestly elevated and back to pre-COVID levels, presenting a relative challenge to bottom-up stock pickers. Most bottom-up stock pickers rightfully gravitate toward more idiosyncratic names, and this has not been the best area to operate in this year
5. **Factor reversals and volatility in signal efficacy:** The volatility of signal efficacy and the amount of a signal's performance explained by one short period instead of a sustained period are both at 10-year highs. This means it is very challenging to use the same approach for investing, as each period where, for example, buying cheap on price-to-cash flow works, is followed by a sharp reversal. The May to June transition was particularly challenging, with nearly all the top 20 worst performing signals in May performing in the top 20% in June

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CONCLUSIONS

1. **The potentially optimistic message?** Historically, we saw better alpha generation in periods 6-12 months after challenging environments like this – particularly with high alpha long opportunity set - potentially a positive harbinger for alpha generation late this year and in 2022
2. **Look more at value**: The value universe is now more idiosyncratic than the growth universe, so bottom-up stock pickers who have been over indexed to growth need to push themselves to entertain value candidate ideas. This is not making a value-over-growth call, rather a call that alpha generation might be better in the value universe than the growth universe for the next several months
3. **Risk management**: When quantitative signals are this volatile in their efficacy, our judgment is the important for analytically rigorous risk management grows
   - Run with a more diversified than average portfolios (more names / smaller positions than normal)
   - Trade more than normal - managers whose allocators can't handle market-induced (not manager induced) volatility need to trade more often than usual
   - Employ more rigorous risk management – make sure your long / shorts are balanced on growth / value or that you are aware of your signal / factor bets to avoid "Texas Hedge" periods where a huge reversal in efficacy of signals can hurt your portfolio

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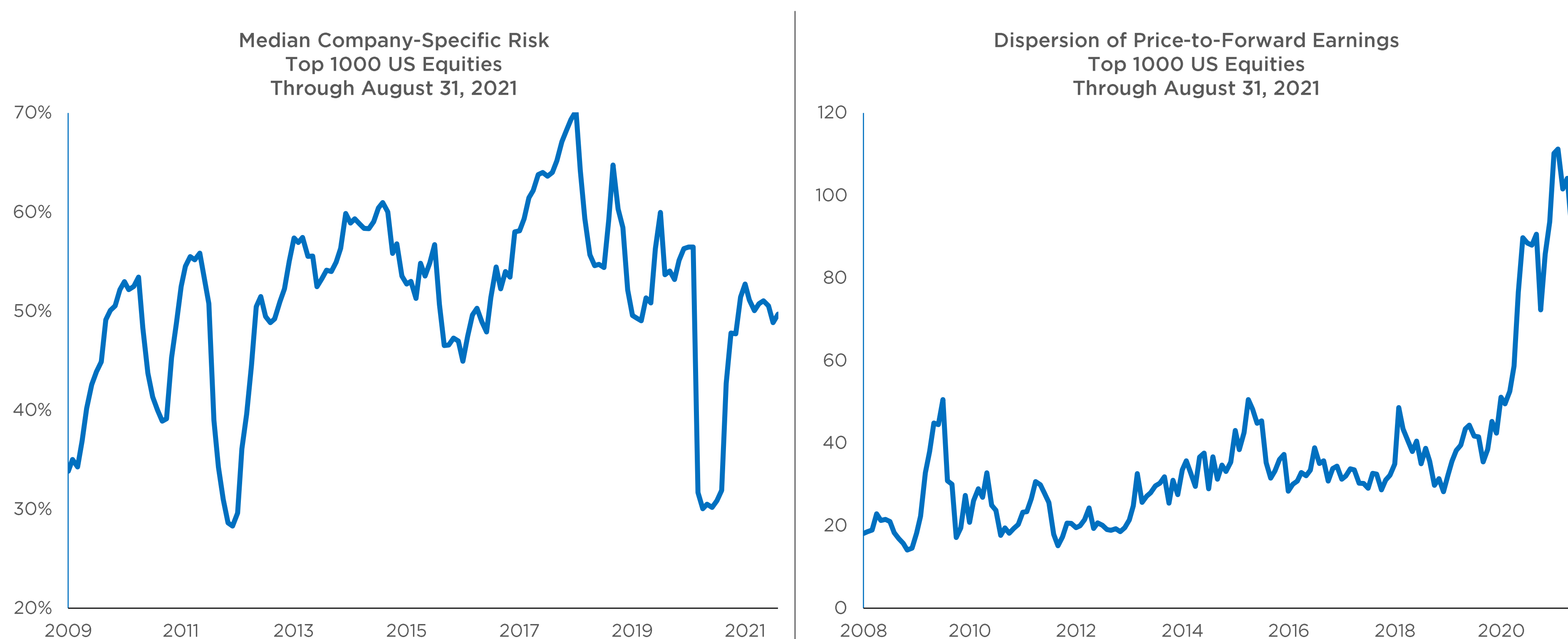
COMPANY-SPECIFIC RISK HAS PAUSED, DISPERSION REMAINS WIDE

Two of the gauges we use to comment on the market environment are company-specific risk (left) and dispersion on valuation (right). Company-specific risk rose markedly off the bottom as the crisis abated but has more recently modestly declined for the median stock. It is currently in the 33rd percentile vs. history. Dispersion on price-to-forward earnings remains quite high, signaling some overall opportunity, in the 94th percentile vs. history



Note: The median's stock return can be explained by our proprietary seven factor model – equity market beta, two size factors (mega/large vs mid and mid vs. small/micro), style (growth vs. value), substance (quality vs. junk), liquidity, and momentum. At the peak of the COVID market hysteria, nearly 70% of the average stocks' return could be explained by these macro signals. Today, it is less than 50%.

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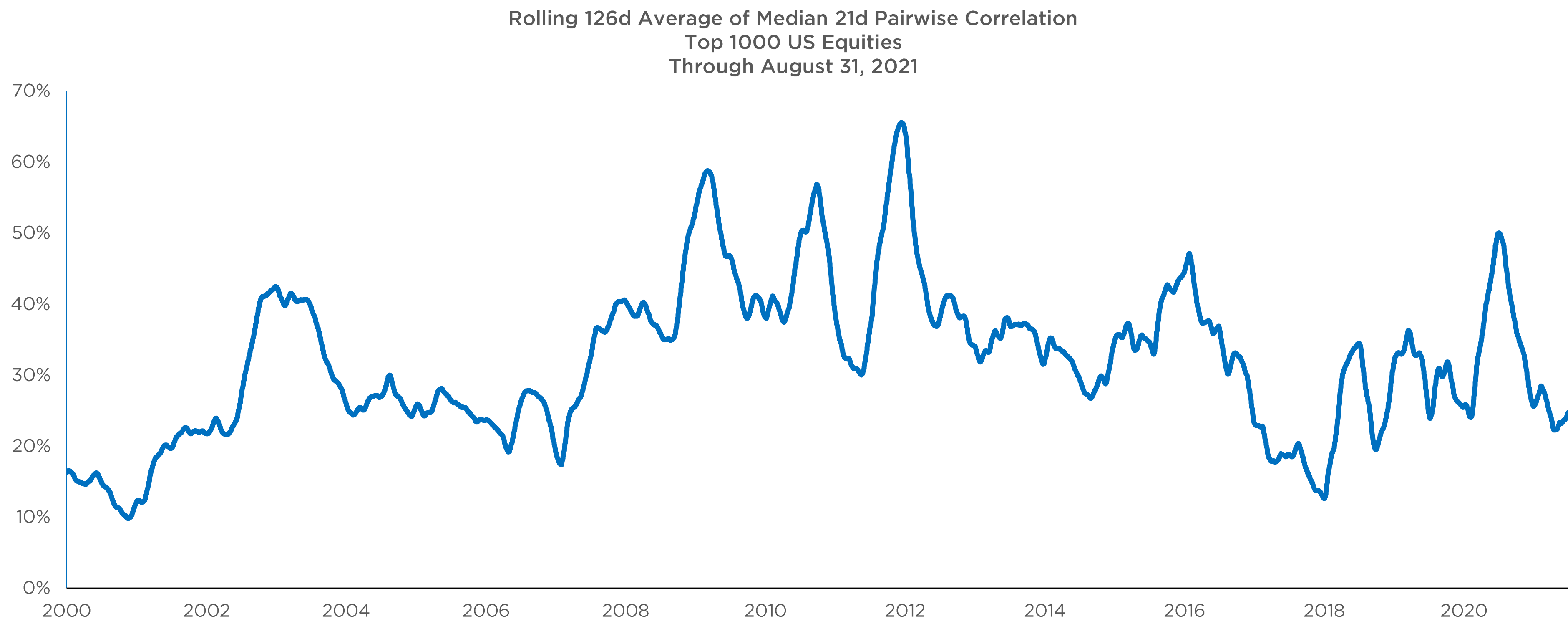
PAIRWISE CORRELATION IS BELOW AVERAGE

Another potential tailwind for stock selection is that the average pairwise correlation of stocks is below average. Building a risk-adjusted and alpha-generative portfolio is typically easier when correlations are low, and today the average is in the 32nd percentile vs. history



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POINT 1: CONFLICTING SIGNALS AT THE INDUSTRY LEVEL

Only 6 of the 24 industries are above average on each of the three signals, pairwise correlation (low is good), company-specific risk (high is good) and price-to-forward earnings dispersion (high is good)

Percentile Rank vs. History of the Industry Group (US Top 1000)
Through August 31, 2021

Industry Group	Median Pairwise Correlation	Company Specific Risk	Price-to-Forward Earnings Dispersion
Automobiles & Components	55.0%	34.1%	88.8%
Banks	96.4%	7.2%	59.9%
Capital Goods	64.7%	35.3%	88.8%
Commercial & Professional Services	43.3%	28.1%	81.8%
Consumer Durables & Apparel	77.3%	25.1%	56.7%
Consumer Services	81.6%	16.2%	98.4%
Diversified Financials	34.6%	35.3%	94.1%
Energy	88.6%	16.2%	17.1%
Food & Staples Retailing	60.9%	65.3%	69.0%
Food, Beverage & Tobacco	57.5%	34.1%	97.9%
Health Care Equipment & Services	26.7%	38.3%	92.5%
Household & Personal Products	9.3%	62.3%	100.0%
Insurance	77.4%	24.6%	63.1%
Materials	69.0%	38.9%	39.0%
Media	25.7%	40.7%	72.7%
Pharmaceuticals, Biotechnology & Life Sciences	19.6%	58.1%	79.1%
Real Estate	31.5%	70.7%	92.5%
Retailing	21.3%	31.7%	98.4%
Semiconductors & Semiconductor Equipment	89.9%	18.0%	74.9%
Software & Services	31.4%	38.9%	97.9%
Technology Hardware & Equipment	77.5%	35.3%	48.7%
Telecommunication Services	42.8%	26.9%	98.9%
Transportation	28.5%	63.5%	99.5%
Utilities	58.4%	78.4%	80.2%

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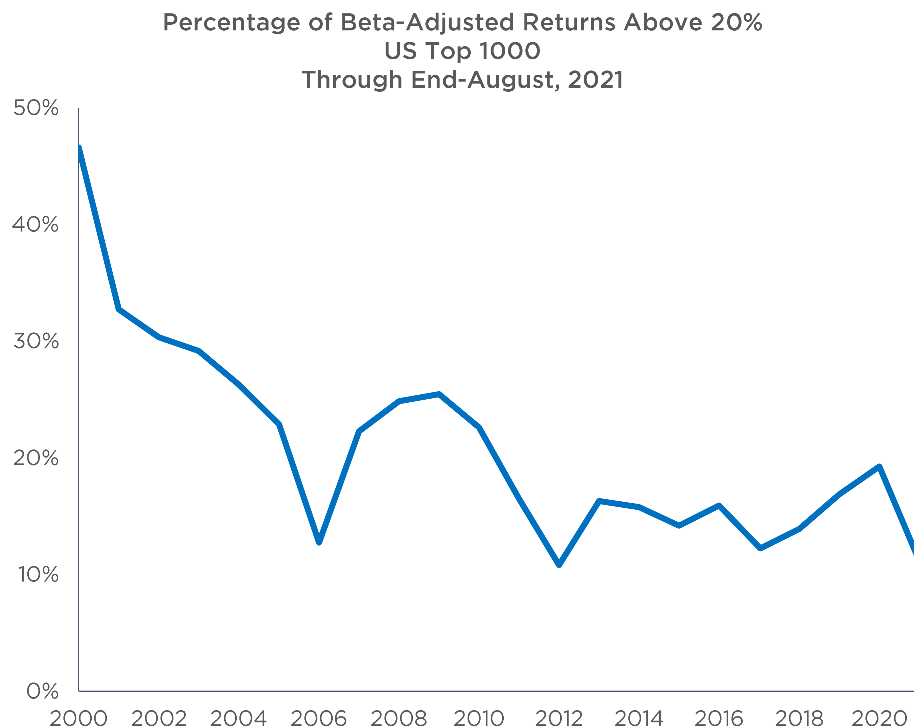
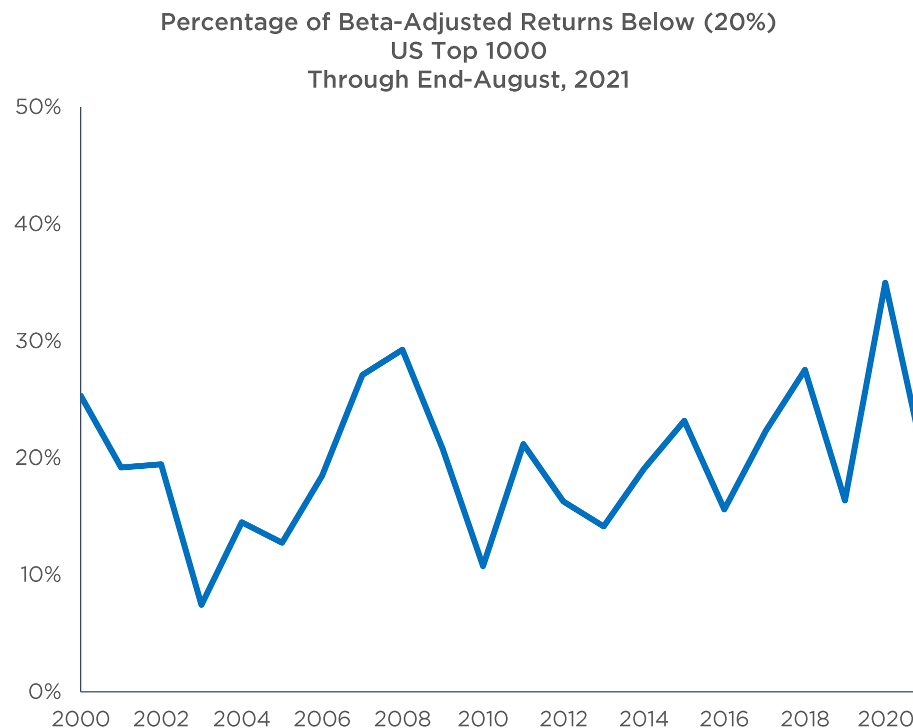
POINT 2: THERE ARE FEW GOOD LONG IDEAS

The number of stocks generating 20%+ alpha on the long side is at a multi-decade low (left exhibit). Only 11% of the top 1000 US equities by market cap. have beta-adjusted returns above 20% YTD, a 21-year low (if it holds until the end of the year). Only 7 of the 24 industry groups have average beta adjusted returns that are positive (Diversified Financials, Food & Staples Retailing, Real Estate, Energy, Banks, Consumer Durables & Apparel, Retailing). On the other hand, the number of names lagging by 20% or more YTD is above average (right exhibit)





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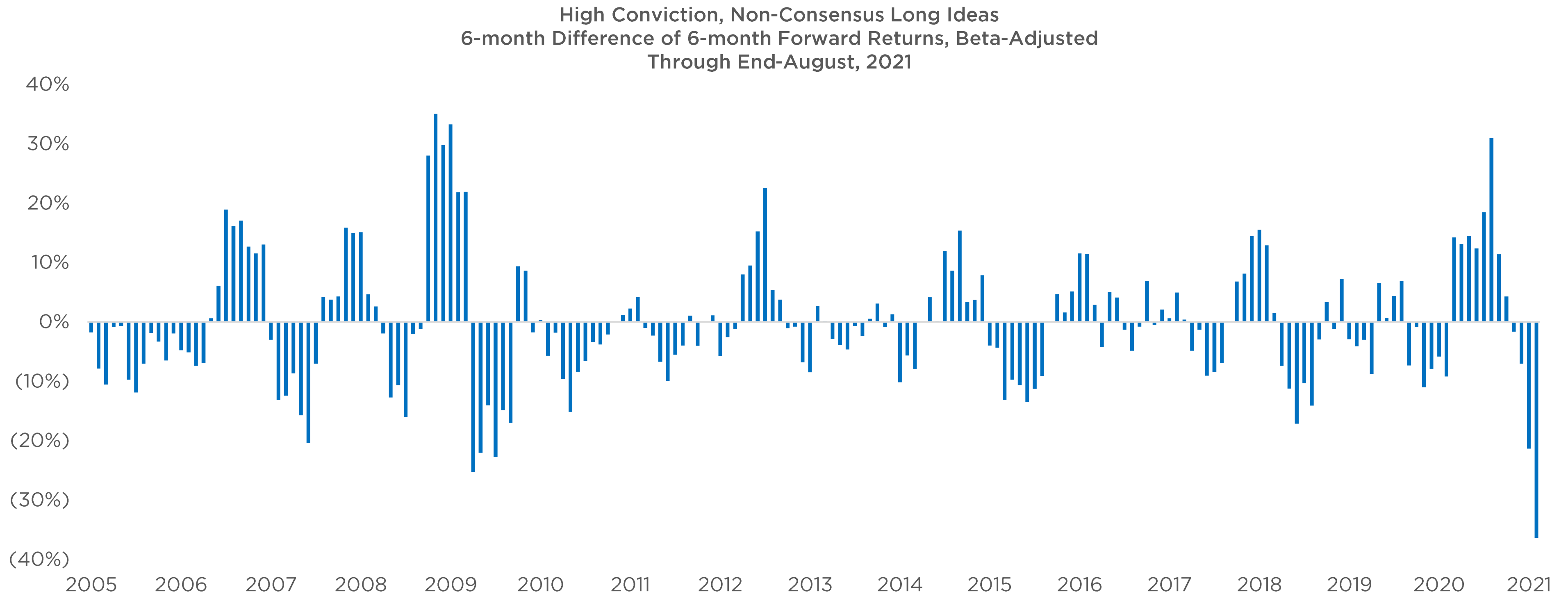
POINT 3: THE BIG AND NON-CONSENSUS LONGS HAVE FAILED

We analyze the high conviction (3% or more of their long AUM) holdings of 60 fundamental hedge fund managers who run between $1 and $15b that are not disproportionately owned by the rest of the asset managers. Since the fall of 2020, these hedge fund manager's high-conviction, non-consensus long ideas began degrading and have lagged the market since December. The difference between the most recent six-month beta-adjusted return – based on February 2021's ideas – and that of the return six months before that – based on August 2020's ideas – are the lowest of all six-month differences



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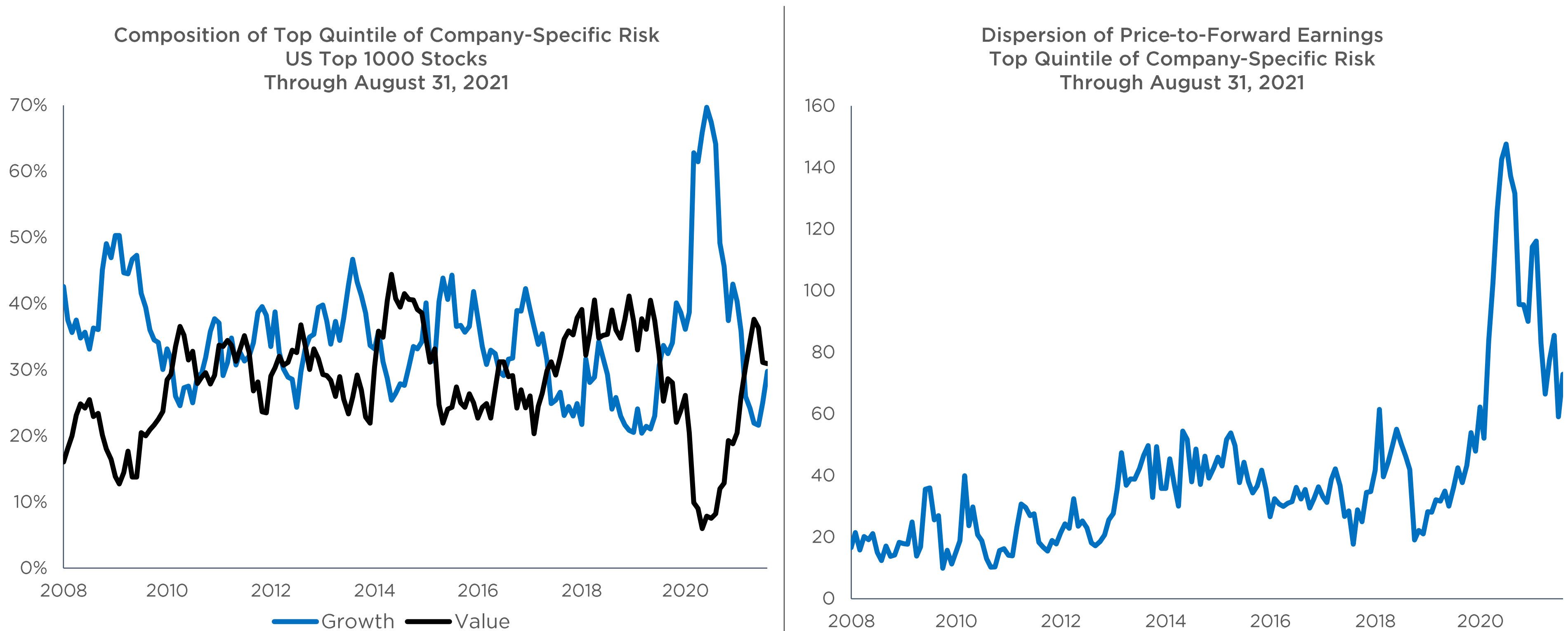
POINT 4: GROWTH IS TRENDING MORE "MACRO" THAN VALUE

The most idiosyncratic names are now more value than growth, a sharp reversal from the peak levels we saw for growth last year (left chart). Many bottom-up stock pickers have gravitated toward growth given its strong outperformance over the last decade, but this has become a more macro group than value this year. The most idiosyncratic names have seen a sharp reversal in the dispersion on price-to-forward earnings, back down to pre-COVID levels and only modestly elevated today, suggesting there is less potential dislocation in the most idiosyncratic names (right chart)



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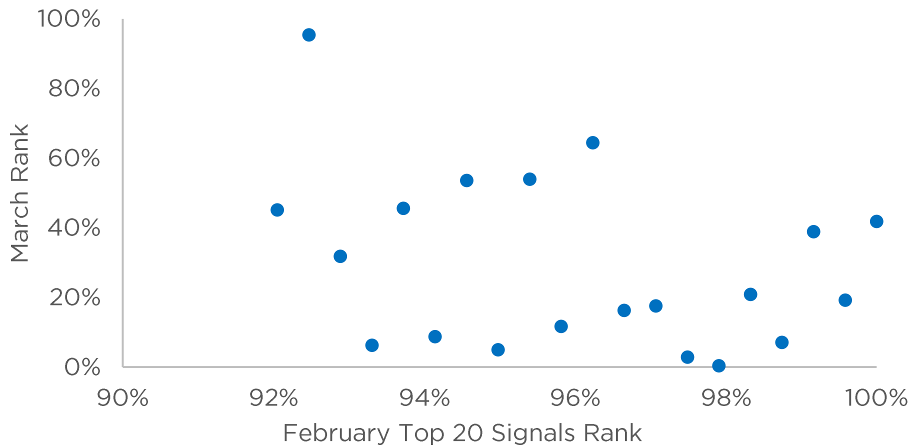
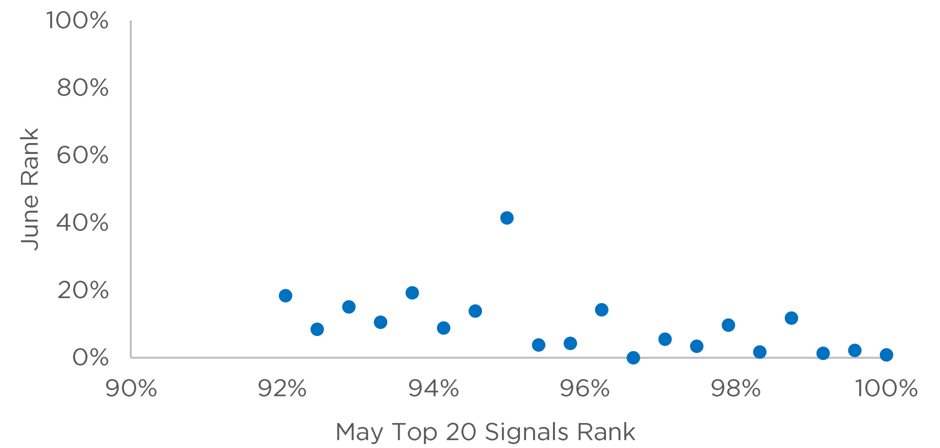
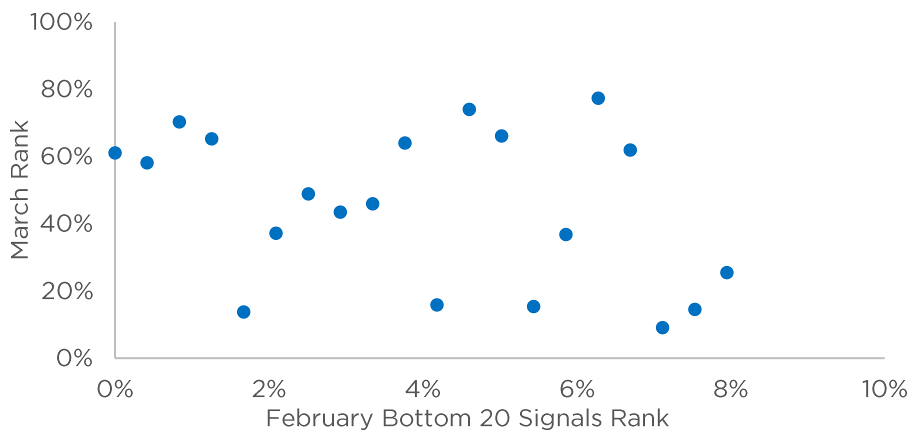
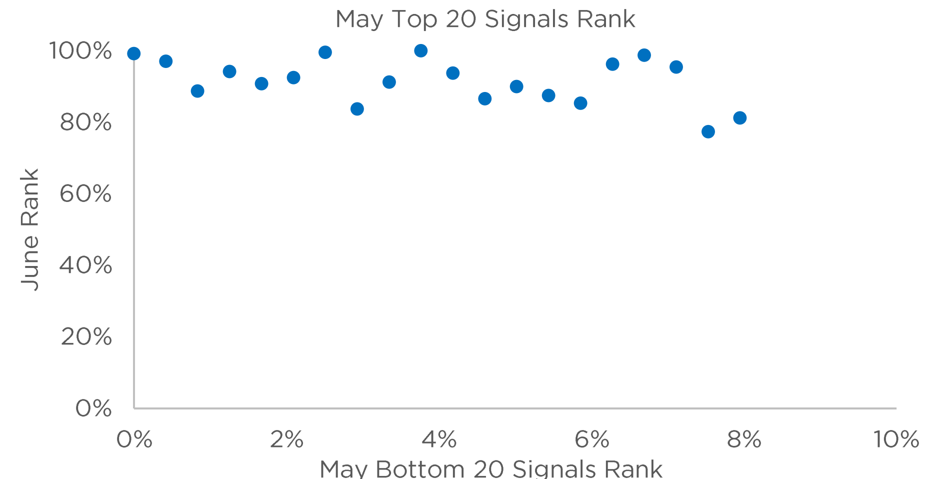
POINT 5: THE BEST SIGNALS ONE MONTH ARE THE WORST THE NEXT

To further demonstrate the volatility in efficacy we show the percentile rank of the top 20 most effective signals in February and their percentile rank in March (upper left). On the upper right, you can see the top 20 signals in May were consistently among the worst signals in June. The bottom 20 signals in February were mixed in March (bottom left). The worst signals in May (bottom right) were all incredibly efficacious in June and vice-versa (top right)









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HOW DO WE ASSESS WHERE ARE WE ARE TODAY?

- We created twelve proprietary indices using over 100 variables that systematically process "macro" data. The macro data have various frequencies, ranging from daily through monthly and are downloaded from Bloomberg, except for corporate profitability and company-specific risk data, which we compute. We smooth and transform the data to create twelve indices or gauges of where we are in the investing world today. Our proprietary gauges include:

1. Economic activity
2. Consumer activity
3. Corporate profitability
4. Financial conditions
5. Currency
6. The slope and level of the US Treasury yield curve
7. Industrial activity
8. China activity
9. European activity
10. Oil
11. Commodities
12. Company-specific risk

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ALL GOOD EXCEPT FINANCIAL CONDITIONS, CHINA, AND CURRENCY?

Many of our signals have multiple inputs (right side of below chart) and are designed to capture larger and longer-term trends, not shorter-term / smaller counter-trend movements. When we look at our 12 gauges (listed alphabetically below) most are generally increasing / improving. The 3-month curve is bull flattening while the 12-month one is bear steepening. Financial conditions are no longer loosening. China has rolled over

Current Regime for Each Macro Signal

Macro Signal	Current Regime	Examples of Components
China	None	Fiscal Expenditures, New Auto Registrations, Electricity Consumption, Exports, Consumer Confidence, Financial Conditions, Residential Property Sales, 10-Year Yield
Commodities	Increasing	Aluminum, Corn, Cotton, Copper, Lumber, Natural Gas, Soybeans, Sugar, Silver
Consumer Activity	Increasing	Credit Card Delinquency, Retail Sales, Consumer Confidence, Wage Growth, Unemployment
Corporate Profitability	Increasing	Operating Margin, 1-Year FWD Earnings Expectations, 2-Year FWD Earnings Expectations
Company-Specific Risk	Increasing (More Idiosyncratic, Less Macro)	The amount unexplained by our 7-factor model
Currency	None	AUD, CAD, CHF, DXY, EUR, GBP, INR, JPY, SEK
Economic Activity	Increasing	CEO Confidence, Inflation, Philly Fed Business Outlook, Small Business Optimism, Leading Indicators
Europe	Increasing	Financial Conditions, 5y5y Forward Break-evens, Unemployment, Consumer Confidence, CDS Spreads
Financial Conditions	Tightening	Credit Spreads, US Treasury Implied Volatility, 30-Year Fixed Mortgage Rates
Industrial Activity	Increasing	Dry Van Rate per Mile, Baker Hughes Total Rig Count, AAR N. America Total Carloads, US Capacity Utilization, Private Non-Residential Construction, US C&I Loans
Oil	Increasing	WTI, Brent
Yield Curve 63d	Bull Flattening	US 2-Year Yield, US 10-Year Yield
Yield Curve 126d	Bull Flattening	US 2-Year Yield, US 10-Year Yield
Yield Curve 252d	Bear Steepening	US 2-Year Yield, US 10-Year Yield

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WHAT SHOULD WE DO ABOUT IT?

1. We recommend that investors **gross up their TMT exposure**. Our work shows that our multi-factor quantitative alpha model in TMT performs materially better at picking winners from losers when economic activity is positive and increasing than when it is not
2. We recommend that investors **gross down their durables exposure**. We struggle to separate winners from losers in durables like homebuilders, air conditioners, and select durable apparel when economic activity is positive and increasing
3. We recommend that investors **gross up their consumer discretionary exposure**. Our consumer discretionary model also performs better when our consumer activity gauge is positive and increasing
4. Other recommendations include: **gross down exposure to staples** and **gross up exposure to healthcare, and non-growth "junk" stocks**

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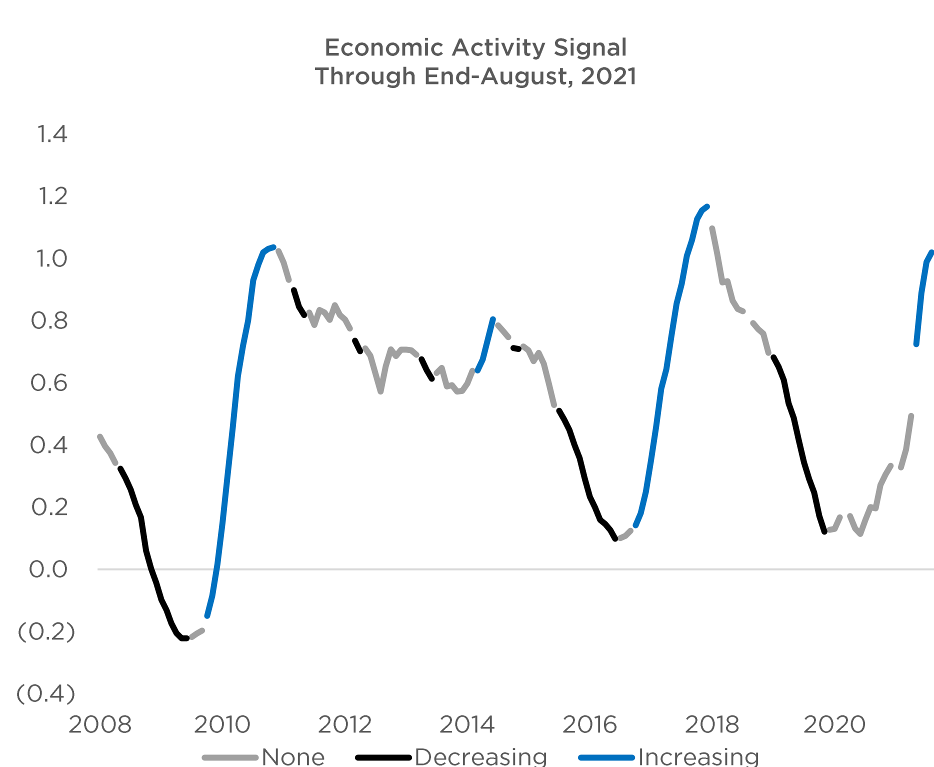
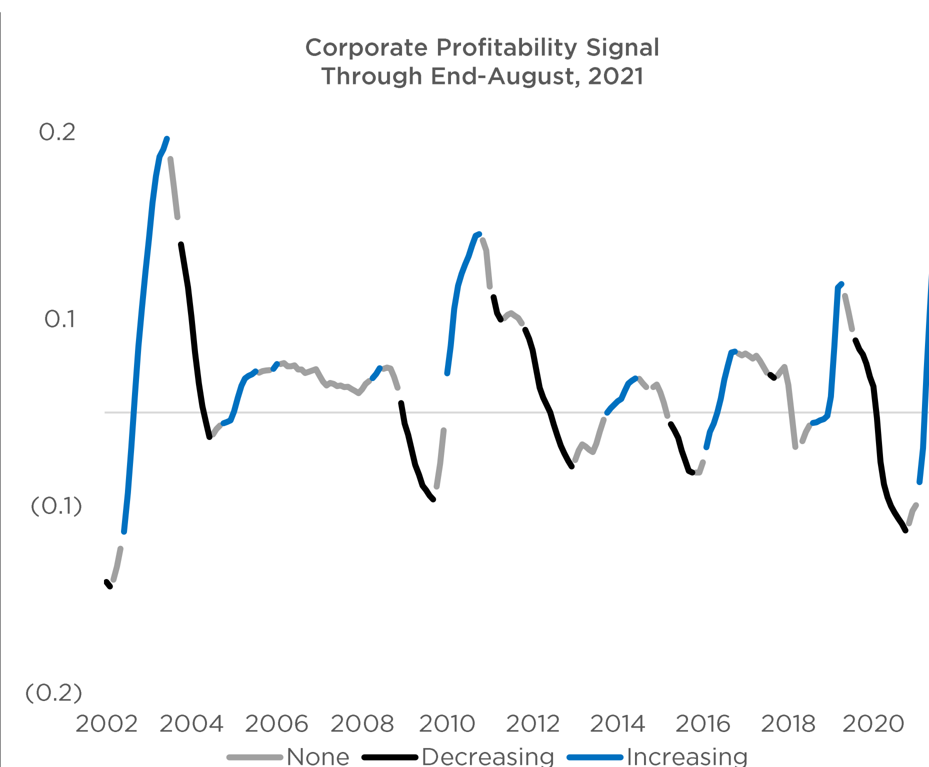
OUR ECONOMIC AND CORPORATE PROFITABILITY GUAGES ARE IMPROVING

We show the economic and consumer activity gauges below. We evaluate where we are in the economic activity cycle by looking at variables like CEO Confidence, Philly Fed Business Outlook, Small Business Optimism, US Economic Surprise, US LEI, US 5y5y Forward Breakeven, etc. Our corporate profitability gauge consists of current operating margins and forward earnings expectations (relative to current) for the fiscal years 1 and 2 years into the future. Currently, 1-year forward earning expectations are at an all-time high, 2-year earnings expectations are in the 86th percentile vs. history, and current operating margins are in the 73rd percentile, rebounding strongly off COVID bottoms.





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GROSS UP TMT EXPOSURE AND IDEAS

Our model performance is way better in TMT when the economy is improving (left chart). Our Q1-Q5 spread is 17.6% when economic activity is increasing, vs. 7.5% when it is not. Select long / short ideas from our quantitative model are show on the right chart. CAN, TEAM, ATVI, ROKU, and PLAN screen well, PANW, LBRDK, SSNC, OTEX and CYBR are among those that screen poorly today

TMT Model Performance
Through End-August, 2021

Stat (Beta-Adjusted)	Economic Activity Increasing	Economic Activity Not Increasing	Difference
Weighted Mean	17.6%	7.5%	10.1%
Weighted Median	17.9%	6.1%	11.8%
Weighted Information Ratio	2.01	0.82	1.19
Hit Rate	69.7%	57.3%	12.4%

Prospective TMT Model Longs and Shorts
August 31, 2021

Long

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
ACN	Accenture plc	IT Services	213.43
TEAM	Atlassian Corporation Plc	Software	92.37
ATVI	Activision Blizzard, Inc.	Entertainment	64.06
ROKU	Roku, Inc.	Entertainment	47.03
PLAN	Anaplan, Inc.	Software	8.68

Short

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
PANW	Palo Alto Networks, Inc.	Software	44.90
LBRDK	Liberty Broadband Corporation	Media	34.61
SSNC	SS&C Technologies Holdings, Inc.	Software	19.31
OTEX	Open Text Corporation	Software	14.81
CYBR	CyberArk Software Ltd.	Software	6.68

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OTHER GROSS RECOMMENDATIONS

Our durables model performance poorly when corporate profitability is increasing, fueling our judgment that picking winners from losers is challenging in areas like home builders, air conditioning, and select apparel today. The top quintile of our durables model UNDERPERFORMS the bottom quintile by 3.2% on average when corporate profitability is increasing but outperforms the bottom quintile by 8.8% when it is not increasing (left chart). We show the additional gross exposure recommendations activated by our 12 proprietary gauges, including grossing up banks, healthcare, and high yielding junk, and grossing down staples (right chart)

Durables Model Performance Through End-July, 2021

Stat (Beta-Adjusted)	Corporate Profitability Increasing	Corporate Profitability Not Increasing	Difference
Weighted Mean	(3.2%)	8.8%	(12.1%)
Weighted Median	(4.6%)	11.2%	(15.8%)
Weighted Information Ratio	(0.34)	0.75	(1.09)
Hit Rate	40.9%	64.2%	(23.2%)

Other Current Gross Exposure Recommendations

Model	Grossing Action	Justification
Healthcare	UP	Europe activity
High Yielding Junk	UP	Economic and Consumer Activity and Commodities are increasing,
Regular Yielding Junk	UP	Oil increasing and Yield Curve over past 252d is in bear steepening
Staples	DOWN	Increasing Corporate Profitability

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IF RISKS DID NOT CHANGE, ANYONE COULD DO RISK MANAGEMENT

- Key risks worth monitoring
  1. **Short interest**: Avoid shorting high-beta stocks with short interest greater than 15%
  2. **Price momentum**: Measure price momentum over multiple horizons
  3. **High signal correlation**: Variables both fundamental managers and quants use to pick winners from losers are highly correlated in both REITS and industrials
  4. **COVID**: Quality "reopening" stocks have still massively underperformed "junk" "work from home" stocks – monitor exposure of "substance" and "work from home" / "reopening"
  5. **Correlations during downturns**: Many stocks become more correlated to other names during market sell-offs than during "normal" times, and an assessment of drawdowns can help locate better hedges
  6. **Asymmetric betas**: Measure beta during downturns as there appears to be a consistent group of stocks that have much higher betas during market corrections than "normal" times –many of these are REITS
  7. **Inflation**: We recommend looking at the correlation of every stock in your portfolio to an inflation basket (contact us if you want access to our inflation basket) to monitor exposure
  8. **Technology stocks:** We use ten metrics to evaluate technology stocks including high reopening correlation, inflation anticorrelation, "bad crowding", high insider selling, low forecasted gross margins, forecasted margin degradation, high asymmetric betas, higher correlations during downturns, low company-specific risk, and negative forecasted free cash flow. We highlight stocks that screen poorly on multiple "risk" screens

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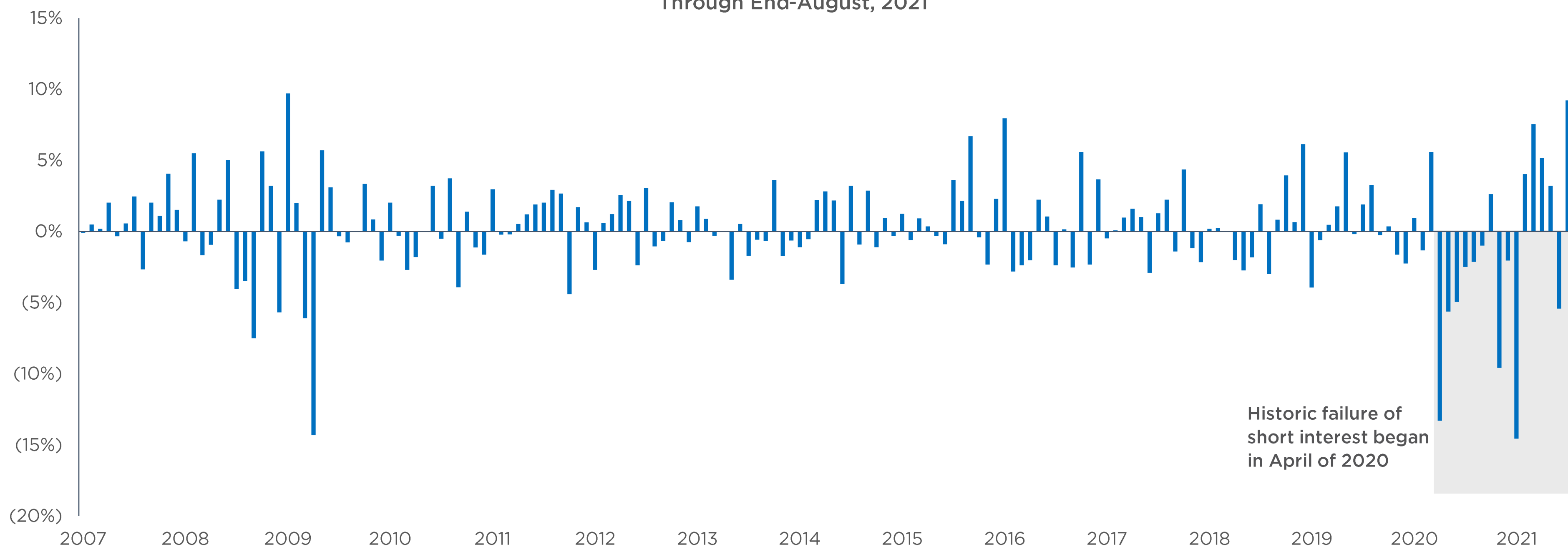
RISK ONE: HEAVILY SHORTED STOCKS

Many quantitative investors use high short interest as a signal to predict subsequent stock underperformance. Many fundamental managers share their top short ideas, fueling more short interest. As such, for long periods of time, stocks with high short interest underperformed. This materially failed beginning in 2020. At the hedge fund, Trivariate Capital, we ran last year, we wrote in our Q2 2020 letter that we did not think it was prudent to short stocks with short interest above 15% given the failures we saw immediately following the global financial crisis. We obviously did not foresee the retail armies that would form several months later, but there is no doubt that monitoring short interest and avoiding stocks with above 10% short interest remains prudent risk management into the second half of 2021, even with the recovery of the signal in recent months



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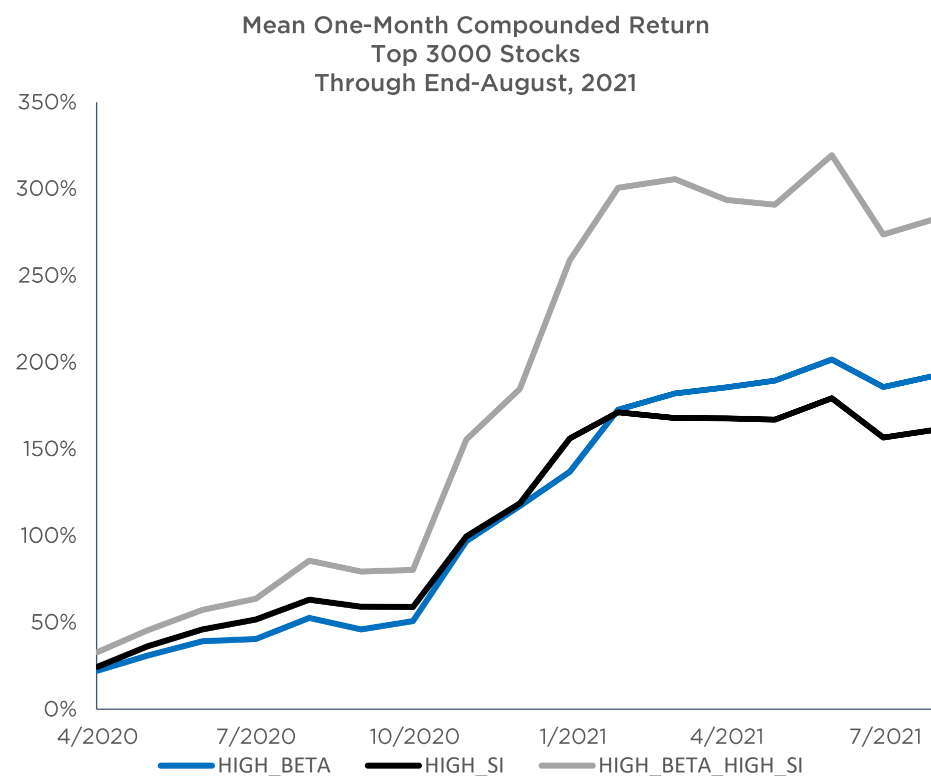
HIGH BETA SHORT INTEREST IS PARTICULARLY RISKY

Both heavily shorted stocks and high beta stocks were risks in 2020, and stocks with both qualities remain a risk. That basket performed strongly as the economy recovered (left chart), and we would specifically be cautious of shorting the stocks in the top 5% on both metrics today (right chart)



Top 5% in Both Beta and Short Interest
August 31, 2021

Ticker	Company	Market Cap. (US$ Bil.)
CREE	Cree, Inc.	9.85
NCLH	Norwegian Cruise Line Holdings Ltd.	9.56
CAR	Avis Budget Group, Inc.	6.04
MP	MP Materials Corp.	5.97
SKLZ	Skillz Inc.	4.74
CRNC	Cerence Inc.	4.12
MARA	Marathon Digital Holdings, Inc.	4.04
DDS	Dillard's, Inc.	4.03
LTHM	Livent Corporation	4.02
SPWR	SunPower Corporation	3.73
BE	Bloom Energy Corporation	3.72

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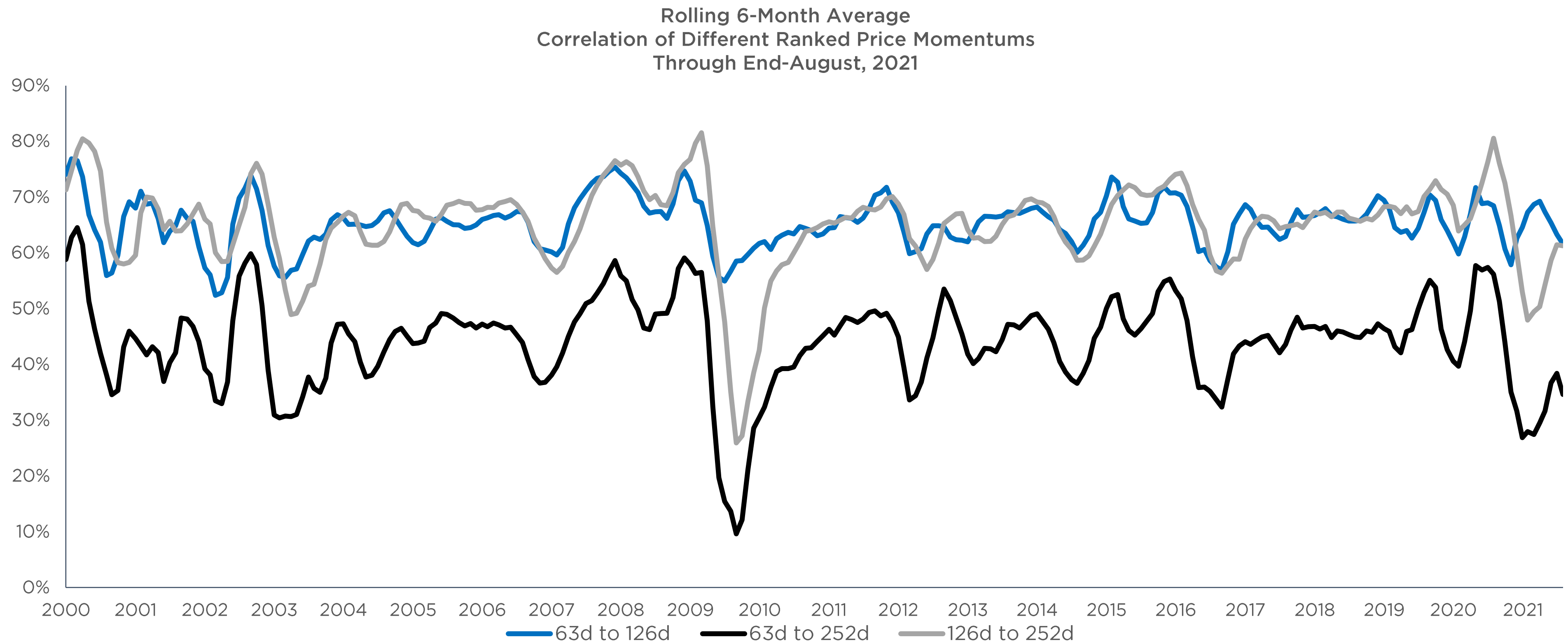
RISK TWO: DIFFERENT PRICE MOMENTUMS

The correlation of different price momentums shows that they are not capturing the same “risk”, something that really is not that surprising following the huge volatility of March 2020 and the subsequent recovery (left chart). In our judgment proper risk management must include measuring net exposure to multiple price momentums. Otherwise, an alpha signal that penalizes weak 12-month price momentum but does not include a 6-month momentum signal will contain biases. We would be worried about shorting stocks with poor 12-month momentum that have very strong 3-or-6-month momentum and suggest monitoring all three momentums



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RISK THREE: HIGHLY CORRELATED SIGNALS – REITS AND INDUSTRIALS

We analyzed all 21 of our quantitative models to see if signals have become increasingly correlated recently. The two biggest risks we see are the increased correlation in REITS and industrials. For both, we have a model comprised of eight signals to predict subsequent 18-month returns for stocks in that industry. There were sustained periods during our model development (2012-2017) where the average pairwise correlation of these signals was near zero (even briefly negative). However, right after the Pfizer vaccine announcement on November 9th of 2020, the average pairwise correlation of our REITs-model signals jumped to near 70% as REITs names rose indiscriminately. Signals in the industrials model have continued to have increased correlation as well

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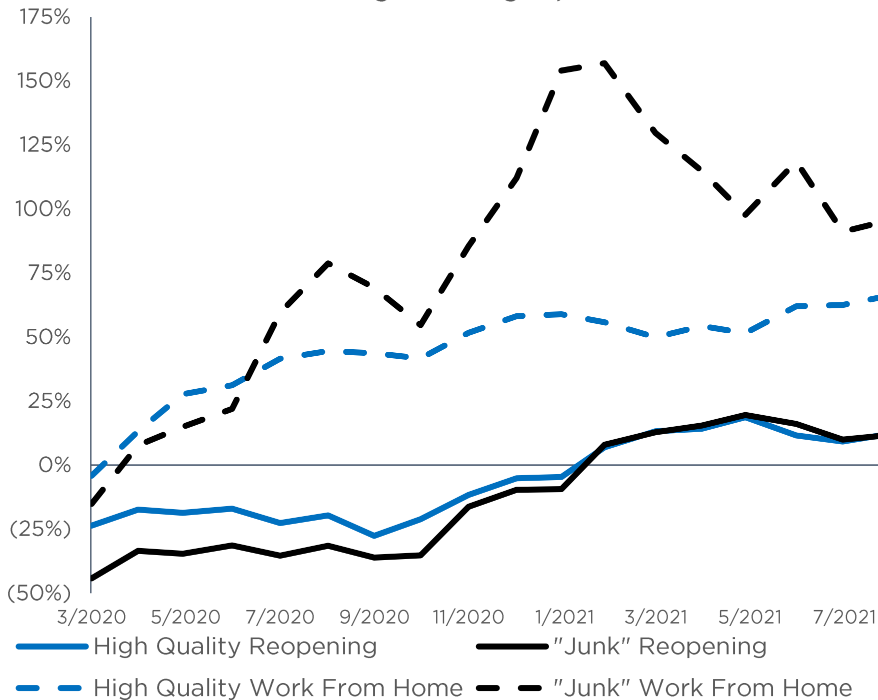
RISK FOUR: JUNK WORK FROM HOME VS. QUALITY REOPENING

We created "work from home" and "reopening" baskets and looked at the correlation of every stock in our universe to both baskets – clearly this was a major new risk to monitor that formed last year. Given the simultaneous move in "junk" and "reopening", we looked at performance of work from home quality and junk and reopening quality and junk since March of 2020 (left exhibit). In our minds, high quality reopening names seem poised for incremental catch up, and junk "work from home" ideas could continue to lag (right exhibit for ideas)



Buy High Quality Reopening, Sell "Junk" Work-from-Home
Names in Top/Bottom Model Quartile with Market Cap. of at least $1 Bil.
August 31, 2021

Long

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
SNA	Snap-on Incorporated	Machinery	12.14
LEVI	Levi Strauss & Co.	Textiles, Apparel & Luxury Goods	10.53
UGI	UGI Corporation	Gas Utilities	9.68
PB	Prosperity Bancshares, Inc.	Banks	6.49
SEAS	SeaWorld Entertainment, Inc.	Hotels, Restaurants & Leisure	3.89
IBOC	International Bancshares Corporation	Banks	2.65
CASH	Meta Financial Group, Inc.	Thrifts & Mortgage Finance	1.57

Short

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
CHWY	Chewy, Inc.	Internet & Direct Marketing Retail	36.61
PTON	Peloton Interactive, Inc.	Leisure Products	30.11
CONE	CyrusOne Inc.	Equity Real Estate Investment Trusts (REITs)	9.55
BYND	Beyond Meat, Inc.	Food Products	7.57
FCEL	FuelCell Energy, Inc.	Electrical Equipment	2.01
GRWG	GrowGeneration Corp.	Specialty Retail	1.91
ACMR	ACM Research, Inc.	Semiconductors & Semiconductor Equipment	1.73
VLDR	Velodyne Lidar, Inc.	Electronic Equipment, Instruments & Components	1.29

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RISK FIVE: BEAR CASE CORRELATIONS THAT RISE

We analyzed stock performance during market drawdowns of 10% or more and noticed that some stocks become increasingly correlated during market pullbacks. We like to monitor "bear case" correlations so we are not misled about the portfolio being hedged or defensive when there is a measurable phenomena during downturns

Names with Higher 126d Correlations to Peers During SPX Drawdowns of at Least 10%
End-August, 2021

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
WMT	Walmart Inc.	Food & Staples Retailing	415.00
PFE	Pfizer Inc.	Pharmaceuticals	258.30
ORCL	Oracle Corporation	Software	248.85
VZ	Verizon Communications Inc.	Diversified Telecommunication Services	227.71
COST	Costco Wholesale Corporation	Food & Staples Retailing	201.36
MCD	McDonald's Corporation	Hotels, Restaurants & Leisure	177.33
TGT	Target Corporation	Multiline Retail	120.54
EW	Edwards Lifesciences Corporation	Health Care Equipment & Supplies	73.04
PSA	Public Storage	Equity Real Estate Investment Trusts (REITs)	56.71
DLR	Digital Realty Trust, Inc.	Equity Real Estate Investment Trusts (REITs)	46.32
WBA	Walgreens Boots Alliance, Inc.	Food & Staples Retailing	43.90
ORLY	O'Reilly Automotive, Inc.	Specialty Retail	40.96
CTSH	Cognizant Technology Solutions Corporation	IT Services	40.11
AZO	AutoZone, Inc.	Specialty Retail	33.38
EFX	Equifax Inc.	Professional Services	33.17
AVB	AvalonBay Communities, Inc.	Equity Real Estate Investment Trusts (REITs)	32.00
EQR	Equity Residential	Equity Real Estate Investment Trusts (REITs)	31.48
K	Kellogg Company	Food Products	21.52
CLX	The Clorox Company	Household Products	20.64
PCG	PG&E Corporation	Electric Utilities	18.20
EVRG	Evergy, Inc.	Electric Utilities	15.70
ELS	Equity LifeStyle Properties, Inc.	Equity Real Estate Investment Trusts (REITs)	15.63

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RISK SIX: NEGATIVE ASYMMETRIC BETA

We analyzed the beta of stocks during periods where the market is down 10% or more. 41% of stocks with the highest negative asymmetric betas are REITS (left side). Non-REITs are shown on the right. This list represents names where we expect high underperformance in a market drawdown

Names with Higher 252d Betas During SPX Drawdowns of at Least 10%
End-August, 2021

REITs				Non-REITs			
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)	Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
PSA	Public Storage	REITs	56.71	SQ	Square, Inc.	IT Services	123.23
DLR	Digital Realty Trust, Inc.	REITs	46.32	CME	CME Group Inc.	Capital Markets	72.45
SPG	Simon Property Group, Inc.	REITs	44.18	ICE	Intercontinental Exchange, Inc.	Capital Markets	67.31
SBAC	SBA Communications Corporation	REITs	39.33	TWLO	Twilio Inc.	IT Services	63.24
AVB	AvalonBay Communities, Inc.	REITs	32.00	EXC	Exelon Corporation	Electric Utilities	47.93
EQR	Equity Residential	REITs	31.48	LEN	Lennar Corporation	Household Durables	32.77
O	Realty Income Corporation	REITs	28.12	NDAQ	Nasdaq, Inc.	Capital Markets	32.74
EXR	Extra Space Storage Inc.	REITs	25.01	YUMC	Yum China Holdings, Inc.	Hotels, Restaurants & Leisure	25.91
MAA	Mid-America Apartment Communities, Inc.	REITs	22.32	TDOC	Teladoc Health, Inc.	Health Care Technology	23.00
ESS	Essex Property Trust, Inc.	REITs	21.51	LYV	Live Nation Entertainment, Inc.	Entertainment	18.62
BXP	Boston Properties, Inc.	REITs	17.65	AEM	Agnico Eagle Mines Limited	Metals & Mining	14.01
UDR	UDR, Inc.	REITs	16.04	NLY	Annaly Capital Management, Inc.	Mortgage Real Estate Investment Trusts	12.55
ELS	Equity LifeStyle Properties, Inc.	REITs	15.63	DECK	Deckers Outdoor Corporation	Textiles, Apparel & Luxury Goods	11.58
CPT	Camden Property Trust	REITs	15.09	GPK	Graphic Packaging Holding Company	Containers & Packaging	6.30
KIM	Kimco Realty Corporation	REITs	13.35	BXMT	Blackstone Mortgage Trust, Inc.	Mortgage Real Estate Investment Trusts	4.87
LSI	Life Storage, Inc.	REITs	9.73	GRA	W. R. Grace & Co.	Chemicals	4.62
NNN	National Retail Properties, Inc.	REITs	8.36	RDN	Radian Group Inc.	Thrifts & Mortgage Finance	4.38
CUZ	Cousins Properties Incorporated	REITs	5.73	MTH	Meritage Homes Corporation	Household Durables	4.20
ADC	Agree Realty Corporation	REITs	5.12	EXLS	ExlService Holdings, Inc.	IT Services	4.09
HIW	Highwoods Properties, Inc.	REITs	4.76	TIGO	Millicom International Cellular S.A.	Wireless Telecommunication Services	3.82

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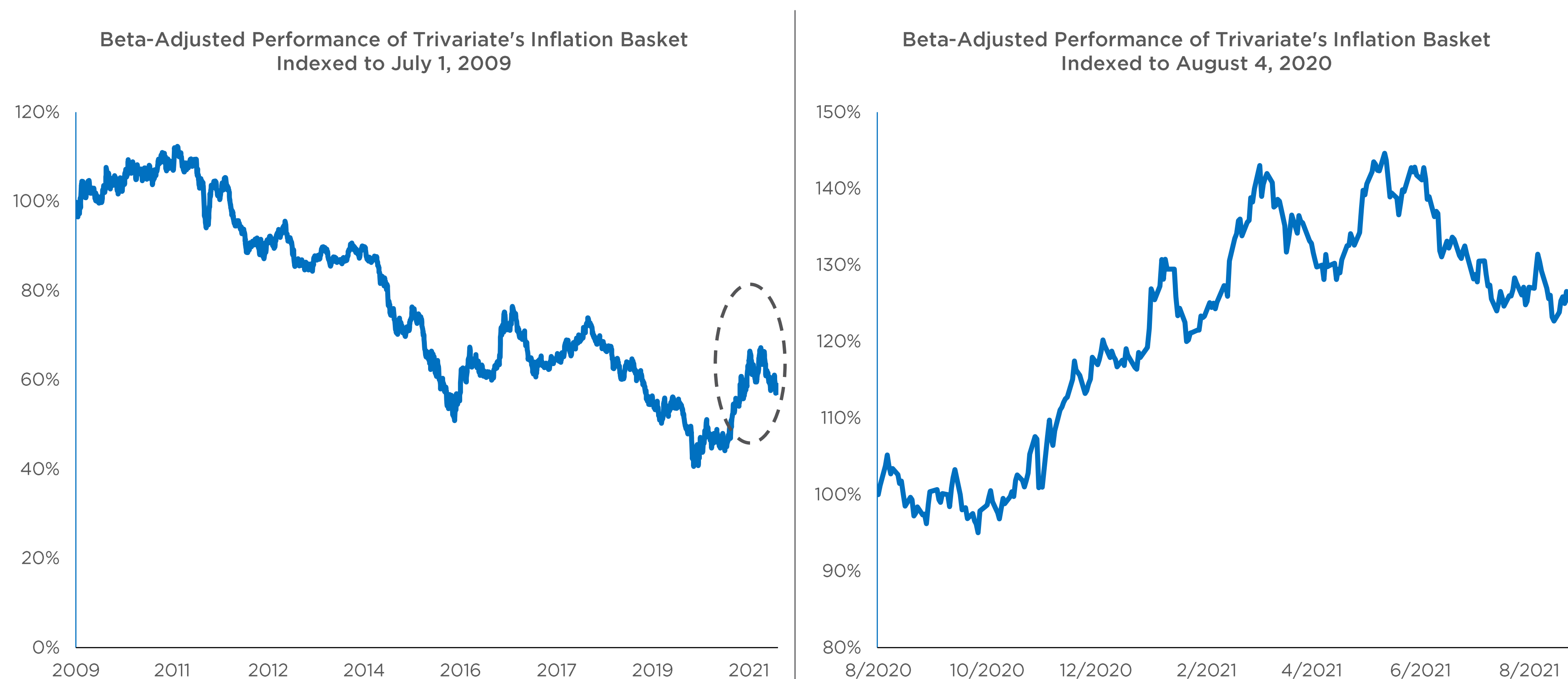
RISK SEVEN: INFLATION EXPOSURE MATTERS

Following the quantitative easing phase in 2010-2012, there were fleeting fears of inflation that never materialized (left exhibit below). But since the 10-year yield bottom last August, our inflation basket has beaten the market by over 23% on a beta-adjusted basis (right exhibit below). Inflation was the number one investors topic three months ago, but this has abated some now. It seems to us the key controversy around inflation remains wage growth, and how long high unemployment / low labor force participation and inability of companies to hire will remain conflicting trends. While rising input costs certainly are a key issue for corporate profitability, we would monitor our long / short inflation exposure to avoid the Texas Hedge



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RISK EIGHT: RISKY TECH STOCKS

Of the ten metrics we used to evaluate technology stocks, the stocks that appear in the bottom ten stocks of all technology stocks with greater than $5 billion in market capitalization on three or more of the ten metrics are **Apple, NVIDIA, PayPal, Shopify, Square, DXC Technology, Flex, Nutanix, and NCR. Our view is that these are among the riskiest stocks to own today, so investors who own these names should have disproportionate upside to their base cases to compensate them for these risks**

Names with 3 or more Appearances on Risk Screens
Tech Names with Market Cap > $5 bn. And Beta > 1
August 31, 2021

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
AAPL	Apple Inc.	Technology Hardware, Storage & Peripherals	2509.78
NVDA	NVIDIA Corporation	Semiconductors & Semiconductor Equipment	558.73
PYPL	PayPal Holdings, Inc.	IT Services	339.18
SHOP	Shopify Inc.	IT Services	190.4
SQ	Square, Inc.	IT Services	123.23
DXC	DXC Technology Company	IT Services	9.25
FLEX	Flex Ltd.	Electronic Equipment, Instruments & Components	9.07
NTNX	Nutanix, Inc.	Software	7.81
NCR	NCR Corporation	Technology Hardware, Storage & Peripherals	5.58

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INFLATION FOR 6-TO-12 MONTHS?

The primary topic of interest following our initiation was inflation, which dominated investor questions in May and June. Since July, we received markedly fewer questions about inflation. **Our conclusion is this: We think having some exposure to inflation within your equity portfolio continues to makes sense**. However, we are increasingly mindful this is a 6-to-18-month outlook for now, and not necessarily a longer-term view. Why?

- The FED wants to create inflation and is waiting for more sustained evidence of inflation – this is optimistic for US equities. We think FED remains in accommodation mode. The key issue will be wage inflation and the balance between companies unable to staff up, and a high labor participation rate.

We analyzed the market-relative returns of each of the 24 GIC industry groups for statistically significant relationships to the trend in the 10-year yield (level) and slope of the interest rate curve (2-year vs. the 10-year yield). Our conclusions:

- **Buy healthcare services**: These stocks typically have a relatively consistent and statistically significant relationship to rising rates and a steepening curve
- **Sell utilities**: Utilities is the only industry group that has a persistent negative relationship to both the level of interest rates and the slope of the curve

Beyond that, if you make a directional bet that rates will rise, our view is that you are saying the economy will be strong. We would own materials and consumer discretionary in that scenario, not banks, which may benefit less than investors think and have already moved

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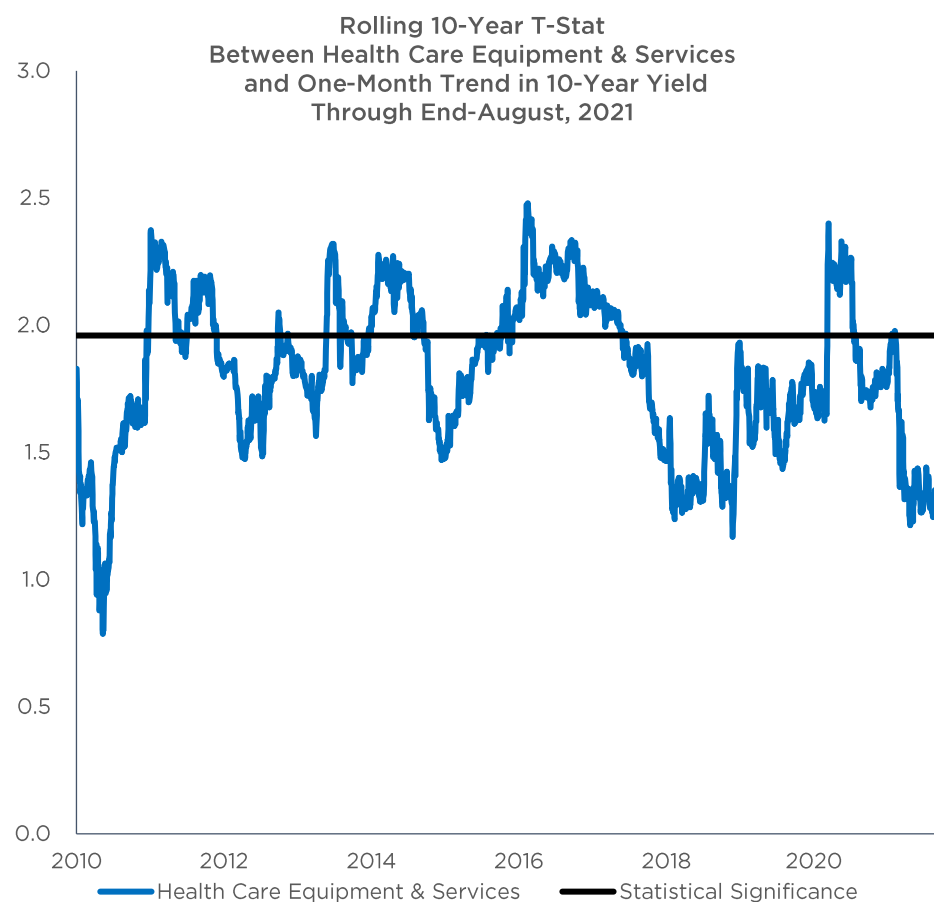
CONCLUSION: BUY HEALTH CARE EQUIPMENT & SERVICES

If we get a rise in the 10-year yield again, health care equipment and services is one of the few industry groups with a relatively consistent relationship to the 10-year yield over the past decade. Clearly there are fundamental issues, but the group has performed roughly in-line with the market year-to-date, despite what history dictates should have been a tailwind (see left exhibit with t-stat of 1.96 significance band). As such, we offer health care equipment and services stocks that screen well in our quantitative models as candidate long ideas (right exhibit)



Health Care Equipment & Services
Top Quintile Model Ranked Stocks
August 31, 2021

Ticker	Company	Market Cap. (US$ Bil.)
UNH	UnitedHealth Group Incorporated	392.51
ABT	Abbott Laboratories	224.03
MDT	Medtronic plc	179.49
ISRG	Intuitive Surgical, Inc.	125.36
ANTM	Anthem, Inc.	91.46
HCA	HCA Healthcare, Inc.	80.99
CI	Cigna Corporation	71.98
BSX	Boston Scientific Corporation	64.29
IDXX	IDEXX Laboratories, Inc.	57.32
ALGN	Align Technology, Inc.	56.02
HUM	Humana Inc.	52.10
VEEV	Veeva Systems Inc.	50.77
BAX	Baxter International Inc.	38.10
MCK	McKesson Corporation	31.58
LH	Laboratory Corporation of America Holdings	29.34
ABC	AmerisourceBergen Corporation	25.39
CERN	Cerner Corporation	22.57
MOH	Molina Healthcare, Inc.	15.70
CAH	Cardinal Health, Inc.	15.25
DVA	DaVita Inc.	13.70

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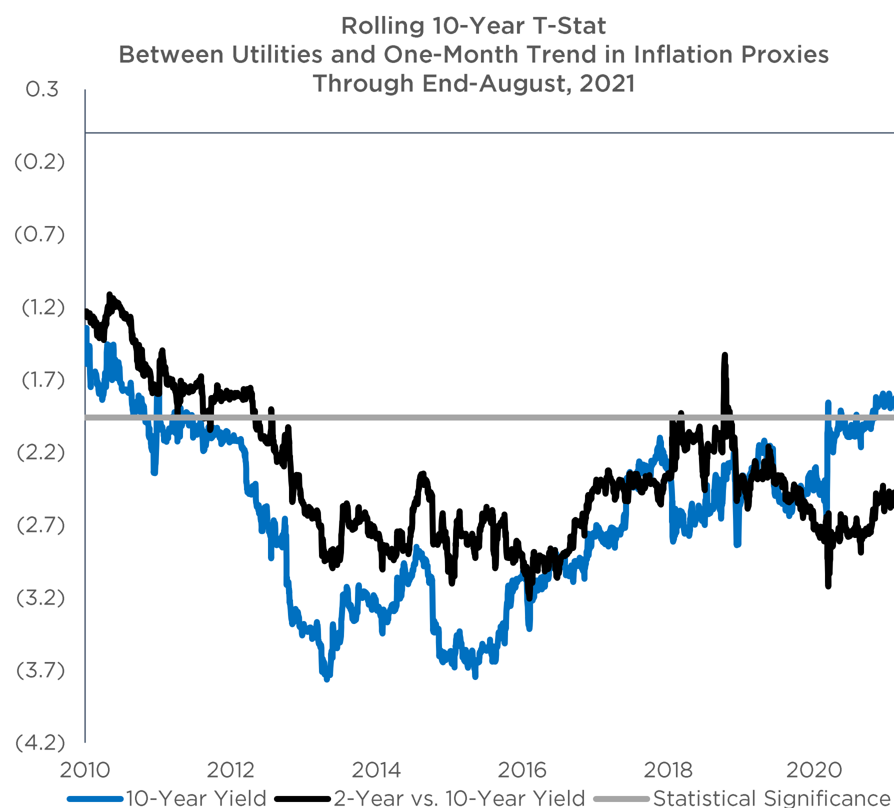
SELL UTILITIES IF THE 10-YEAR STARTS RISING AGAIN

Utilities are the only industry group of the 24 that have consistently had a negative and largely statistically significant relationship to both the slope of the curve and the level of interest rates (left exhibit). The group has lagged this year, and the stocks that screen poorly in our quantitative model are shown in the right exhibit. However, with the recent bull market, it might make sense to tactically add to utilities



Utilities
Bottom Quartile Model Ranked Stocks
August 31, 2021

Ticker	Company	Market Cap. (US$ Bil.)
NEE	NextEra Energy, Inc.	164.77
D	Dominion Energy, Inc.	62.93
SRE	Sempra	42.27
PEG	Public Service Enterprise Group Incorporated	32.33
ES	Eversource Energy	31.18
DTE	DTE Energy Company	23.32
AEE	Ameren Corporation	22.56
ETR	Entergy Corporation	22.23
AGR	Avangrid, Inc.	21.16
PCG	PG&E Corporation	18.2
EVRG	Evergy, Inc.	15.7
ATO	Atmos Energy Corporation	12.75
VST	Vistra Corp.	9.21
OGE	OGE Energy Corp.	7.09

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CONTROVERSIES AND VARIABLES TO MONITOR FOR BANKS

We took a detailed look at the banks sector and research key investment controversies facing bank stock investors and three data points to monitor. We think these concepts apply broadly to investors in other industries as well. The controversies are:

1. Gross Exposure: Our quantitative models work better at discriminating banks stocks when financial conditions are loosening, something we capitalized on earlier in the year by recommending high gross exposure in banks. However, financial conditions have tightened over the past couple of months, average pairwise bank stock correlations are near all-time highs, company-specific risk for the banks is low and valuation dispersion has not seen a sustained increase in banks like it has in the broader market. **Recently, we recommended that investors de-gross from high to average gross exposures in banks as a modest tightening of financial conditions developed – whether financial conditions become increasingly tight is an important debate for sizing positions in banks, and our bias it to be cautious**
2. **Long-term vs. short-term valuation:** While banks remain relatively cheap vs. their own history on price-to-tangible book, multiples have expanded substantially more than actual book value has grown since the 10-year yield bottomed in August of 2020, meaning investors have been excessively anticipatory of fundamentals. **We offer quantitatively derived long (short) ideas**, i.e., the ones with the (least) most expansion on multiples relative to actual tangible book growth, given excessive expectations are the cause of banks underperformance the last two months

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SUMMARY AND INVESTMENT CONCLUSIONS

3. **Large vs. small cap. banks:** The large 8 banks stocks (JPM, WFC, C, BAC, USB, PNC, MS, GS) have moved toward cycle high return on tangible equity and have improved balance sheets such that Tier 1 ratios have gone from inferior to the broader group of banks, to sustainably superior. Nonetheless, they trade at only a modest premium to the rest of the banks, well below the 50% premium they traded at prior to the financial crisis. Given that the most risk-on part of the market trade is likely behind us, and the path on 10-year yields is uncertain, our judgment is to prefer the large to small cap. banks, as they have superior business model diversification, and what we think are under-rewarded balance sheet and profitability improvements
4. **Micro cap. Quality vs. Junk valuation**: Quality micro cap. bank stocks trade at a discount on price-to-forward earnings to micro-cap “junk” stocks, which was not historically the case. We offer quality micro cap. banks ideas that are cheap relative to their history and junk micro cap. bank ideas that are expensive as long / short ideas

The three variables to monitor are: Financial conditions, the savings rate, and loan growth. Low loan delinquency, and high savings likely mean dis-savings is likely an important pre-requisite for higher loan growth, and a potential for upward earnings revisions in 2022, short of a vigorous bear-steepening. Financial conditions are important for assessing gross exposure

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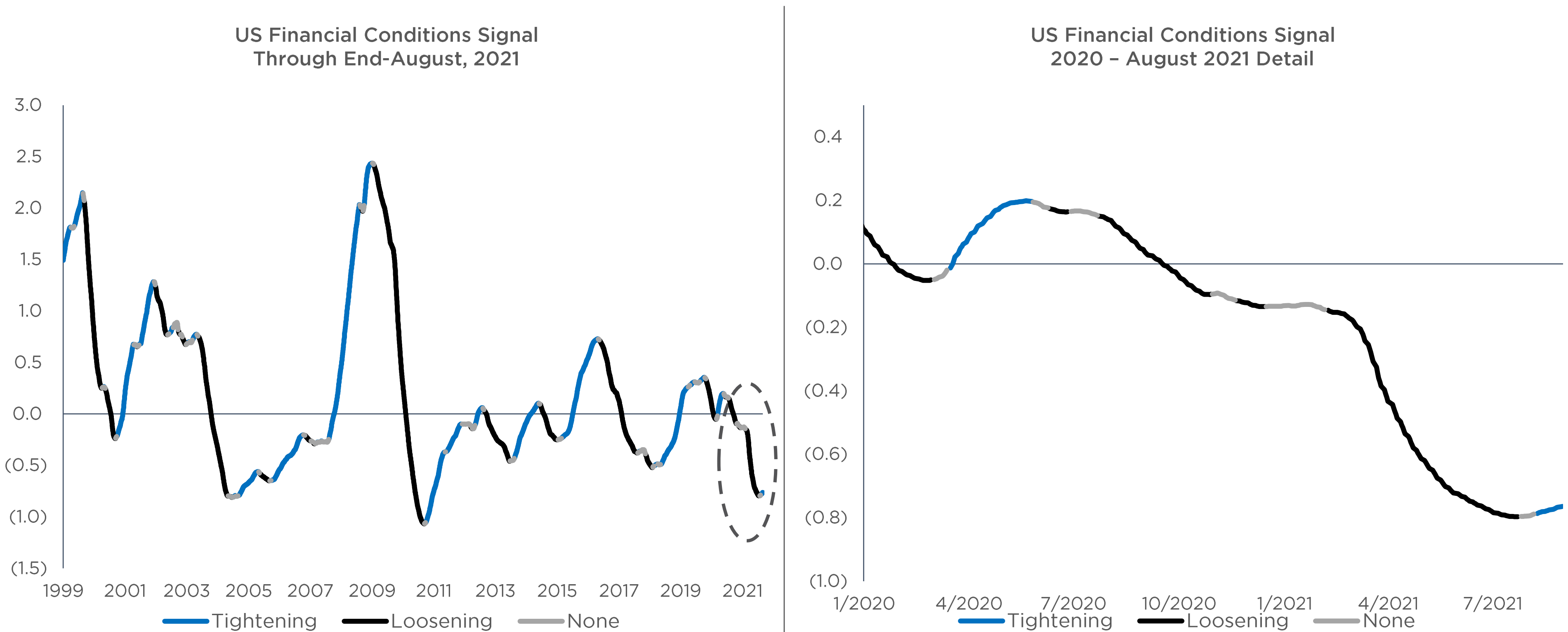
FINANCIAL CONDITIONS HAVE STARTED TO TIGHTEN

We evaluate financial conditions by combining credit spreads, mortgage rates, US Treasury volatility, the Bloomberg Financial Conditions Index, and other signals. We intentionally try to create a slower moving signal so that we are not over-reacting to shorter term moves in financial conditions. Our framework officially flagged loosening financial conditions in March of this year. This loosening stopped on July 26th according to our framework



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GROSS UP BANKS IF FINANCIAL CONDITIONS LOOSEN AGAIN

We observed that our banks quantitative model works well historically when financial conditions are loosening (left chart). In the past, the top vs. bottom quintile (Q1-Q5) spread is 15.3% when economic activity is increasing vs. 3.3% when it is not. The banks model has again worked well "live" this cycle, both in strong up months like April, and in relative weaker months, like June / July, up about 4% cumulatively over the last four months (right chart). Today, financial conditions have stopped loosening, so we no longer recommend grossing up banks

Banks Model Performance Through End-August, 2021

Stat (Beta-Adjusted)	Financial Conditions Loosening	Financial Conditions Not Loosening	Difference
Weighted Mean	15.3%	3.7%	11.7%
Weighted Median	13.0%	5.3%	7.6%
Weighted Information Ratio	2.51	0.60	1.92
Hit Rate	79.7%	61.5%	18.1%

Select Signals Used in Our Banks Model

Percent to Median Target (Sentiment),
Provision for Loan Loss Ratio Growth (Balance Sheet),
Consensus Recommendation (Sentiment),
Dividend Yield Trend (Capital Use),
Return on Tangible Book (Profitability),
Price-to-Tangible Book (Valuation),
Loan Loss Coverage Ratio (Balance Sheet)

Banks Model Performance April – August, 2021

Stat (Beta-Adjusted)	Q1 Average Return	Q5 Average Return	Q1-Q5 Spread
April	4.6%	1.7%	2.9%
May	3.7%	2.7%	1.0%
June	(6.2%)	(6.0%)	(0.2%)
July	(2.2%)	(3.2%)	1.1%
August	5.9%	3.8%	2.1%

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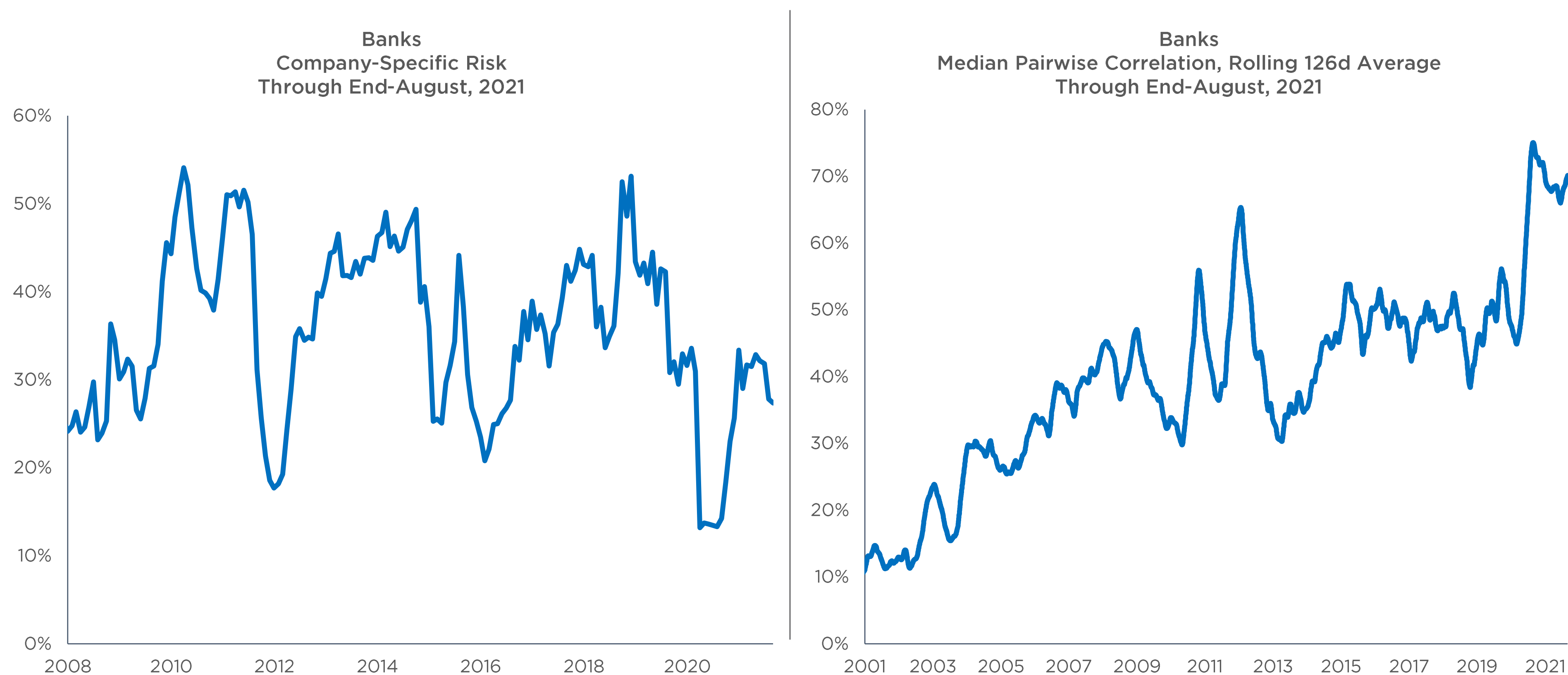
OTHER DATA SUGGEST STOCK SELECTION IN BANKS IS TOUGH TODAY

Company-specific risk for banks has remained relatively low, and below long-term averages for banks (left chart). The average pairwise return correlation of banks is currently 0.7 on a twenty-year trend of higher correlation that was only 0.2 following the TMT crisis (right chart)



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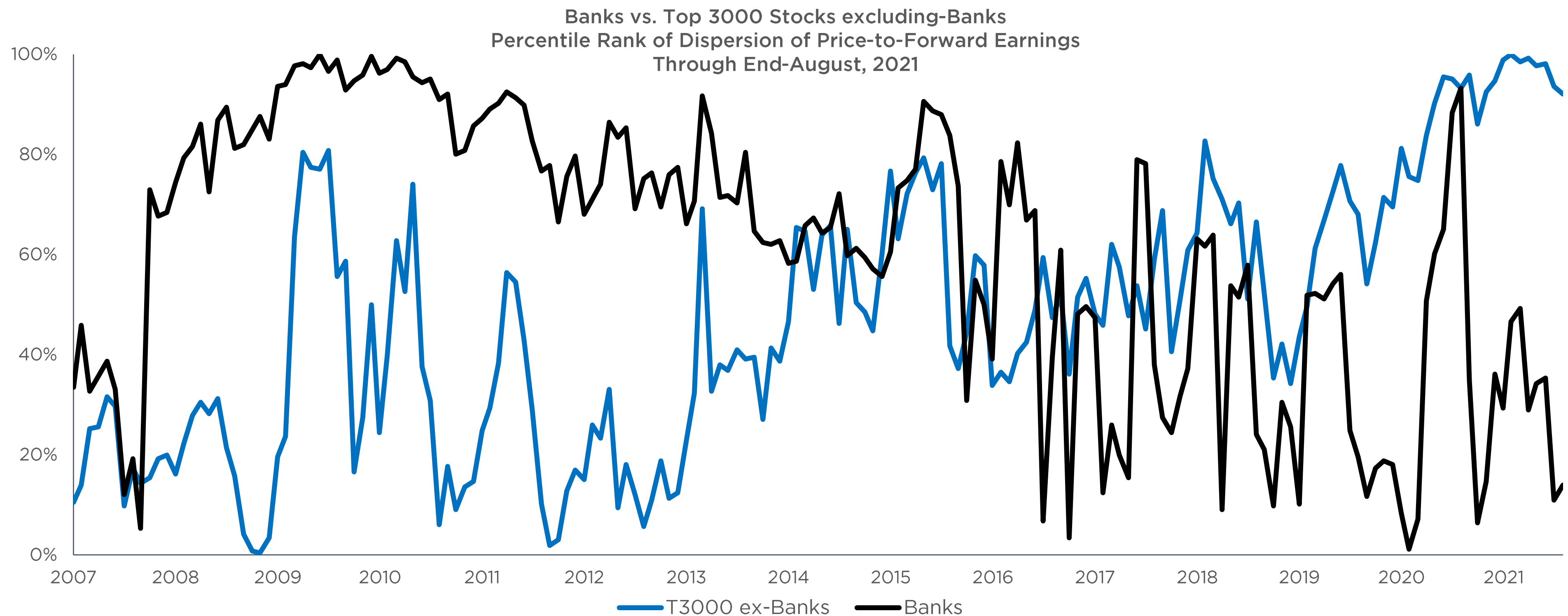
BANK VALUATION DISPERSION IS LOW

Moreover, for the broad market valuation dispersion (shown here on price-to-forward earnings in blue) is elevated, indicated potential above-normal opportunity for stock selection. Yet, for banks (in black), valuation dispersion remains well below long-term averages having corrected quickly after the COVID recovery. Our conclusion is that if you were grossed up in banks the past few months, it might be prudent to reduce gross exposure closer to your baseline level. Financial conditions have begun to modestly tighten, and company-specific risk, pairwise correlation, and valuation dispersion all appear to make bank stock selection more difficult today



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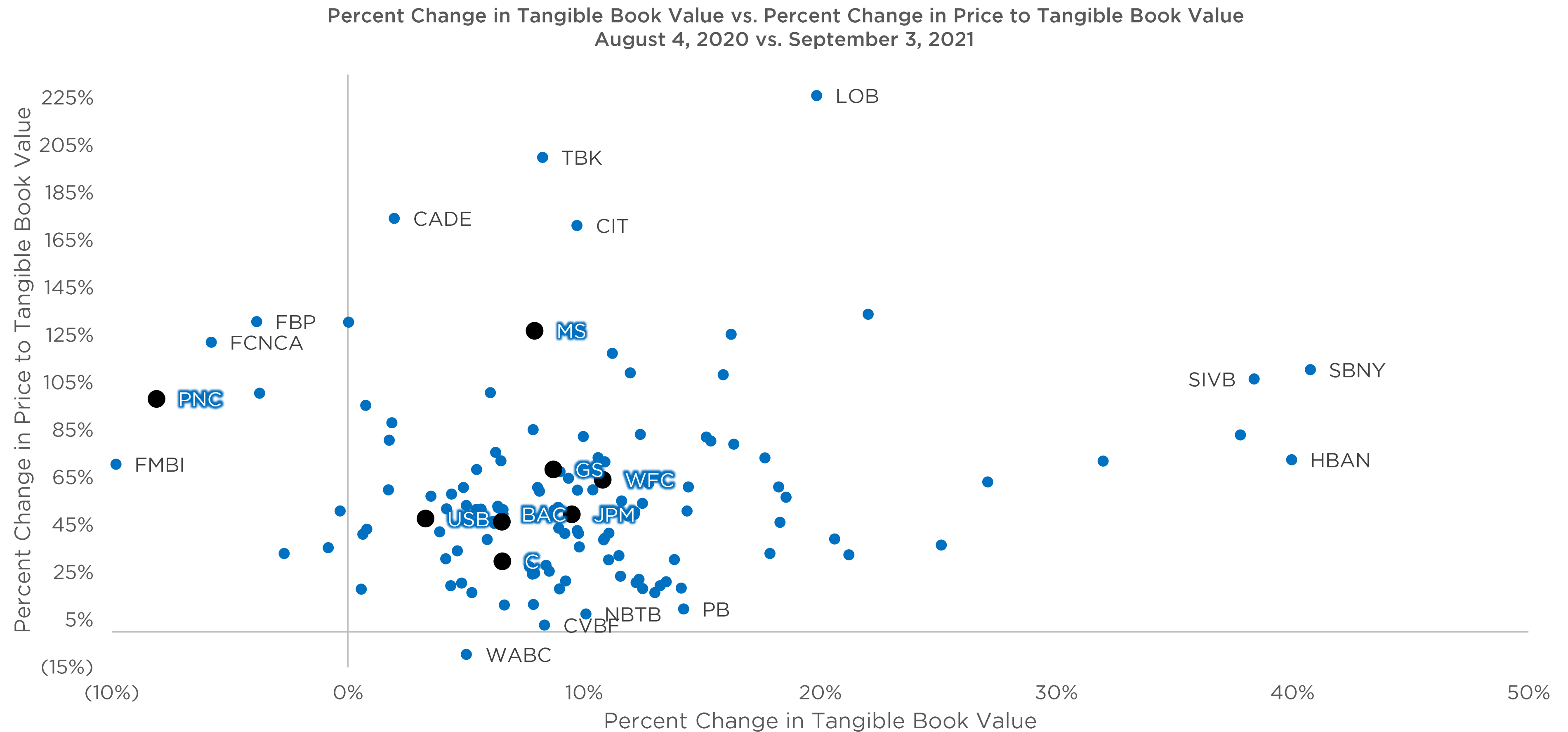
MULTIPLE EXPANSION VS. TANGIBLE BOOK GROWTH

Since August 4th, 2020 when the 10-year yield bottomed around 0.5%, many banks have had a lot of price-to-tangible book expansion, without much tangible book growth. Our view is that investors have been excessively anticipatory of tangible book expansion, and this fuels some of our caution on banks. We highlight the large banks, which generally have not seen outsized multiple expansion. Among the largest cap stocks, the highest tangible book growth has come from WFC, whereas the most multiple expansion has come from MS



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STOCK IDEAS BASED ON VALUATION AND GROWTH

Stocks with relatively strong book growth and relatively low multiple expansion are shown on the left chart. Those with high multiple expansion in the last year but limited actual book value growth are shown on the right chart

Banks Stocks with Less Price-to-Tangible Book Multiple Expansion Relative to Tangible Book Growth
August 4th, 2020 Through September 3, 2021

Ticker	Company Name	Market Cap ($ US. Bil)	Book Value Growth	Price to Tangible Book Growth
PB	Prosperity Bancshares, Inc.	6.52	14.2%	9.5%
SSB	South State Corporation	4.83	11.5%	23.4%
HOMB	Home Bancshares, Inc. (Conway, AR)	3.58	14.1%	18.3%
BXS	BancorpSouth Bank	3.20	13.8%	30.4%
RNST	Renasant Corporation	1.95	11.5%	32.1%
BANF	BancFirst Corporation	1.82	13.0%	16.5%
NBTB	NBT Bancorp Inc.	1.52	10.1%	7.5%
WABC	Westamerica Bancorporation	1.51	5.0%	-9.5%
SYBT	Stock Yards Bancorp, Inc.	1.43	21.2%	32.4%
BUSE	First Busey Corporation	1.35	11.0%	30.3%
SBSI	Southside Bancshares, Inc.	1.22	13.2%	19.3%
TCBK	TriCo Bancshares	1.17	13.5%	21.0%
NBHC	National Bank Holdings Corporation	1.15	12.3%	22.1%
FFWM	First Foundation Inc.	1.08	17.9%	33.0%
GABC	German American Bancorp, Inc.	1.00	12.5%	18.1%
HFWA	Heritage Financial Corporation	0.90	12.2%	20.7%

Banks Stocks with Relatively Weak Tangible Book Growth That Have Also Seen Material Price-to-Tangible Book Multiple Expansion
August 4th, 2020 Through September 3, 2021

Ticker	Company Name	Market Cap ($ US. Bil)	Book Value Growth	Price to Tangible Book Growth
PNC	The PNC Financial Services Group, Inc.	81.39	(8.1%)	98.2%
WAL	Western Alliance Bancorporation	10.07	22.0%	133.9%
FCNCA	First Citizens BancShares, Inc.	8.61	(5.8%)	122.0%
PNFP	Pinnacle Financial Partners, Inc.	7.23	15.9%	108.4%
SNV	Synovus Financial Corp.	6.23	6.0%	100.7%
BPOP	Popular, Inc.	6.03	0.8%	95.5%
CIT	CIT Group Inc.	5.45	9.7%	171.3%
PACW	PacWest Bancorp	4.99	12.0%	109.1%
HWC	Hancock Whitney Corporation	3.88	11.2%	117.4%
CADE	Cadence Bancorporation	2.70	2.0%	174.3%
FBP	First BanCorp.	2.64	(3.9%)	130.8%
LOB	Live Oak Bancshares, Inc.	2.59	19.9%	226.1%
FMBI	First Midwest Bancorp, Inc.	2.12	(9.8%)	70.6%
TBK	Triumph Bancorp, Inc.	2.04	8.2%	200.0%
GWB	Great Western Bancorp, Inc.	1.64	0.0%	130.5%
NTB	The Bank of N.T. Butterfield & Son Limited	1.63	(2.7%)	32.9%
TBBK	The Bancorp, Inc.	1.39	16.2%	125.3%
AMTB	Amerant Bancorp Inc.	0.94	(3.7%)	100.6%

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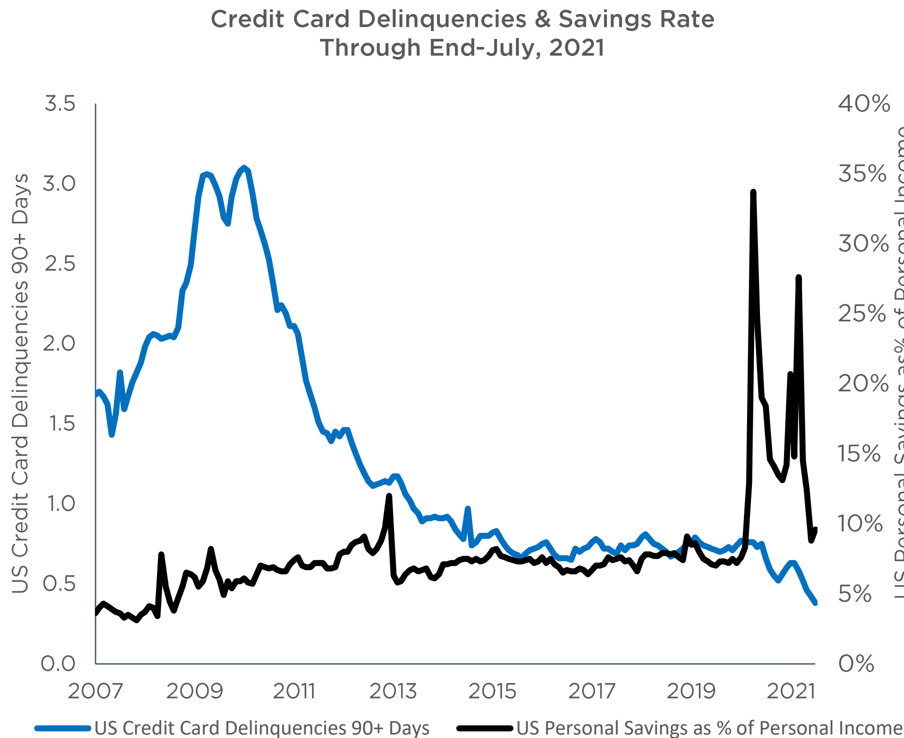
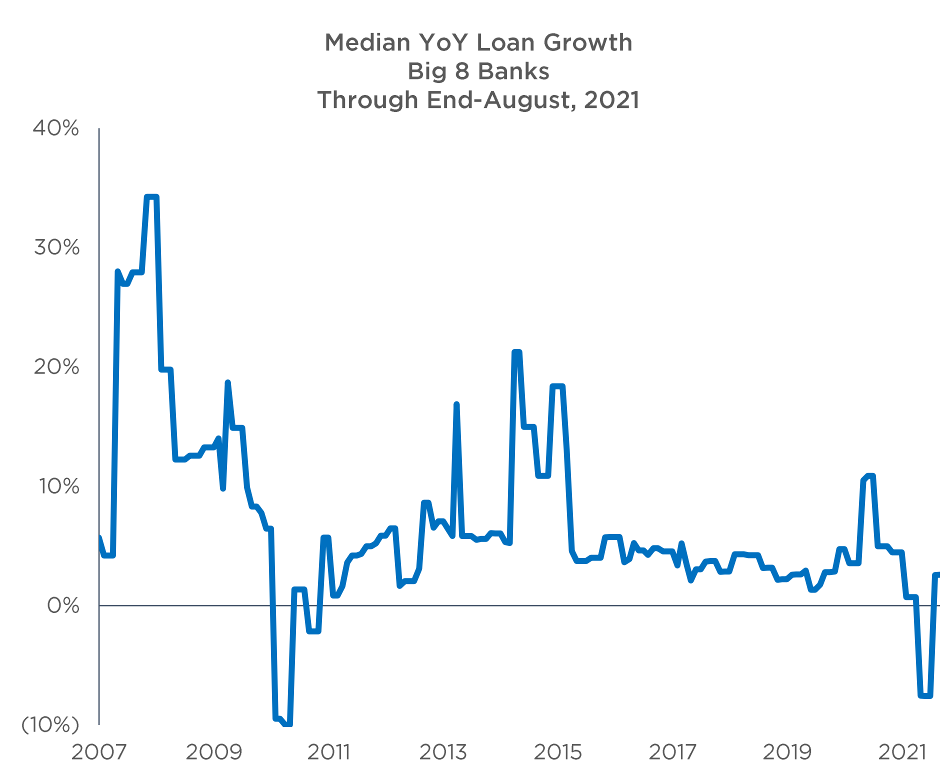
WATCH THE SAVINGS RATE AND LOAN GROWTH TO GAUGE REVISIONS

As generalists, our observation is that bank-stock investors excessively focusing on net interest margins, trying to gauge a few bps up or down. The bigger issue in our judgment is loan growth, and what could drive that as the cycle expands. The consumer is in great shape, with 90-day credit card delinquencies at a cycle low and the savings rate quite elevated (left chart). Loan growth has started to pickup for the biggest banks (right chart) but likely requires more dis-savings and a more demanding consumer before growing to levels seen in 2014-2015





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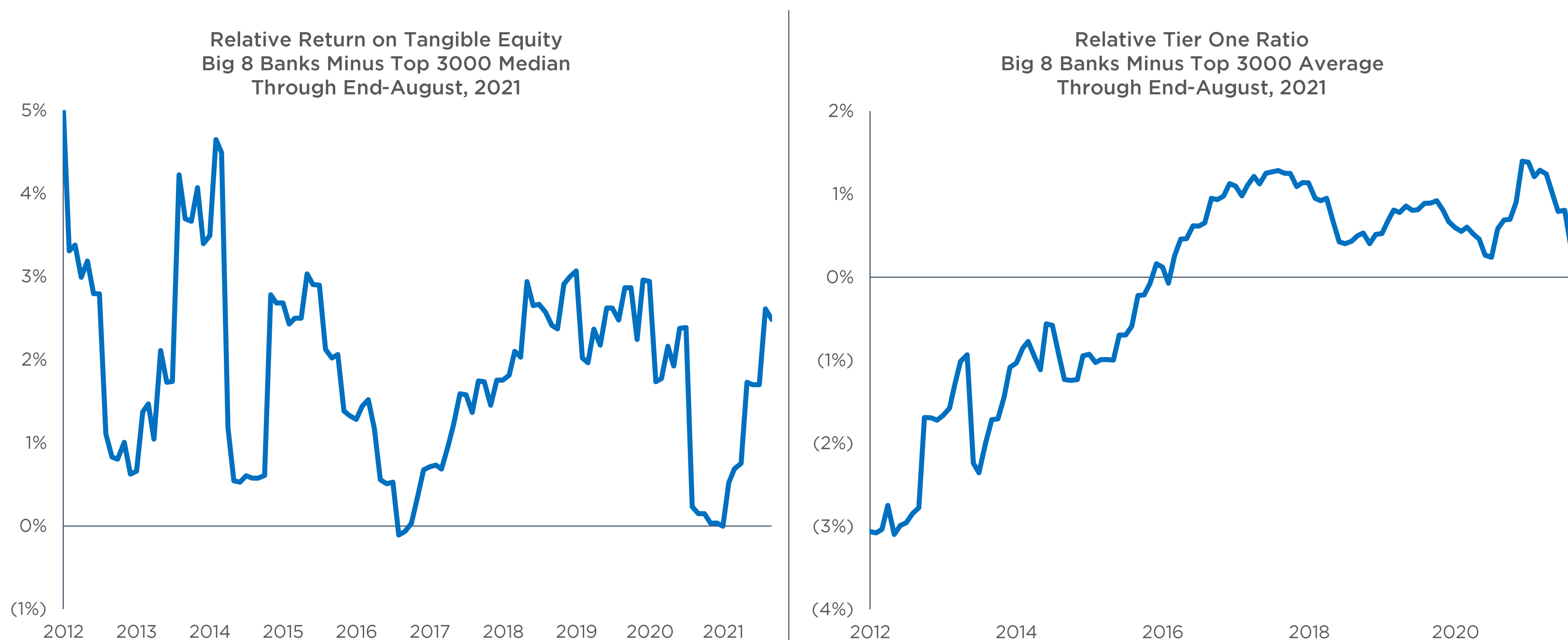
THE BIG 8: INCOME STATEMENT AND BALANCE SHEET IMPROVEMENT

The largest 8 banks (JPM, WFC, C, BAC, USB, PNC, GS, and MS) have markedly improved both their profitability and balance sheets over the last several years, on average better than the broader bank universe on both metrics. Return on tangible equity (left chart) now shows the large banks are at cycle highs on return on tangible book relative to the rest of banks (median ROTE of the Big 8 is now 17% vs 14.5% for the larger universe). This is close to the highest level of excess ROTE since 2014. The Big 8 have also improved their balance sheets over time, with what appears to be a sustainably higher Tier 1 Ratio than the broader group of banks (right chart)



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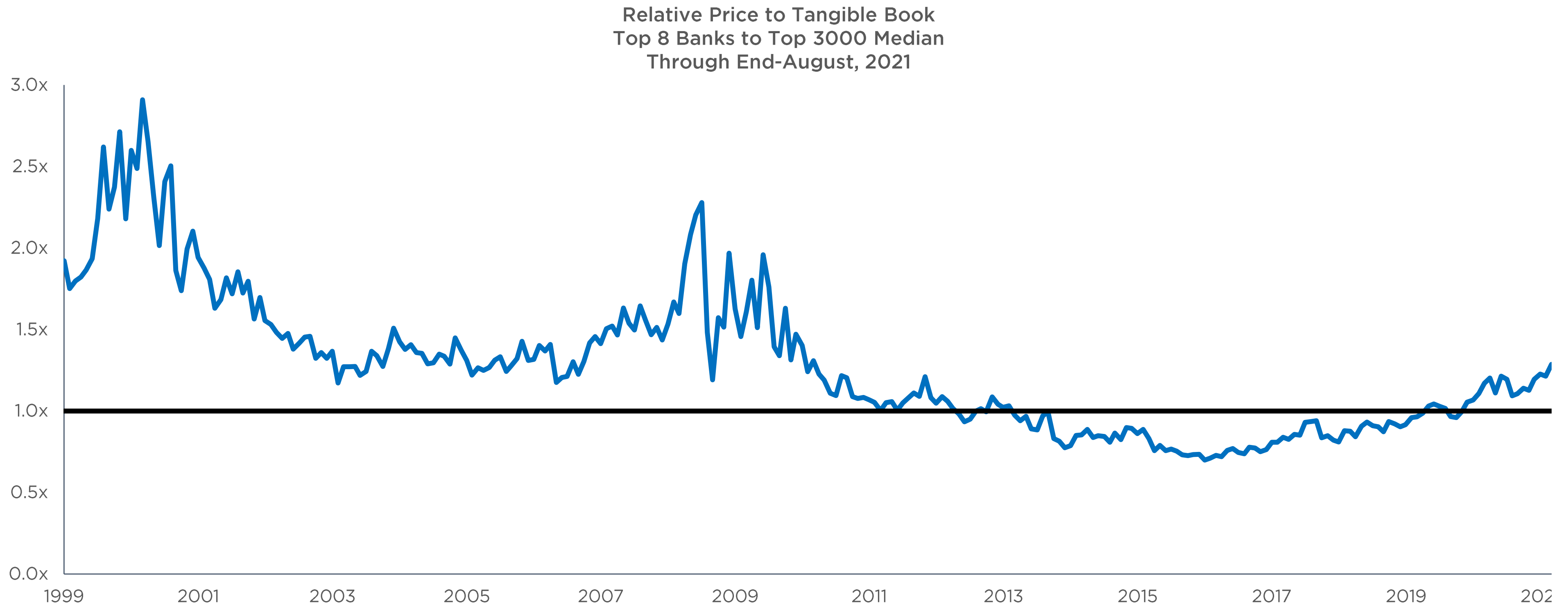
DESPITE THIS RELATIVE STRENGTH – VALUATION PREMIA ARE MODEST

Despite the relatively higher profitability and improved balance sheets, the large cap. banks barely trade at a premium to the broader group of banks. If longer-term history is a guide, the large cap. banks relative valuation could still substantially expand, even as the broader universe in-part have premia related to M&A potential. Our judgment is to prefer the Big 8 banks to the broader universe of banks, as their improved income statements and balance sheets should cost more relative to regionals



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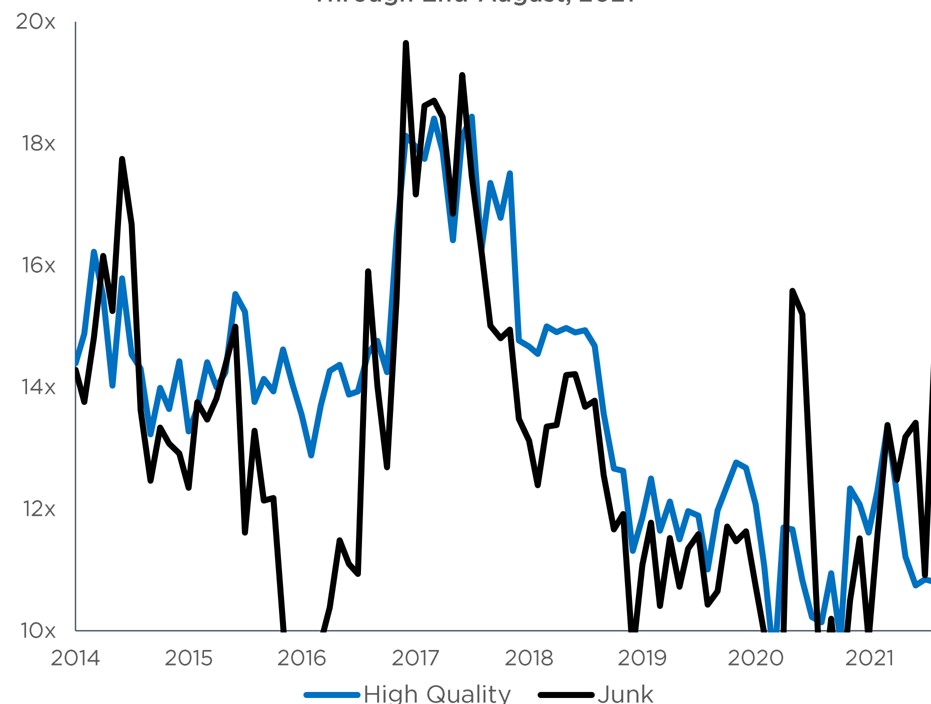
THERE IS A QUALITY / VALUATION DISCONNECT AMONG MICRO CAPS.

For those investors who can invest in micro cap. banks, we noticed an unusual valuation-based opportunity today. Historically, high quality micro cap. banks traded at a modest premium on price-to-forward earnings to the lowest quality or "junk" quartile. However, junk stocks are at a premium today (left chart). Our judgment is that this is likely to normalize over time, and hence, we offer long ideas that are quality micro cap. banks that are cheap on price-to-forward earnings, and short ideas that are junk stocks that are expensive on price-to-forward earnings (right)



Buy High Quality Cheap Micro Cap. Banks, Sell "Junk" Expensive Micro Cap. Banks
End-August, 2021

Long

Ticker	Company Name	Price to FWD Earnings	Market Cap ($ US. Bil)
PFBC	Preferred Bank	10.20x	0.95
QCRH	QCR Holdings, Inc.	9.39x	0.82
GSBC	Great Southern Bancorp, Inc.	10.72x	0.74
CAC	Camden National Corporation	10.74x	0.70
MCBS	MetroCity Bankshares, Inc.	8.37x	0.53
THFF	First Financial Corporation	9.84x	0.53
RBB	RBB Bancorp	9.22x	0.50
RBNC	Reliant Bancorp, Inc.	10.43x	0.48
FMNB	Farmers National Banc Corp.	8.12x	0.44
CCNE	CNB Financial Corporation	8.02x	0.41

Short

Ticker	Company Name	Price to FWD Earnings	Market Cap ($ US. Bil)
BHLB	Berkshire Hills Bancorp, Inc.	17.71x	1.23
AMTB	Amerant Bancorp Inc.	16.40x	0.96
HBMD	Howard Bancorp, Inc.	16.09x	0.37

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CAN YOU STILL OWN ENERGY & MATERIALS?

Oil prices were roughly flat in August, falling nearly 10% in mid-July and then recovering up 11% by the end of the month after the OPEC announcement, dropping the first day of August and then holding flat since

For energy, rising oil means higher earnings revisions and higher net income for the group. Earnings revisions are highly effective at picking winners from losers within the cohort for the 6-months following periods when oil is rising, likely meaning energy stocks beating estimates will still perform strongly. In addition, despite the strong rally, the sector is quite cheap versus history on price-to-book, which historically was the most efficacious valuation metric for picking energy stocks. It is VERY infrequent in the last decade where a sector has positive revisions, positive momentum, and cheap valuation versus history. Despite what seems obvious to be sustained demand growth exceeding supply growth for the sustainable future, there is a lot of negative sentiment, and firms have dropped coverage or don't have analysts. We think energy is a contrarian investment idea

For materials, the huge year-over-year move in commodities nearly guarantees the sector is poised to see record profitability next year, **yet valuation is at 18-year lows vs. the market excluding materials**. Revisions and valuation also work here so we offer long ideas in energy and materials, and we recommend investors own this group as the underlying commodities likely still rise in the coming year

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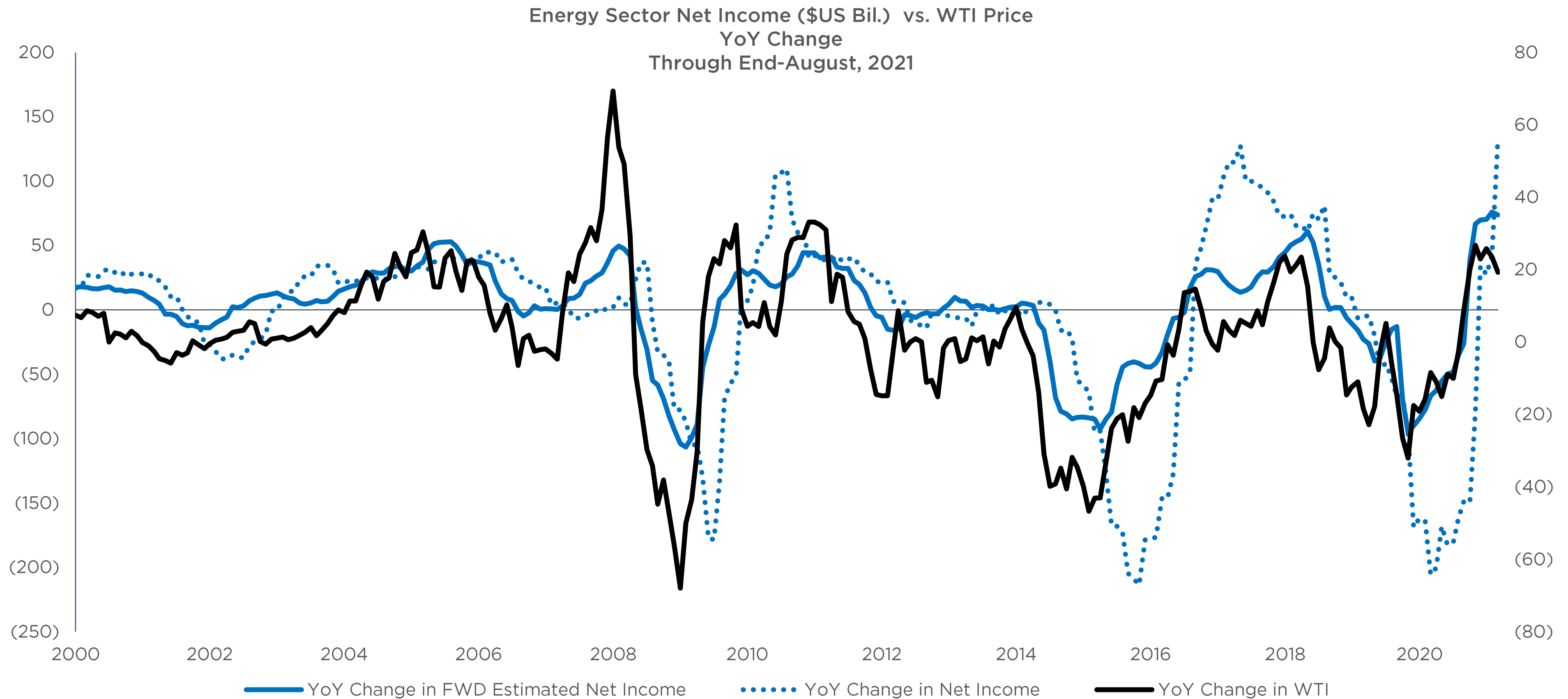
THERE IS A LAG BETWEEN OIL PRICES, ESTIMATES, AND REPORTS

For energy, oil prices are a leading indicator for net income of the energy sector. The black line below shows the change in WTI , which is typically a 3-to-6-month leading indicator for the dashed blue line, which is reported net income. The analysts typically wait until after oil lags (solid blue line), but right before the companies report earnings, so their forecasts are not particularly anticipatory



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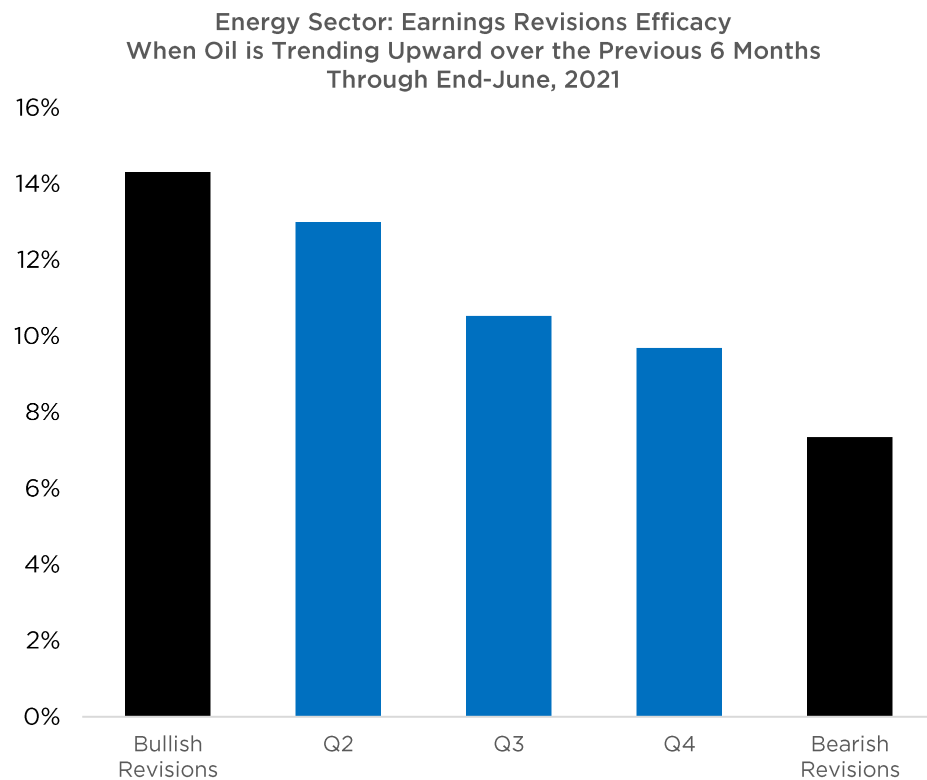
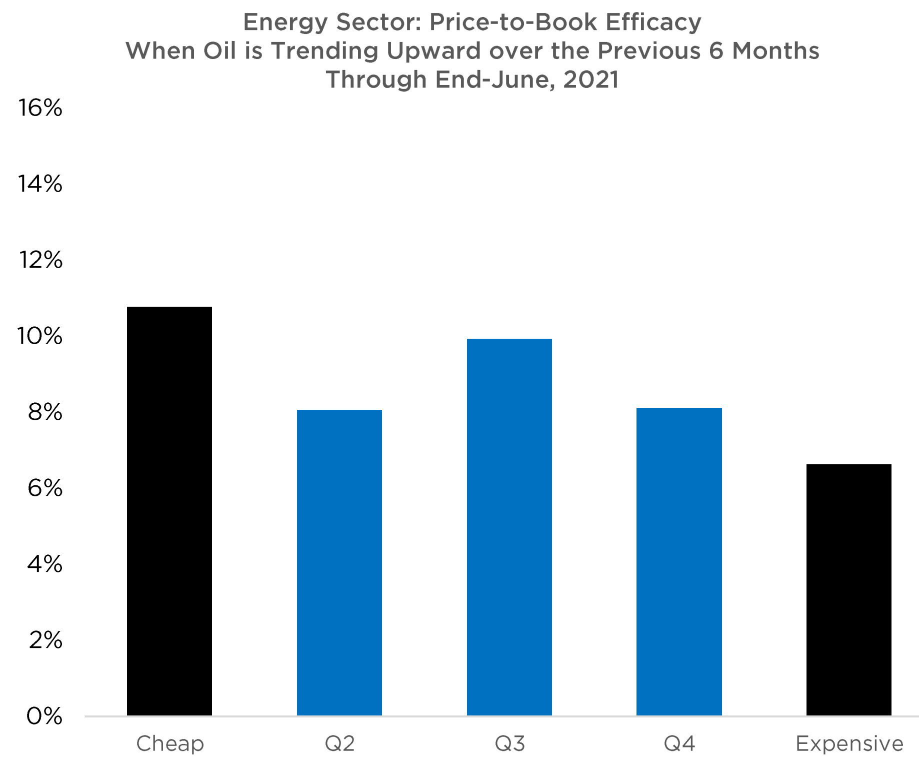
USE ENERGY EARNINGS REVISIONS & VALUATION WHEN OIL IS RISING

We analyzed whether earnings revisions were efficacious at predicting subsequent energy sector returns when oil is rising. Given that stocks prices are typically anticipatory, we have received several questions about how much more energy stocks could rally. During a rising oil regime, analyst earnings revisions have historically been highly effective at picking winners from losers, with the top quintile on revisions beating the bottom quintile by approximately 7% during the average subsequent 6-month period. While for the broader market we do not necessarily anticipate valuation metrics to work particularly well, valuation has also worked, with the cheapest quintile on price-to-book outperforms the most expensive quintile by approximately 5%





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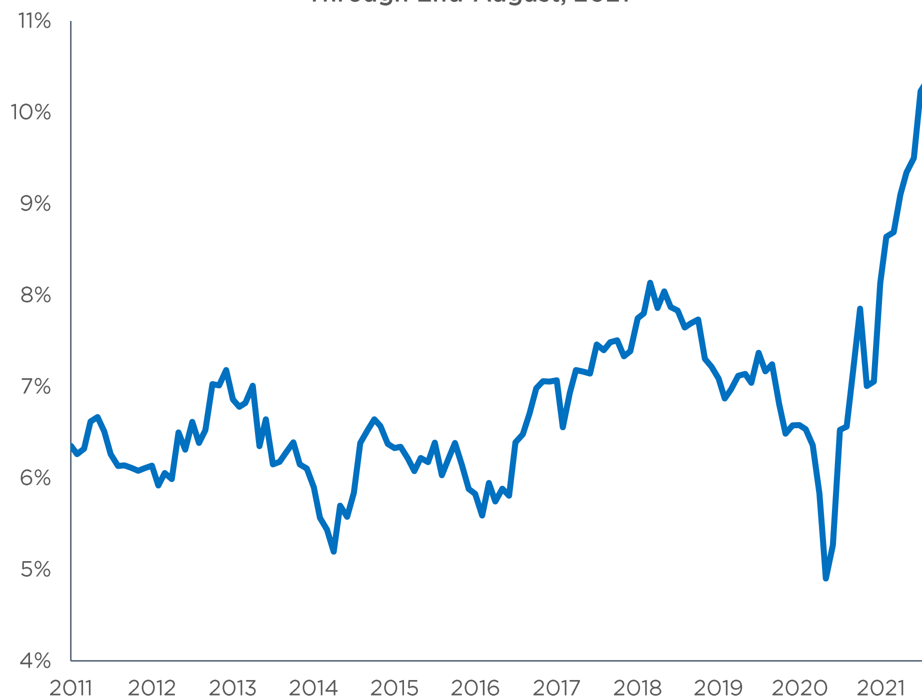
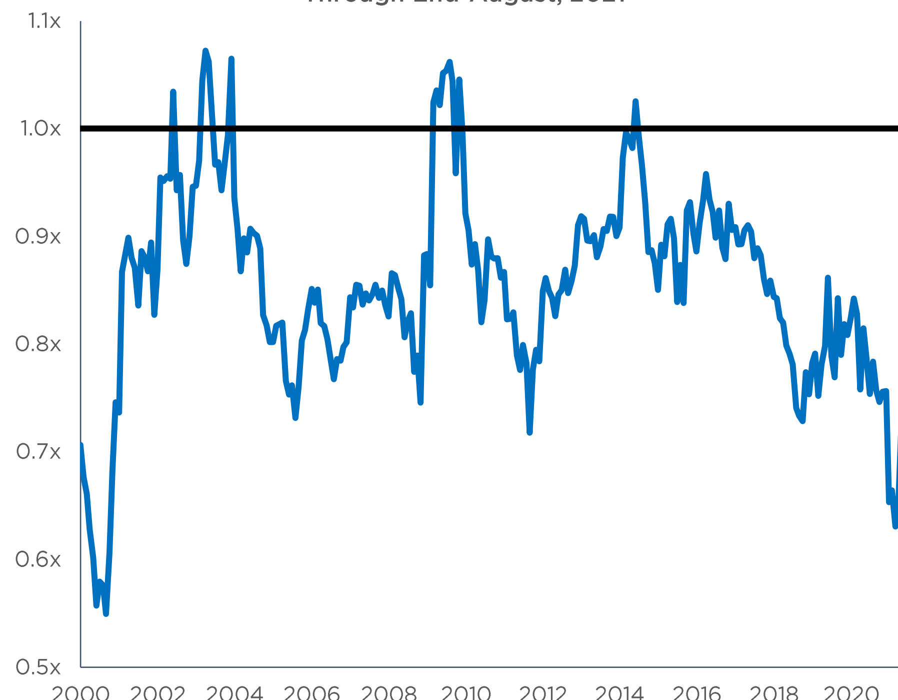
THE MARKET IS SKEPTICAL OF RECORD MATERIALS PROFIT ESTIMATES

The consensus expectations are that net margins for the materials sector will achieve record highs, yet the valuation on a relative to the market basis has recovered to levels near 18-year lows. Our belief is that many of the companies can structurally improve cycle to cycle with the anticipated profit expansion, helping future investments and balance sheet repair. We like the risk-reward of a sector with high but likely achievable near-term estimates and attractive relative valuation





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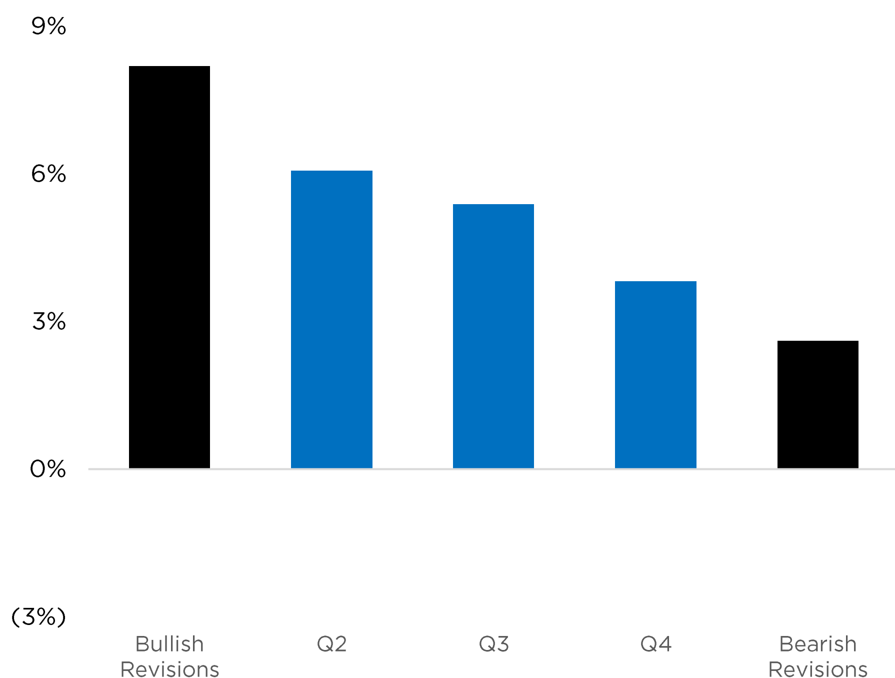
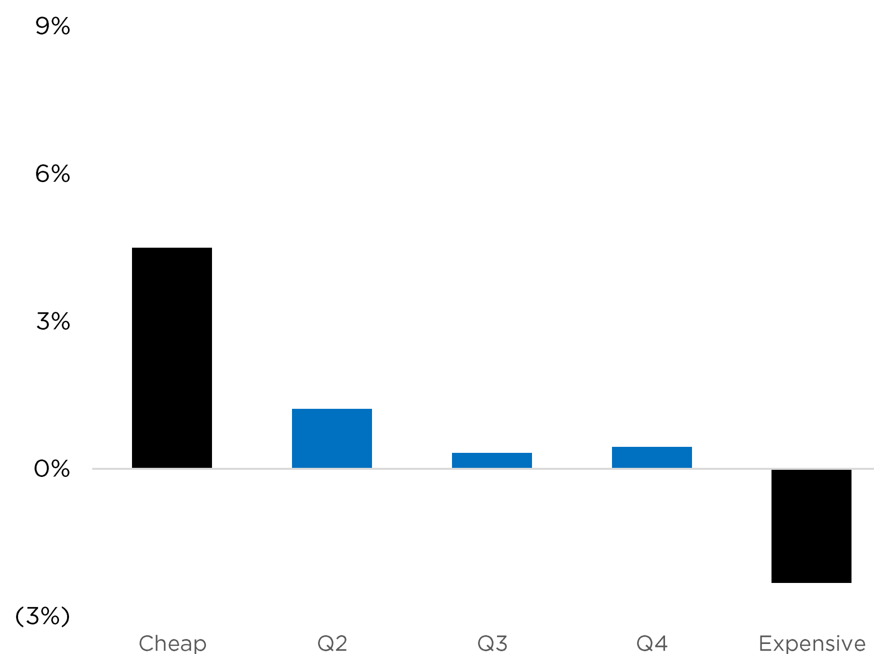
EARNINGS REVISIONS & VALUATION WORK FOR MATERIALS

As was the case in energy, materials stocks with upward analyst earnings revisions and cheaper valuation outperform those with less upward or downward revisions as oil and commodity prices rise. The top vs. bottom quintile spreads on earnings revisions average 6% on average over the subsequent six months following rising revisions, and the cheapest quintile on EV-to-EBITDA outperforms the most expensive by 7% on average





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ENERGY AND MATERIALS STOCK SCREEN

Tying it together, we are bullish on energy and materials given the combination of estimate achievability and valuation. The below screen shows stocks that are in the energy and materials sector and are in the top 25% of both valuation and earnings revisions today

Energy and Materials Sector
Top Quartile in Estimate Revisions and Valuation
August 31, 2021

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
DOW	Dow Inc.	Chemicals	46.58
NUE	Nucor Corporation	Metals & Mining	34.53
LYB	LyondellBasell Industries N.V.	Chemicals	33.57
STLD	Steel Dynamics, Inc.	Metals & Mining	13.78
MOS	The Mosaic Company	Chemicals	12.23
WLK	Westlake Chemical Corporation	Chemicals	11.19
RS	Reliance Steel & Aluminum Co.	Metals & Mining	9.53
MRO	Marathon Oil Corporation	Oil, Gas & Consumable Fuels	9.26
AA	Alcoa Corporation	Metals & Mining	8.29
OLN	Olin Corporation	Chemicals	8.00
X	United States Steel Corporation	Metals & Mining	7.23
LPX	Louisiana-Pacific Corporation	Paper & Forest Products	6.04
HFC	HollyFrontier Corporation	Oil, Gas & Consumable Fuels	5.19
AR	Antero Resources Corporation	Oil, Gas & Consumable Fuels	4.31
MUR	Murphy Oil Corporation	Oil, Gas & Consumable Fuels	3.28
UFS	Domtar Corporation	Paper & Forest Products	2.76
TSE	Trinseo S.A.	Chemicals	2.02
CDEV	Centennial Resource Development, Inc.	Oil, Gas & Consumable Fuels	1.42

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THE US CONSUMER – GROSS UP AND NET UP

Our consumer activity gauge leads us to believe the US consumer remains in solid shape. However, investors have been concerned about a modest softening in retail sales from May's peak and now likely will question a softer-than-expected August jobs report. With August consumer earnings showing more large beats than misses, but also some stock volatility following the earnings reports, many investors have been asking about the consumer playbook from back-to-school through year-end

- **Consumer activity is positive**: We have a proprietary consumer activity gauge that contains several metrics, such as retail sales, consumer confidence, jobs, wages, etc. The gauge continues to show positive and increasing consumer activity
- **Increase gross and net exposure to discretionary**: Our discretionary quantitative model generates materially stronger performance when consumer activity is positive and increasing, leading us to advise higher gross exposure today. Moreover, all industries within consumer discretionary outperform during periods where consumer activity is increasing (except autos), leading us to recommend a high net exposure as well. Only 16% of discretionary stocks have seen relative multiple expansion this year, despite the consumer strength, and relatively few of the big consumer drawdowns occurred during a regime of increasing consumer activity, bolstering our confidence to increase exposure
- **Staples are more idiosyncratic than discretionary**: Despite conventional wisdom, staples have beaten discretionary on a beta-adjusted basis over the long-term and the median stock has more idiosyncratic risk. With a far greater percentage lagging the market by 20% or more than leading, we think staples is a rich area to look for short ideas

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TWO INVESTMENT STRATEGIES FOR CONSUMER STOCKS

1. **Investment Strategy #1**: Long quality reopening, short junk work from home. Since the beginning of the pandemic:
   - Quality reopening stocks have barely outperformed junk reopening stocks
   - Junk work from home stocks have still strongly outperformed quality reopening stocks

As the recovery continues, we see a high probability that quality outperforms junk, and reopening outperforms work from home. Hence, our recommendation is to:

- **Long**: Quality stocks with high correlation to our "reopening" basket (stocks on page 15)
- **Short**: "Junk" stocks with high correlation to our "work from home" basket

2. **Investment strategy #2**: We like a consumer barbell:
   - **Long**: Consumer services with suppressed profitability that likely recover as reopening continues and demand for services grow. Since services now trade like junk stocks, multiple expansion is likely as balance sheets improve over the coming cycle
   - **Long**: Select retailers given we want to run with higher-than-normal net exposure
   - **Short**: Highly idiosyncratic staples, given company-specific risk is higher for staples than discretionary and there are many names lagging the market by 20% or more. We can see the logic of being long a staples ETF (to capture long-term above average performance) and short some high company-specific risk staples names given the fact pattern
   - **Short**: Durables that appear to trade like growth stocks with record momentum, and are likely over-earning (stocks on page 16)

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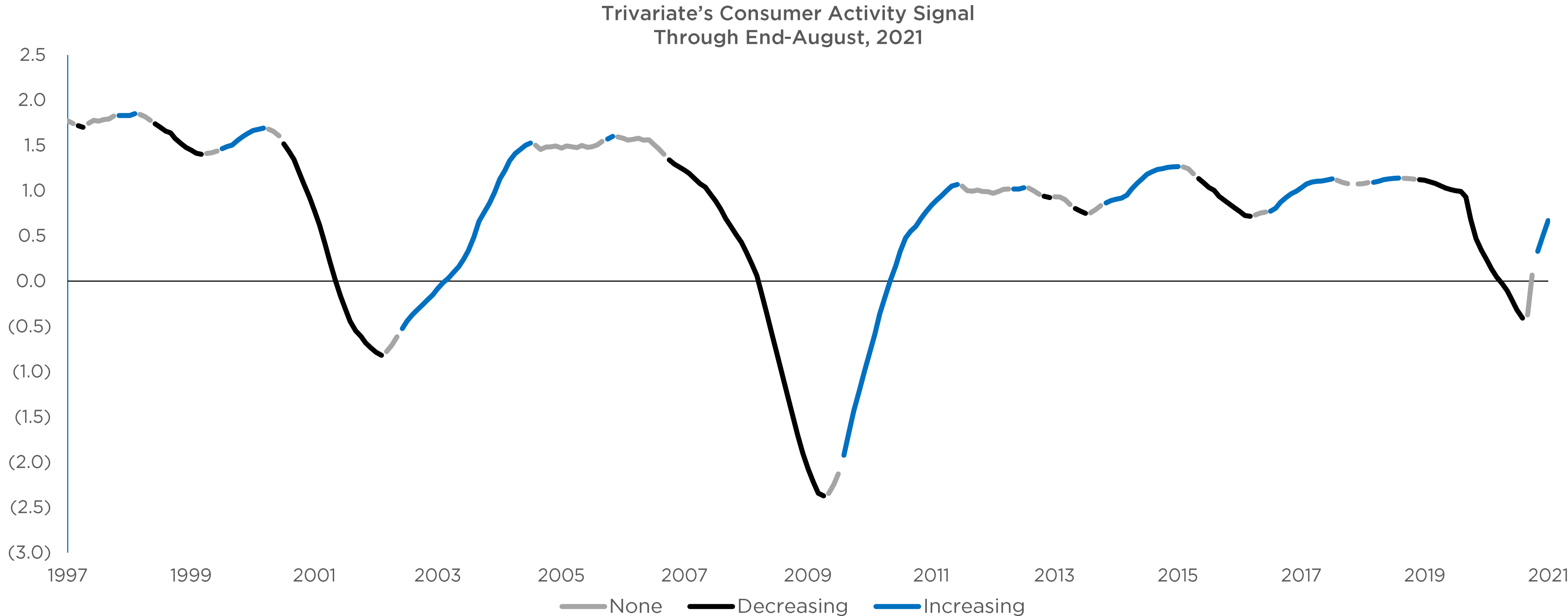
OUR CONSUMER ACTIVITY GAUGE IS POSITIVE AND INCREASING

Or consumer activity gauge contains metrics like 90-day credit card delinquencies, retail sales, consumer confidence, wage growth, unemployment data, and several other metrics. While consumer activity was decreasing for much of 2020, it has rebounded sharply off the bottom. Today, our signals show a positive and increasing consumer overall



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THE US CONSUMER IS STRONG BUT THERE IS FEAR OF A SOFTENING

On the positive side, labor trends have generally been positive despite today's softer-than-expected report, credit card delinquencies are at all-time low, and consumer confidence and retail sales are at the 99th percentile levels vs. history. On the flip side, the year-over-year growth in retail sales did peak in May, and while hourly earnings are relatively strong, the Atlanta Wage growth tracker is only slightly above longer-term averages. Personal income growth has also been weak

Consumer Activity Signals
As of End-August, 2021

Consumer Activity Component	August 2021 Value	Percentile vs. Long-Term History
ADP Payrolls (YoY%)	4.6%	99%
US Hourly Earnings Growth (6-Month MA)	4.0%	93%
US Consumer Confidence (YoY%)	40.8%	96%
US Credit Cards 90+ Days Delinquency Rate	0.38	0%
Non-Farm Payrolls (YoY%)	5.2%	99%
US Personal Income (YoY% Change)	2.7%	13%
US Retail Sales	15.8%	99%
Atlanta Fed Wage Growth Tracker	3.7	56%

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RECENT EARNINGS HAVE SHOWN UPSIDE, BUT WITH SOME BLOWUPS

69 out of 88 consumer stocks reporting in August beat earnings expectations, with notable strength in the lower-end consumer stocks like WMT, TJX, and ROST, among others. There were some double-digit earnings misses however (DASH, PTON, BKNG), and others where the beats disappointed investors as expectations were for stronger performance and guidance (i.e. JWN)

August Earnings
Mega and Large Cap. Consumer Stocks
As of August 30, 2021

Ticker	Company Name	Industry Group	Market Cap. ($ US Bil.)	Estimate	Actual	Surprise	Forward 3d Return (Relative to SPX)
WMT	Walmart Inc.	Food & Staples Retailing	422.42	1.57	1.78	13.7%	1.2%
HD	The Home Depot, Inc.	Retailing	356.24	4.42	4.53	2.4%	(2.0%)
LOW	Lowe's Companies, Inc.	Retailing	128.31	4.01	4.25	5.9%	14.4%
TGT	Target Corporation	Retailing	125.98	3.48	3.64	4.7%	(0.4%)
EL	The Estée Lauder Companies Inc.	Household & Personal Products	115.67	0.51	0.78	54.2%	3.6%
ABNB	Airbnb, Inc.	Consumer Services	91.95	(0.36)	(0.11)	69.3%	(4.5%)
BKNG	Booking Holdings Inc.	Consumer Services	85.64	(2.10)	(2.55)	(21.4%)	2.8%
GM	General Motors Company	Automobiles & Components	83.96	2.08	1.97	(5.2%)	(5.2%)
TJX	The TJX Companies, Inc.	Retailing	83.43	0.57	0.80	39.7%	7.2%
DASH	DoorDash, Inc.	Retailing	61.33	0.09	(0.22)	(349.7%)	(1.0%)
DG	Dollar General Corporation	Retailing	55.45	2.61	2.69	3.2%	(4.7%)
MNST	Monster Beverage Corporation	Food, Beverage & Tobacco	48.63	0.68	0.75	10.8%	7.2%
KHC	The Kraft Heinz Company	Food, Beverage & Tobacco	47.63	0.72	0.78	7.9%	(4.8%)
MAR	Marriott International, Inc.	Consumer Services	47.18	0.47	0.79	69.2%	(3.1%)
EBAY	eBay Inc.	Retailing	46.34	0.95	0.99	4.8%	9.9%
ROST	Ross Stores, Inc.	Retailing	45.20	0.95	1.39	45.7%	(4.0%)
SYY	Sysco Corporation	Food & Staples Retailing	37.58	0.60	0.71	17.5%	6.6%
PTON	Peloton Interactive, Inc.	Consumer Durables & Apparel	34.24	(0.39)	(0.92)	(139.8%)	(13.4%)
JWN	Nordstrom, Inc.	Retailing	6.01	0.27	0.49	84.9%	(23.2%)
M	Macy's, Inc.	Retailing	5.64	0.20	1.29	558.2%	22.6%

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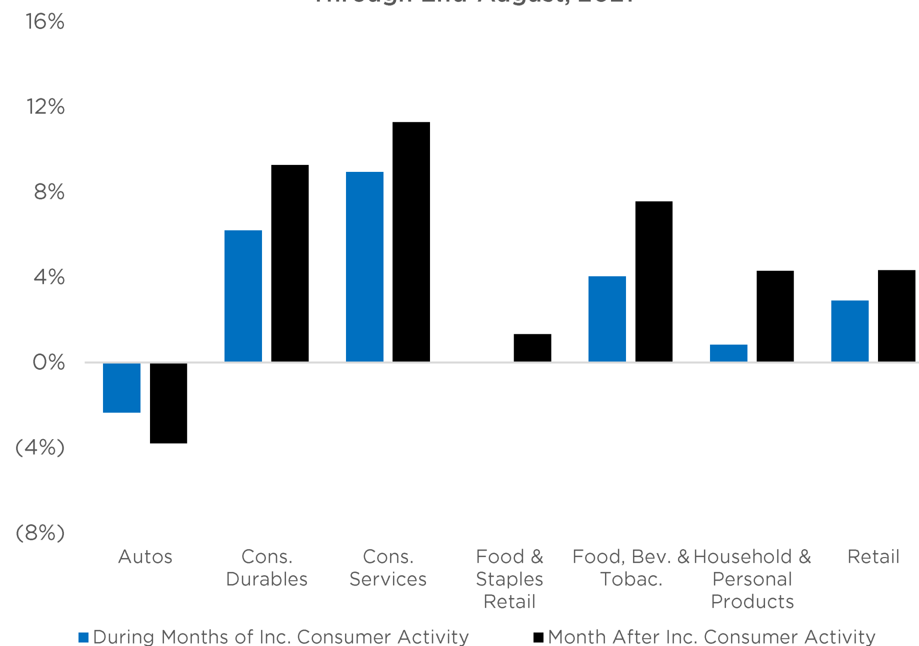
GROSSING AND NETTING UP DISCRETIONARY IS PRUDENT

Our quantitative model that forecasts returns for discretionary stocks performs better when our consumer activity gauge is increasing, with a higher top vs. bottom quintile spread and hit rate (left chart) that when consumer activity is not increasing. Grossing up exposure to discretionary stocks is therefore prudent. We also analyzed the performance of each of the consumer discretionary industries when our consumer activity gauge is increasing and found that relative performance is strong for all industries except autos (right chart). We saw little reversal in the subsequent month, bolstering our confidence to make a higher net exposure recommendation as well

Performance of Consumer Discretionary Model When Consumer Activity Is Positive and Increasing Through End-August, 2021

Stat	Consumer Activity Positive and Increasing	Consumer Activity Not Positive and Increasing	Difference
Hit Rate	75.5%	56.4%	19.1%
Weighted IR	1.82	0.80	1.01
Weighted Mean	19.0%	9.3%	9.7%
Weighted Median	21.8%	13.3%	8.5%



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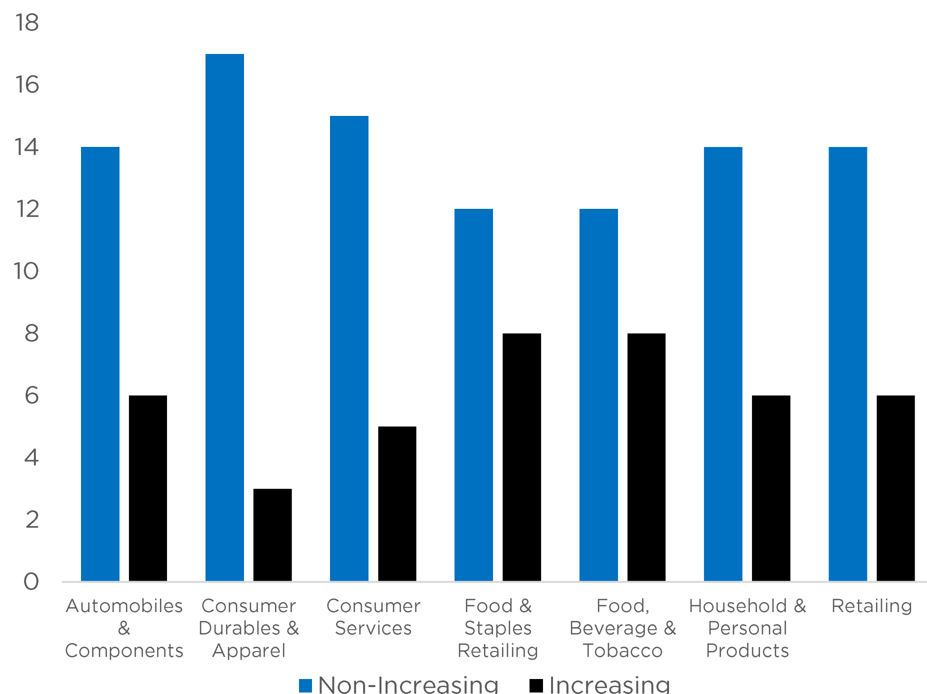
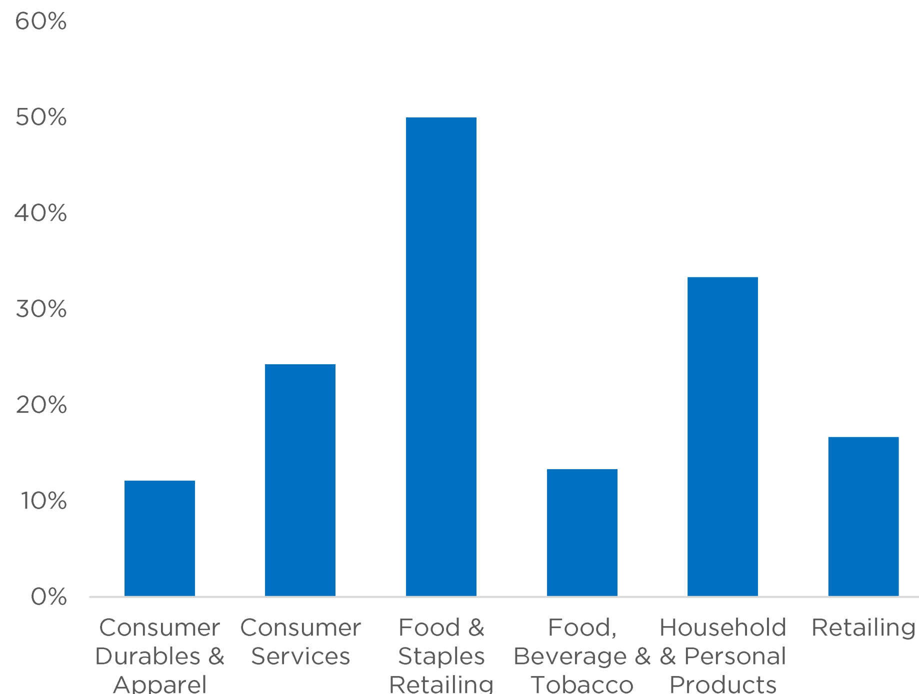
WHAT IF WE ARE WE LATE?

We evaluated the worst 20 months of consumer industry performance in the last 12 years to see if these drawdowns more frequently occurred during or right after periods of increasing consumer activity. We are heartened by the fact that consumer industries typically have their worst relative performance when consumer activity is not increasing (left chart). An additional reason to be bullish on consumer stocks is relative valuation. Way less than half the consumer stocks have seen relative-to-SP500 price-to-forward earnings multiple expansion this year, despite the obvious consumer strength. About half of the food and staples retailers have seen relative multiple expansion, but relatively few consumer services, retail, food, beverages & tobacco, or durables have, meaning in general investors have not bid up consumer stocks despite their fundamental strength (right chart)





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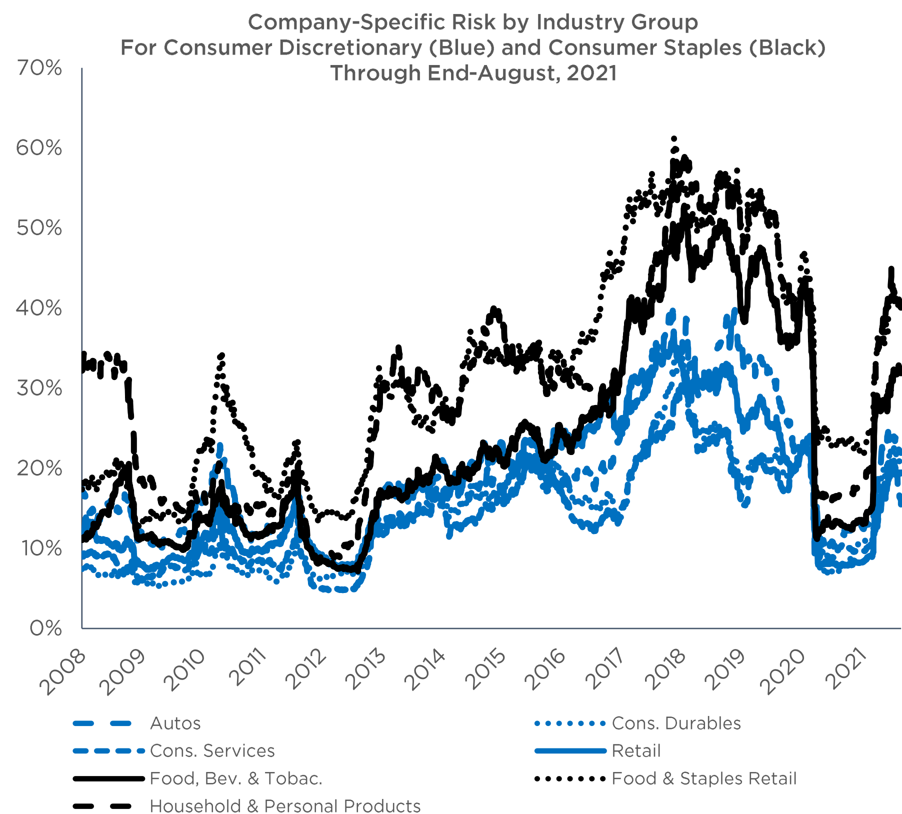
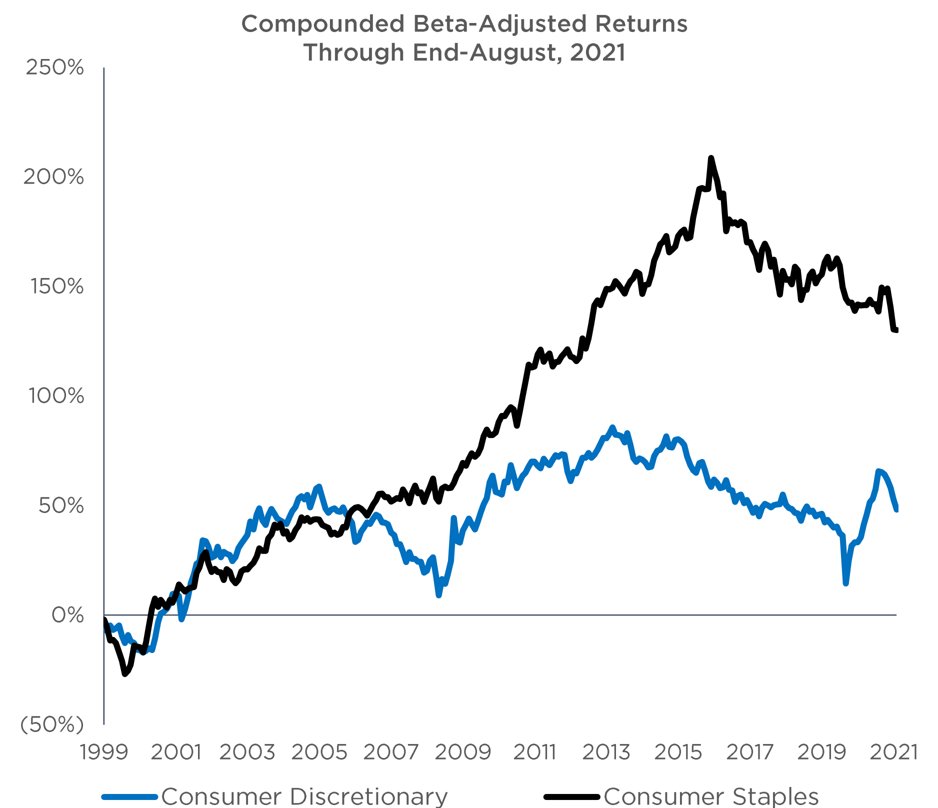
STAPLES ARE MORE IDIOSYNCRATIC AND HAVE HAD HIGHER ALPHA…

Conventional wisdom is that staples are more macro and discretionary stocks are more idiosyncratic among consumer analysts. However, (left chart) food, beverage & tobacco, and household and personal products tend to have more company-specific risk than retail, durables and consumer services. Since the TMT bubble, staples have also strongly beaten discretionary on a beta-adjusted basis (right chart)





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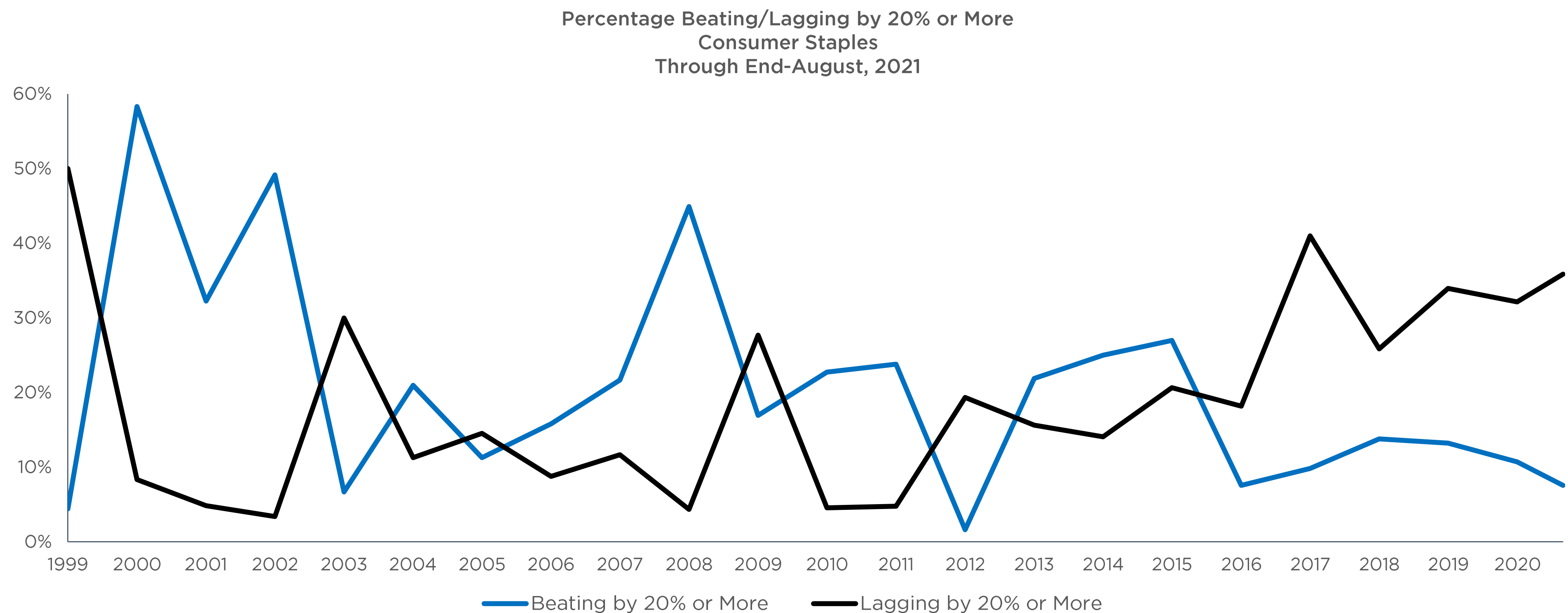
…BUT THERE ARE MORE LARGE LAGGARDS IN STAPLES

Identifying strong long ideas in staples is particularly challenging today. The fewest number of staples in nine years are beating the market by 20% or more but the largest number of staples stocks in 12 years are lagging the market by 20% or more. Given there is higher company-specific risk in staples than many might surmise, hunting for idiosyncratic shorts in staples is prudent. We could also see the logic to stay long a staples ETF and short some high company-specific risk staples to lower the net exposure



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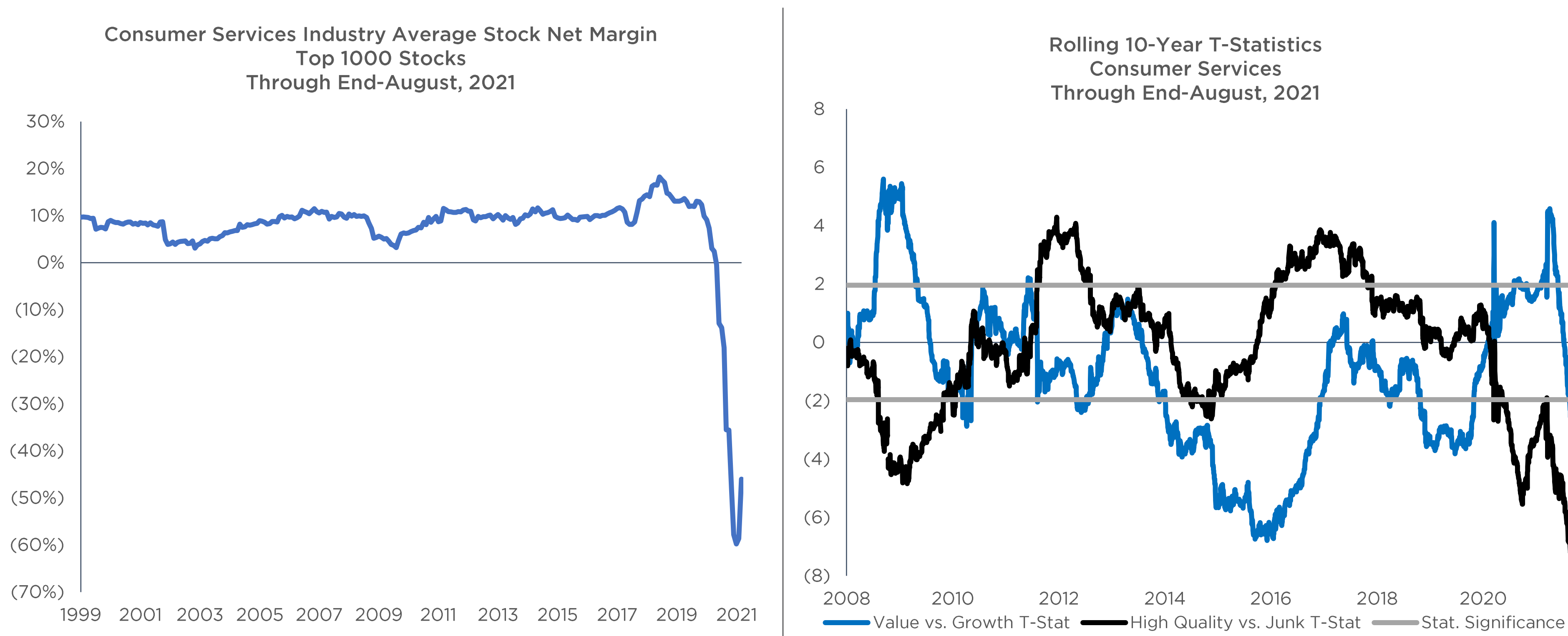
THE CONSUMER SERVICES INDUSTRY IS UNDER-EARNING THE MOST

The consumer service industry has been rocked by COVID-19, with the average companies' net margin bouncing just above record lows right now (left chart). As the economy and demand for services grow, it stands to reason that the services industry will regain profitability back toward the lower volatility high single-digit band it was in for the previous two decades. The result of the sustained losses in consumer services is the industry now has the strongest statistically significant relationship to junk and value this cycle (right chart)



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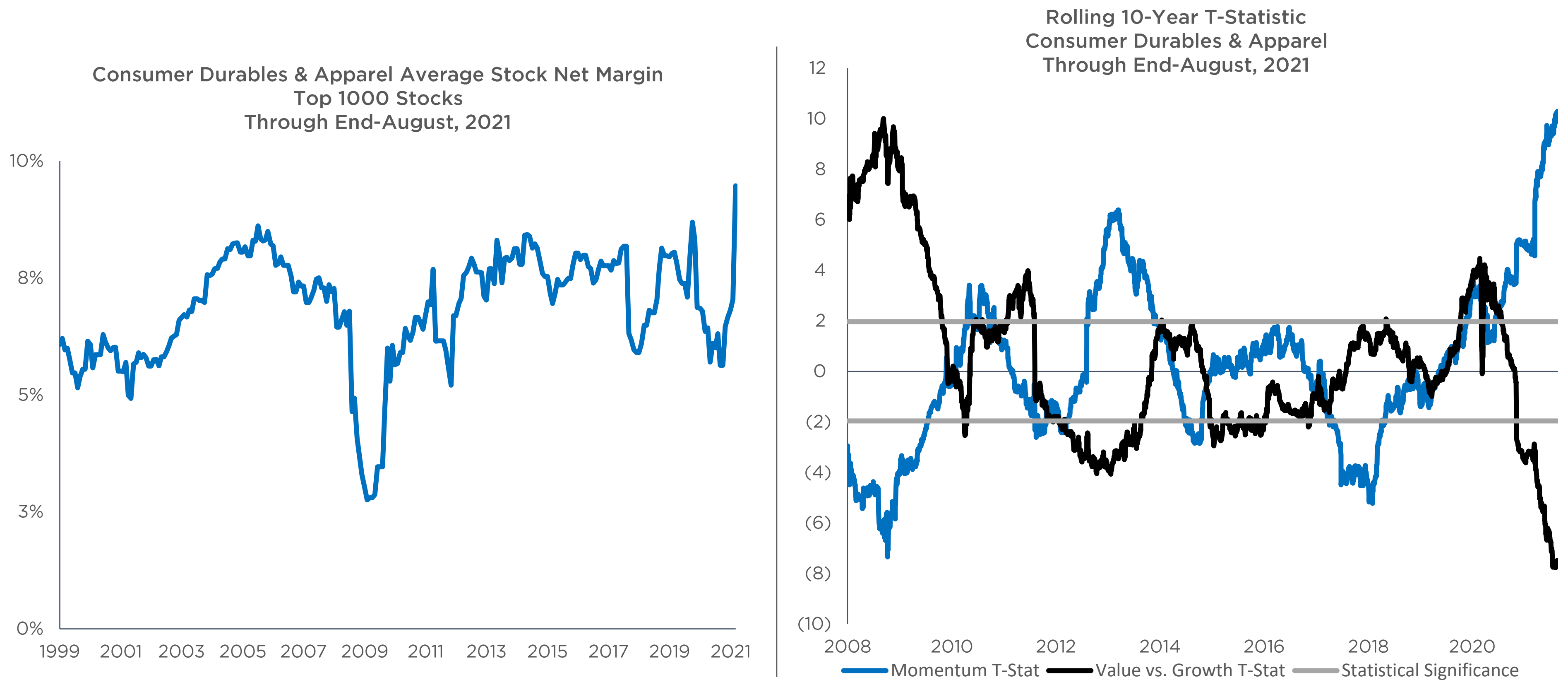
WHEREAS DURABLES SEEM TO BE OVER-EARNING THE MOST

Durables appear to be over-earning the most, with record profitability due in large part to housing demand and the homebuilders (left chart), a trend that is likely to rollover in the coming quarters. The result of strong profitability is the industry now trades the most like the growth universe ever, with the highest momentum ever (right chart). While durables can have prolonged cycles, we doubt there will be a structural shift to growth and momentum for the industry, viewing this as a place to sell winners over the coming months



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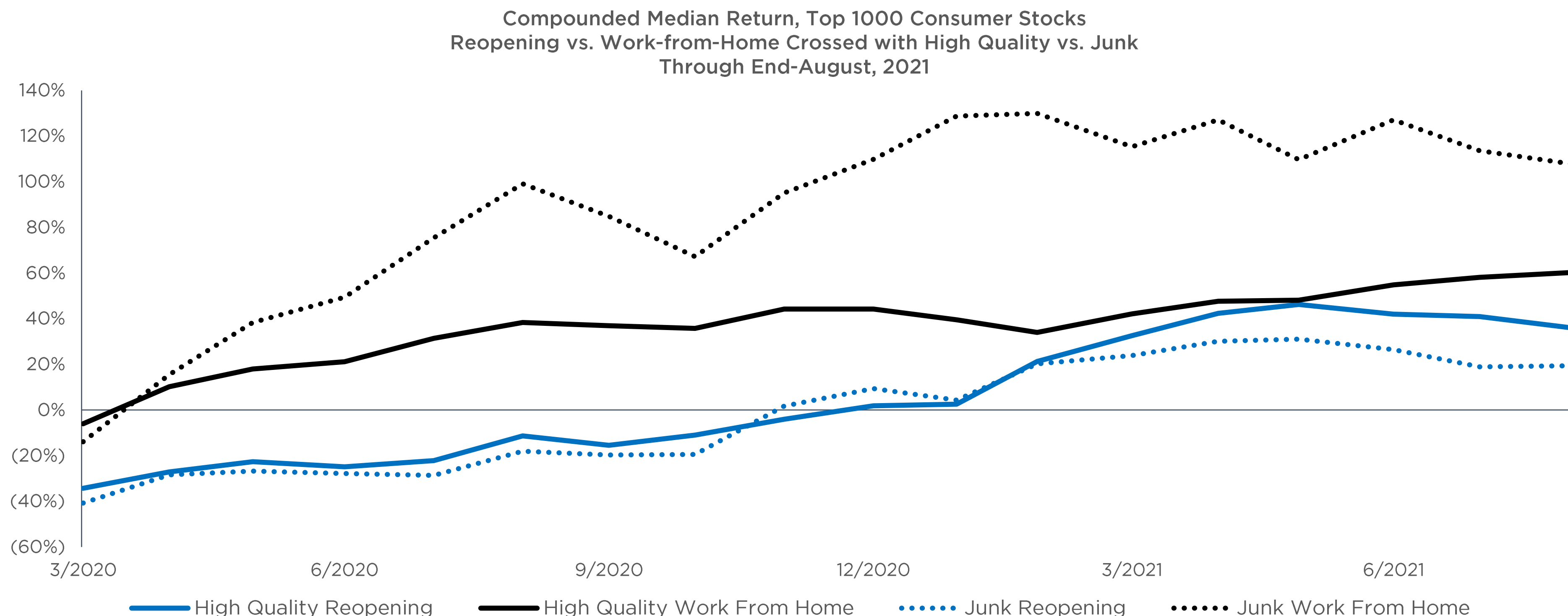
JUNK WORK FROM HOME WILL EVENTUALLY LAG QUALITY REOPENING

We analyzed the returns of quality vs. junk within "work from home" and "reopening" consumer stocks, given the on-again-off-again nature of consumer demand and experience in a Delta-variant world. We have two observations. Firstly, we think quality reopening will ultimately outperforming junk reopening by a more substantial margin over the coming quarters. Secondly, we think quality reopening will perform better than junk work from home as the world continues to adapt and adjust. Our advice is to look for quality reopening long ideas, and junk work from home short ideas



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STRATEGY 1: QUALITY CROSSED WITH WORK FROM HOME / REOPENING

Consistent with this theme, we offer long and short consumer ideas in the quality reopening and junk work from home buckets, respectively

Long Quality Reopening, Short Junk Work From Home, As of August 31, 2021

Longs				Shorts			
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)	Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
ROST	Ross Stores, Inc.	Retailing	43.82	PTON	Peloton Interactive, Inc.	Consumer Durables & Apparel	35.21
HLT	Hilton Worldwide Holdings Inc.	Consumer Services	36.63	CVNA	Carvana Co.	Retailing	27.33
EXPE	Expedia Group, Inc.	Consumer Services	23.64	DKNG	DraftKings Inc.	Consumer Services	19.48
ULTA	Ulta Beauty, Inc.	Retailing	18.39	FTCH	Farfetch Limited	Retailing	17.75
GPC	Genuine Parts Company	Retailing	18.18	SAM	The Boston Beer Company, Inc.	Food, Beverage & Tobacco	8.66
LKQ	LKQ Corporation	Retailing	15.04	LAZR	Luminar Technologies, Inc.	Automobiles & Components	6.25
LEVI	Levi Strauss & Co.	Consumer Durables & Apparel	11.06				
GPS	The Gap, Inc.	Retailing	11.01				
RL	Ralph Lauren Corporation	Consumer Durables & Apparel	8.34				
SKX	Skechers U.S.A., Inc.	Consumer Durables & Apparel	8.33				
USFD	US Foods Holding Corp.	Food & Staples Retailing	7.62				
CHH	Choice Hotels International, Inc.	Consumer Services	6.63				

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STRATEGY 2: A BARBELL

Another consumer theme we like is a barbell approach - long retail as discretionary tends to work when consumer activity is strong and services on a rebound of suppressed profitability - short idiosyncratic staples and durables which are potentially over-earning

Long Retailers and Services that Favored by Our Model, Short Highly Idiosyncratic Staples and Durables Our Model Disfavors, As of August 31, 2021

Longs				Shorts			
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)	Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
HD	The Home Depot, Inc.	Retailing	344.24	KHC	The Kraft Heinz Company	Food, Beverage & Tobacco	44.03
LOW	Lowe's Companies, Inc.	Retailing	141.18	STZ	Constellation Brands, Inc.	Food, Beverage & Tobacco	40.58
TGT	Target Corporation	Retailing	120.54	KR	The Kroger Co.	Food & Staples Retailing	34.43
ROST	Ross Stores, Inc.	Retailing	42.28	PTON	Peloton Interactive, Inc.	Consumer Durables & Apparel	30.11
ORLY	O'Reilly Automotive, Inc.	Retailing	40.96	CLX	The Clorox Company	Household & Personal Products	20.64
BBY	Best Buy Co., Inc.	Retailing	28.66	HAS	Hasbro, Inc.	Consumer Durables & Apparel	13.54
TSCO	Tractor Supply Company	Retailing	22.21	CPB	Campbell Soup Company	Food, Beverage & Tobacco	12.65
CZR	Caesars Entertainment, Inc.	Consumer Services	21.69	DAR	Darling Ingredients Inc.	Food, Beverage & Tobacco	12.07
DRI	Darden Restaurants, Inc.	Consumer Services	19.63	TAP	Molson Coors Beverage Company	Food, Beverage & Tobacco	10.35
RH	RH	Retailing	14.74	CASY	Casey's General Stores, Inc.	Food & Staples Retailing	7.59
GPS	The Gap, Inc.	Retailing	10.05	COTY	Coty Inc.	Household & Personal Products	7.48
SGMS	Scientific Games Corporation	Consumer Services	6.97	POST	Post Holdings, Inc.	Food, Beverage & Tobacco	7.13
WEN	The Wendy's Company	Consumer Services	5.13				

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TRIVARIATE'S PROPRIETARY QUANTITATIVE TOOLS

We developed a database, signals, models and a risk management system to run a hedge fund – the data integrity, system checks passed allocator diligence

Our Trivariate approach generates ideas that include:

1. Proprietary stock level models with custom tags, cohorts, signals
2. Ingestion of 100+macro factors to re-sort our model outcomes and improve recommendations on grossing / sizing
3. Systematic identification of fundamental factors, such as deals, new management teams, etc. which increase volatility without commensurate alpha

Following our idea generation, we advise on risk management in areas including:

1. Risk diagnostics
2. Portfolio optimization with customizable constraints
3. Identification of crowded ideas from proprietary 13-F "high conviction" analysis

Please reach out to us for bespoke risk management services

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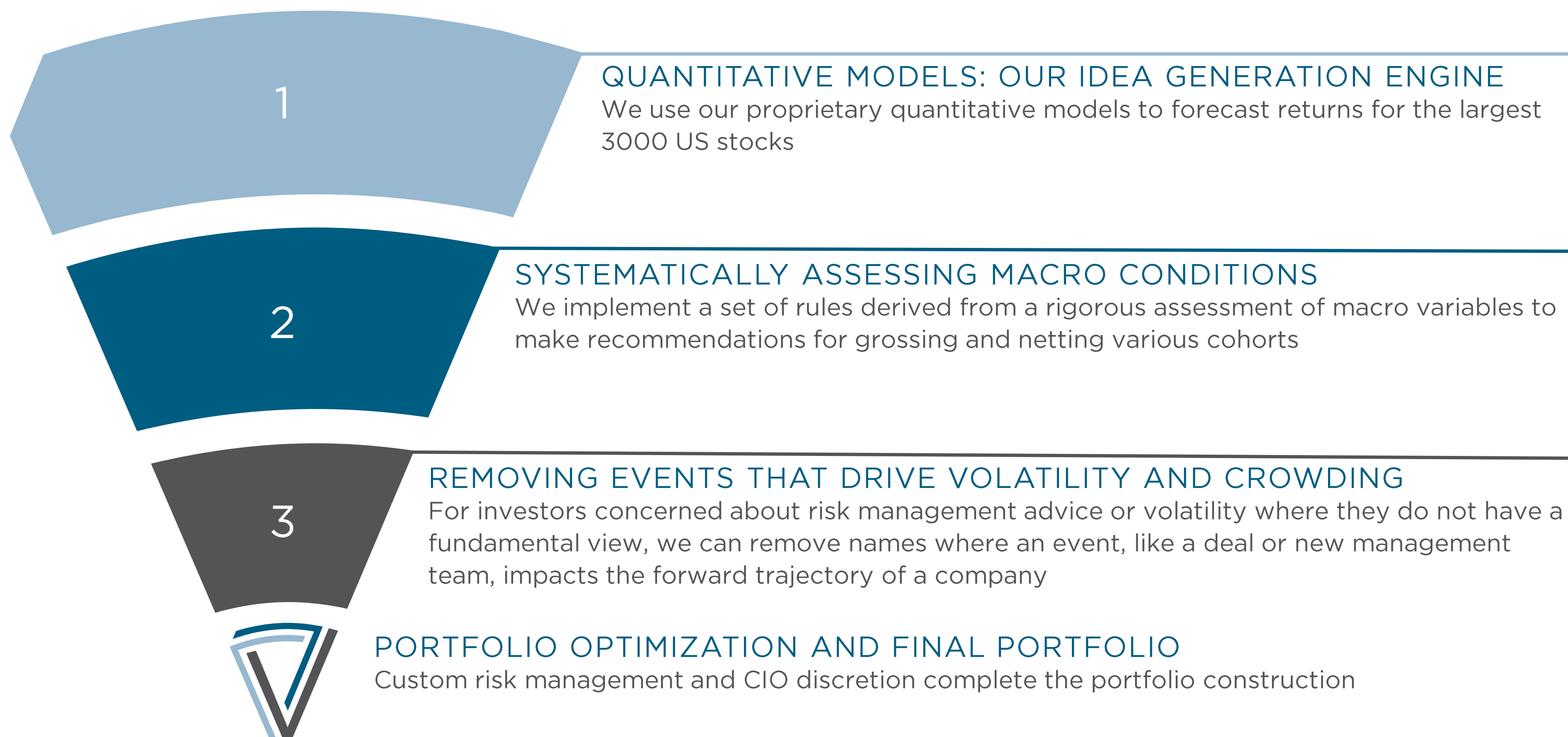
QUANTITATIVE MODEL OVERVIEW

Trivariate Research's process for investment advice combines quantitative stock-level models, top-down rules designed to improve how investors make decisions about gross exposures, and a systematic identification of stocks where fundamental "events" create increased volatility. Our goal is to improve how CIOs use their judgment in forming their final portfolios



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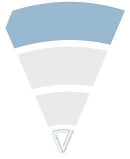
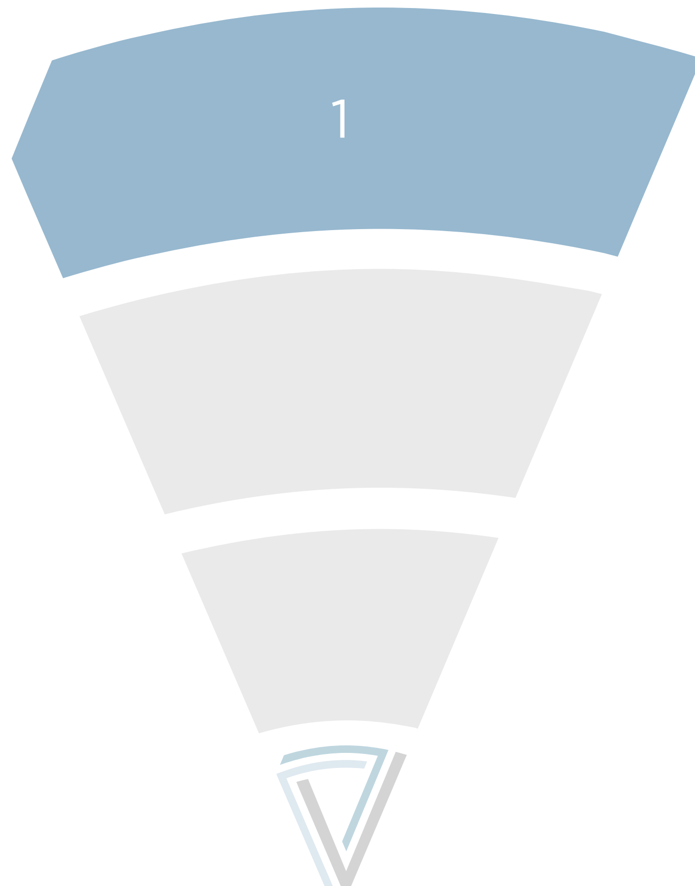


QUANTITATIVE MODELS: OUR IDEA GENERATION ENGINE

The first and in our view, most critical step in the process is running our custom quantitative models to predict returns for the largest 3000 US stocks. The output of this quantitative process is a ranking of the stock universe by anticipated returns. When we ran our hedge fund we selected the top 20% as potential long ideas and the bottom 20% as potential short ideas. As such, we often use this same approach for idea generation to embody a theme in our research



QUANTITATIVE MODELS – WHAT ARE WE DOING?

- **Breaking the market into distinct cohorts:** We parse the universe into 21 proprietary cohorts that are the result of years of research and multiple model-building iterations. Examples include: "hyper growth", "high yield junk", "cheap for a reason", and other non-traditional classifications. For clients who build models please contact us if you are interested in the details of our model construction
- **Infusing fundamental knowledge:** A significant source of our differentiation is our experience in combining both the quantitative and fundamental disciplines
- **Differentiating our time horizon:** We build models to predict 18-month forward returns for each US stock
- **Limiting variable overlap:** We use variables to predict returns in our models that come from categories like balance sheet, income statement, cash flow, sentiment, valuation, and accounting, with several custom definitions and a low overlap of variables between cohorts

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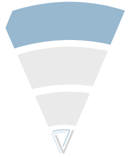

OVERVIEW OF OUR QUANTITATIVE MODELS

Each stock receives several tags which are systematically used to determine its cohort. These cohort groupings are critical as model development improves when stocks in a cohort share common characteristics. We then build different models in each cohort, using distinct variables to predict future stock-level returns. Finally, we rank the universe from 1 to 3000 on the forecasted return from the models, with the top 20% becoming potential long ideas and the bottom 20% potential short ideas

INVESTMENT UNIVERSE
STOCK 1
STOCK 2
STOCK 3
STOCK 4
STOCK 2997
STOCK 2998
STOCK 2999
STOCK 3000

TAG ALL STOCKS
TAG 1
TAG 2
TAG 3
TAG 4
TAG N

ASSIGN ALL STOCKS TO COHORTS
COHORT 1
COHORT 2
COHORT 3
COHORT 4
COHORT N

BUILD COHORT MODELS
MODEL 1
MODEL 2
MODEL 3
MODEL 4
MODEL N

STOCK RANK
TOP 20%
CANDIDATE LONGS
STOCKS 1-600
BOTTOM 20%
CANDIDATE SHORTS
STOCKS 2401-3000

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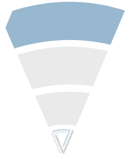
STOCK TAGGING EXAMPLE



The first step in building our distinct cohorts is assigning multiple tags to each stock in the universe. Each tag is systematically generated based on a series of input variables. As an example, every stock will be labeled with a "style" tag which has five potential categories as shown below

TAG 1	TAG 2	TAG 3	TAG N
SUBSTANCE	YIELD	STYLE	

SAMPLE VARIABLES USED FOR STYLE TAGGING

- DIVIDEND YIELD
- NET DEBT TO ASSETS
- CONSENSUS LONG-TERM EARNINGS GROWTH
- PRICE TO BOOK
- ETC.

"STYLE" TAG	EXAMPLE NAMES
FAST GROWTH	TSLA, CRM, DIS
GROWTH	MSFT, AMZN, GOOGL
NEITHER	BRK.B, JNJ, UNH
VALUE	JPM, XOM, VZ
DEEP VALUE	VIAC, EIX, PPL

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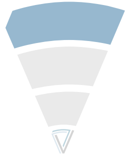
ASSIGNING EACH STOCK TO A COHORT



Once the tagging is complete for our stock universe, we systematically assign each stock to a cohort. This process is rules-based, mutually exclusive and exhaustive. Below is an illustration of how several large cap stocks were tagged and assigned to their Trivariate cohorts. Note the differentiation between our classification and the "traditional" GICS sector classification

TICKER	SUBSTANCE TAG		DIVIDEND YIELD TAG		STYLE TAG		TRIVARIATE COHORT	GICS SECTOR
VIAC	Junk	+	High	+	Deep Value	→	Cheap For A Reason	Communication Services
TSLA	Junk	+	Regular	+	Fast Growth	→	Hyper Growth Junk	Consumer Discretionary
CRM	High Quality	+	Regular	+	Growth	→	Hyper Growth	Information Technology
XOM	Junk	+	High	+	Value	→	High Yield Junk	Energy
JNJ	High Quality	+	High	+	Neither	→	High Yield	Healthcare
TMUS	Junk	+	Regular	+	Neither	→	Other Junk	Communication Services

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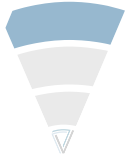
TRIVARIATE COHORT SEGMENTATION



One aspect of our investment process is the differentiation of the cohort definitions we use to segment the market and build our models. We do not use commonly-used GICS sectors but instead, use our own proprietary cohorts. This improves our model performance

TRIVARIATE HIGH YIELD COHORT*

TICKER	GICS SECTOR
JNJ	Healthcare
PG	Consumer Staples
VZ	Communication Services
INTC	Information Technology
CVX	Energy
SO	Utilities
GD	Industrials
NEM	Materials
BK	Financials

GICS CONSUMER DISCRETIONARY

TICKER	TRIVARIATE COHORT
TSLA	Hyper Growth Junk
HD	Discretionary
NKE	Durables
GM	Other Junk
PTON	Hyper Growth
BBY	High Yield
HRB	Cheap for a Reason
DRI	High Yield Junk
GNTX	Industrials

* As of May 1st, 2020

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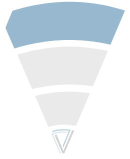

BUILDING COHORT MODELS

We use variables in our models that come from categories like balance sheet, income statement, cash flow, sentiment, valuation and accounting. We intentionally ensure that there is limited variable overlap among our cohort models, seeking to avoid making highly concentrated factor bets

MODEL COHORT 1 HIGH YIELD MODEL	MODEL COHORT 2 HYPER GROWTH MODEL	MODEL COHORT 3 CHEAP FOR A REASON MODEL
DISTANCE TO DEFAULT	STOCK BUYBACKS	PRICE TO FORWARD SALES
PRICE MOMENTUM	DAYS OF INVENTORY	DAYS OF INVENTORY
DIVIDEND COVERAGE	TRADING VOLUME	CASH LEVEL
DIVIDEND GROWTH	PROFIT MARGIN	CASH GROWTH
INCOME STATEMENT STABILITY	PRICE TO FORWARD EARNINGS	FORECAST REVENUE GROWTH
BALANCE SHEET STABILITY	ACCELERATING REVENUE	SELL SIDE ANALYST RECOMMENDATIONS
PRICE TO FORWARD EARNINGS		
DIVIDEND COVERAGE AND GROWTH INTERACTION		

Even when there is variable overlap such as with "Price To Forward Earnings" and "Days of Inventory", the variables can have opposite implications depending on the model.

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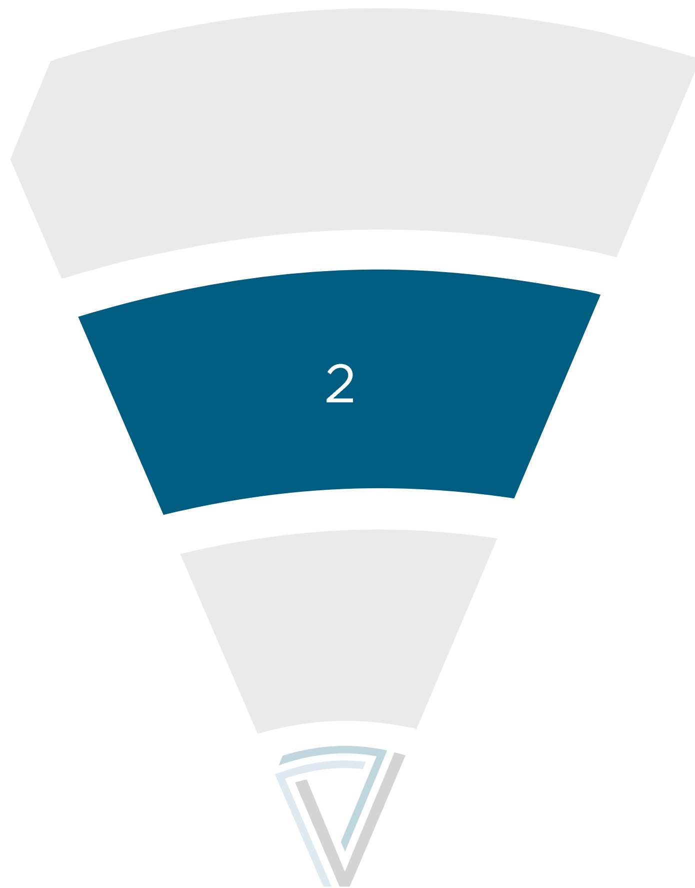
SYSTEMATICALLY ASSESSING MACRO CONDITIONS

The second step in the Trivariate process is a systematic assessment of top-down variables. We use this information to improve the probability of identifying and sizing portfolio candidates – this informs how we make recommendations about gross exposure



ASSESSING MACRO CONDITIONS – WHAT ARE WE DOING?

- **Analyzing macro data:** We systematically track and analyze dozens of economic and macro variables. Examples include economic activity and growth, slope and level of the interest rate curve, commodities, credit spreads, etc.
- **Assessing impact on performance:** We measure how changes in macro regimes alter the performance of our proprietary cohorts and our model efficacy
- **Creating exposure rules:** We create a set of rules that strive to increase our odds of identifying and sizing stocks correctly in the context of the relevant macro regime. The sustained bull-flattening environment for interest causing us to gross up our high yield model is a good example
- **Implementing our rules:** We execute our macro rules against the quantitative model rankings from the first phase of our investment process. This new model rankings, re-ordered by our macro rules, seeks to improve the fund's return potential
- **Avoiding macro bets:** We do not intend to make active directional macro bets and our process is not predicated on making accurate macro forecasts

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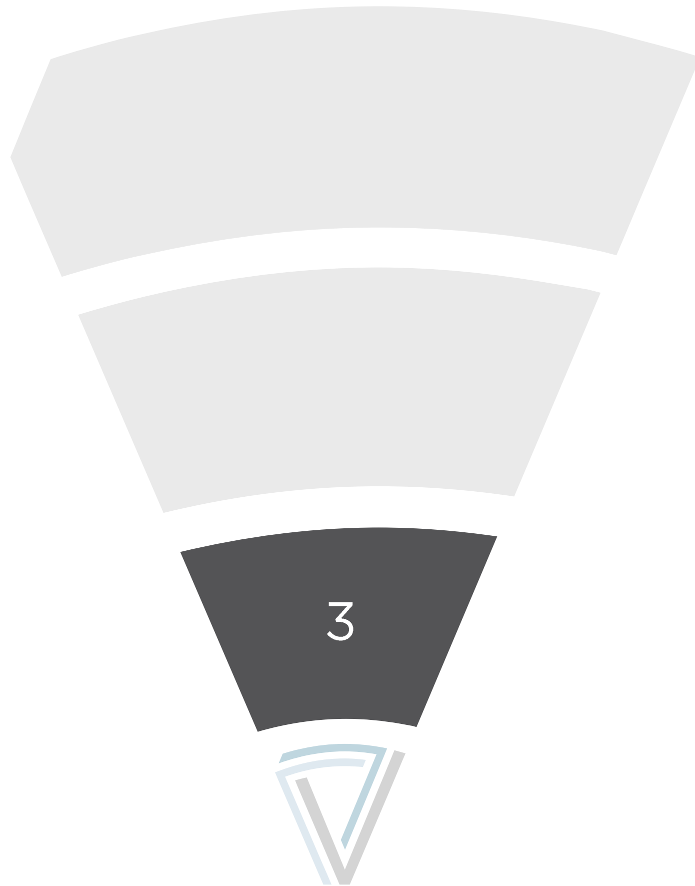
REMOVING EVENTS THAT DRIVE VOLATILITY AND CROWDING

The third step in the process is to systematically remove events such as CEO changes or M&A that may significantly affect a company's outlook. Based on our research, we have found that these "catalysts" often increase stock volatility without a commensurate increase in alpha and are often crowded by traditional fundamental investors. We can remove these stocks from our back-tests and quantitative processes where necessary to create value



REMOVING EVENTS – WHAT ARE WE DOING?

- **Identifying material corporate events:** We systematically identify fundamental corporate activity like new CEOs, meaningful divestitures, spin-offs, mergers or acquisitions
- **Eliminating stocks for a sustained period:** We intentionally remove any stocks where these events occurred for at least one-year until their conditions normalize

REMOVING EVENTS – WHY ARE WE DOING THIS?

- **Seek to lower volatility of fund without losing alpha**
- **Seek to reduce correlation to other traditional L/S funds**

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PORTFOLIO OPTIMIZATION AND OTHER RISK MANAGEMENT ADVICE

After the three-step process is complete, we can provide value to investors through customized risk management

FINAL INVESTMENT ADVICE– WHAT ARE WE DOING?

- **Analyzing 13F filings for crowding:** We created a proprietary universe of hedge fund managers that we know and respect and defined a basket of their "high conviction" ideas – we think investors should avoid certain crowded names
- **Optimizing portfolios:** we can run a client's portfolio through our proprietary optimizer to make stock and sizing recommendations
- **Differentiating risk management:** We feel that using an optimizer makes our advice analytically rigorous relative to traditional long / short funds. Relative to quantitative funds, we believe creating our own custom approach lowers the probability that our recommendations are the same as those guided or forced by funds who buy the same store-bought code
- **We offer bespoke risk management to our clients – please contact us if interested**

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